

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 12 2006 (20th to 26th March 2006)

Summary

During week 12 2006, influenza activity increased slightly in Ireland, with 69 influenza-like illness (ILI) cases reported by sentinel GPs. Fourteen positive influenza specimens were detected by the NVRL during week 12 2006, eleven influenza A and two influenza B. Influenza activity appears to have 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-five 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 12 2006, 69 ILI cases were reported by sentinel GPs, corresponding to an ILI consultation rate of 49.9 per 100,000 population, a slight increase from the updated rate of 42.9 per 100,000 during week 11 2006 (figure 1).

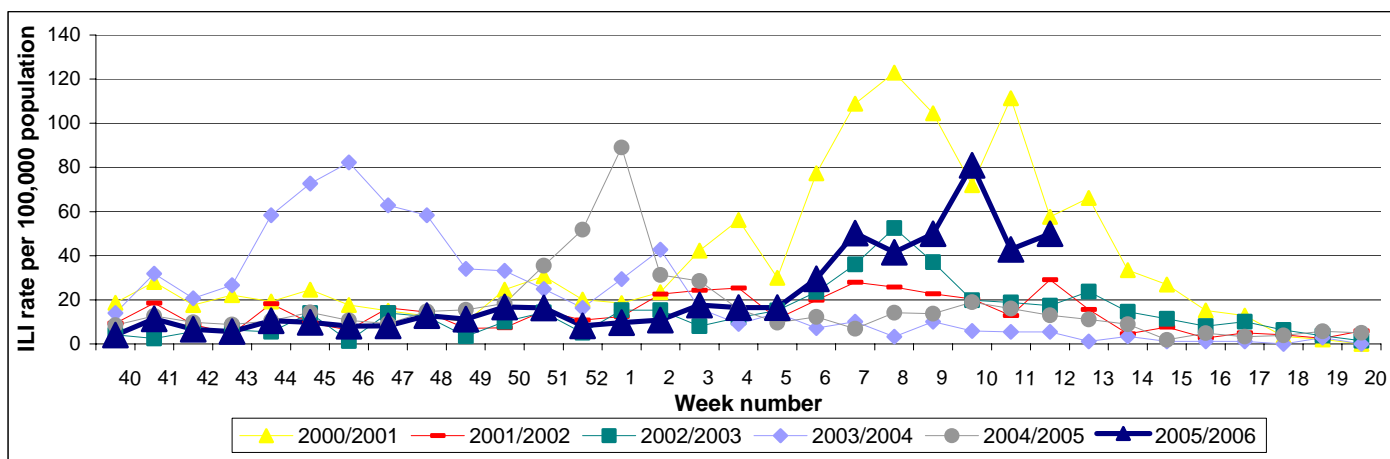


Figure 1: GP consultation rate for ILI per 100,000 population by week, during the 2000/2001, 2001/2002, 2002/2003, 2003/2004, 2004/2005 & 2005/2006 influenza seasons.

Results (continued)

During week 12 2006, ILI rates peaked in 5-14 and 15-64 year olds. Four ILI cases were reported in 0-4 year olds, corresponding to an ILI rate of 40.8 per 100,000 population. Eleven ILI cases were reported in the 5-14 year age group (56.7 per 100,000 population) and 54 ILI cases were reported in those aged 15-64 years or older (57.6 per 100,000 population) during week 12 2006. No ILI cases were reported in those aged 65 years or older (figure 2). Thirty-nine of 45 (86.7%) sentinel general practices reported during week 12 2006, with 22 reporting ILI.

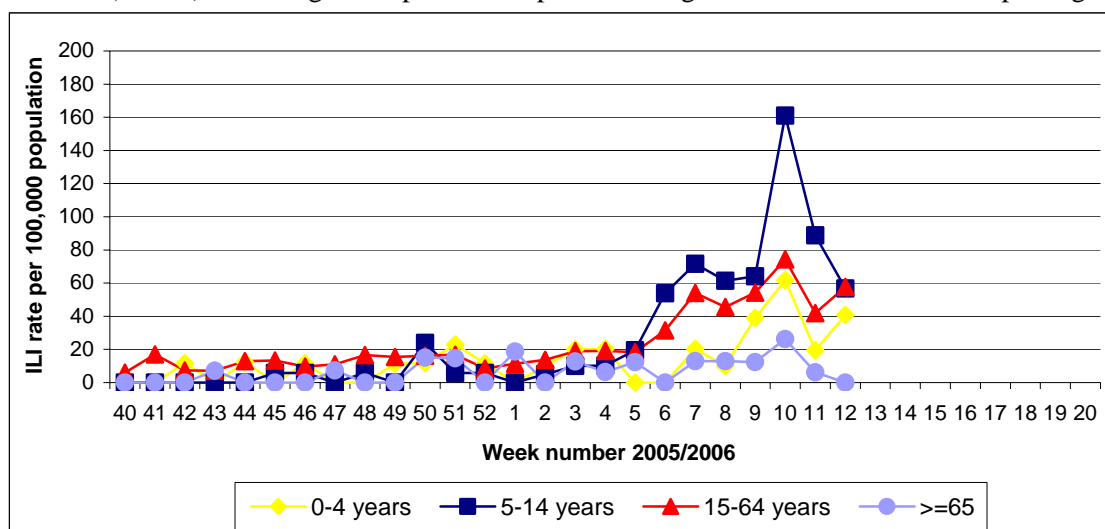


Figure 2: Age specific GP consultation rate* for ILI per 100,000 population by week during the 2005/2006 influenza season. *Please note the denominator used in the age specific consultation rate is from the 2002 census data; this assumes that the age distribution of the sentinel general practices is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

Virological Data from the National Virus Reference Laboratory (NVRL)

The NVRL tested 24 specimens taken by sentinel GPs during week 12 2006, eleven were positive for influenza A and two were positive for influenza B. The NVRL also tested 38 non-sentinel specimens, taken during week 12 2006, mainly from hospitalised paediatric cases, one was positive for influenza A. To date this season, the NVRL has detected 140 positive influenza specimens: 71 influenza A (14 A H3 & 57 A untyped) and 69 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. Three non-sentinel specimens tested positive for respiratory syncytial virus (RSV) during week 12 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 12 2006 and the 2005/2006 season to date.

Week Number	Specimen Type	Total Specimens	No. Influenza Positive	% Influenza Positive	Influenza A	Influenza B	RSV
12 2006	Sentinel	24	13	54.2	11	2	NA
	Non-Sentinel	38	1	2.6	1	0	3
	Total	62	14	22.6	12	2	3
40 2005 – 12 2006	Sentinel	326	109	33.4	49	60	NA
	Non-Sentinel	1448	31	2.1	22	9	369
	Total	1774	140	7.9	71	69	369

*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 12 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 12 2006			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
HSE-ER	2	0	2	38	27	65
HSE-MA	0	0	0	1	2	3
HSE-MWA	1	0	1	5	7	12
HSE-NEA	3	1	4	6	4	10
HSE-NWA	1	0	1	6	4	10
HSE-SEA	3	0	3	9	11	20
HSE-SA	2	1	3	5	8	13
HSE-WA	0	0	0	1	6	7
Total	12	2	14	71	69	140

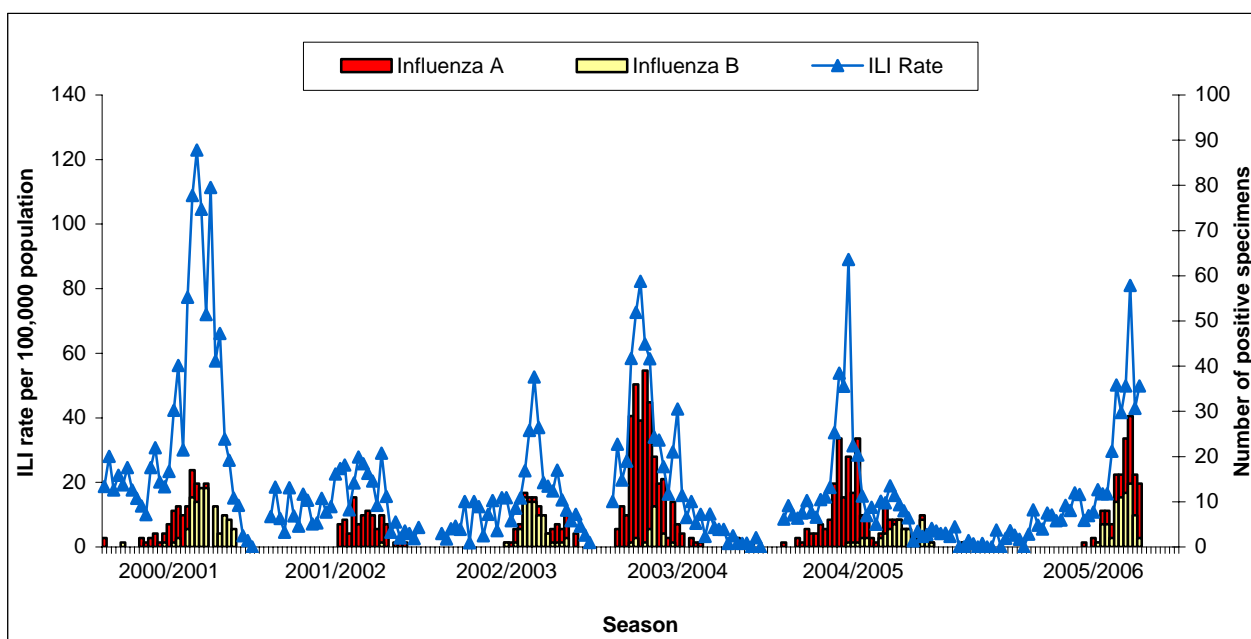


Figure 3: ILI rate per 100,000 population and the number of positive influenza specimens detected by the NVRL during the 2000/2001, 2001/2002, 2002/2003, 2003/2004 & 2004/2005 seasons, summer 2005 and the 2005/2006 season.

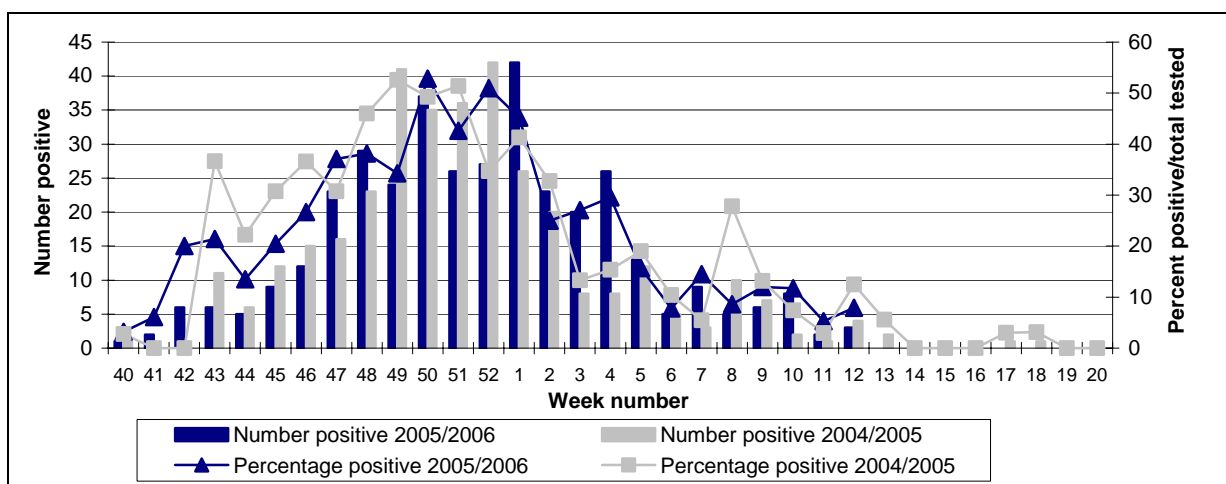


Figure 4. Number and percentage of non-sentinel RSV positive specimens detected during the 2005/2006 and 2004/2005 influenza seasons.

Weekly Influenza Notifications

During week 13 2006, five influenza A cases (four from HSE-NEA and one from HSE-SEA) and three influenza B cases (one from HSE-MA, one from HSE-NEA and one from HSE-NWA) 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.

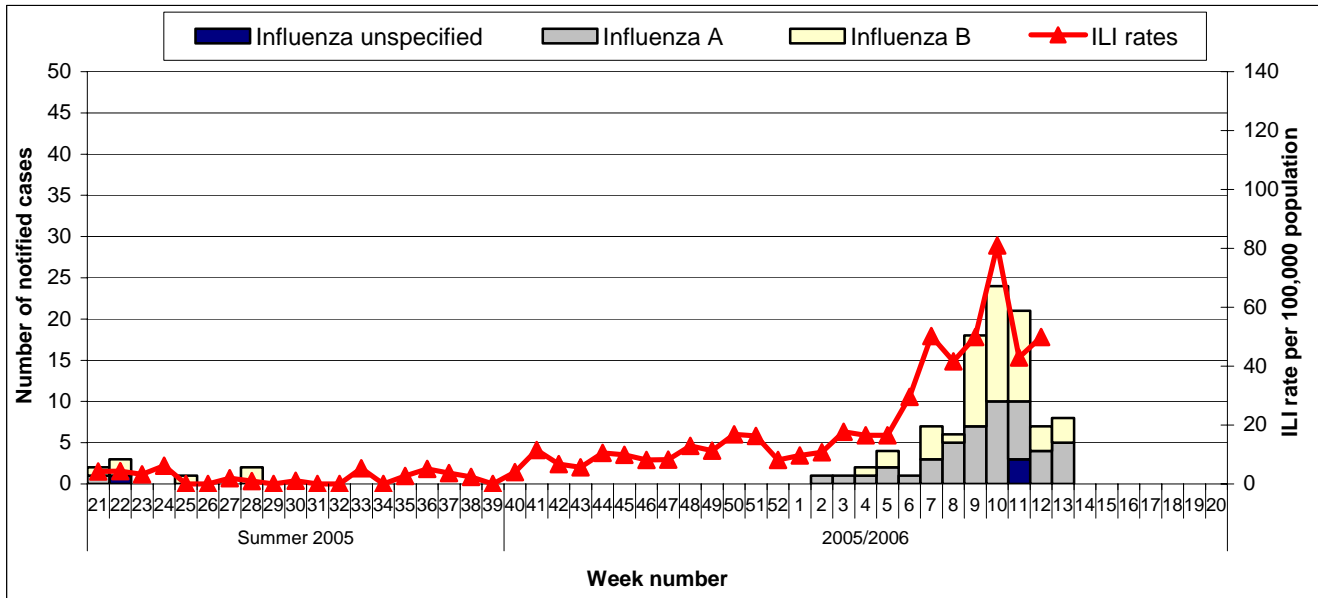


Figure 5: Number of notifications* of influenza (possible & confirmed) by type and by week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2005 and the 2005/2006 influenza season. *Notification data are provisional and were extracted from [CIDR](#) on the 30/03/2006 at 01:46 GMT.

Mortality Data

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

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. A significant increase in respiratory admissions were reported from a sentinel hospital in HSE-ER during week 12 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 two sentinel secondary schools in HSE-ER during weeks 10, 11 and 12 2006, one of these schools reported that the increased absenteeism was associated with ILI during week 12 2006. Increased absenteeism was also reported from a sentinel primary school in HSE-MA during week 12 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 reported localised influenza activity, six HSE-Health Areas (HSE-MA, -MWA, -NEA, -SEA, -SA and -WA) reported sporadic influenza activity and HSE-NWA reported no influenza activity during week 11 (figure 6).

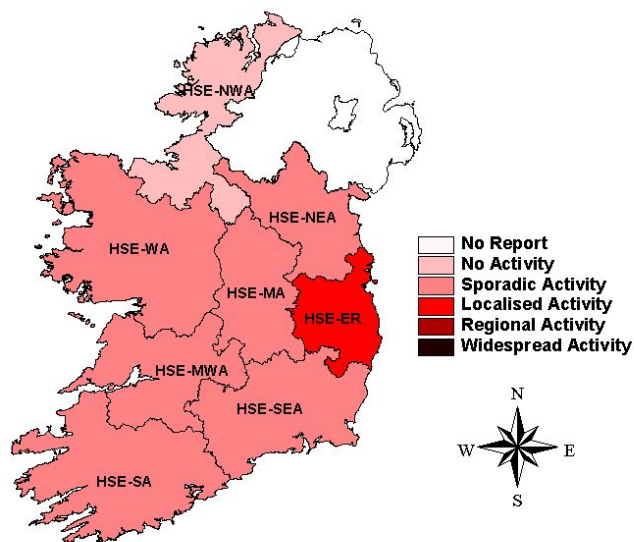


Figure 6: Map of influenza activity by HSE-Health Area during week 11 2006

Influenza Activity in Northern Ireland

The combined ILI and clinical influenza consultation rate in Northern Ireland during week 12 2006 was 50.4 per 100,000 population, a significant decrease from the updated rate of 97.7 per 100,000 in week 11 2006. No new influenza detections were detected during week 12 2006. <http://www.cdscni.org.uk>

Influenza Activity in England, Scotland & Wales

ILI consultation rates remained low at 21.3 per 100,000 population in week 12 2006 compared to 23.9 in week 11 2006 and 22.0 in week 10 2006 according to data reported from 75 GP practices in England and Wales representing a population of 699,000. The rates remained below the baseline level of 30 per 100,000 population for all age groups. GP consultation rates for ILI in Scotland remained low at 16.7 per 100,000 in week 11 2006 and 15.5 per 100,000 in week 12 2006. Consultation rates for influenza in Wales have also decreased from 4.2 in week 11 2006 to 3.6 in week 12 2006. During weeks 11 and 12 2006, six samples referred to the Centre for Infections Respiratory Virus Unit (RVU) from community sources tested positive for influenza B, respectively, and 21 samples for influenza A, respectively. Since week 40 2005, 411 influenza viruses have been further characterised by RVU; 29 influenza A/New Caledonia/20/1999 (H1N1)-like, 20 influenza A/California/7/2004 (H3N2)-like, two influenza A/Wellington/1/04(H3N2)-like; 377 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

The seasonal influenza epidemics started late this year in Europe and there is now a mixed pattern across European countries. Clinical influenza activity was stable in 12 countries, increasing in seven countries (Denmark, Estonia, Hungary, Northern Ireland, Poland, Spain and Switzerland) and decreasing in another four. Since the start of the season, more influenza B viruses (65%) have been reported than influenza A viruses (35%) for Europe as a whole. Clinical influenza activity has increased compared to week 10 2006 in Denmark, Estonia, Hungary, Northern Ireland, Poland, Spain and Switzerland. In Belgium, Ireland, Lithuania and Norway, clinical influenza activity declined in week 11 2006. Twelve countries experienced stable levels of influenza activity during week 11 2006. The highest consultation rates for ILI or acute respiratory infection (ARI) were reported in the 0-4 and 5-14 age

groups, although consultation rates in Norway were also high in the 15-65 age group. Belgium, Denmark, the Netherlands, Norway and Switzerland reported widespread influenza activity. France, Germany and Spain reported regional activity, six countries reported local outbreaks and 12 countries reported sporadic activity. The total number of respiratory specimens collected by sentinel physicians in week 11 2006 was 1208, of which 340 (28%) were positive for influenza virus: 215 (63%) influenza B and 125 (37%) influenza A. In addition, 280 non-sentinel specimens tested positive for influenza virus, of which 140 (50%) were influenza B and 140 (50%) influenza A. Based on (sub)typing data of all influenza virus detections from sentinel and non-sentinel sources up to week 11 2006 (N=6458), 4225 (65%) were influenza B and 2233 (35%) were influenza A. Of the total influenza A virus detections (N=2233), 1511 (68%) were influenza A untyped, 356 (16%) were A(H1) [122 were A(H1N1), and 2 H1N2] and 366 (16%) were A(H3) [149 were A(H3N2)]. Based on the characterisation data of all influenza virus detections up to week 11 2006, 1280 have been antigenically and/or genetically characterised: 250 were A/New Caledonia/20/99 (H1N1)-like, 118 were A/California/7/2004 (H3N2)-like, 824 were B/Malaysia/2506/2004-like (B/Victoria/2/87-lineage) and 88 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 11 2006, overall influenza activity in Canada remained at approximately the same level as the previous week, with laboratory detections for influenza virus continuing to rise. Widespread influenza activity was reported in Toronto and localised activity was reported in some regions in the West, Ontario, Quebec and New Brunswick. In week 11 2006, the ILI consultation rate was calculated as 38 per 1000 patient visits which is within the expected range for this week. ILI consultations were highest among children in most of the regions reporting ILI activity. During week 11 2006, 3181 specimens were tested for influenza, of which 649 (20%) were positive: 324 (50%) influenza A and 325 (50%) for influenza B. In the current season to date, a mix of influenza A (52%) and influenza B (48%) viruses have been detected in Canada. During week 11, 22 new outbreaks were reported: 14 were in long term care facilities; three were in schools; and five were in other settings. To date, 100% of the influenza A strains characterised have matched those included in the 2005/2006 Canadian vaccine. However, only 2% of the influenza B characterisations have matched the current vaccine strain. The remaining 98% 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 11 2006, influenza activity decreased in the United States. 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-three states and New York City states reported widespread influenza activity; 14 states reported regional influenza activity; 8 states and the District of Columbia reported local influenza activity; and 5 states reported sporadic influenza activity. During week 11 2006, WHO and NREVSS laboratories reported 3,092 specimens tested for influenza viruses, 655 (21.2%) of which were positive: 159 A (H3N2), 33 A (H1N1), 255 A (untyped) and 208 B viruses. To date this season, CDC has antigenically characterised 261 influenza viruses as A/California/07/2004-like, which is the influenza A (H3N2) component recommended for the 2005/2006 influenza vaccine, and 64 viruses showed reduced titers with antisera produced against A/California/07/2004. Of the 64 low-reacting viruses, 38 were tested with antisera produced against A/Wisconsin/67/2005 (the H3N2 component selected for the 2006/2007 vaccine), and 34 are A/Wisconsin-like. The hemagglutinin proteins of 16 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. Twenty-four of the influenza B viruses characterised this season belong to the B/Yamagata lineage. Four were similar to B/Shanghai/361/2002, the recommended influenza B component for the 2005/2006 influenza vaccine, and 20 were characterised as B/Florida/07/2004-like. B/Florida/07/2004 is a minor antigenic variant of B/Shanghai/361/2002. Twenty-eight 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

Regional influenza activity was reported in Tunisia (4 A H1, 2 A H3 & 1 B) during week 11 2006. Sporadic activity was reported in China (90 A H1, 8 A H3, 2 A untyped & 88 B) and Madagascar (1 A untyped) and no influenza activity was reported in Argentina and Chile during week 11 2006.

<http://gamapserver.who.int/GlobalAtlas/home.asp>

Avian Influenza

As of March 24th, there have been 186 confirmed human cases of influenza A (H5N1) and 105 fatalities in eight different countries (Azerbaijan, Cambodia, China, 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 eleven EU countries: Austria, Denmark, France, Germany, Greece, Hungary, Italy, Poland, Slovakia, Slovenia and Sweden. 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

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