

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 7 2006 (13th to 19th Feb 2006)

Summary

During week 7 2006, influenza activity continued to increase in Ireland, with 43 influenza-like illness cases reported by sentinel GPs. Nine positive influenza specimens were detected by the NVRL during week 7, five influenza A and four influenza B. Seven European countries (including Ireland) reported increases in clinical influenza activity of more than 30% during week 6, compared to week 5. 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-four 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 & hospital admissions data.

Results

Clinical Data

During week 7 2006, 43 ILI cases were reported by sentinel GPs, corresponding to an ILI consultation rate of 37.4 per 100,000 population, a slight increase from the updated rate of 31.2 per 100,000 during week 6 2006 (figure 1).

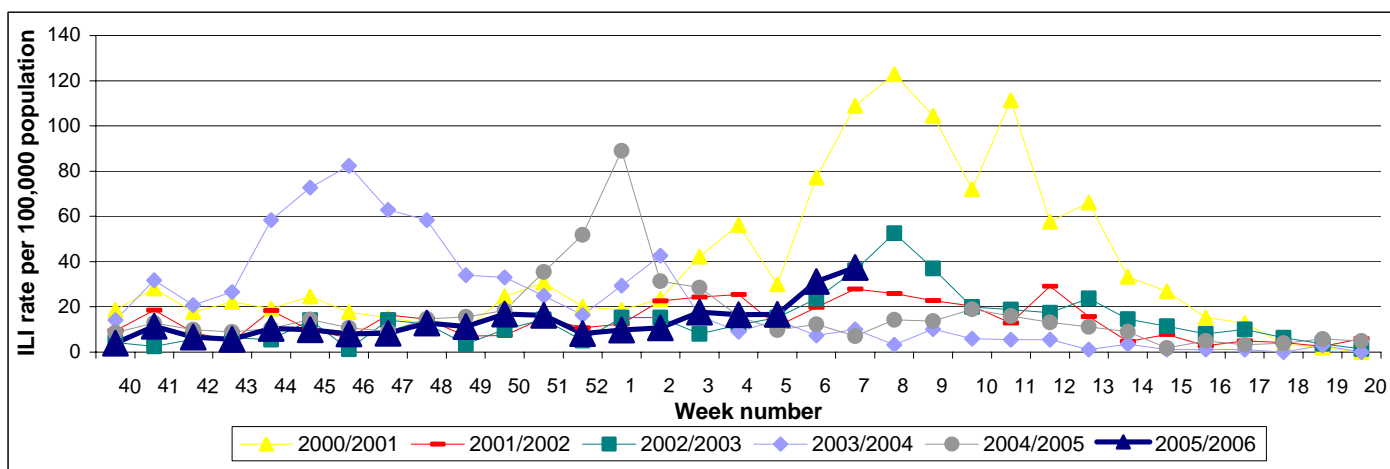


Figure 1: GP consultation rate for ILI per 100,000 population by week, during the 2000/2001, 2001/2002, 2002/2003, 2003/2004, 2004/2005 & 2005/2006 influenza seasons.

Results (continued)

During week 7 2006, ILI rates peaked in those aged 15-64 years, with 34 cases reported, corresponding to an ILI rate of 43.6 per 100,000 population. One ILI case was reported in the 0-4 year age group, corresponding to an ILI consultation rate of 12.3 per 100,000 population. Six ILI cases were reported in the 5-14 year age group (37.4 per 100,000 population) and two ILI cases were reported in those aged 65 years or older (43.6 per 100,000 population) during week 7 2006 (figure 2). Thirty-five of 44 (79.5%) sentinel general practices reported during week 7 2006, with 17 reporting ILI.

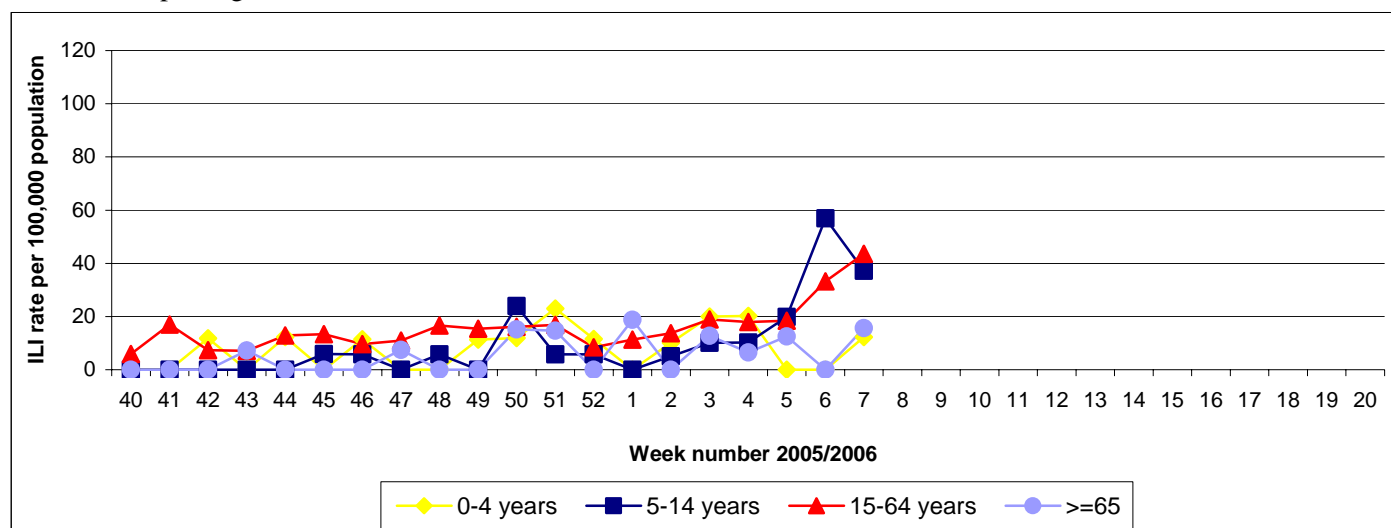


Figure 2: Age specific GP consultation rate* for ILI per 100,000 population by week during the 2005/2006 influenza season. *Please note the denominator used in the age specific consultation rate is from the 2002 census data; this assumes that the age distribution of the sentinel general practices is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

Virological Data from the National Virus Reference Laboratory (NVRL)

The NVRL tested 15 specimens taken by sentinel GPs during week 7 2006, two were positive for influenza A and four were positive for influenza B. The NVRL also tested 61 non-sentinel specimens, taken during week 7 2006, mainly from hospitalised paediatric cases, three were positive for influenza A. To date this season, the NVRL has detected 33 positive influenza specimens, 16 influenza A (10 A H3 & 6 A untyped) and 17 influenza B (table 1). To date this season, influenza positive specimens have been detected in all HSE-Health Areas (table 2).

Figure 3 compares the ILI consultation rates by season and the number of positive influenza specimens tested by the NVRL. Nine non-sentinel specimens tested positive for respiratory syncytial virus (RSV) during week 7 2006 (figure 4). The percentage of RSV positive respiratory specimens peaked in week 50 2005. 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 7 2006 and the 2005/2006 season to date.

Week Number	Specimen Type	Total Specimens	No. Influenza Positive	% Influenza Positive	Influenza A	Influenza B	RSV
7 2006	Sentinel	15	6	40.0	2	4	NA
	Non-Sentinel	61	3	4.9	3	0	9
	Total	76	9	11.8	5	4	9
40 2005 – 7 2006	Sentinel	168	22	13.1	8	14	NA
	Non-Sentinel	1195	11	0.9	8	3	345
	Total	1363	33	2.4	16	17	345

*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 7 2006 and the 2005/2006 season to date

	Week 7 2006			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
HSE-ER	4	2	6	10	8	18
HSE-MA	0	0	0	0	1	1
HSE-MWA	0	1	1	0	2	2
HSE-NEA	0	1	1	0	1	1
HSE-NWA	0	0	0	4	3	7
HSE-SEA	1	0	1	1	1	2
HSE-SA	0	0	0	1	0	1
HSE-WA	0	0	0	0	1	1
Total	5	4	9	16	17	33

* 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.

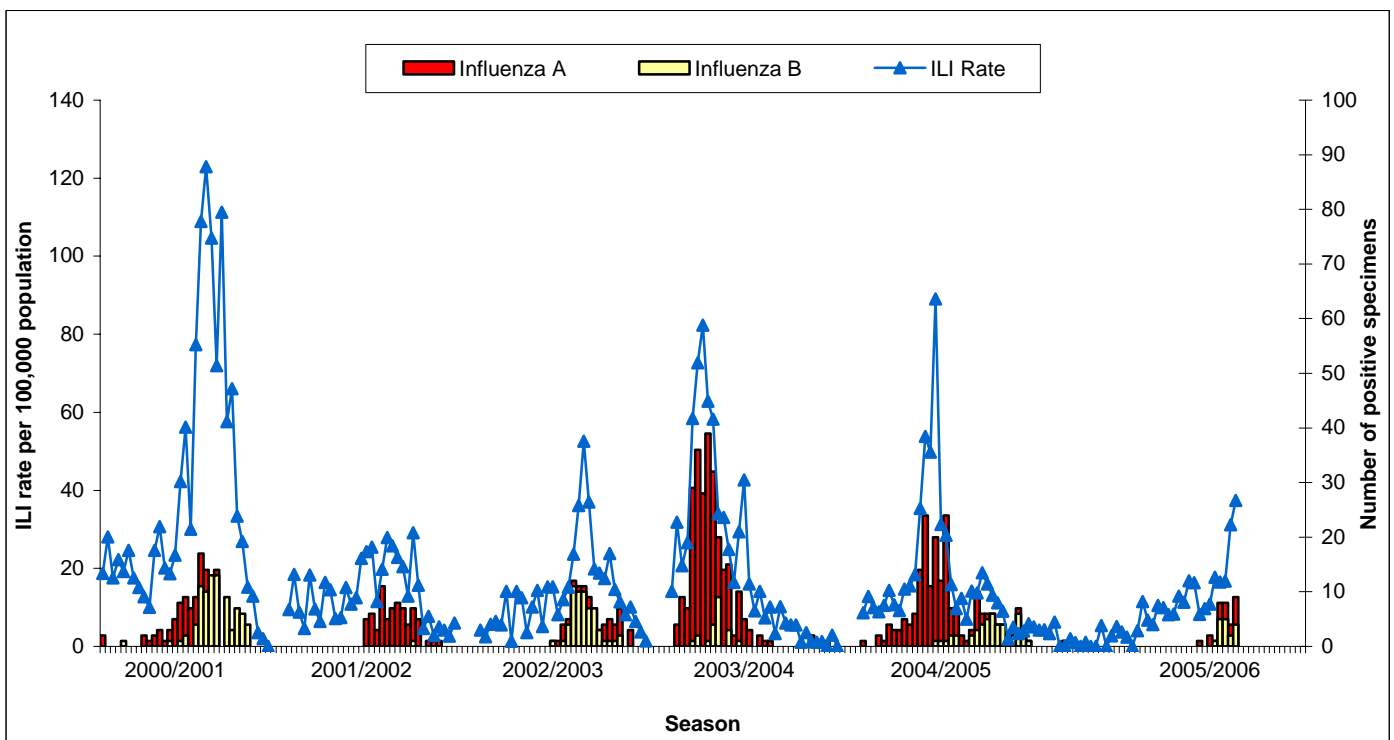


Figure 3: ILI rate per 100,000 population and the number of positive influenza specimens detected by the NVRL during the 2000/2001, 2001/2002, 2002/2003, 2003/2004 & 2004/2005 seasons, summer 2005 and the 2005/2006 season.

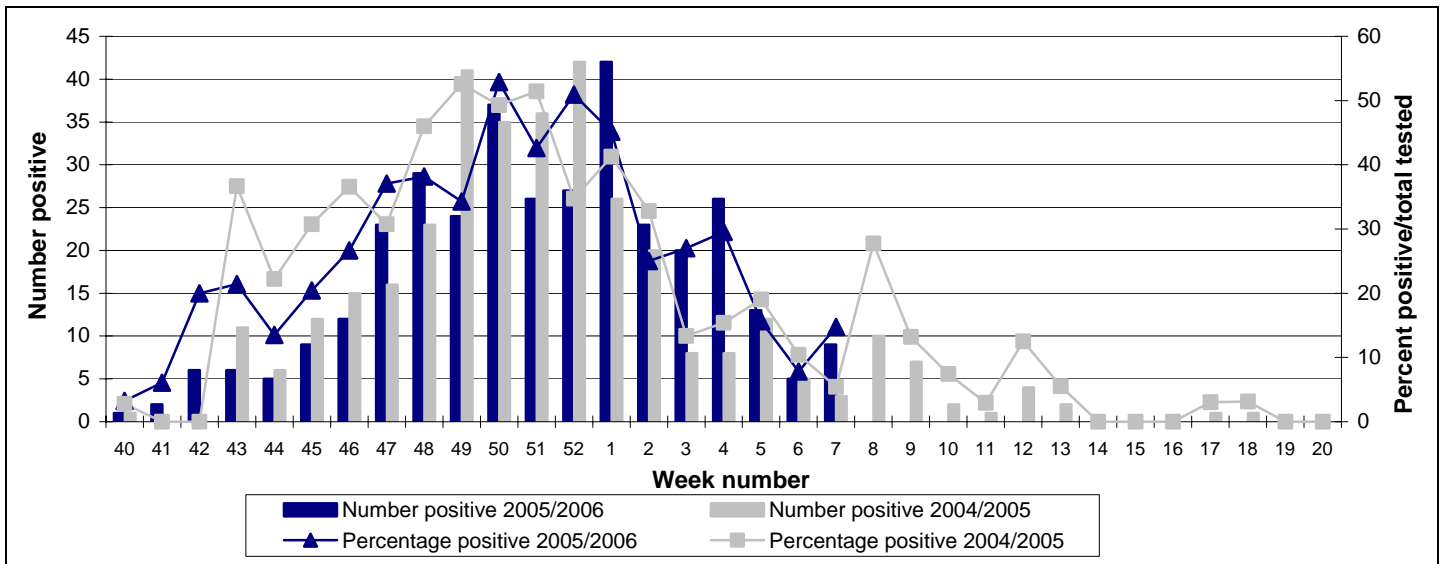


Figure 4. Number and percentage of non-sentinel RSV positive specimens detected during the 2005/2006 and 2004/2005 influenza seasons.

Weekly Influenza Notifications

One influenza A case was notified from HSE-MA to HPSC during week 7 2006. 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.

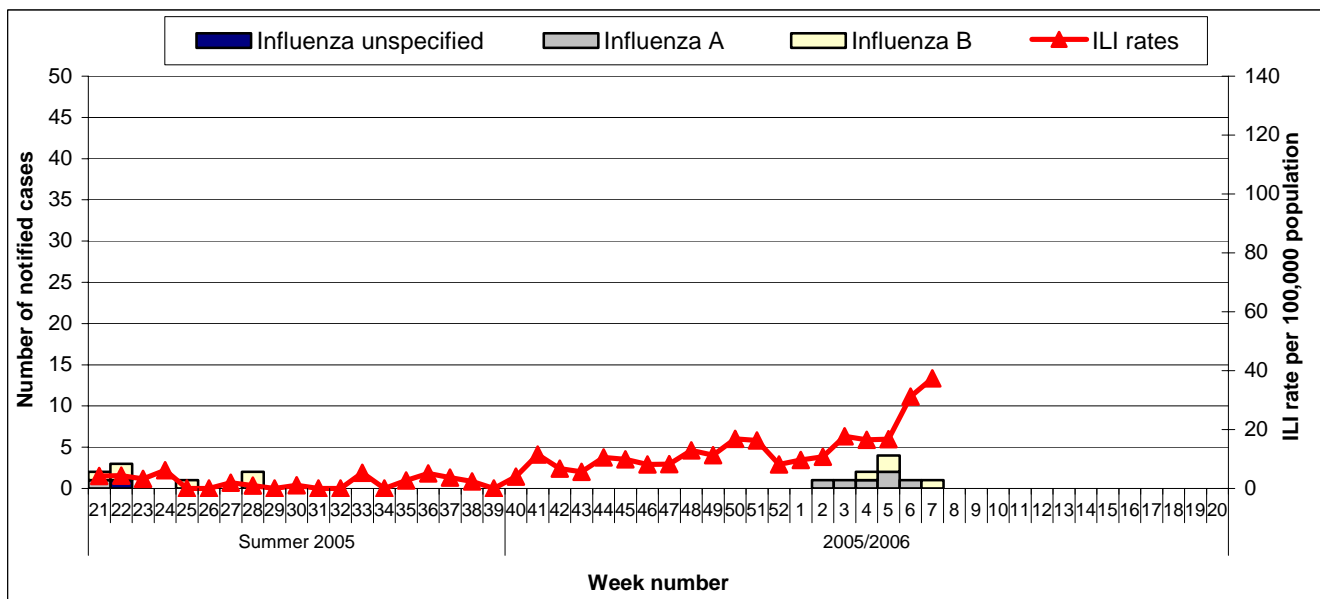


Figure 5: Number of notifications* of influenza (possible & confirmed) by type and by week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2005 and the 2005/2006 influenza season. *Notification data are provisional and were extracted from [CIDR](#) on the 23/02/2006 at 12:27 GMT.

Mortality Data

No deaths registered with the GRO to date this season were attributed to influenza.

Outbreak Reports

One ILI outbreak during week 4 2006 in a nursing home in HSE-NEA was reported to HPSC. The main symptoms experienced were headache, malaise, nasal symptoms and fever. All residents had received the 2005/2006 influenza vaccine. This is the only ILI/influenza outbreak 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. No significant increases in respiratory admissions were reported from sentinel hospitals during week 6 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. Increased absenteeism was reported in sentinel primary schools in HSE-ER, -NWA and -SEA during week 6. Absenteeism was also at increased levels in two sentinel secondary schools during week 6 and in one sentinel primary school during week 7 in HSE-ER.

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. HSE-ER reported localised influenza activity during week 6, six HSE-Health Areas reported sporadic influenza activity and HSE-SA reported no influenza activity during week 6 2006 (figure 6).

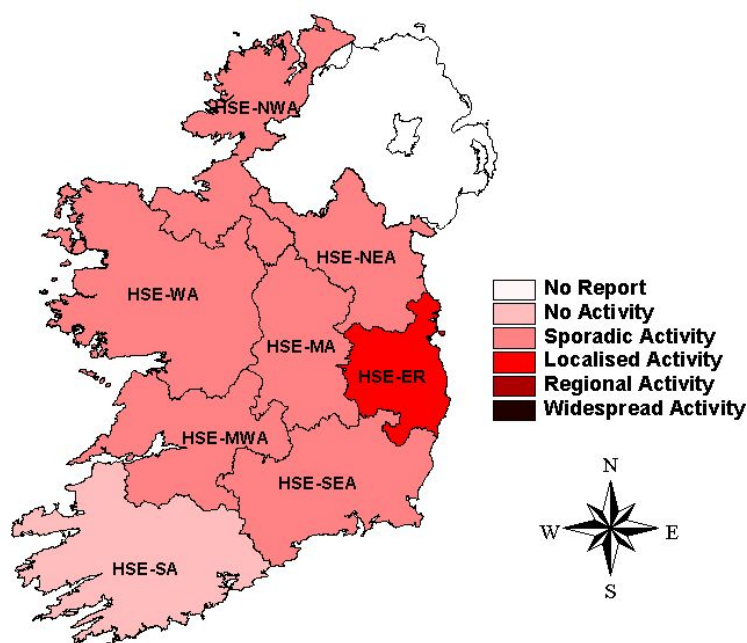


Figure 6: Map of influenza activity by HSE-Health Area during week 6 2006

Influenza Activity in Northern Ireland

The combined ILI and clinical influenza consultation rate in Northern Ireland during week 7 2006 was 93 per 100,000 population, an increase from the updated rate of 59.9 per 100,000 in week 6 2006. Three influenza B positive sentinel specimens and one influenza A (unsubtyped), two influenza B and 58 RSV positive non-sentinel specimens were detected during week 7 2006. All influenza positive specimens detected during week 7 2006 were in those under 18 years of age. <http://www.cdscni.org.uk>

Influenza Activity in England, Scotland & Wales

Influenza activity has continued to increase for week 7 2006 and stayed above the baseline level for the third consecutive week in England and Wales. GP consultation rates for ILI in Scotland continued to decrease from 20.3 per 100,000 in week 6 2006 to 12.9 per 100,000 in week 7 2006. To date this season, the UK HPA Centre for Infections at London have received 636 reports of ILI outbreaks associated with schools (primary and secondary), colleges, nurseries and other institutions throughout England and Wales. Most outbreaks began from mid-January onwards, however the numbers of new outbreaks are now declining. Since week 40 2005, 130 influenza viruses have been antigenically characterised; nine influenza A/New Caledonia/20/1999 (H1N1)-like, seven influenza A/California/7/2004 (H3N2)- like; 112 influenza B viruses antigenically similar to influenza B/Hong Kong/330/2001 and two influenza B/Shanghai/361/2002-like virus.

http://www.hpa.org.uk/infections/topics_az/influenza/seasonal/flureports0506.htm

Influenza Activity in Europe

Belgium, Denmark, Ireland, Latvia, Lithuania, Northern Ireland and Norway reported increases in clinical influenza activity of more than 30% during week 6, compared to week 5. However, in most countries the intensity of activity is still low. The dominant type of virus detected during week 6 was influenza B. Since the start of the season, more influenza B viruses (70%) have been reported than influenza A viruses (30%) for Europe as a whole. The total number of respiratory specimens collected by sentinel physicians in week 6 2006 was 1004, of which 194 (19%) were positive for influenza virus: 135 (70%) influenza B and 59 (30%) influenza A. In addition, 2,278 non-sentinel specimens were analysed, of which 379 (17%) tested positive for influenza virus: 285 (75%) influenza B and 94 (25%) influenza A. Based on (sub)typing data of all influenza virus detections from sentinel and non-sentinel sources up to week 6 2006 (N=2,084), 1463 (70%) were influenza B and 621 (30%) were influenza A. Of the total influenza A virus detections, 422 (68%) were influenza A (unsubtyped), 101 (16%) A(H1) [26 A(H1N1)] and 98 (16%) A(H3) [36 A(H3N2)]. Based on the characterisation data of all influenza virus detections up to week 6 2006, 236 have been antigenically and/or genetically characterised: 35 were A/New Caledonia/20/99 (H1N1)-like, 35 were A/California/7/2004 (H3N2)-like, 128 were B/Malaysia/2506/2004-like (B/Victoria/2/87-lineage) and 38 were B/Jiangsu/10/2003-like (B/Jiangsu/10/2003 is a B/Shanghai/361/2002-like virus from the B/Yamagata/16/88-lineage and is currently used in the vaccine). <http://www.eiss.org/index.cgi>

Influenza Activity in Canada

During week 6 2006, widespread influenza activity was reported in three influenza surveillance regions and localised activity was reported in eight regions. Sporadic activity was reported in parts of British Columbia, Alberta, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia and the Northwest Territories. The ILI consultation rate in Canada was calculated as 21 per 1000 patient visits in week 6, which is below the expected range for this week. During week 6, the Public Health Agency of Canada received 2810 reports of laboratory tests for influenza of which 287 (10%) were positive for influenza virus: 161 influenza A and 126 influenza B. To date, 100% of the influenza A strains characterised have matched those included in the 2005/2006 vaccine. However, only 3% of the influenza B characterisations have matched the current vaccine strain. The remaining 97% 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 6, influenza activity increased in the United States, primarily in the eastern half of the country. 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. Thirteen states reported widespread influenza activity; 21 states and New York City reported regional influenza activity; 11 states and the District of Columbia reported local influenza activity; and five states and Puerto Rico reported sporadic influenza activity. During week 6, WHO and NREVSS laboratories reported 2,438 specimens tested for influenza viruses, of which 455 (18.7%) were positive: 136 A (H3N2), 6 A (H1N1), 280 A (unsubtyped) and 33 B viruses. CDC has antigenically characterised 189 influenza viruses this season [149 influenza A (H3N2), 9 influenza A (H1), and 31 influenza B viruses]. Of the 149 influenza A (H3N2) viruses, 123 were A/California/07/2004-like, and 26 showed reduced titers with antisera produced against A/California/07/2004. The hemagglutinin proteins of seven influenza A (H1) viruses were similar antigenically to the hemagglutinin of the vaccine strain A/New Caledonia/20/99, and two showed reduced titers with antisera produced against 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.
<http://www.cdc.gov/flu/>

Influenza Activity Worldwide

During week 6 2006, sporadic influenza activity was reported in China (57 A H1, 4 A H3, 2 A untyped & 95 B), Israel (4 A untyped & 4 B) and Mongolia. No influenza activity was reported in Argentina during week 6. Six influenza A (H1), one influenza A (H3) and one influenza B positive specimens were detected in Iran and five influenza A (H1) and 17 influenza A (H3) positive specimens were detected in Japan during week 6.
<http://gamapserver.who.int/GlobalAtlas/home.asp>

Avian Influenza

As of February 20th, there have been 170 confirmed human cases of influenza A (H5N1) and 92 fatalities reported to WHO. The World Organisation for Animal Health (OIE) and the European Centre for Disease Prevention and Control (ECDC) have reported influenza A (H5) in wild birds in several EU countries: Austria, France, Germany, Greece, Hungary, Italy and Slovenia. Developments concerning influenza A(H5N1), especially 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 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