

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 5 2007 (29th January to 4th February 2007)

Summary

During week 5 2007, influenza activity was at medium levels in Ireland, with 65 influenza-like illness (ILI) cases reported by sentinel GPs. Twelve specimens tested by the NVRL were positive for influenza A virus during week 5.

Background

This is the seventh 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 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.

Results

Clinical Data

Sixty-five ILI cases were reported from sentinel GPs during week 5 2007, corresponding to an ILI consultation rate of 44.5 per 100,000 population, a sharp increase from the updated rate of 22.5 in week 4 (figure 1).

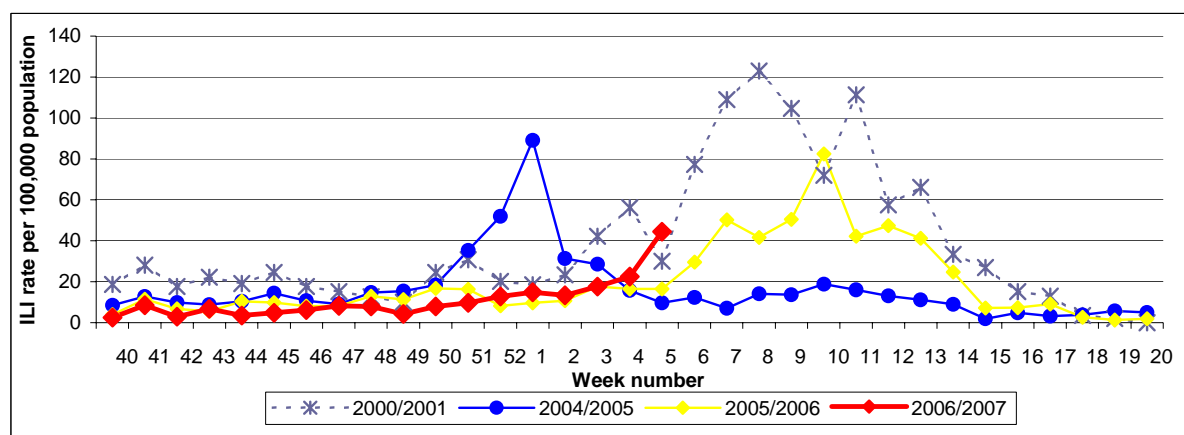


Figure 1: GP consultation rate for ILI per 100,000 population by week, during the 2000/2001*, 2004/2005, 2005/2006 & 2006/2007 influenza seasons.

* Highest recorded levels of ILI activity since initiation of sentinel surveillance.

Results (continued)

Four cases were in the 0-4 year age group (38.7 per 100,000 population), six cases in 5-14 year age group (29.3 per 100,000 population), 54 cases were in the 15-64 year age group (54.6 per 100,000 population) and one case was in the 65 years or older age group (6.2 per 100,000 population) as shown in figure 2. Forty of the 46 (87%) sentinel general practices reported during week 5 2007, with 26 reporting ILI.

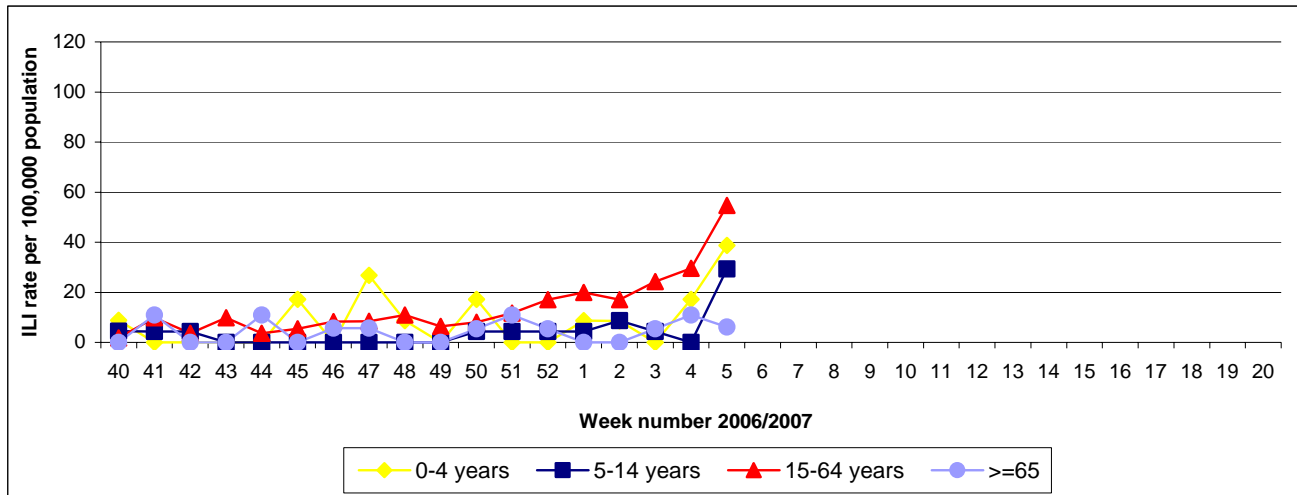


Figure 2: Age specific GP consultation rate* for ILI per 100,000 population by week during the 2006/2007 influenza season. *Please note the denominator used in the age specific consultation rate is from the 2002 census data; this assumes that the age distribution of the sentinel general practices is similar to the national age distribution.

Virological Data from the National Virus Reference Laboratory (NVRL)

The NVRL tested 30 specimens taken by sentinel GPs during week 5 2007, nine of which were positive for influenza A unsubtype. The NVRL also tested 44 non-sentinel specimens taken during week 5 2007, mainly from hospitalised paediatric cases. Four non-sentinel specimens were positive for respiratory syncytial virus (RSV) and three were positive for influenza A unsubtype (table 1). During the 2006/2007 season to date, 45 influenza A viruses have been detected. Of the 45, two have been subtyped as A(H1) and 14 have been subtyped as A(H3). Influenza positive specimens have been detected in all of the eight HSE-Areas so far this season (table 2). Table 3 shows influenza positive specimens detected by the NVRL by age group in years for week 5 2007 and for the 2006/2007 season to date. 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 2005/2006 and 2006/2007 influenza seasons.

Table 1: Number of sentinel and non-sentinel* respiratory specimens and positive results for week 5 2007 and the 2006/2007 season to date

Week Number	Specimen Type	Total Specimens	No. Influenza Positive	% Influenza Positive	Influenza A	Influenza B	RSV
5 2007	Sentinel	30	9	30	9	0	NA
	Non-Sentinel	44	3	6.8	3	0	4
	Total	74	12	16.2	12	0	4
40 2006 - 5 2007	Sentinel	166	31	18.7	31	0	NA
	Non-Sentinel	1138	14	1.2	14	0	297
	Total	1304	45	3.5	45	0	297

*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 week 5 2007 and the 2006/2007 season to date

	Week 5 2007			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
HSE-ER	0	0	0	13	0	13
HSE-MA	0	0	0	2	0	2
HSE-MWA	1	0	1	6	0	6
HSE-NEA	0	0	0	2	0	2
HSE-NWA	3	0	3	9	0	9
HSE-SEA	1	0	1	1	0	1
HSE-SA	4	0	4	7	0	7
HSE-WA	3	0	3	5	0	5
Total	12	0	12	45	0	45

* 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 week 5 2007 and the 2006/2007 season to date

	Week 5 2007			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
0-4 years	3	0	3	14	0	14
5-14 years	1	0	1	1	0	1
15-64 years	8	0	8	29	0	29
65 years and older	0	0	0	0	0	0
Age group unknown	0	0	0	1	0	1
Total	12	0	12	45	0	45

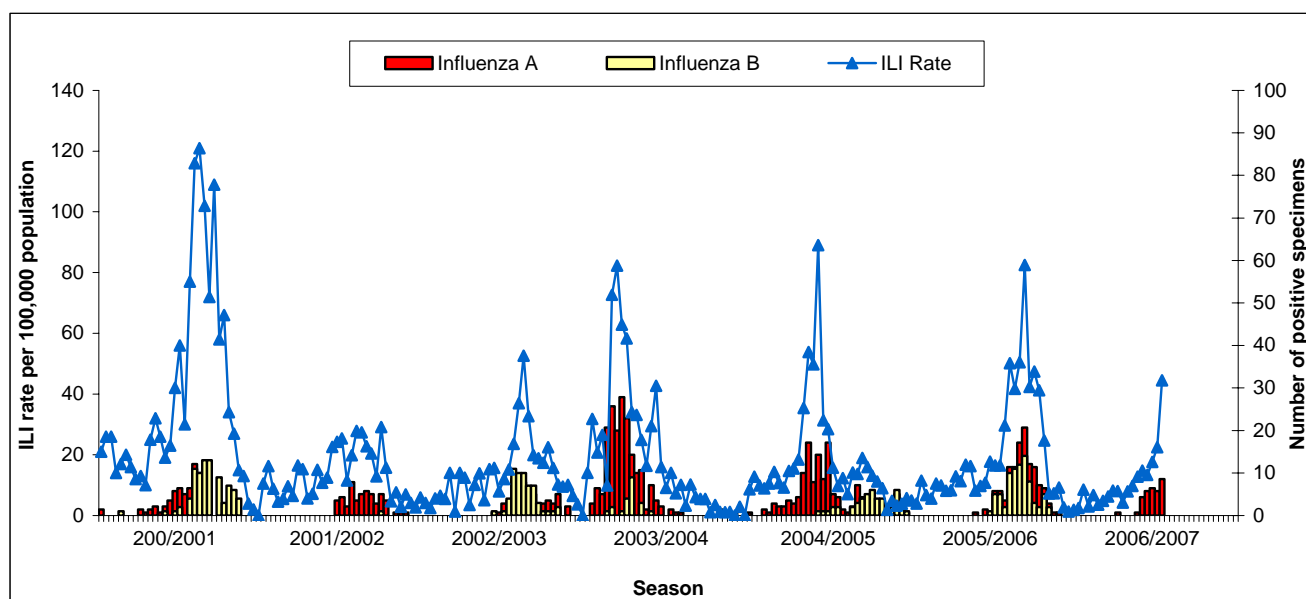


Figure 3: ILI rate per 100,000 population and the number of positive influenza specimens detected by the NVRL during the 2000/2001, 2001/2002, 2002/2003, 2003/2004, 2004/2005, 2005/2006 & 2006/2007 seasons.

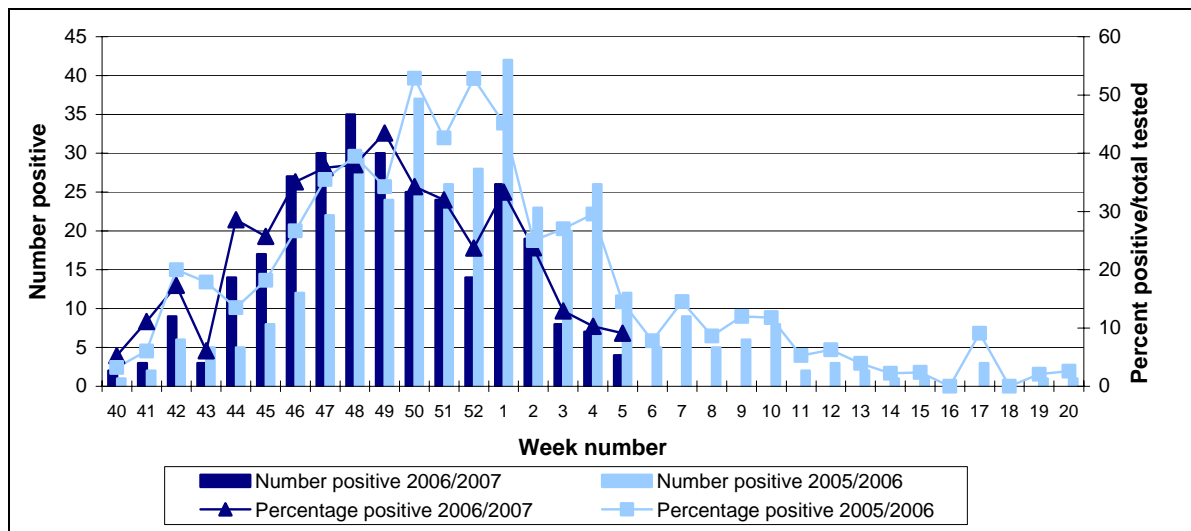


Figure 4. Number and percentage of non-sentinel RSV positive specimens detected during the 2005/2006 and 2006/2007 influenza seasons.

Weekly Influenza Notifications

Three influenza cases were notified to HPSC during week 5 2007. Influenza cases notified to HPSC during the summer of 2006 and during the 2006/2007 influenza season are shown in figure 5 and compared to ILI consultation rates.

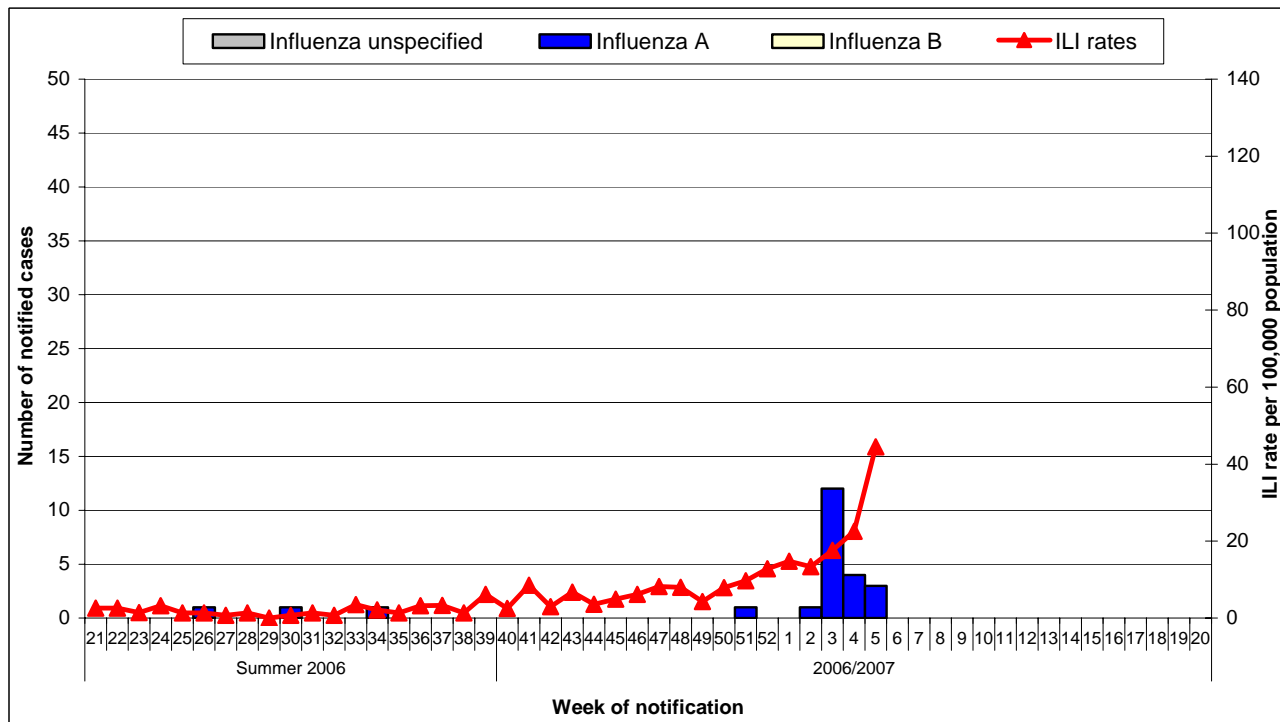


Figure 5: Number of notifications* of influenza (possible & confirmed) by type and by week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2006 and the 2006/2007 influenza season.
 *Notification data are provisional and were extracted from [CIDR](#) on the 06/02/2007 at 17.55

Mortality Data

No influenza associated deaths were registered during week 5 2007.

Outbreak Reports

No influenza/ILI outbreaks were reported to HPSC during week 5 2007.

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, laboratory confirmed influenza cases and influenza/ILI 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. During week 4, sporadic influenza activity based on isolated cases of ILI and influenza virus isolations was reported by HSE-ER, -MA, -MWA, -NEA, -NWA and -SA. No activity was reported from HSE-SEA and -WA during week 4 2007 (figure 6). During week 4, an elevated level of absenteeism was reported by a secondary school in HSE-ER.

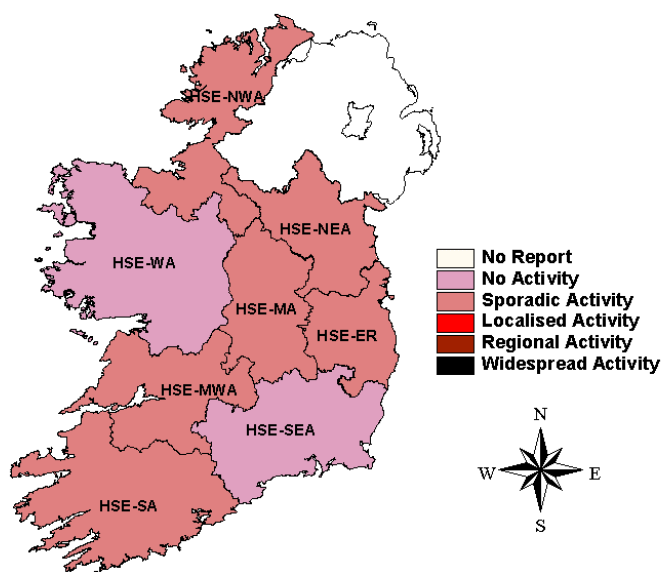


Figure 6: Map of influenza activity by HSE-Health Area during week 4 2007

Influenza Activity in Northern Ireland

One hundred and eighty-eight ILI cases and 43 cases of clinical influenza were reported from sentinel GPs in Northern Ireland during week 5 2007, corresponding to a combined rate of 204.2 per 100,000 population, an increase from the updated rate of 120.1 per 100,000 population during week 5. Influenza A viruses were detected in five non-sentinel swabs from hospitalised patients (four children and one adult) and from 10 sentinel swabs (four children and six adults). <http://www.cdscni.org.uk>

Influenza Activity in England, Scotland & Wales

During week 5, clinical influenza activity increased in England and Wales while it continued to decrease in Scotland although remaining above baseline levels. In England, the ILI episode incidence rate has increased to 30.2 per 100,000 in week 5 from 16.8 per 100,000 in week 4. This is above the baseline activity threshold of 30 per 100,000 persons and is now said to be normal seasonal activity. In Scotland, GP consultation rates for ILI decreased to 52 consultations per 100,000 in week 5 from 64 per 100,000 in week 4. Rates for both weeks exceed the Scottish baseline threshold of 50 consultations per 100,000 and as such are said to be normal seasonal activity. In Wales, GP consultation rates for ILI have increased to 13.57 per 100,000 in week 5 compared to 4.8 per 100,000 in week 4. Both rates are below the baseline threshold of 25 consultations per 100,000. Two samples referred to the Centre for Infections' Respiratory Virus Unit (RVU) tested positive for RSV while 57 samples tested positive for influenza A(H3) and one for influenza B.

<http://www.hpa.org.uk/infections/topics%5Faz/influenza/seasonal/activity0607/flureport.htm>

Influenza Activity in Europe

During week 4 2007, national network levels of ILI and/or acute respiratory infection (ARI) were high in Luxembourg and medium in the Czech Republic, France (South East), Hungary, the Netherlands, Portugal, Romania, Spain and Switzerland, whilst it remained low in 17 other countries. The high influenza activity reported by Luxembourg was based on virological data (personal communication). For the geographical spread indicator, widespread activity was reported in three countries (Luxembourg, Norway and Portugal) and regional activity in four countries (the Czech Republic, France, Italy and Spain). Local activity was reported in five countries, sporadic activity in 12 and no activity in Lithuania and Poland. So far this season, the consultation rates for ILI and/or ARI have been above the national baseline in Luxembourg (since week 2 2007), Spain (since week 2 2007), Switzerland (since week 3 2007) and the Netherlands (since week 3 2007). Since week 4 2007, consultation rates for ILI and/or ARI were also above the national baseline in the Czech Republic, Hungary, Portugal and Romania. In the other countries influenza activity has remained at national baseline levels. The total number of respiratory specimens collected by sentinel physicians was 1563, of which 392 (25.1%) were positive for influenza virus. Of these, 383 (98%) specimens tested positive for influenza A virus and nine (2%) were influenza B. In addition, 464 specimens from non-sentinel sources (e.g. specimens collected for diagnostic purposes in hospitals) tested positive for influenza virus, of which 460 (99%) were influenza A and four (1%) influenza B. Based on subtyping data of all influenza virus detections (N=2970; sentinel and non-sentinel data), 1829 (62%) were type A unsubtyped, 32 (1%) were type A(H1), 47 (2%) were A(H1N1), 399 (13%) were A(H3), 601 (20%) were A(H3N2) and 62 (2%) were type B. Based on the characterisation data of all influenza virus detections, 445 have been antigenically and/or genetically characterised: 318 were A/Wisconsin/67/2005 (H3N2)-like, 92 were A/California/7/2004 (H3N2)-like [a strain of the A(H3N2) virus that emerged during the 2004-2005 season, circulated during the 2005-2006 season, and is closely related to the A/Wisconsin/67/2005 (H3N2) reference virus], 30 were A/New Caledonia/20/99 (H1N1)-like, four were B/Malaysia/2506/2004-like (the B/Victoria/2/87 lineage) and one was B/Jiangsu/10/2003-like (the B/Yamagata/16/88 lineage).

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

Influenza Activity in Canada

During week 4, overall influenza activity in Canada increased from the previous week. Widespread influenza activity was reported in Toronto, Ontario and in the Interior and Fraser regions of British Columbia while localised activity was reported in 14 other regions across the country. Sporadic influenza activity was reported in more regions across Canada compared to the previous week, while the rest reported no activity. In week 4, the number of specimens that tested positive for influenza virus increased from the previous week to 8.3% (239/2,889). Of the influenza virus detections to date this season, 98% (1,425/1,460) were influenza A viruses. In week 4, the ILI consultation rate increased slightly to 24 per 1,000 patient visits, however it is still within the expected range for this week. The sentinel response rate was 73%. During week 4, 27 new outbreaks were reported, seven influenza outbreaks in long term care facilities (four of which were in Ontario), two in hospitals, one in another type of facility and 17 in schools in British Columbia. The National Microbiology Laboratory (NML) has characterised 206 influenza viruses for the 2006-2007 influenza season: 101 were A/New Caledonia/20/1999(H1N1)-like, 99 were A/Wisconsin/67/05(H3N2)-like, 3 B/Malaysia/2506/2004-like, and 3 B/Shanghai/361/2002-like. All but the B/Shanghai/361/2002-like strain are included in the composition of the 2006-2007 Canadian influenza vaccine. Of the influenza A viruses characterised, 91% of the A(H1N1) viruses were from the West and 84% of the A(H3N2) viruses were from Ontario.

<http://www.phac-aspc.gc.ca/fluwatch/index.html>

Influenza Activity in the United States

During week 4, influenza activity increased in the United States. Among specimens tested by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories for influenza, 17.9% were positive. ILI data was above baseline for week 4. Eight states reported widespread influenza activity, 14 states reported regional influenza activity, 15 states reported local influenza activity and 13 states, the District of Columbia and New York City reported sporadic influenza activity. The reporting of widespread or regional influenza activity increased from 18 states for week 3 to 22 states for week 4. The percent of deaths due to pneumonia and influenza remained below baseline level. During week 4, WHO and NREVSS laboratories reported 3,450 specimens tested for influenza viruses, 618 (17.9%) of which were positive: 117 influenza A (H1) viruses, 44 influenza A (H3) virus, 381 influenza A viruses that were untyped and 76 influenza B viruses. Since October 1 2006, WHO and NREVSS laboratories have tested a total of 75,765 specimens for influenza viruses and 5,109 (6.7%) were positive. Among the 5,109 influenza viruses, 4,162 (81.5%) were influenza A viruses and 947 (18.5%) were influenza B viruses. One thousand three hundred eighty-eight (33.3%) of the 4,162 influenza A viruses have been subtyped: 1,234 (88.9%) were influenza A (H1) viruses and 154 (11.1%) were influenza A (H3) viruses.

<http://www.cdc.gov/flu/>

Influenza Activity Worldwide

During week 4 2007 the following influenza isolates were reported; China 71 (2 A(H1), 59 A(H3), 4 A untyped and 6 B), Iran 11 (1 A(H1), 7 A(H3) and 3 B), Japan 19 (3 A(H1), 15 A(H3) and 1 B) and Tunisia 12 (5 A(H1), 3 A(H3) and 4 influenza untyped). China and Mongolia reported sporadic levels of ILI while Tunisia reported a regional outbreak of ILI.

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

Avian Influenza

On the 6 February 2007, the Veterinary Laboratories Agency (VLA) have confirmed that the H5N1 avian influenza identified in samples from poultry found dead on a farm near Lowestoft in Suffolk is the highly pathogenic Asian strain. It is similar to the virus that was found in Hungary in January. Restrictions on bird movement and increased bird surveillance have been imposed in the area around the farm and the culling of birds from this farm is now complete.

Human Cases of Avian Influenza

As of the 7th February 2007, 272 confirmed human cases and 166 (61%) deaths from avian influenza A (H5N1) have been reported to the WHO from Azerbaijan, Cambodia, China, Djibouti, Egypt, Indonesia, Iraq, Thailand, Turkey and Vietnam.

The Egyptian Ministry of Health and Population has announced a new human case of avian influenza A(H5N1) virus infection. The case was confirmed by the Egyptian Central Public Health Laboratory and by the US Naval Medical Research Unit No.3 (NAMRU-3). The 17-year-old female from Fayyoun Governorate developed symptoms on 25 January 2007 and was initially treated for seasonal influenza. She was hospitalized on 1 February with fever and breathing difficulties, and died on 2 February. Initial investigations into the source of her exposure indicate the presence of sick and dead poultry at her home in the days prior to the onset of symptoms. Of the 20 cases confirmed to date in Egypt, 12 (60%) have been fatal.

The government of Nigeria announced the presence of A(H5N1) avian influenza virus in a 22-year-old deceased female from Lagos on 3rd of February 2007. The initial positive test findings from a laboratory in Nigeria were confirmed by the WHO Collaborating Centre for Reference and Research on Influenza in London. Further investigations are under way to identify the source of her infection. All samples from contacts of the deceased have tested negative by the WHO Collaborating Centre.

Further information on avian influenza is available on the following websites:

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/>

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 Sarah Jackson & Dr. Joan O'Donnell, HPSC