

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 9 2006 (27th February to 5th March 2006)

Summary

During week 9 2006, influenza activity remained at increased levels in Ireland, with 63 influenza-like illness (ILI) cases reported by sentinel GPs. The highest ILI rates were reported in 5-14 year olds, which was also reflected in increased absenteeism in some sentinel schools and a report of an ILI outbreak in a primary school. Fifteen positive influenza specimens were detected by the NVRL during week 9 2006, eight influenza A and seven influenza B. 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 9 2006, 63 ILI cases were reported by sentinel GPs, corresponding to an ILI consultation rate of 48.8 per 100,000 population, a slight increase from the updated rate of 42.0 per 100,000 during week 8 2006 (figure 1).

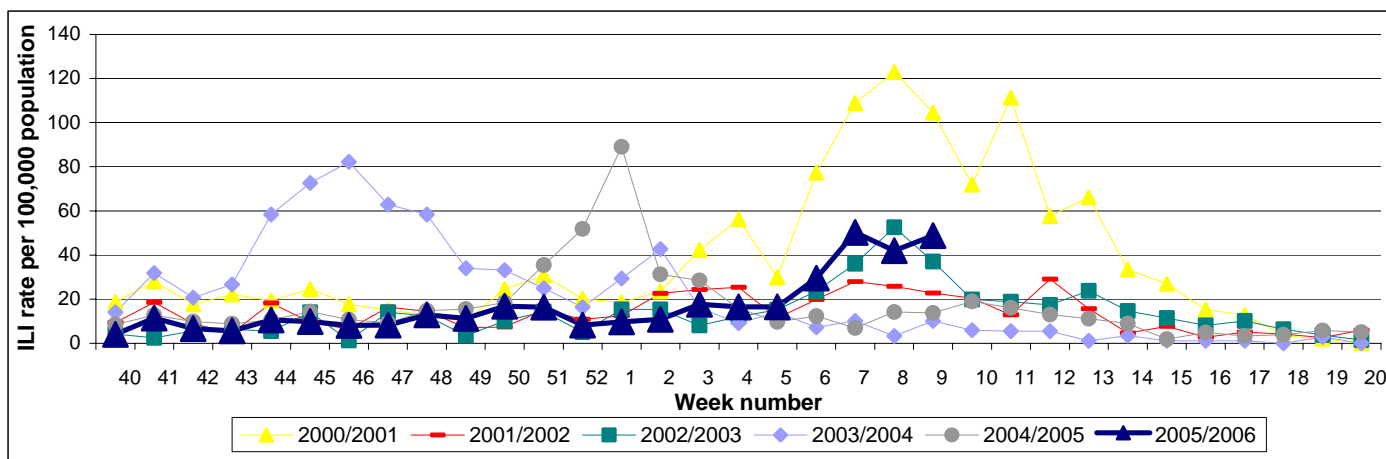


Figure 1: GP consultation rate for ILI per 100,000 population by week, during the 2000/2001, 2001/2002, 2002/2003, 2003/2004, 2004/2005 & 2005/2006 influenza seasons.

Results (continued)

During week 9 2006, ILI rates peaked in those aged 5-14 years, with 12 cases reported, corresponding to an ILI rate of 66.2 per 100,000 population. ILI rates increased in all age groups during week 9, with the exception of those aged 65 years or older. Four ILI cases were reported in the 0-4 year age group, corresponding to an ILI consultation rate of 43.7 per 100,000 population. Forty-six ILI cases were reported in the 15-64 year age group (52.6 per 100,000 population) and one ILI case was reported in those aged 65 years or older (6.7 per 100,000 population) during week 9 2006 (figure 2). Thirty-six of 44 (81.8%) sentinel general practices reported during week 9 2006, with 23 reporting ILI.

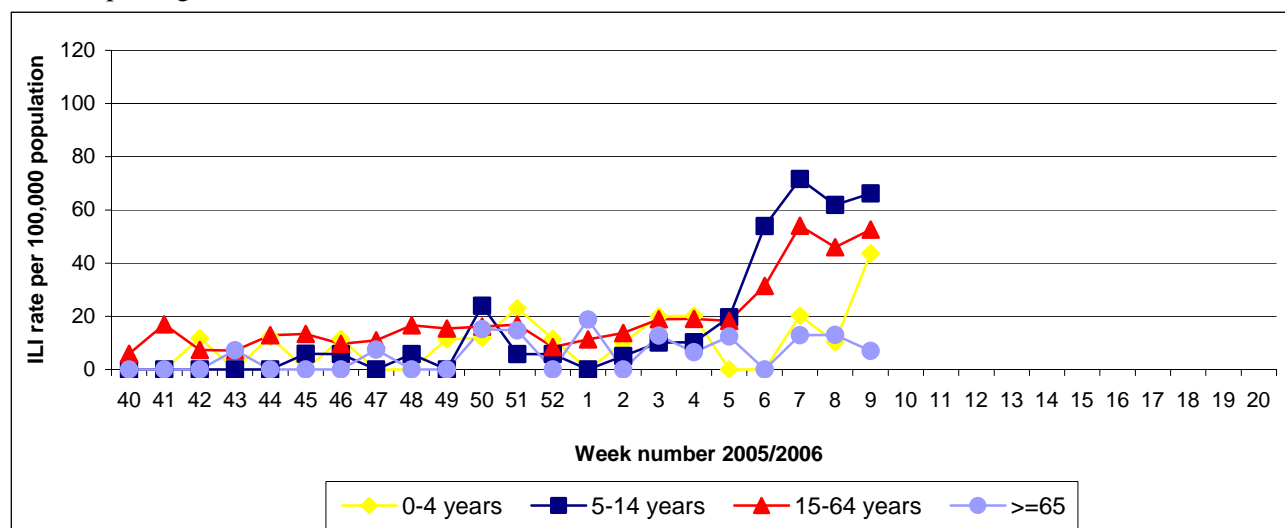


Figure 2: Age specific GP consultation rate* for ILI per 100,000 population by week during the 2005/2006 influenza season. *Please note the denominator used in the age specific consultation rate is from the 2002 census data; this assumes that the age distribution of the sentinel general practices is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

Virological Data from the National Virus Reference Laboratory (NVRL)

The NVRL tested 26 specimens taken by sentinel GPs during week 9 2006, four were positive for influenza A and six were positive for influenza B. The NVRL also tested 46 non-sentinel specimens, taken during week 9 2006, mainly from hospitalised paediatric cases, four were positive for influenza A and one was positive for influenza B. To date this season, the NVRL has detected 72 positive influenza specimens, 31 influenza A (14 A H3 & 17 A untyped) and 41 influenza B (table 1). 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. Six non-sentinel specimens tested positive for respiratory syncytial virus (RSV) during week 9 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 9 2006 and the 2005/2006 season to date.

Week Number	Specimen Type	Total Specimens	No. Influenza Positive	% Influenza Positive	Influenza A	Influenza B	RSV
9 2006	Sentinel	26	10	38.5	4	6	NA
	Non-Sentinel	46	5	10.9	4	1	6
	Total	72	15	20.8	8	7	6
40 2005 – 9 2006	Sentinel	224	52	23.2	16	36	NA
	Non-Sentinel	1300	20	1.5	15	5	356
	Total	1524	72	4.7	31	41	356

*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 9 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 9 2006			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
HSE-ER	4	2	6	21	17	38
HSE-MA	0	0	0	0	1	1
HSE-MWA	1	1	2	1	4	5
HSE-NEA	2	0	2	2	1	3
HSE-NWA	1	0	1	5	4	9
HSE-SEA	0	2	2	1	7	8
HSE-SA	0	0	0	1	2	3
HSE-WA	0	2	2	0	5	5
Total	8	7	15	31	41	72

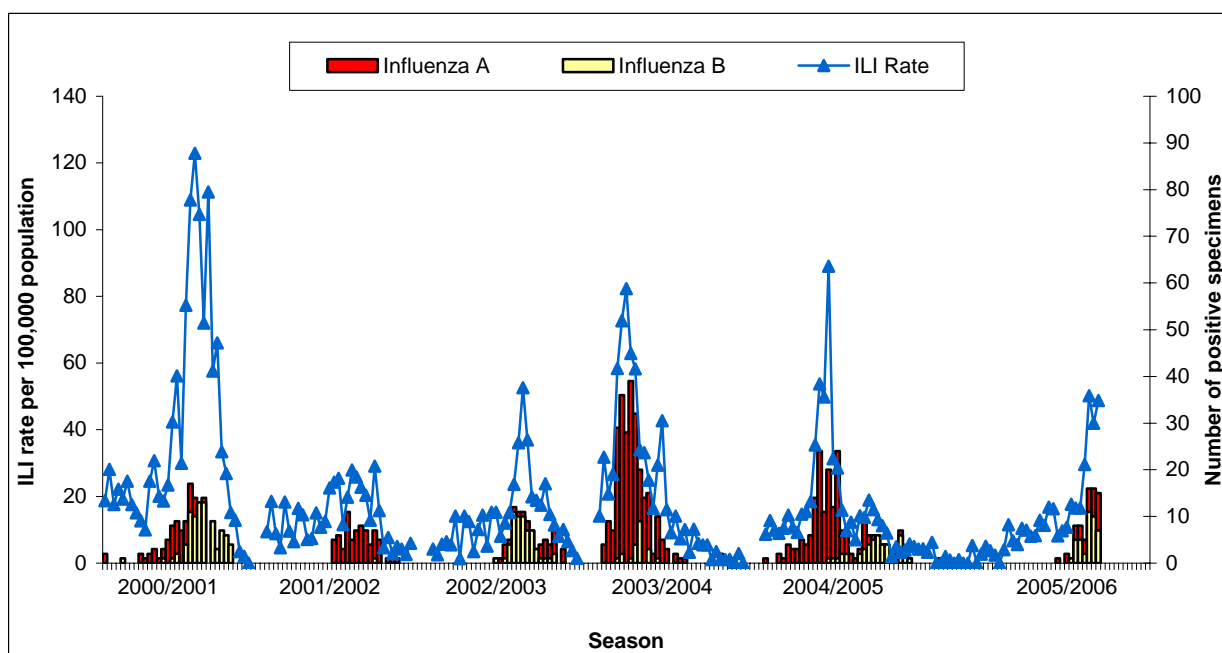


Figure 3: ILI rate per 100,000 population and the number of positive influenza specimens detected by the NVRL during the 2000/2001, 2001/2002, 2002/2003, 2003/2004 & 2004/2005 seasons, summer 2005 and the 2005/2006 season.

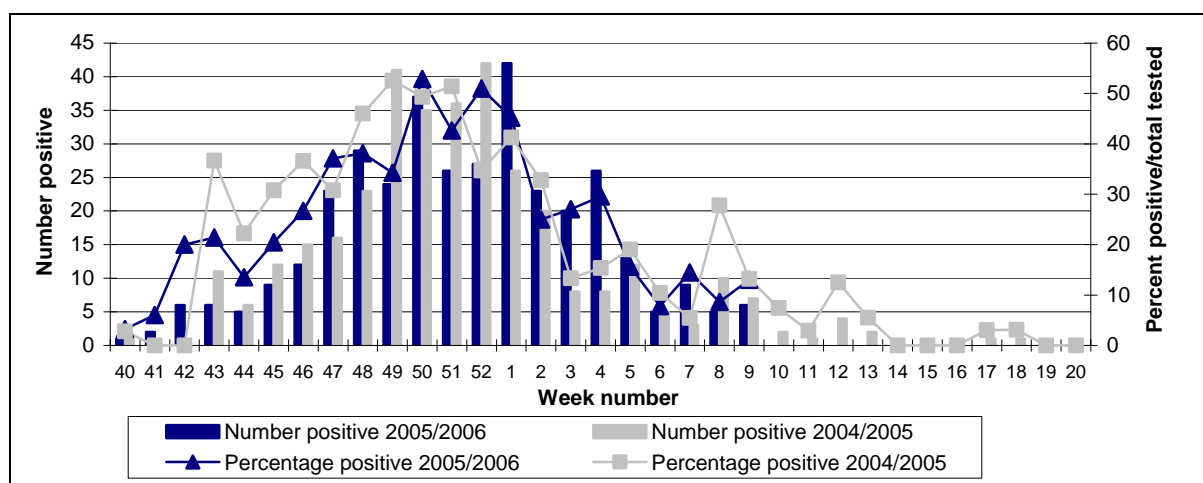


Figure 4. Number and percentage of non-sentinel RSV positive specimens detected during the 2005/2006 and 2004/2005 influenza seasons.

Weekly Influenza Notifications

One influenza A case (from HSE-SEA) and eight influenza B cases (one from HSE-NWA, five from HSE-SEA and two from HSE-SA) were notified to HPSC during week 9 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.

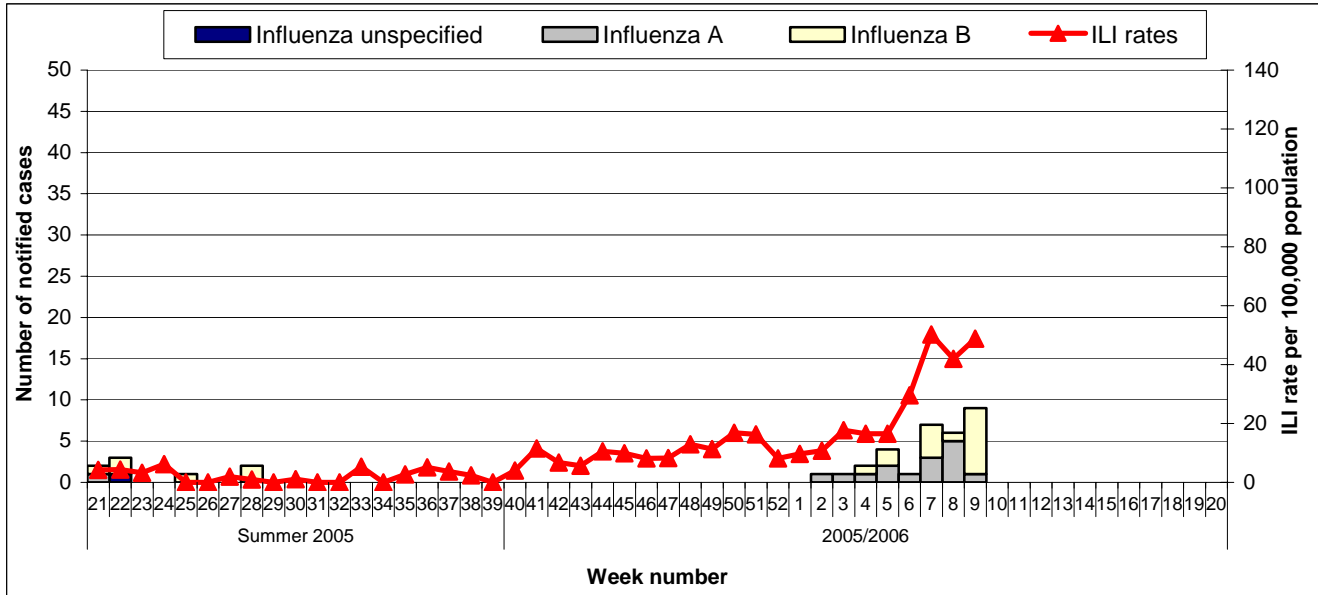


Figure 5: Number of notifications* of influenza (possible & confirmed) by type and by week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2005 and the 2005/2006 influenza season. *Notification data are provisional and were extracted from [CIDR](#) on the 08/03/2006 at 11:55 GMT.

Mortality Data

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

Outbreak Reports

HPSC has received a preliminary notification of an ILI outbreak in a primary school in HSE-ER during week 9 2006. This is the second ILI outbreak that has been 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. Increased total hospital admissions were reported from sentinel hospitals in HSE-ER during weeks 8 and 9 2006 and in HSE-NEA during weeks 7 and 8 2006. There was a slight increase in respiratory admissions in a sentinel hospital in HSE-WA during week 7 2006, which decreased during week 8 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 some sentinel primary schools in HSE-SEA during week 7, HSE-ER during weeks 6, 7 and 8 2006, HSE-MA during week 8 and HSE-NEA during week 9. Cases of gastroenteritis and ILI were reported from the sentinel primary school reporting increased absenteeism in HSE-NEA during week 9 2006.

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. HSE-ER and HSE-SEA reported localised influenza activity during week 8 and the remaining six HSE-Health Areas reported sporadic influenza activity (figure 6). Please note that during week 7, influenza activity was incorrectly reported as sporadic for HSE-MA, there was no influenza activity reported from HSE-MA during 7.

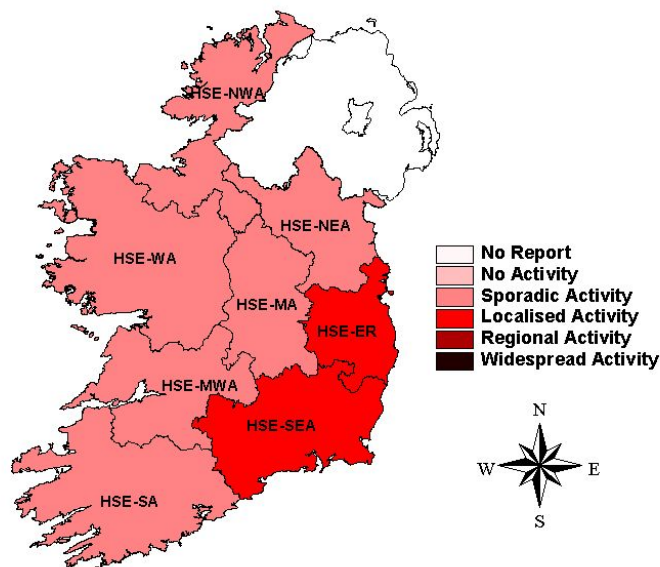


Figure 6: Map of influenza activity by HSE-Health Area during week 8 2006

Influenza Activity in Northern Ireland

The combined ILI and clinical influenza consultation rate in Northern Ireland during week 9 2006 was 86.8 per 100,000 population, a decrease from the updated rate of 100.7 per 100,000 in week 8 2006. One influenza B positive sentinel specimen and 20 RSV positive non-sentinel specimens were detected during week 9 2006. <http://www.cdscni.org.uk>

Influenza Activity in England, Scotland & Wales

In England, ILI consultation rates continued to decrease from the updated rate of 29.1 per 100,000 in week 8 2006 to 24.4 per 100,000 in week 9 2006. The rates are below the baseline level of 30 per 100,000 population, in all age groups. In Wales, the consultation rate for influenza continued to decrease from 9.4 per 100,000 in week 8 2006 to 6.2 per 100,000 in week 9 2006. GP consultation rates for ILI in Scotland remained unchanged at 13.8 in week 9 2006, compared to 13.3 per 100,000 in week 8 2006. The HPA Centre for Infections at Colindale in London continues to collect, receive and update reports of outbreaks of ILI, with 684 outbreaks associated with schools (primary and secondary), colleges, nurseries and other institutions throughout England and Wales reported to date this season. During week 9 2006, 15 samples referred to the Centre for Infections Respiratory Virus Unit (RVU) from community sources tested positive for influenza B and eight samples for influenza A. Since week 40 2005, 250 influenza viruses have been further characterised by RVU; 21 influenza A/New Caledonia/20/1999 (H1N1)-like, ten influenza A/California/7/2004 (H3N2)-like; 216 influenza B viruses antigenically similar to influenza B/Hong Kong/330/2001 and three influenza B/Shanghai/361/2002-like virus. http://www.hpa.org.uk/infections/topics_az/influenza/seasonal/flureports0506.htm

Influenza Activity in Europe

Lithuania reported a high intensity of clinical influenza activity during week 8 2006. Twelve countries reported a medium intensity and fourteen countries reported low intensity. Belgium, France, Lithuania, Luxembourg, the Netherlands and Norway reported widespread influenza activity. Spain and Switzerland reported regional activity, four countries reported local activity and thirteen countries reported sporadic activity. Poland and Slovenia reported no influenza activity in week 8 2006. The highest consultation rates for ILI or acute respiratory infection were reported in the 0-4 and 5-14 year age groups. Whilst clinical influenza activity is now declining in a number of countries, some countries have seen very little influenza activity this season. The total number of respiratory specimens collected by sentinel physicians in week 8 2006 was 1161, of which 283 (24%) were positive for influenza virus: 180 (64%) influenza B virus and 103 (36%) influenza A virus. In addition, 2235 non-sentinel specimens were analysed, of which 527 (24%) tested positive for influenza virus: 359 (68%) influenza B and 168 (32%) influenza A. Since the start of the season, more influenza B viruses (68%) have been reported than influenza A viruses (32%) for Europe as a whole. Based on (sub)typing data of all influenza virus detections from sentinel and non-sentinel sources up to week 8 2006 (N=3816), 2590 (68%) were influenza B and 1226 (32%) were influenza A. Of the total influenza A virus detections (N=1226), 849 (69%) were influenza A (unsubtyped), 209 (17%) were A(H1) [70 were A(H1N1)] and 168 (14%) were A(H3) [68 were A(H3N2)]. Based on the characterisation data of all influenza virus detections up to week 8 2006, 375 have been antigenically and/or genetically characterised: 74 were A/New Caledonia/20/99 (H1N1)-like, 58 were A/California/7/2004 (H3N2)-like, 194 were B/Malaysia/2506/2004-like (B/Victoria/2/87-lineage) and 49 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). The antigenic match between the majority of the European B virus isolates and the B virus vaccine component has therefore been poor. However, serological evidence suggests that the 2005/2006 vaccine will provide reduced but still valuable protection against B/Malaysia/2506/2004-like viruses.

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

Influenza Activity in Canada

During week 8, influenza activity overall in Canada was increasing with widespread activity reported in Saskatchewan and parts of southern British Columbia. Localised activity was reported in British Columbia, Alberta, Ontario, Quebec and Nova Scotia whereas the rest of the country reported sporadic or no activity. So far this season, influenza activity in Canada is lower compared to the last two seasons. The ILI consultation rate was calculated as 22 per 1000 patient visits in week 8, which is below the expected range for this week. During week 8, the Public Health Agency of Canada received 3193 reports of laboratory tests for influenza of which 383 (12%) were positive for influenza virus. In the current season to date, a mix of influenza A (56%) and influenza B (44%) viruses have been detected in Canada whereas influenza A virus detections predominated in the previous two seasons. To date, 100% of the influenza A strains characterised have matched those included in the 2005/2006 Canadian 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 and B/Malaysia/2506/2004-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 8, influenza activity increased in the United States. Four hundred thirty-nine specimens (21.2%) tested by U.S. WHO and NREVSS collaborating laboratories were positive for influenza. 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. Twenty-one states and New York City reported widespread influenza activity; 14 states reported regional influenza activity; 10 states and the District of Columbia reported local influenza activity; and 5 states and Puerto Rico reported sporadic influenza activity. During week 8, WHO and NREVSS laboratories reported 2,066 specimens tested for influenza viruses, 439 (21.2%) of which were positive: 134 A (H3N2) viruses, 12 A (H1N1) viruses, 231 A (unsubtyped) and 62 were influenza B viruses. Of the 295 influenza viruses antigenically characterised by CDC this season, 201 were characterised as A/California/07/2004-like (the A (H3N2) component recommended for the 2005/2006 influenza vaccine), and 49 viruses showed reduced titers with antisera produced against A/California/07/2004. Of the 49 low-reacting viruses, 23 were tested with antisera produced against A/Wisconsin/67/2005 (the H3N2 component selected for the 2006/2007 vaccine), and 19 are A/Wisconsin-like. The hemagglutinin proteins of 12 influenza A (H1) viruses were similar antigenically to the hemagglutinin of the vaccine strain A/New Caledonia/20/99, and 2 showed reduced titers with antisera produced against A/New Caledonia/20/99. Nineteen of the influenza B viruses that have been

characterised belong to the B/Yamagata lineage. Two were similar to B/Shanghai/361/2002, the recommended influenza B component for the 2005/2006 influenza vaccine, and 17 were characterised as B/Florida/07/2004-like. B/Florida/07/2004 is a minor antigenic variant of B/Shanghai/361/2002. Twelve influenza B viruses were identified as belonging to the B/Victoria lineage and all were similar to B/Ohio/1/2005, the influenza B component selected for the 2006/2007 vaccine. <http://www.cdc.gov/flu/>

Influenza Activity Worldwide

During week 8 2006, widespread influenza activity was reported in Tunisia (2 A H3). Sporadic influenza activity was reported in China (80 A H1, 4 A H3, 1 A untyped & 52 B) and Mongolia during week 8 2006. Four influenza A (H3) positive specimens were detected in Iran and 8 A (H1), 10 A (H3) and 2 B positive specimens were detected in Japan during week 8. No influenza activity was reported in Argentina, Chile or the Philippines during week 8 2006. <http://gamapserver.who.int/GlobalAtlas/home.asp>

Avian Influenza

As of March 8th, there have been 175 confirmed human cases of influenza A (H5N1) and 96 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 avian species in several EU countries: Austria, France, Germany, Greece, Hungary, Italy, Slovakia and Slovenia. 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 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

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- 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