

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 10 2006 (6th to 12th March 2006)

Summary

During week 10 2006, influenza activity increased significantly in Ireland, with 111 influenza-like illness (ILI) cases reported by sentinel GPs. Nineteen positive influenza specimens were detected by the NVRL during week 10 2006, seven influenza A and twelve influenza B. The 5-14 year age group was most affected during week 10, with the highest ILI consultation rates and reports of increased school absenteeism and ILI outbreaks in two schools. 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 10 2006, 111 ILI cases were reported by sentinel GPs, corresponding to an ILI consultation rate of 82.9 per 100,000 population, a significant increase from the updated rate of 49.6 per 100,000 during week 9 2006 (figure 1).

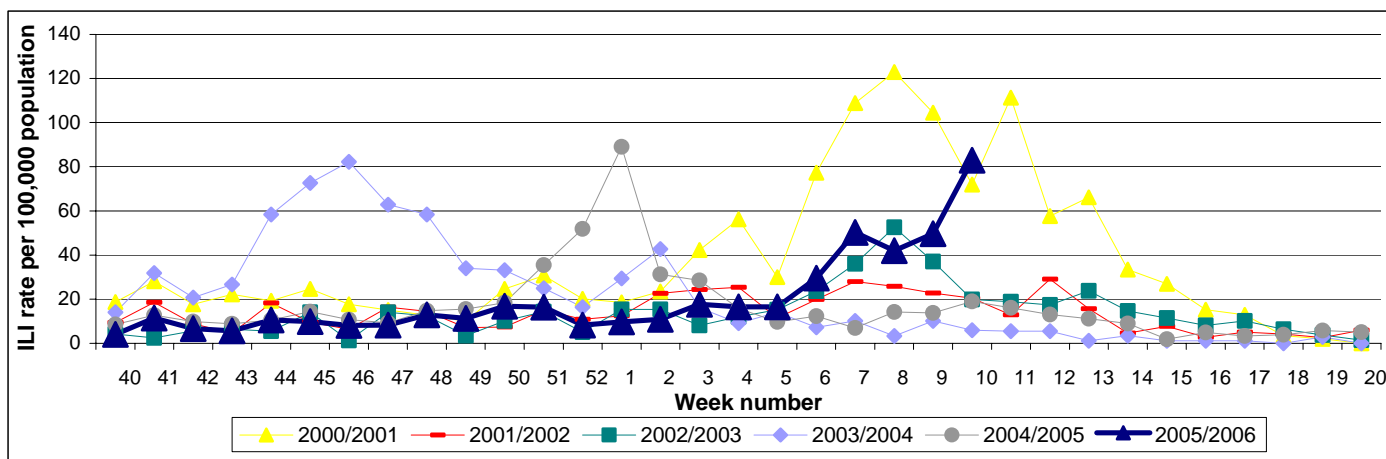


Figure 1: GP consultation rate for ILI per 100,000 population by week, during the 2000/2001, 2001/2002, 2002/2003, 2003/2004, 2004/2005 & 2005/2006 influenza seasons.

Results (continued)

During week 10 2006, ILI rates peaked in those aged 5-14 years, with 31 cases reported, corresponding to an ILI rate of 164.9 per 100,000 population. ILI rates increased in all age groups during week 10. Six ILI cases were reported in the 0-4 year age group, corresponding to an ILI consultation rate of 63.2 per 100,000 population. Sixty-nine ILI cases were reported in the 15-64 year age group (76.1 per 100,000 population) and four ILI cases were reported in those aged 65 years or older (26.8 per 100,000 population) during week 10 2006 (figure 2). Thirty-seven of 44 (84.1%) sentinel general practices reported during week 10 2006, with 24 reporting ILI.

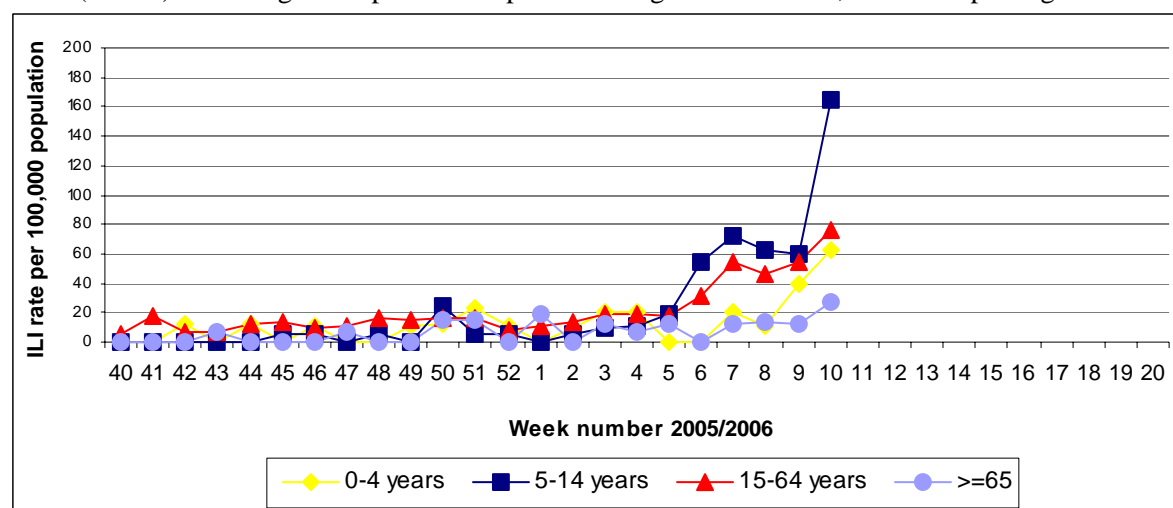


Figure 2: Age specific GP consultation rate* for ILI per 100,000 population by week during the 2005/2006 influenza season. *Please note the denominator used in the age specific consultation rate is from the 2002 census data; this assumes that the age distribution of the sentinel general practices is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

Virological Data from the National Virus Reference Laboratory (NVRL)

The NVRL tested 38 specimens taken by sentinel GPs during week 10 2006, five were positive for influenza A and eight were positive for influenza B. The NVRL also tested 68 non-sentinel specimens, taken during week 10 2006, mainly from hospitalised paediatric cases, two were positive for influenza A and four were positive for influenza B. To date this season, the NVRL has detected 98 positive influenza specimens, 41 influenza A (14 A H3 & 27 A untyped) and 57 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. Eight non-sentinel specimens tested positive for respiratory syncytial virus (RSV) during week 10 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 10 2006 and the 2005/2006 season to date.

Week Number	Specimen Type	Total Specimens	No. Influenza Positive	% Influenza Positive	Influenza A	Influenza B	RSV
10 2006	Sentinel	38	13	34.2	5	8	NA
	Non-Sentinel	68	6	8.8	2	4	8
	Total	106	19	17.9	7	12	8
40 2005 – 10 2006	Sentinel	266	72	27.1	24	48	NA
	Non-Sentinel	1372	26	1.9	17	9	364
	Total	1638	98	6.0	41	57	364

*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 10 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 10 2006			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
HSE-ER	3	4	7	25	23	48
HSE-MA	0	1	1	0	2	2
HSE-MWA	1	3	4	3	7	10
HSE-NEA	0	2	2	2	3	5
HSE-NWA	0	0	0	5	4	9
HSE-SEA	2	1	3	4	9	13
HSE-SA	1	1	2	2	4	6
HSE-WA	0	0	0	0	5	5
Total	7	12	19	41	57	98

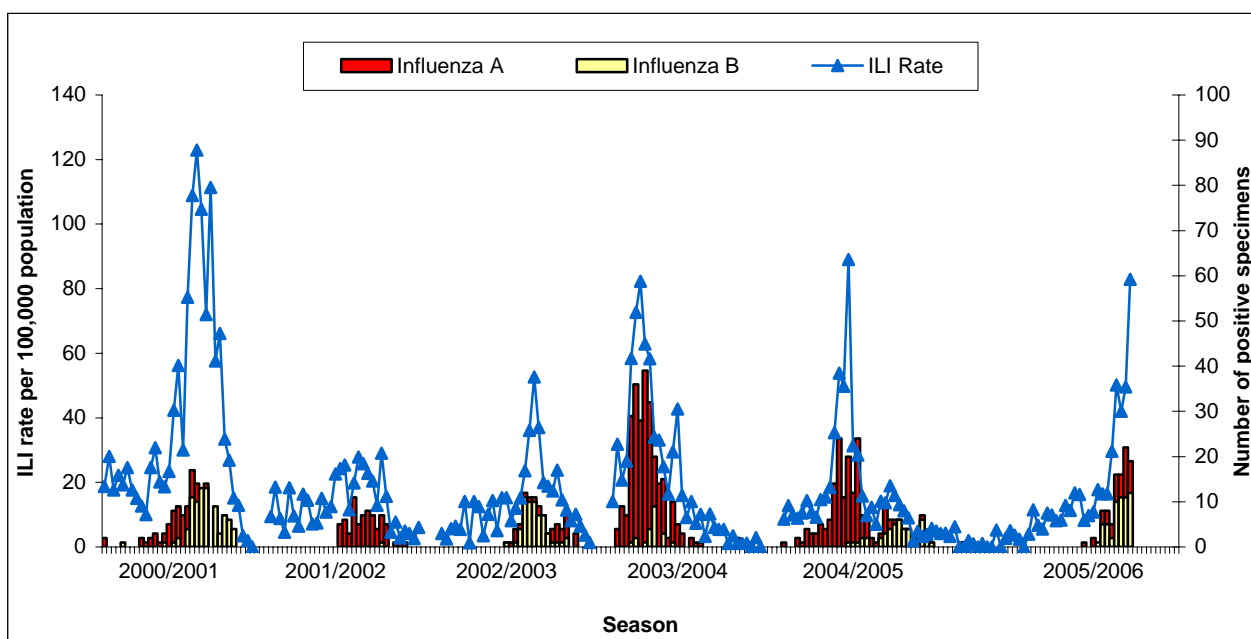


Figure 3: ILI rate per 100,000 population and the number of positive influenza specimens detected by the NVRL during the 2000/2001, 2001/2002, 2002/2003, 2003/2004 & 2004/2005 seasons, summer 2005 and the 2005/2006 season.

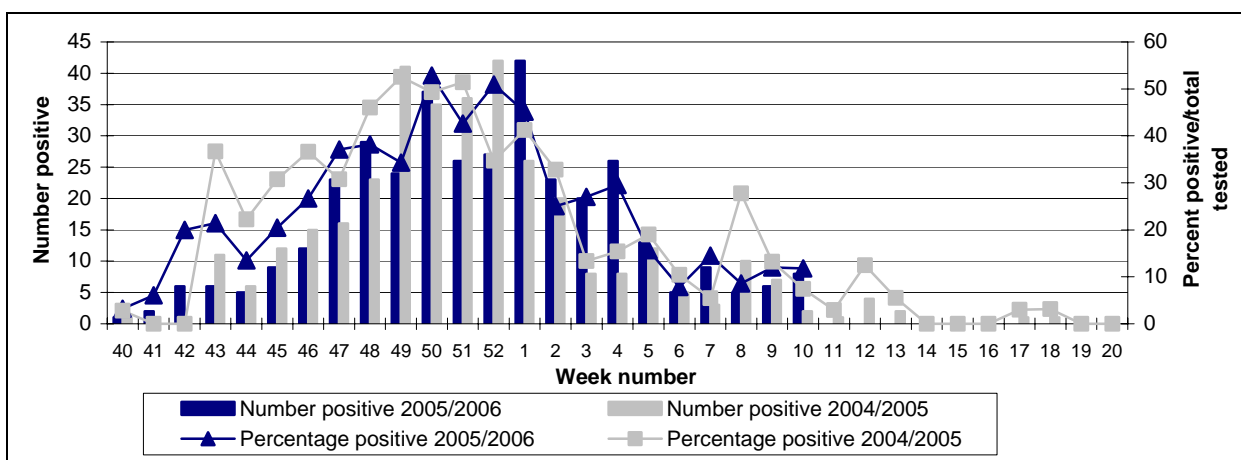


Figure 4. Number and percentage of non-sentinel RSV positive specimens detected during the 2005/2006 and 2004/2005 influenza seasons.

Weekly Influenza Notifications

Five influenza A cases (one from HSE-NEA, two from HSE-NWA and two from HSE-SEA) and six influenza B cases (three from HSE-NWA and three from HSE-SEA) were notified to HPSC during week 10 2006. One influenza A case (from HSE-NWA) and one influenza B case (from HSE-SA) were notified to HPSC during week 11 2006. 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.

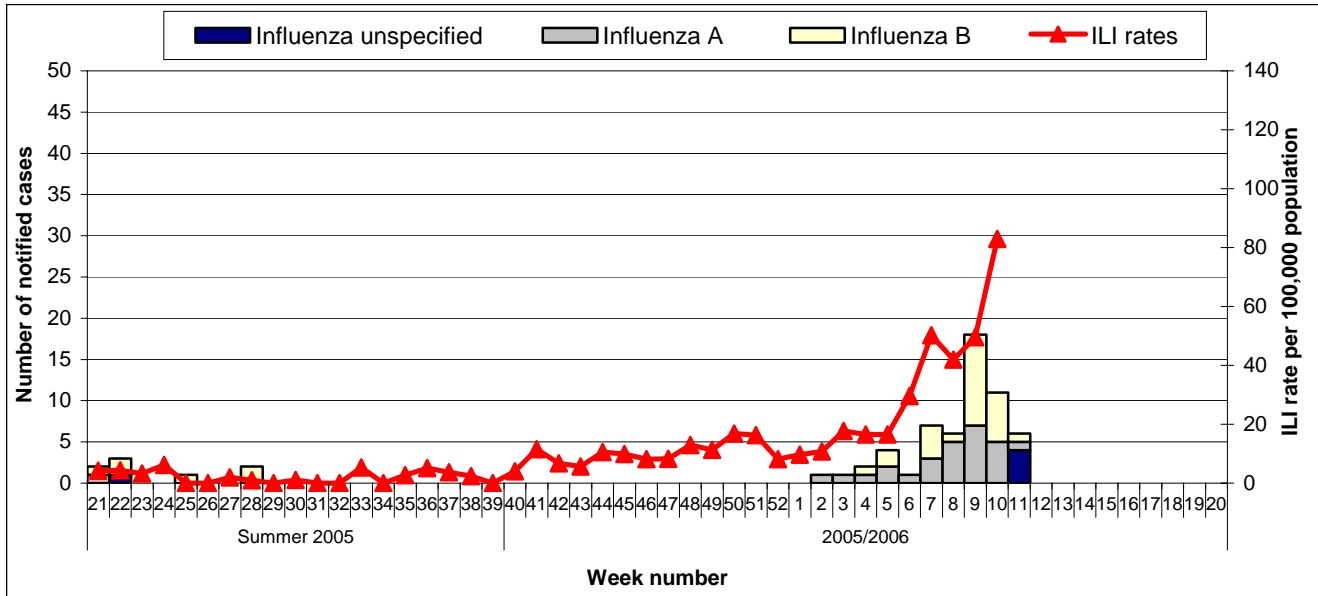


Figure 5: Number of notifications* of influenza (possible & confirmed) by type and by week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2005 and the 2005/2006 influenza season. *Notification data are provisional and were extracted from [CIDR](#) on the 15/03/2006 at 12:56 GMT.

Mortality Data

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

Outbreak Reports

HPSC was informed of two ILI outbreaks in a sentinel primary and secondary school in HSE-MA during week 10 2006. Influenza B was associated with the ILI outbreak in the sentinel secondary school. Four ILI/influenza outbreaks have 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. There was a slight increase in total hospital admissions and respiratory hospital admissions reported from a sentinel hospital in HSE-MA during week 10 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 week 10. One sentinel primary school in HSE-ER reported increased absenteeism 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 9; five HSE-Health Areas reported sporadic influenza activity and HSE-MA reported no influenza activity (figure 6).

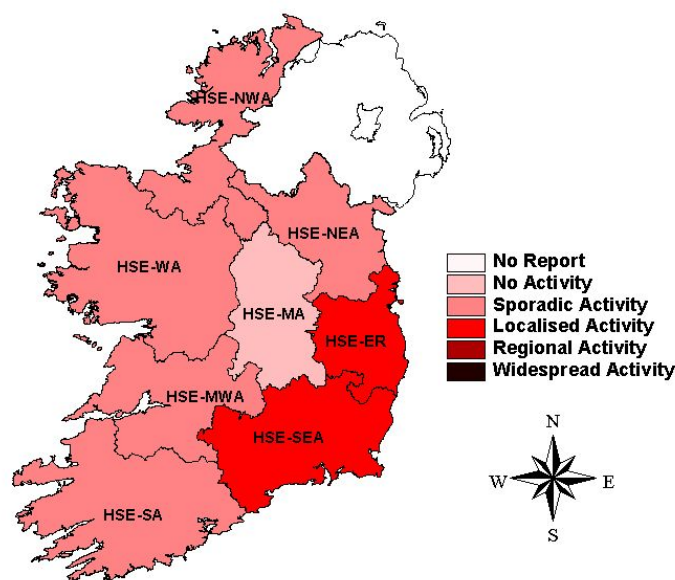


Figure 6: Map of influenza activity by HSE-Health Area during week 9 2006

Influenza Activity in Northern Ireland

The combined ILI and clinical influenza consultation rate in Northern Ireland during week 10 2006 was 97.8 per 100,000 population, an increase from the updated rate of 84.7 per 100,000 in week 9 2006. Three influenza A and eight influenza B positive sentinel specimens and one influenza A and one influenza B positive non-sentinel specimens were detected during week 10 2006. <http://www.cdscni.org.uk>

Influenza Activity in England, Scotland & Wales

ILI consultation rates continued to decrease from the updated rate of 24.2 per 100,000 in week 9 2006 to 22.0 per 100,000 in week 10 2006, according to data reported from 74 GP practices in England and Wales representing a population of 650,000. GP consultation rates for ILI in Scotland increased slightly from 13.8 in week 9 2006 to 17.5 per 100,000 in week 10 2006. Consultation rates for influenza in Wales decreased from 6.2 per 100,000 in week 9 2006 to 2.76 per 100,000 in week 10 2006. To date this season, 692 ILI outbreaks have been reported to the HPA Centre for Infections at Colindale in London. During week 10 2006, the Centre for Infections Respiratory Virus Unit (RVU) reported 10 influenza A and one influenza B positive detections. Since week 40 2005, 346 influenza viruses have been further characterised by RVU; 22 influenza A/New Caledonia/20/1999 (H1N1)-like, 15 influenza A/California/7/2004 (H3N2)-like, one influenza A/Wellington/1/04(H3N2)-like; 305 influenza B viruses antigenically similar to influenza B/Hong Kong/330/2001 and three influenza B/Shanghai/361/2002-like viruses. http://www.hpa.org.uk/infections/topics_az/influenza/seasonal/flureports0506.htm

Influenza Activity in Europe

During week 9 2006, elevated ILI consultation rates were reported in Belgium, Ireland, Luxembourg, Latvia, the Netherlands, Northern Ireland and Switzerland. In England and Lithuania the consultation rate for ILI decreased.

The highest consultation rates for ILI or acute respiratory infection were reported in the 0-4 and 5-14 age groups. Belgium, France, Lithuania, Luxembourg, the Netherlands and Switzerland reported widespread influenza activity. Spain reported regional activity, five countries reported local activity and 13 countries reported sporadic activity. Only Slovenia reported no influenza activity in week 9 2006. The total number of respiratory specimens collected by sentinel physicians in week 9 2006 was 1191, of which 261 (22%) were positive for influenza virus: 171 (66%) influenza B virus and 90 (34%) influenza A. In addition, 377 non-sentinel specimens tested positive for influenza virus, of which 251 (67%) were influenza B and 126 (33%) were influenza A. Based on (sub)typing data of all influenza virus detections from sentinel and non-sentinel sources up to week 9 2006 (N=4647), 3155 (68%) were influenza B and 1492 (32%) were influenza A. Of the total influenza A virus detections (N=1492), 1013 (68%) were influenza A unsubtype, 252 (17%) were A(H1) [76 were A(H1N1)] and 227 (15%) were A(H3) [95 were A(H3N2)]. Based on the characterisation data of all influenza virus detections up to week 9 2006, 754 have been antigenically and/or genetically characterised: 208 were A/New Caledonia/20/99 (H1N1)-like, 72 were A/California/7/2004 (H3N2)-like, 398 were B/Malaysia/2506/2004-like (B/Victoria/2/87-lineage) and 76 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 9 2006, overall influenza activity in Canada continued to increase with widespread influenza activity reported in parts of Ontario, Alberta and British Columbia. Localised activity was reported in some regions of the Atlantic Provinces, the Prairies, Ontario and British Columbia. In week 9, the ILI consultation rate was 50 per 1000 patient visits, which is a two-fold increase compared to the previous week. Preliminary results suggest that ILI consultations were highest among the 5-19 year-olds in most of the regions reporting ILI activity. Although the rate for week 9 is the highest this season, it is still within the expected range for this week. During week 9, 450 (15%) positive influenza virus detections were reported. This season to date, a mix of influenza A (53%) and influenza B (47%) viruses have been detected in Canada. During week 9, 29 new outbreaks were reported: 18 of which were in schools. Since the start of the 2005/2006 influenza season, 442 influenza viruses have been antigenically characterised: 219 A/California/07/2004(H3N2)-like viruses; 10 A/New Caledonia/20/1999(H1N1)-like viruses; 136 B/Hong Kong/330/2001-like and 72 B/Malaysia/2506/2004-like viruses both belonging to the B/Victoria/2/1987 lineage; and 5 B/Shanghai/361/2002-like viruses belonging to the B/Yamagata/16/1988 lineage. <http://www.phac-aspc.gc.ca/fluwatch/index.html>

Influenza Activity in the United States

During week 9 2006, influenza activity increased 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-five states and New York City reported widespread influenza activity; 13 states reported regional influenza activity; eight states and the District of Columbia reported local influenza activity; and four states reported sporadic influenza activity. During week 9, WHO and NREVSS laboratories reported 3,239 specimens tested for influenza viruses, 701 (21.6%) of which were positive: 175 A (H3N2), 20 A (H1N1), 399 A unsubtype and 107 B viruses. CDC has antigenically characterised 305 influenza viruses this season. Of the 250 influenza A (H3N2) viruses, 201 were characterised as A/California/07/2004-like, 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 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 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 18 were characterised as B/Florida/07/2004-like. B/Florida/07/2004 is a minor antigenic variant of B/Shanghai/361/2002. Seventeen 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 9 2006, widespread influenza activity was reported in Japan (9 A H1, 4 A H3 & 1 B). Regional influenza activity was reported in Israel (1 A H1, 2 A unsubtype & 5 B) and Tunisia (2 A H1 & 1 A H3). Sporadic

influenza activity was reported in China (75 A H1, 1 A H3, 6 A untyped & 79 B) and Mongolia. No influenza activity was reported in the Philippines during week 9 2006. <http://gamapserver.who.int/GlobalAtlas/home.asp>

Avian Influenza

As of March 13th, there have been 177 confirmed human cases of influenza A (H5N1) and 98 fatalities 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 ten EU countries: Austria, 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

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This report was produced by Dr. Lisa Domegan & Dr. Joan O'Donnell, HPSC