

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 15 2006 (10th to 16th April 2006)

Summary

During week 15 2006, influenza activity decreased in Ireland, with ten influenza-like illness (ILI) cases reported by sentinel GPs. Four positive influenza specimens were detected by the NVRL during week 15 2006, two influenza A and two influenza B. 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 15 2006, 10 ILI cases were reported by sentinel GPs, corresponding to an ILI consultation rate of 7.6 per 100,000 population, a significant decrease from the updated rate of 25.2 per 100,000 during week 14 2006 (figure 1).

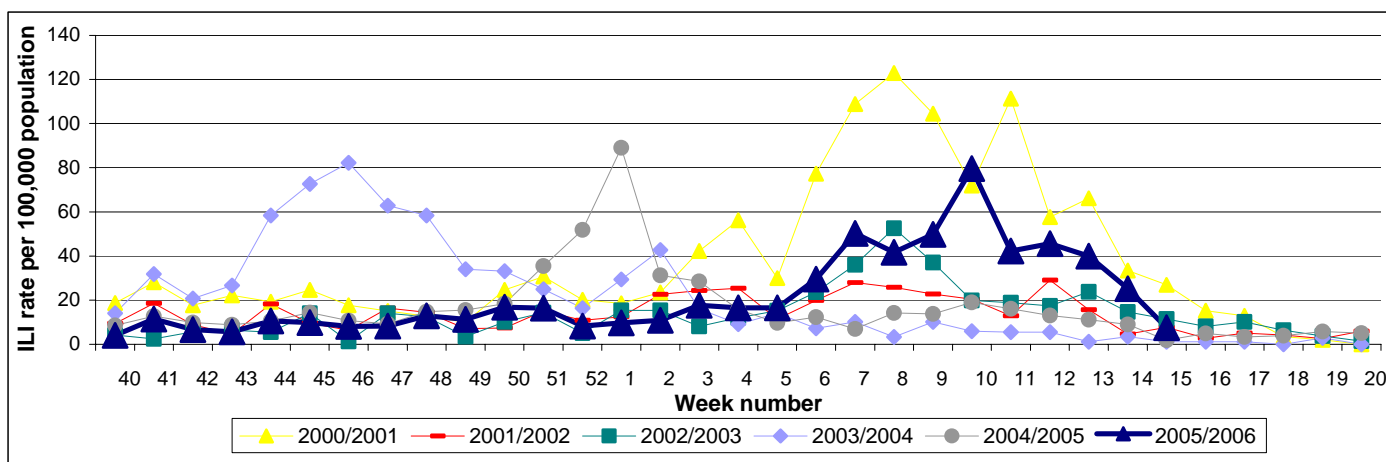


Figure 1: GP consultation rate for ILI per 100,000 population by week, during the 2000/2001, 2001/2002, 2002/2003, 2003/2004, 2004/2005 & 2005/2006 influenza seasons.

Results (continued)

During week 15 2006, ILI rates peaked in the 5-14 year age group, with two ILI cases reported, corresponding to an ILI consultation rate of 10.9 per 100,000 population. No ILI cases were reported in 0-4 year olds. Seven ILI cases were reported in those aged 15-64 years (7.9 per 100,000 population) and one ILI case was reported in those aged 65 years or older (6.9 per 100,000 population). ILI rates decreased significantly in the 0-4, 5-14 and 15-64 year age groups during week 15 2006 (figure 2). Thirty-five of 46 (65.5%) sentinel general practices reported during week 15 2006, with 10 reporting ILI cases.

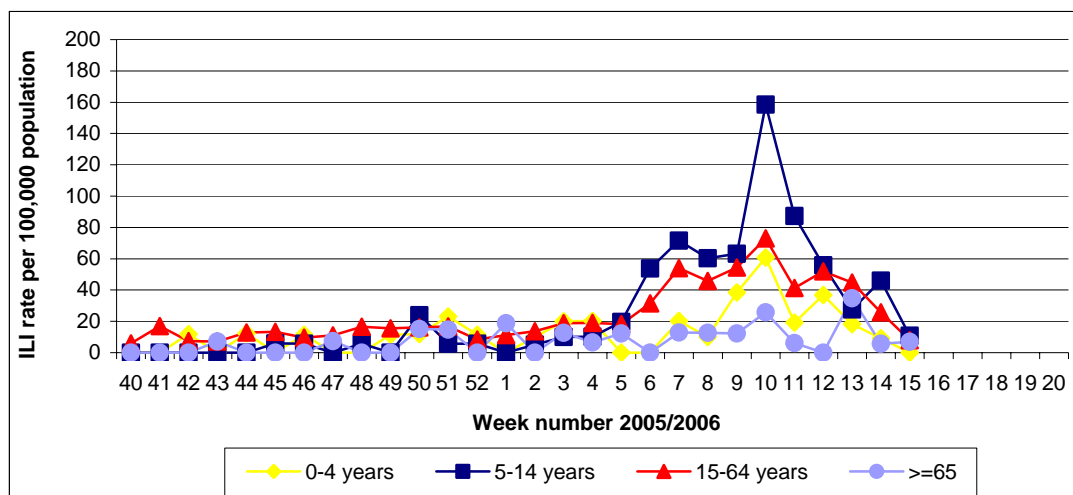


Figure 2: Age specific GP consultation rate* for ILI per 100,000 population by week during the 2005/2006 influenza season. *Please note the denominator used in the age specific consultation rate is from the 2002 census data; this assumes that the age distribution of the sentinel general practices is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

Virological Data from the National Virus Reference Laboratory (NVRL)

The NVRL tested four specimens taken by sentinel GPs during week 15 2006, two were positive for influenza A and one was positive for influenza B. The NVRL also tested 37 non-sentinel specimens during week 15 2006, mainly from hospitalised paediatric cases, one was positive for influenza B. 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. One non-sentinel specimens tested positive for respiratory syncytial virus (RSV) during week 15 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 15 2006 and the 2005/2006 season to date.

Week Number	Specimen Type	Total Specimens	No. Influenza Positive	% Influenza Positive	Influenza A	Influenza B	RSV
15 2006	Sentinel	4	3	75.0	2	1	NA
	Non-Sentinel	37	1	2.7	0	1	1
	Total	41	4	9.8	2	2	1
40 2005 – 15 2006	Sentinel	363	130	35.8	62	68	NA
	Non-Sentinel	1591	36	2.3	24	12	373
	Total	1954	166	8.5	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 15 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 15 2006			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
HSE-ER	1	1	2	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	1	1	2	2	9	11
Total	2	2	4	86	80	166

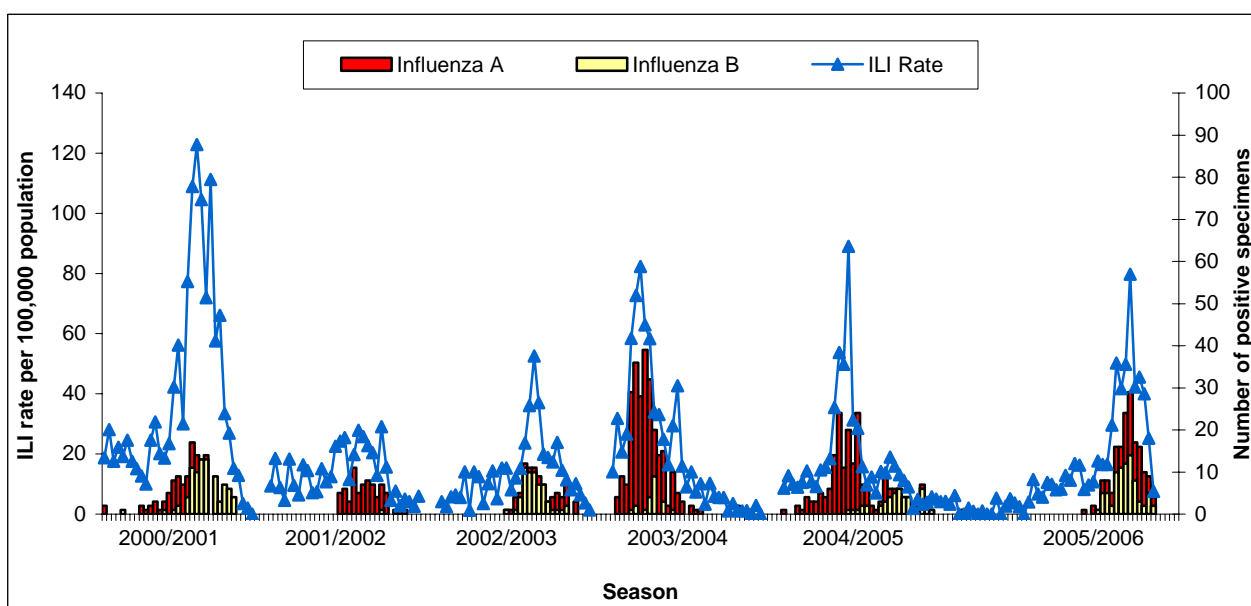


Figure 3: ILI rate per 100,000 population and the number of positive influenza specimens detected by the NVRL during the 2000/2001, 2001/2002, 2002/2003, 2003/2004 & 2004/2005 seasons, summer 2005 and the 2005/2006 season.

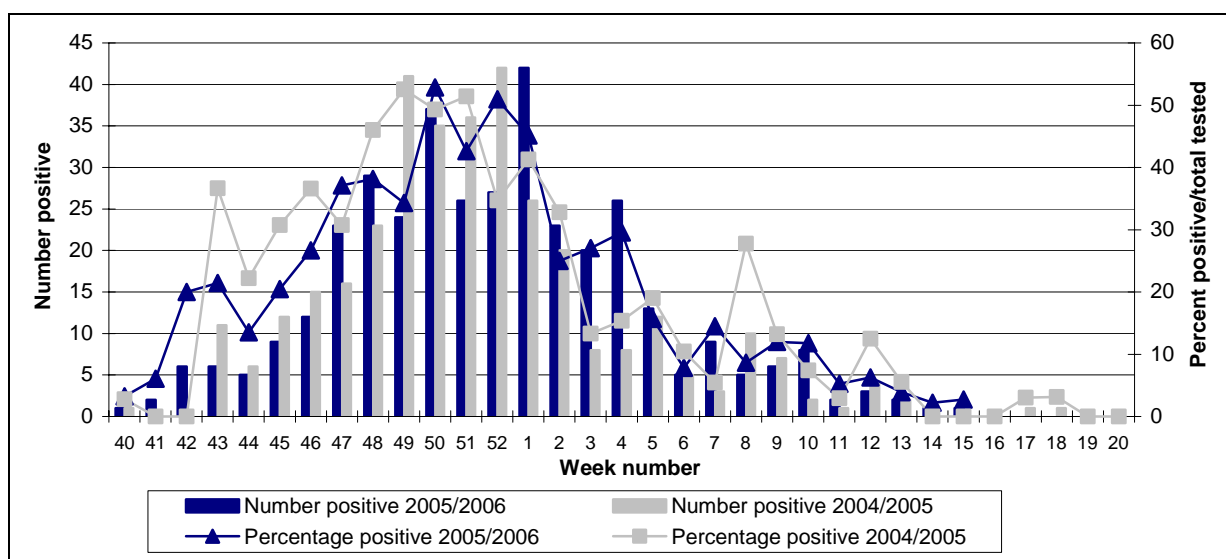


Figure 4. Number and percentage of non-sentinel RSV positive specimens detected during the 2005/2006 and 2004/2005 influenza seasons.

Weekly Influenza Notifications

During week 16 2006, two influenza A cases (one from HSE-NWA and one from HSE-SA) were notified to HPSC. During week 15 2006, one influenza A (from HSE-SA) and one influenza B (from HSE-MA) cases 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.

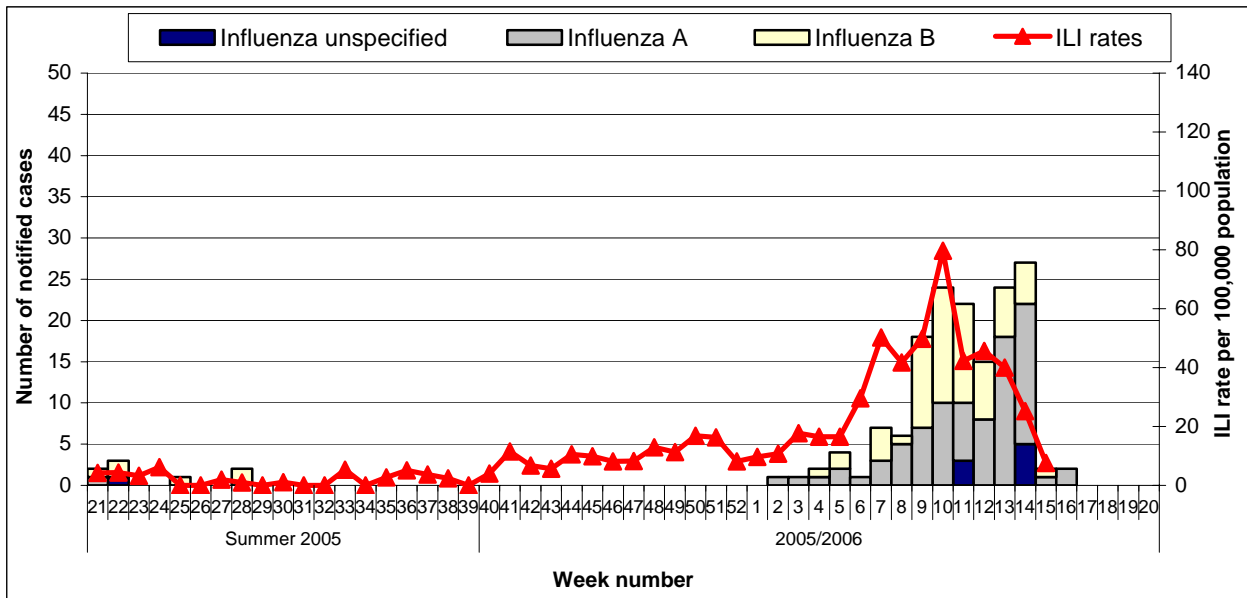


Figure 5: Number of notifications* of influenza (possible & confirmed) by type and by week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2005 and the 2005/2006 influenza season. *Notification data are provisional and were extracted from [CIDR](#) on the 20/04/2006 at 03:36 GMT.

Mortality Data

One death attributed to influenza was registered with the GRO during week 15 2006, influenza was the secondary cause of death and not the primary cause. This is the only registered death 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 increased hospital admissions were reported to HPSC from sentinel hospitals during week 14 or 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. Increased absenteeism in a sentinel primary school was reported from HSE-MA during week 14 2006. Increased absenteeism was also reported from sentinel secondary schools in HSE-ER, -NEA and -SEA during week 14 2006. It should be noted that increased absenteeism reported during week 14 2006 may be due to the 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.

Localised influenza activity was reported in HSE-SA and seven HSE-Health Areas/region reported sporadic activity during week 14 2006 (figure 6).

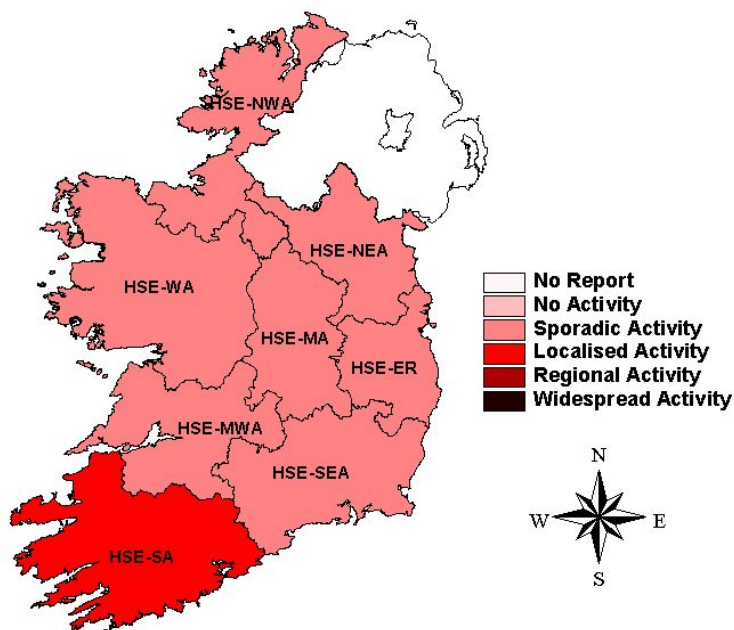


Figure 6: Map of influenza activity by HSE-Health Area during week 14 2006

Influenza Activity in Northern Ireland

Data for week 15 2006 was not available at the time of publication of this report. The combined ILI and clinical influenza consultation rate in Northern Ireland during week 14 2006 was 73.9 per 100,000 population, an increase from the updated rate of 62.2 per 100,000 in week 13 2006. Four influenza A viruses were detected during week 14 2006. <http://www.cdscni.org.uk>

Influenza Activity in England, Scotland & Wales

Data for week 15 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

Seasonal influenza epidemics have started late in European countries during the 2005/2006 season. Since the start of the season, influenza activity in Europe as a whole has been associated with influenza B viruses (62% of total detections). In two thirds of the countries reporting to the European Influenza Surveillance Scheme (EISS),

influenza B was detected in the majority of the specimens examined. Seasonal influenza activity is almost over now in most European countries. During week 14 2006, Norway and Slovenia reported widespread influenza activity. Germany and the Netherlands reported regional activity, six countries reported local outbreaks, 13 countries reported sporadic activity and four countries reported no activity. During week 14 2006, the consultation rate for ILI was either declining or at baseline levels in all countries, except for Northern Ireland, where a slight increase was observed in week 14 2006. The highest consultation rates in week 14 2006 were reported in the 0-4 and 5-14 age groups, although consultation rates were also elevated in the 15-65 age group in Norway. The total number of respiratory specimens collected by sentinel physicians in week 14 2006 was 734, of which 210 (29%) were positive for influenza virus: 132 (63%) influenza B and 78 (37%) influenza A. In addition, 235 non-sentinel specimens tested positive for influenza virus: 64 (27%) influenza B and 171 (73%) influenza A. Based on (sub)typing data of all influenza virus detections from sentinel and non-sentinel sources up to week 14 2006 (N=8691), 5344 (62%) were influenza B and 3347 (38%) were influenza A. Of the total influenza A virus detections (N=3347), 2183 (65%) were influenza A (unsubtyped), 449 (13%) were A(H1) [184 A(H1N1) & 2 A(H1N2)] and 715 (21%) were A(H3) [417 A(H3N2)]. Based on the characterisation data of all influenza virus detections up to week 14 2006, 1823 have been antigenically and/or genetically characterised: 311 were A/New Caledonia/20/99 (H1N1)-like, 206 were A/California/7/2004 (H3N2)-like, 1181 were B/Malaysia/2506/2004-like (B/Victoria/2/87-lineage) and 125 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). <http://www.eiss.org/index.cgi>

Influenza Activity in Canada

During week 14 2006, overall influenza activity in Canada started to decrease, with all indicators (except ILI) having declined from the previous weeks. Although the number of regions reporting widespread and localised activity declined, somewhat elevated activity levels were still reported in most regions of Ontario and New Brunswick. In week 14 2006, the ILI consultation rate increased from the previous week and was calculated as 29 per 1000 patient visits, which is within the expected range for this week. ILI consultation rates remained highest among children in most of the provinces and territories reporting ILI activity. In addition, increased influenza activity presented later this season than expected. In week 14 2006, 600 (19%) of the specimens tested for influenza viruses were positive. In the current season to date, a mix of influenza A (57%) and influenza B (43%) viruses have been detected in Canada. To date this season, 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 14 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. Ten states reported widespread influenza activity; ten states reported regional influenza activity; 15 states, New York City, and the District of Columbia reported local influenza activity; 14 states and Puerto Rico reported sporadic influenza activity; and one state reported no activity. During week 14, WHO and NREVSS laboratories reported 1,908 specimens tested for influenza viruses, 300 (15.7%) of which were positive: 24 A (H3N2), 36 A (H1N1), 77 A (unsubtyped) and 163 B viruses. CDC has antigenically characterised 575 influenza viruses [453 influenza A (H3N2), 42 influenza A (H1) and 80 influenza B viruses] this season. Of the 453 influenza 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 39 (92.9%) influenza A (H1) viruses were similar antigenically to the hemagglutinin of the vaccine strain A/New Caledonia/20/99, and three (7.1%) showed reduced titers with antisera produced against A/New Caledonia/20/99. Twenty-nine (36.3%) of the influenza B viruses that have been characterised belong to the B/Yamagata lineage. Five were similar to B/Shanghai/361/2002, and 24 were characterised as B/Florida/07/2004-like. B/Florida/07/2004 is a minor antigenic variant of B/Shanghai/361/2002. Fifty-one (63.8%) 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 14 2006, sporadic activity was reported in China (83 A H1, 3 A H3, 4 A unsubtyped & 54 B) and Tunisia (2 A H1). No influenza activity was reported in Argentina and Chile during week 14 2006. <http://gamapserver.who.int/GlobalAtlas/home.asp>

Avian Influenza

As of April 19th 2006, there have been 196 confirmed human cases of influenza A (H5N1) and 110 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