

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

Weeks 51 & 52 2007 (17th – 30th December 2007)

Summary

During weeks 51 & 52 2007, influenza activity was at low levels in Ireland. Influenza-like illness (ILI) consultation rates increased during weeks 51 & 52 2007, but remain within expected levels for the time of year. Four influenza positive specimens were detected by the NVRL during week 51 and none were positive during week 52 2007. Respiratory syncytial virus (RSV) detections reached their peak during week 47 2007 and are now decreasing.

of 38°C 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 during the influenza season. This report includes data on ILI cases reported by sentinel GPs, influenza test results from the NVRL, influenza notifications, registered deaths attributed to influenza, and regional influenza activity reported by the Departments of Public Health.

Background

This is the eighth 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. Fifty 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

Results

Clinical Data

Sentinel GPs reported 12 ILI cases during week 51 and 21 cases during week 52, corresponding to ILI consultation rates of 8.8 and 15.8 per 100,000 population respectively (figure 1). Of the 50 sentinel practices, 72% reported during week 51 with eight reporting ILI and 68% reported during week 52, with 12 reporting ILI cases. The Christmas and New Year holidays have likely affected the observed ILI rates and level of reporting from sentinel GPs during weeks 51 and 52 2007.

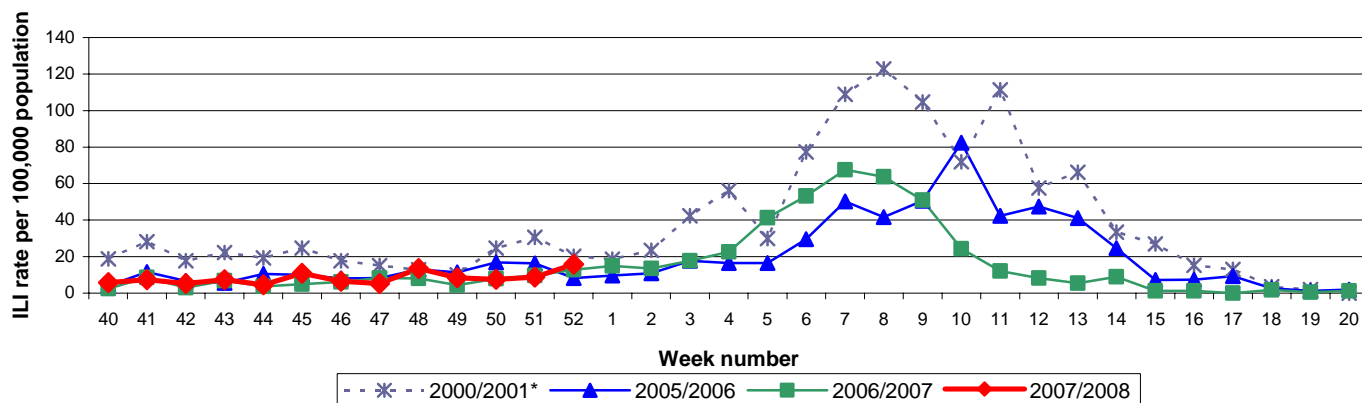


Figure 1: GP consultation rate for ILI per 100,000 population by week, during the 2000/2001*, 2005/2006, 2006/2007 & 2007/2008 influenza seasons *Highest recorded levels of ILI activity since initiation of sentinel surveillance

Results (continued)

During week 51 2007, one ILI case was reported in the 5-14 year age group (5.5 per 100,000 population), 10 cases were reported in the 15-64 year age group (10.6 per 100,000 population) and one case was reported in those aged 65 years or older (6.6 per 100,000 population), as shown in figure 2. No ILI cases were reported in those aged 0-4 years. During week 52 2007, one ILI case was reported in the 0-4 year age group (10.5 per 100,000 population), one case was reported in the 5-14 year age group (5.7 per 100,000 population), 17 cases were reported in the 15-64 year age group (18.6 per 100,000 population) and two cases were reported in those aged 65 years or older (13.6 per 100,000 population).

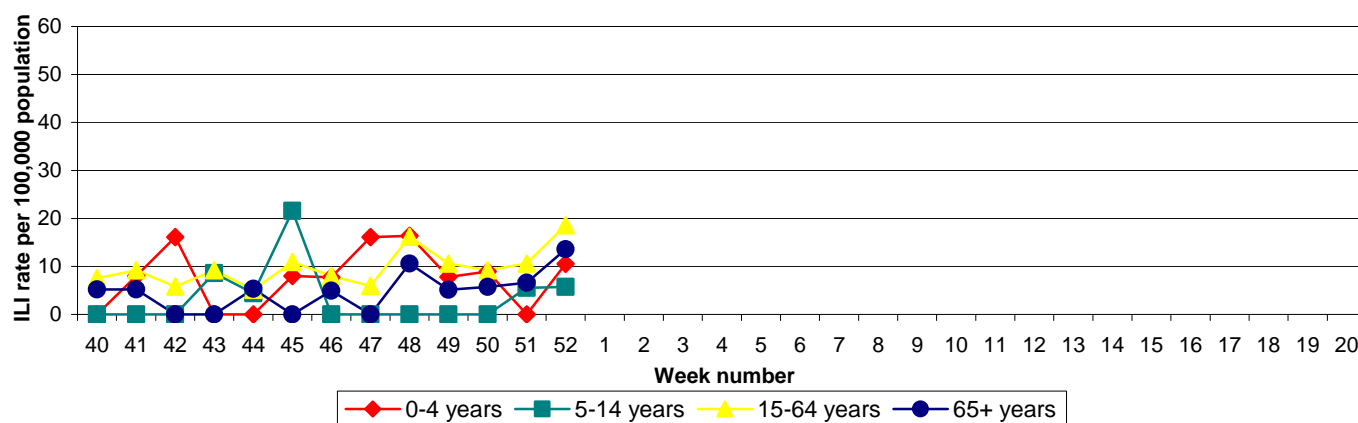


Figure 2: Age specific GP consultation rate* for ILI per 100,000 population by week during the 2007/2008 influenza season

*Please note the denominator used in the age specific consultation rate is from the 2006 census data; this assumes that the age distribution of the sentinel general practices is similar to the national age distribution.

Virological Data from the NVRL

The NVRL tested 8 specimens taken by sentinel GPs during week 51 2007, four of which were positive for influenza: three A (unsubtyped) and one B. The NVRL also tested 154 non-sentinel specimens taken during weeks 51 and 52 2007, mainly from hospitalised paediatric cases, all of which were negative for influenza and 66 were positive for RSV (table 1). To date this season, 15 specimens have tested positive for influenza from sentinel and non-sentinel sources: 11 A (unsubtyped) and 1 A (H3) and 3 B viruses. NVRL detections of RSV from non-sentinel sources peaked during week 47 2007 and are now decreasing (figure 4). To date this season, the NVRL has detected the following positive specimens from non-sentinel sources: one influenza B, 346 RSV, 4 Adenovirus, 2 parainfluenza virus (PIV) type-1, 1 PIV-2 and 8 PIV-3. Influenza positive specimens by HSE area and age group (in years) for week 51 and 52 2007 and the 2007/2008 season to date are shown in tables 2 and 3, respectively. Figure 3 compares the ILI consultation rates by season and the number of positive influenza specimens tested by the NVRL. Figure 4 compares the number and percentage of non-sentinel RSV positive specimens detected during the 2006/2007 and 2007/2008 influenza seasons.

Table 1: Number of sentinel and non-sentinel* respiratory specimens and positive results for weeks 51 and 52 2007 and the 2007/2008 season to date

Week Number	Specimen Type	Total Specimens	No. Influenza Positive	% Influenza Positive	Influenza A	Influenza B	RSV	% RSV Positive
51 2007	Sentinel	8	4	50	3	1	NA	NA
	Non-Sentinel	108	0	0	0	0	48	44.4
	Total	116	4	3.4	3	1	48	41.4
52 2007	Sentinel	0	0	0	0	0	NA	NA
	Non-Sentinel	46	0	0	0	0	18	39.1
	Total	46	0	0	0	0	18	39.1
Season to date	Sentinel	91	14	15.4	12	2	NA	NA
	Non-Sentinel	942	1	0.1	0	1	346	36.7
	Total	1033	15	1.5	12	3	346	33.5

*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 area for weeks 51 and 52 2007 and the 2007/2008 season to date

	Week 51 2007			Week 52 2007			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total	Flu A	Flu B	Total
HSE-ER	0	0	0	0	0	0	3	1	4
HSE-M	0	0	0	0	0	0	0	0	0
HSE-MW	0	0	0	0	0	0	0	0	0
HSE-NE	0	1	1	0	0	0	2	1	3
HSE-NW	0	0	0	0	0	0	0	0	0
HSE-SE	1	0	1	0	0	0	2	0	2
HSE-S	2	0	2	0	0	0	5	0	5
HSE-W	0	0	0	0	0	0	0	1	1
Total	3	1	4	0	0	0	12	3	15

* 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 3: Total number of sentinel and non-sentinel* influenza A and B positive specimens by age group (in years) for weeks 51 and 52 2007 and the 2007/2008 season to date

	Week 51 2007			Week 52 2007			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total	Flu A	Flu B	Total
0-4 years	0	0	0	0	0	0	0	0	0
5-14 years	0	0	0	0	0	0	1	0	1
15-64 years	3	1	4	0	0	0	11	3	14
65 years and older	0	0	0	0	0	0	0	0	0
Age group unknown	0	0	0	0	0	0	0	0	0
Total	3	1	4	0	0	0	12	3	15

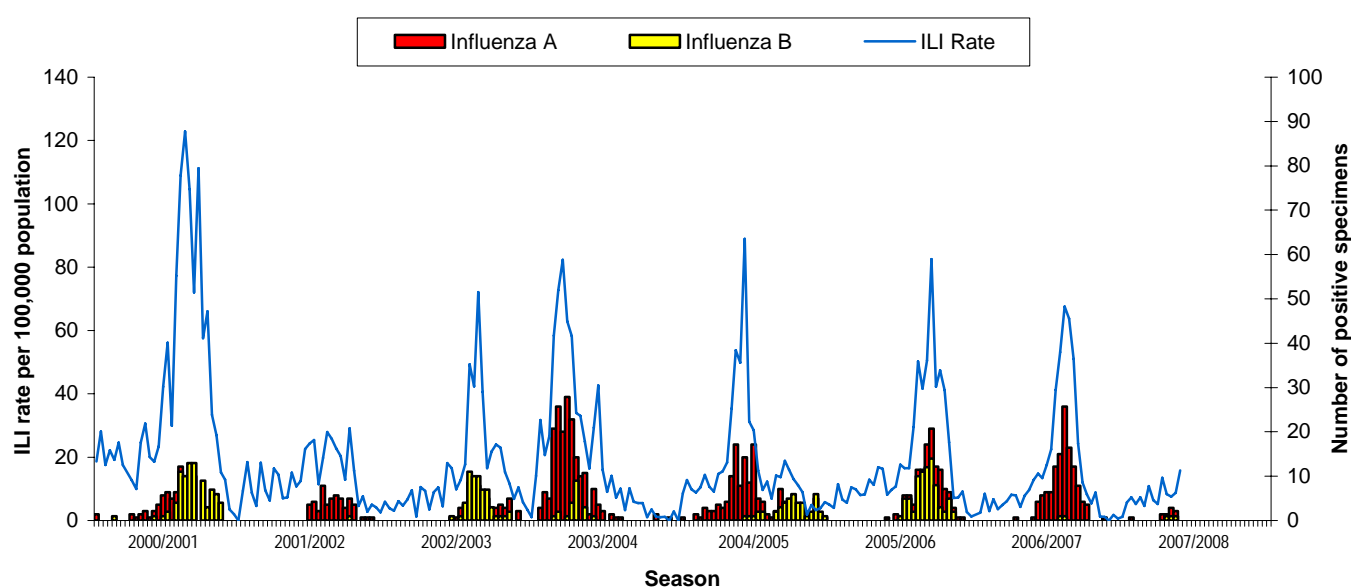


Figure 3: GP ILI consultation rate per 100,000 population and the number of positive influenza specimens detected by the NVRL by week and season, 2000/2001 - 2007/2008

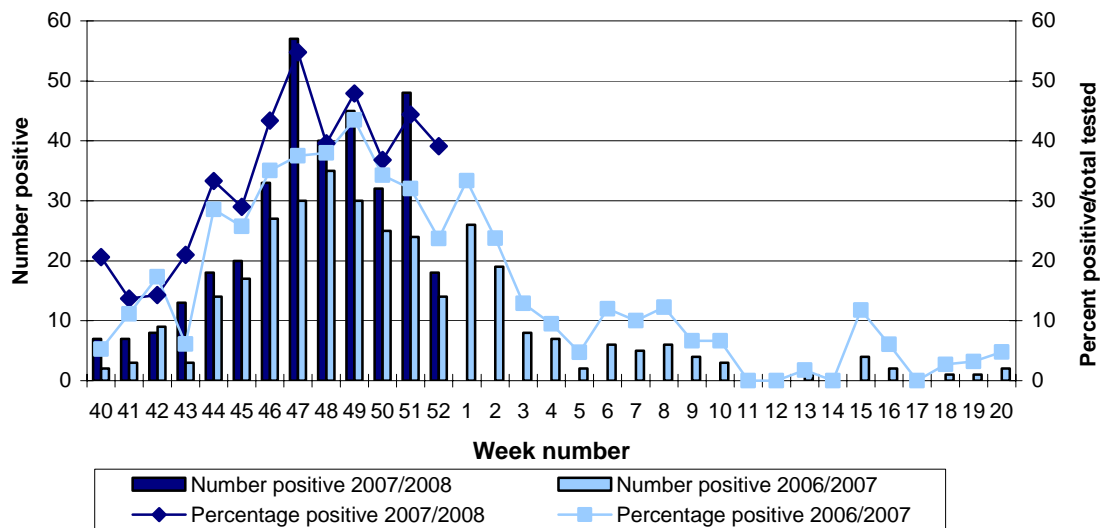


Figure 4. Number and percentage of non-sentinel RSV positive specimens detected during the 2006/2007 and 2007/2008 influenza seasons

Weekly Influenza Notifications

Three influenza A cases were notified to HPSC during week 51 2007, two from HSE-E and one from HSE-SE. One influenza B was notified during week 52 2007 from HSE-E. Influenza cases notified to HPSC during the summer of 2007 and during the 2007/2008 influenza season are shown in figure 5 and compared to GP ILI consultation rates.

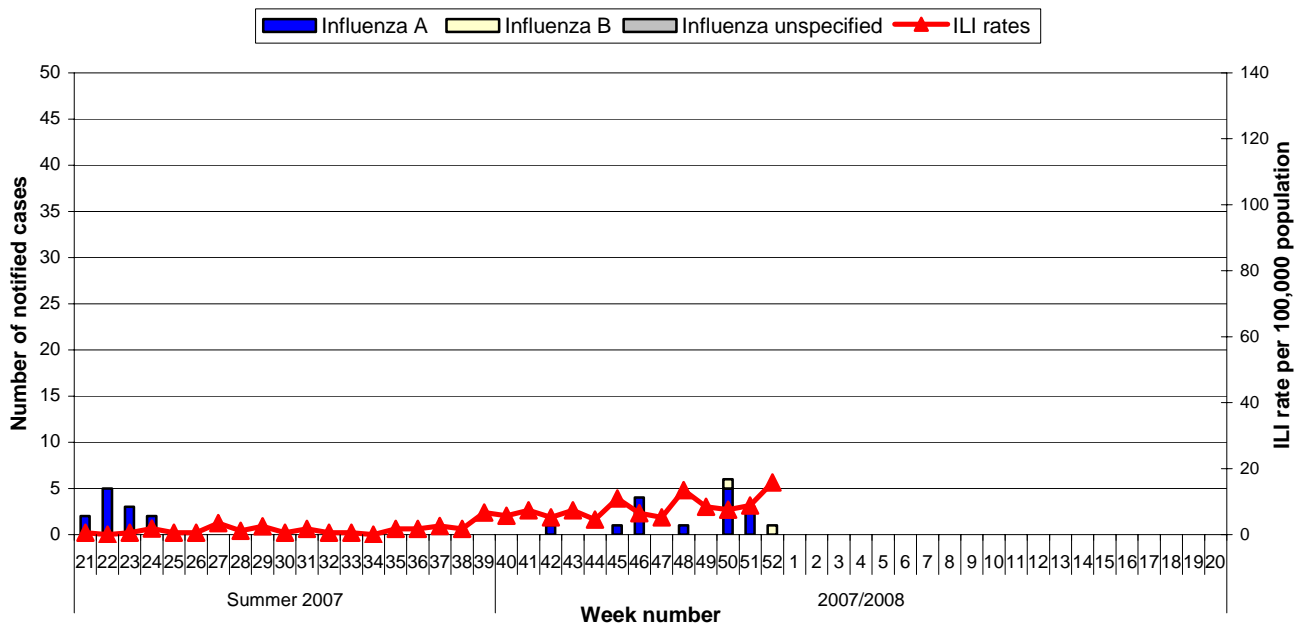


Figure 5: Number of notifications* of influenza (possible & confirmed) by type and by week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2007 and the 2007/2008 influenza season
 *Notification data are provisional and were extracted from [CIDR](#) on the 02/01/2008 at 10:49

Mortality Data

No influenza associated deaths were registered with the GRO and reported to HPSC to date this season.

Outbreak Reports

No ILI/influenza outbreaks have been reported to HPSC to date this season.

Regional Influenza Activity by HSE 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 ILI/influenza outbreaks. Each Department of Public Health has established one sentinel hospital in each HSE area, to report total hospital admissions, accident and emergency admissions and respiratory admissions data on a weekly basis. Sentinel primary and secondary schools were also established in each HSE area in close proximity to the sentinel GPs, reporting absenteeism data on a weekly basis.

The Christmas and New Year holiday period resulted in reduced reporting from sentinel schools and hospitals. No significant increases in respiratory admissions were reported in sentinel hospitals during week 50 2007. Increased absenteeism during week 50 2007 was reported in five sentinel primary schools [three in HSE-E (due to gastrointestinal symptoms), one in HSE-M and one in HSE-S] and in five sentinel secondary schools [one in HSE-M, three in HSE-NW and one in HSE-SE]. During week 50 2007, sporadic influenza activity was reported in five HSE areas: HSE-E, -MW, -SE, -S and -W. No influenza activity was reported in HSE-M, -NE and -NW during week 50 2007 (figure 6).

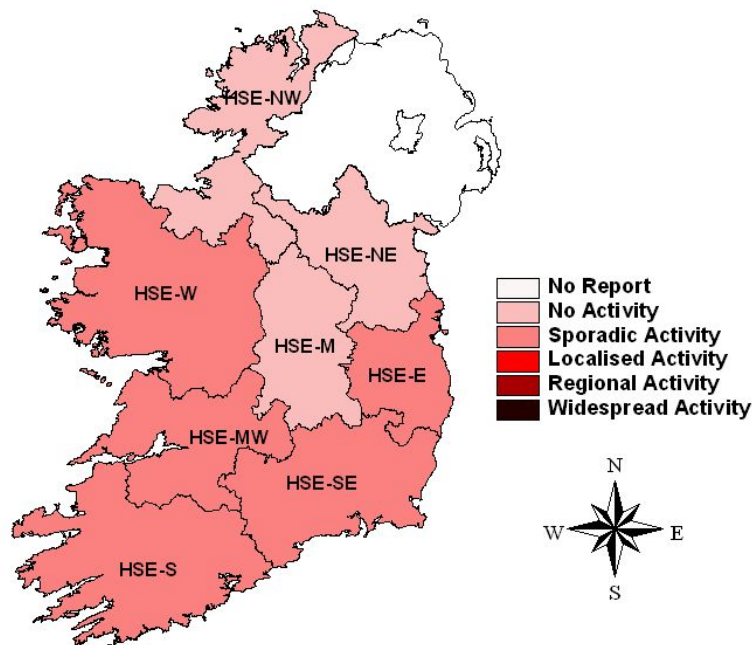


Figure 6: Map of influenza activity by HSE area during week 50 2007

Influenza Activity in Northern Ireland

During week 51 2007, 16 cases of clinical influenza and four ILI cases were reported in Northern Ireland, corresponding to a combined rate of 20.7 per 100,000 population, a decrease from the updated rate of 31.0 per 100,000 for week 50 2007. Four sentinel and 67 non-sentinel specimens were tested during week 51 2007, two of which were positive for influenza A. <http://www.cdscni.org.uk>

Influenza Activity in England, Scotland & Wales

Influenza activity remains below baseline activity thresholds in England, Scotland and Wales. ILI incidence rates increased in England, from 14.2 per 100,000 population in week 50 to 22.1 per 100,000 during week 51, but decreased slightly to 20.9 per 100,000 population during week 52 2007. GP ILI consultation rates remained low in Wales during weeks 50, 51 and 52 2007 at 1.0, 1.9 and 2.0 per 100,000 respectively. In Scotland, GP ILI consultation rates increased from 22 per 100,000 in week 50 to 34 per 100,000 population in week 51 2007. Detections of influenza A and B from NHS and HPA laboratories remain elevated. Laboratory confirmed infections of RSV are at higher levels than those recorded last season. Of the specimens sent to the Respiratory Virus Unit at the Centre for Infections during week 51 and 52 2007, two were positive for RSV, 48 for influenza A(H1), one for influenza A(H3) and three for influenza B. Since week 40 2007, 146 influenza viruses have been isolated: 138 A viruses and eight B viruses.

<http://www.hpa.org.uk/infections/topics%5Faz/influenza/seasonal/flureports0708.htm>

Influenza Activity in Europe

During week 50 2007, levels of influenza activity remained low in Europe, at levels normally observed outside the seasonal influenza peak period in most countries. Localised influenza activity was reported in the Czech Republic and Spain, sporadic influenza activity in 13 countries and in the remaining 15 countries no influenza activity was reported during week 50 2007. The percentage of respiratory specimens testing positive for influenza virus in Europe remains low at about 5%, despite the increase in laboratory confirmed cases for Europe as a whole. The total number of respiratory specimens collected by sentinel physicians in week 50 2007 was 777, 84 (10.8%) of which were influenza virus positive: 33 A (unsubtyped), 40 A (H1) and 11 B. In addition, 57 influenza virus detections (32 A unsubtyped, 14 A H1 and 11 B) were reported from non-sentinel sources. Based on (sub)typing data of all influenza virus detections this season (N=555), 191 were A (unsubtyped), 220 were A(H1), 21 were A(H3) and 123 were B. Based on the antigenic and/or genetic characterisation of 124 influenza viruses, 101 were A/Solomon Island/3/2006 (H1N1)-like, seven were A/Brisbane/10/2007 (H3N2)-like, ten were B/Florida/4/2006-like (B/Yamagata/16/88 lineage) and six were B/Malaysia/2506/2004-like (B/Victoria/2/87 lineage). Regarding the dominant subtype isolated thus far, the situation in Europe seems to be very similar to the US where the majority of the subtyped viruses were influenza A (H1) viruses. The majority of antigenically or genetically characterised A (H1) viruses this season are a good match to the corresponding vaccine strain A/Solomon Island/3/2006, which is included in the 2007/2008 vaccine. <http://www.eiss.org/index.cgi>

Influenza Activity in Canada

During week 50 2007, influenza activity levels started to increase with six influenza surveillance regions reporting localised influenza activity compared to only one or two regions in previous weeks. However, overall influenza activity in Canada still remains fairly low with the majority of regions reporting either no activity or sporadic activity. The ILI consultation rate continued to rise compared to previous weeks and was at 25 per 1,000 patient visits during week 50 2007, which is within the expected rate for this week. In week 50 2007, the proportion of positive influenza tests increased to 2.9% (67/2244). Although the majority of influenza detections during week 50 2007 were for influenza A viruses (70%; 47/67), the proportion of influenza B detections also started to increase during week 50 2007. Of the influenza detections to date, 79% (131/166) were influenza A and 21% (35/166) were influenza B. Based on antigenic characterisation of 42 viruses, 27 were A/Solomon Islands/3/2006 (H1N1)-like, five were A/Wisconsin/67/2005 (H3N2)-like, one was A/Brisbane/10/2007 (H3N2)-like, two were B/Malaysia/2506/2004-like and seven were B/Florida/4/2006-like. <http://www.phac-aspc.gc.ca/fluwatch/index.html>

Influenza Activity in the United States

During week 50 2007, a low level of influenza activity was reported in the United States. The proportion of outpatient visits for ILI and acute respiratory illness was below national baseline levels. One state reported regional influenza activity; five states reported localised influenza activity; 36 states, the District of Columbia, and Puerto Rico reported sporadic influenza activity; and eight states reported no influenza activity. During week 50 2007, WHO and NREVSS laboratories reported 2,207 specimens tested for influenza viruses, 86 (3.9%) of which were positive: 49 A (unsubtyped), 22 A (H1), 5 A (H3) and 10 B. It is too early in the influenza season to determine which influenza viruses will predominate in the United States or how well the vaccine and circulating strains will match. <http://www.cdc.gov/flu/weekly/fluactivity.htm>

Influenza Activity Worldwide

During week 50 2007, sporadic influenza activity was reported in China (5 A H3, 3 A untyped and 49 B) and Sri-Lanka (2 B) and no influenza activity was reported in Argentina. Thirteen influenza A (H1) and one influenza B virus detections were reported from Iran, 17 influenza A (H1) virus detections from Japan and one influenza B virus detection from Morocco during week 50 2007. <http://gamapserver.who.int/GlobalAtlas/home.asp>

Avian Influenza

Between 28th December 2007 and 2nd January 2008, the Ministry of Health and Population, Egypt, announced four new cases of human infection of H5N1 avian influenza. The first case is a 50 year old female from Domiat Governorate. She was hospitalised on 24th December and is in critical condition. The second case is a 22 year old female chicken seller from Menofia Governorate. She was hospitalised on 26th December and is presently recovering in intensive care. The third case is a 25 year old female from Dekerns District, Dakahlyah Governorate. She developed symptoms on 26th December, was hospitalised on 27th December and died on 30th December. The fourth case is a 36 year old female from Menof District, Menofia Governorate. She developed symptoms on 26th December, was hospitalised on 29th December and died on 31st December. To date, there has been no evidence of an epidemiological link between this case and the case from Menofia Governorate announced on the 28th December. All four women had contact with sick and dead poultry prior to illness onset. Of the 43 cases confirmed to date in Egypt, 18 (42%) have been fatal.

On December 28th, the Ministry of Health in Viet Nam confirmed a new case of human infection of H5N1 avian influenza. The case has been confirmed by the National Institute of Hygiene and Epidemiology (NIHE). The case is a 4 year old male from Son La Province. He developed symptoms on 7th December, was hospitalised on 11th December and died on 16th December. Control measures have been implemented and close contacts have been identified. All remain healthy and will continue to be monitored. The source of exposure is currently under investigation. Of the 101 cases confirmed to date in Vietnam, 47 (47%) have been fatal.

On December 27th, the first case of human infection with H5N1 avian influenza was confirmed in Pakistan. Laboratory tests conducted by the WHO H5 Reference Laboratory in Cairo, Egypt and WHO Collaborating Center for Reference and Research on Influenza, in London, United Kingdom have confirmed the presence of avian influenza virus strain A(H5N1) in samples collected from one case in an affected family. The H5N1 positive case was a 25 year old male from the Peshawar area who developed febrile respiratory illness on 21st November, was hospitalised on 23rd November and died on 28th November. Additional laboratory analysis, including gene sequencing, is ongoing. The preliminary risk assessment found no evidence of sustained or community human to human transmission. All identified close contacts including the other members of the affected family and involved health care workers remain asymptomatic and have been removed from close medical observation.

As of 2nd January 2008, 348 confirmed human cases and 215 (62%) deaths from avian influenza A (H5N1) have been reported to the WHO from Azerbaijan, Cambodia, China, Djibouti, Egypt, Indonesia, Iraq, Lao Peoples Democratic Republic, Myanmar, Nigeria, Pakistan, Thailand, Turkey and Viet Nam.

WHO http://www.who.int/csr/disease/avian_influenza/en/

HPSC <http://www.ndsc.ie/hpsc/A-Z/Respiratory/AvianInfluenza/>

ECDC <http://www.ecdc.eu.int/>

HPA http://www.hpa.org.uk/infections/topics_az/influenza/avian/default.htm

Northern Hemisphere Influenza Vaccine for the 2007/2008 Season

The members of the WHO Collaborating Centres on Influenza have recommended that influenza vaccines for the 2007/2008 influenza season in the Northern Hemisphere contain the following strains:

- an A/Solomon Islands/3/2006 (H1N1)-like virus
- an A/Wisconsin/67/2005 (H3N2)-like virus^a
- a B/Malaysia/2506/2004-like virus

Candidate vaccine viruses include:

- ^aA/Wisconsin/67/2005 (H3N2) and A/Hiroshima/52/2005

<http://www.who.int/csr/disease/influenza/recommendations2007north/en/print.html>

Further information on influenza can be found on the [HPSC website](#)

Acknowledgements

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