

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 4 2007 (22nd to 28th January 2007)

Summary

During week 4 2007, influenza activity was at low levels in Ireland, with 36 influenza-like illness (ILI) cases reported by sentinel GPs. Two specimens tested by the NVRL were positive for influenza A virus during week 4.

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

Thirty-six ILI cases were reported from sentinel GPs during week 4 2007, corresponding to an ILI consultation rate of 22.2 per 100,000 population, an increase from the updated rate of 17.2 in week 3 (figure 1).

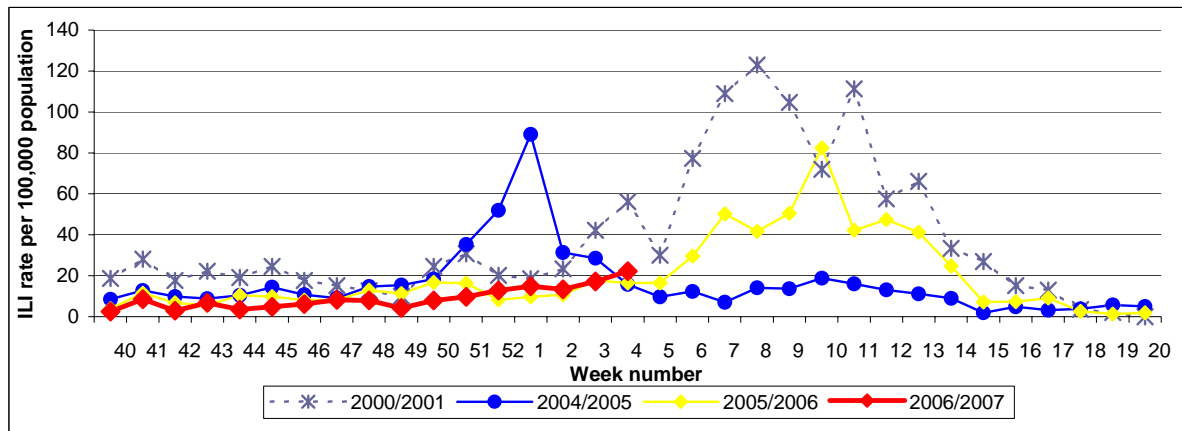


Figure 1: GP consultation rate for ILI per 100,000 population by week, during the 2000/2001*, 2004/2005, 2005/2006 & 2006/2007 influenza seasons.

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

Results (continued)

Two cases were in the 0-4 year age group (17.4 per 100,000 population), 32 cases were in the 15-64 year age group (29.1 per 100,000 population) and two cases were in the 65 years or older age group (11.1 per 100,000 population) as shown in figure 2. Forty-five of the 46 (98%) sentinel general practices reported during week 4 2007, with 16 reporting ILI.

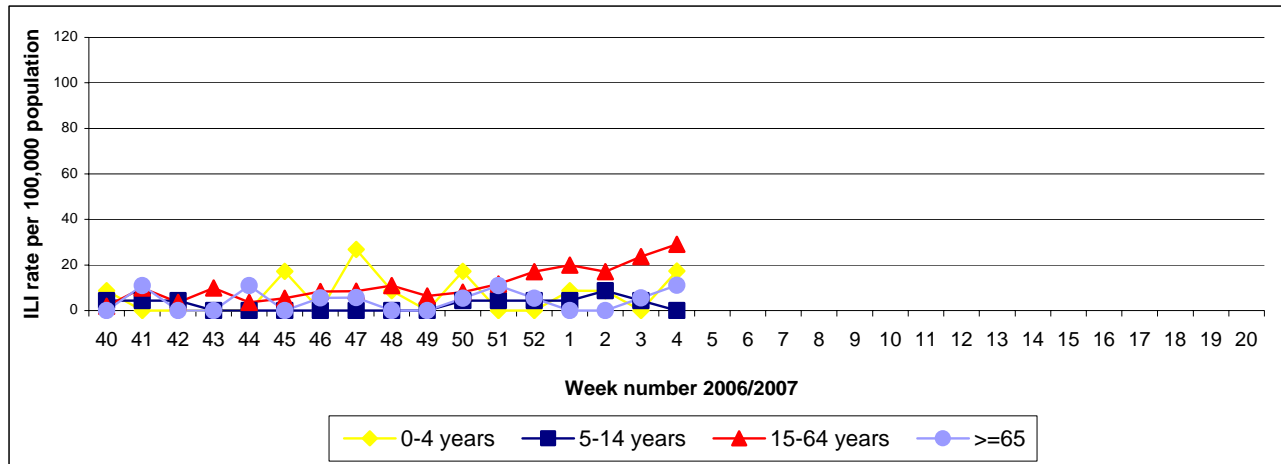


Figure 2: Age specific GP consultation rate* for ILI per 100,000 population by week during the 2006/2007 influenza season. *Please note the denominator used in the age specific consultation rate is from the 2002 census data; this assumes that the age distribution of the sentinel general practices is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

Virological Data from the National Virus Reference Laboratory (NVRL)

The NVRL tested 19 specimens taken by sentinel GPs during week 4 2007, one of which was positive for influenza A unsubtype. The NVRL also tested 61 non-sentinel specimens taken during week 4 2007, mainly from hospitalised paediatric cases. Six non-sentinel specimens were positive for respiratory syncytial virus (RSV) and one was positive for influenza A unsubtype (table 1). During the 2006/2007 season to date, 27 influenza A viruses have been detected. Of the 27, six have been subtyped as A(H3) and one has been subtyped as A(H1). Influenza positive specimens have been detected in seven of the eight HSE-Areas so far this season (table 2). 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 4 2007 and the 2006/2007 season to date

| Week Number | Specimen Type | Total Specimens | No. Influenza Positive | % Influenza Positive | Influenza A | Influenza B | RSV |
|-------------------------|---------------|-----------------|------------------------|----------------------|-------------|-------------|------------|
| 4 2007 | Sentinel | 19 | 1 | 5.3 | 1 | 0 | NA |
| | Non-Sentinel | 61 | 1 | 1.6 | 1 | 0 | 6 |
| | Total | 80 | 2 | 2.5 | 2 | 0 | 6 |
| 40 2006 - 4 2007 | Sentinel | 137 | 20 | 14.6 | 20 | 0 | NA |
| | Non-Sentinel | 1087 | 7 | 0.6 | 7 | 0 | 292 |
| | Total | 1224 | 27 | 2.2 | 27 | 0 | 292 |

*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 4 2007 and the 2006/2007 season to date

| | Week 4 2007 | | | Season to date | | |
|--------------|-------------|----------|----------|----------------|----------|-----------|
| | Flu A | Flu B | Total | Flu A | Flu B | Total |
| HSE-ER | 2 | 0 | 2 | 12 | 0 | 12 |
| HSE-MA | 0 | 0 | 0 | 1 | 0 | 1 |
| HSE-MWA | 0 | 0 | 0 | 4 | 0 | 4 |
| HSE-NEA | 0 | 0 | 0 | 2 | 0 | 2 |
| HSE-NWA | 0 | 0 | 0 | 3 | 0 | 3 |
| HSE-SEA | 0 | 0 | 0 | 0 | 0 | 0 |
| HSE-SA | 0 | 0 | 0 | 3 | 0 | 3 |
| HSE-WA | 0 | 0 | 0 | 2 | 0 | 2 |
| Total | 2 | 0 | 2 | 27 | 0 | 27 |

* 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.

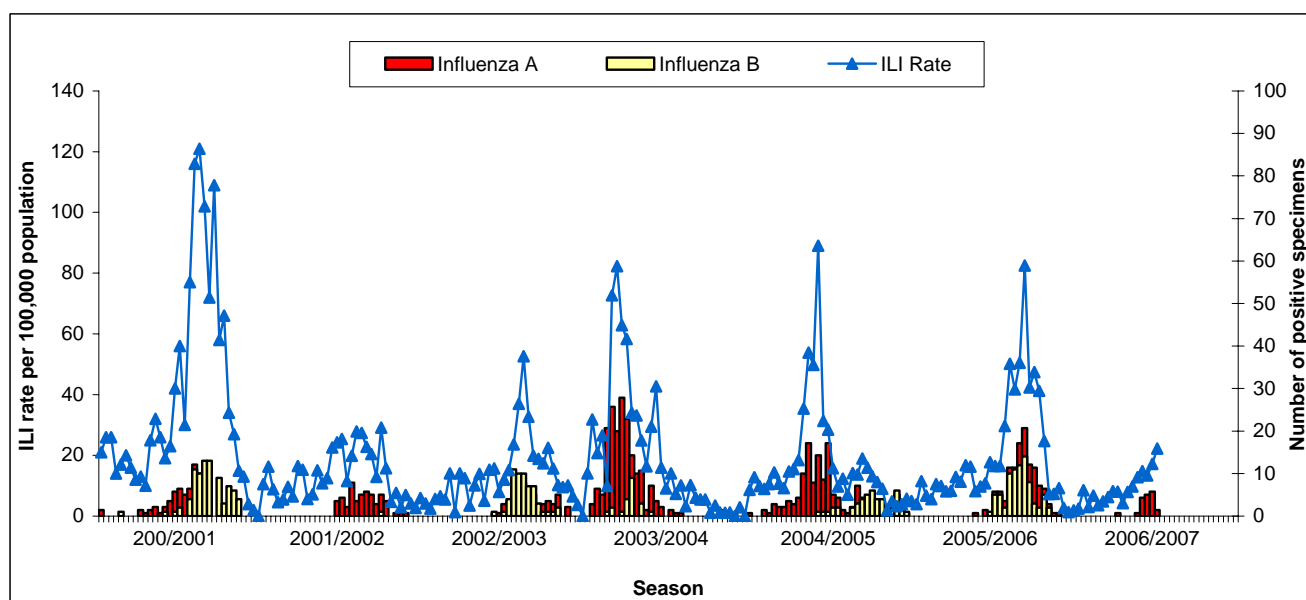


Figure 3: ILI rate per 100,000 population and the number of positive influenza specimens detected by the NVRL during the 2000/2001, 2001/2002, 2002/2003, 2003/2004, 2004/2005, 2005/2006 & 2006/2007 seasons.

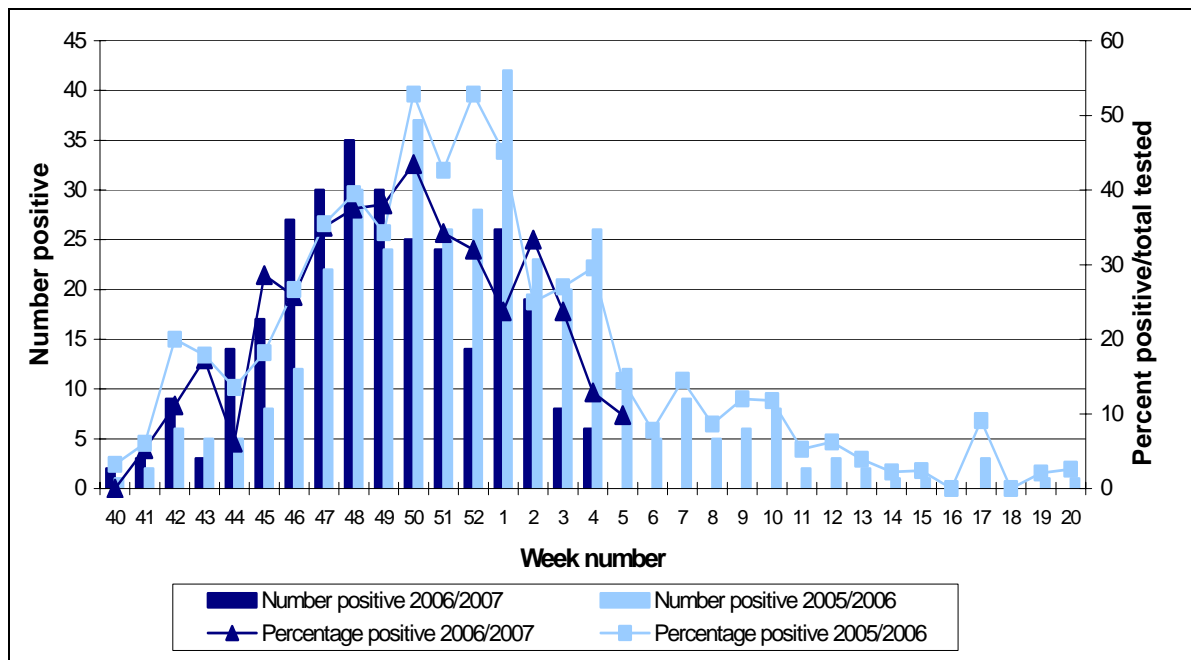


Figure 4. Number and percentage of non-sentinel RSV positive specimens detected during the 2005/2006 and 2006/2007 influenza seasons.

Weekly Influenza Notifications

Four influenza cases were notified to HPSC during week 4 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.

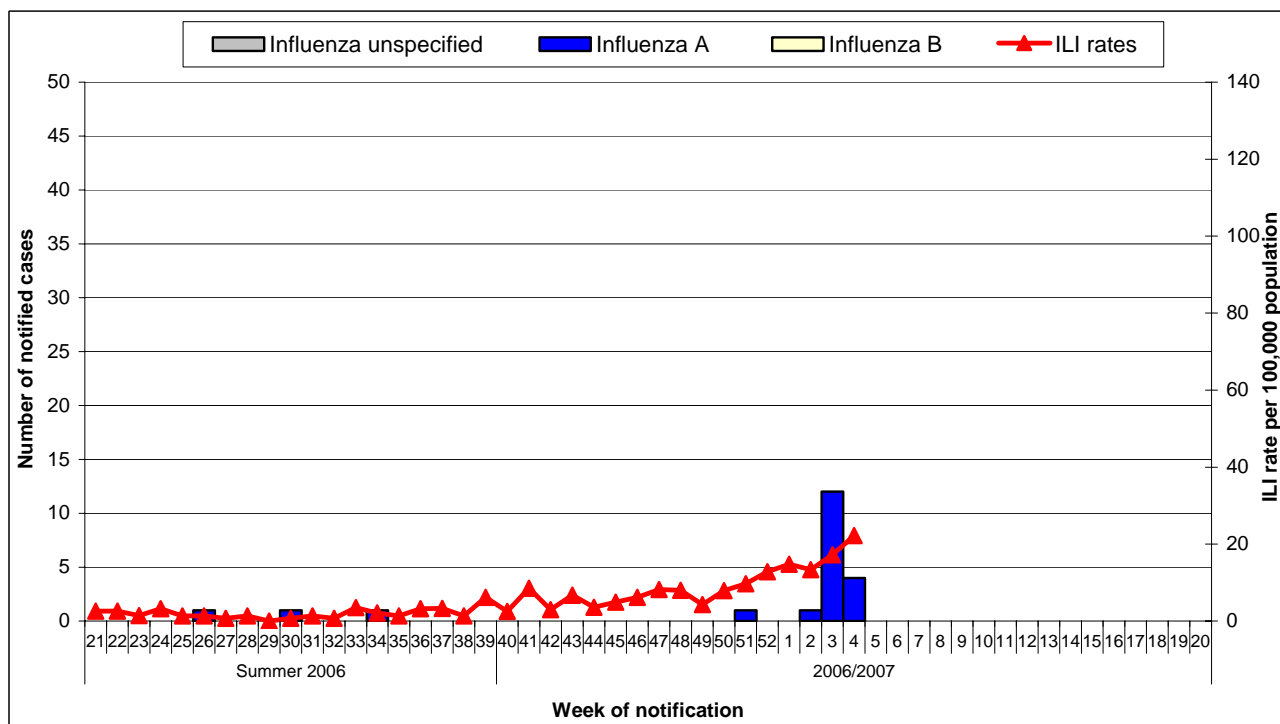


Figure 5: Number of notifications* of influenza (possible & confirmed) by type and by week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2006 and the 2006/2007 influenza season.
 *Notification data are provisional and were extracted from [CIDR](#) on the 30/01/2007 at 15.54

Mortality Data

No influenza associated deaths were registered during week 4 2007.

Outbreak Reports

No influenza/ILI outbreaks were reported to HPSC during week 4 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 3, sporadic influenza activity based on isolated cases of ILI and influenza virus isolations was reported by HSE-ER, -MWA, -NEA, -NWA, -SA and -SEA. No activity was reported from HSE-MA and -WA during week 3 2007 (figure 6). During week 3, elevated levels of absenteeism were reported by two schools in HSE-NWA.

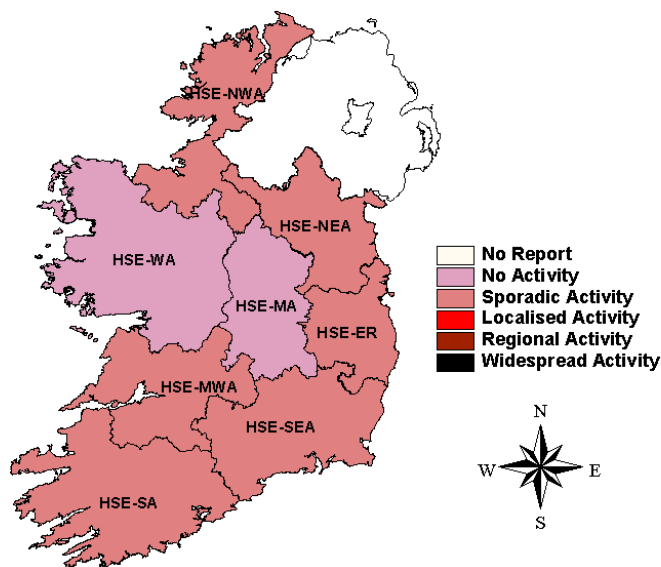


Figure 6: Map of influenza activity by HSE-Health Area during week 3 2007

Influenza Activity in Northern Ireland

One hundred and four ILI cases and 15 cases of clinical influenza were reported from sentinel GPs in Northern Ireland during week 4 2007, corresponding to a combined rate of 142.8 per 100,000 population, an increase from the updated rate of 133.9 per 100,000 population during week 3. Influenza A viruses were detected in seven non-sentinel swabs from hospitalised patients, six children and one adult, and from one sentinel swab in a child.

<http://www.cdscni.org.uk>

Influenza Activity in England, Scotland & Wales

During week 4, clinical influenza activity decreased in Scotland and remained stable at baseline levels in England and Wales. In Scotland, activity seems to have peaked in week 2 and is now on the decline although it remains above baseline levels. In England the ILI episode incidence rate has remained stable at 16.8 per 100,000 in week 4. This is below the baseline activity threshold of 30 per 100,000 persons. In Scotland, GP consultation rates for influenza-like illness decreased to 64 consultations per 100,000 in week 4 from 79 per 100,000 in week 3. Rates for both weeks exceed the Scottish baseline threshold of 50 consultations per 100,000 and as such are said to be normal activity. In Wales, GP consultations for ILI remain very low at 4.8 per 100,000 in week 4 but have risen slightly compared to 3.19 per 100,000 in week 3. 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 32 samples tested positive for influenza A(H3) and two for influenza B.

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

Influenza Activity in Europe

During week 3 2007, national network levels of ILI and/or acute respiratory infection (ARI) were medium in Greece, Luxembourg, the Netherlands, Spain and Switzerland, whilst it remained low in 18 other countries. For the geographical spread indicator, regional activity was reported in four countries (the Czech Republic, Norway, Scotland and Spain), local activity in seven countries, sporadic activity in 12 countries and no activity in three countries (Hungary, Lithuania and Poland). So far this season, the consultation rates for ILI and/or ARI have been above the national baseline threshold in Greece (since week 01/2007), Luxembourg (since week 02/2007), Spain (since week 02/2007), Switzerland (since week 03/2007) and the Netherlands. In the other countries influenza activity has remained at baseline levels. The total number of respiratory specimens collected by sentinel physicians was 1290, of which 320 (24.8%) were positive for influenza virus. Of these, 315 (98%) specimens tested positive for influenza A virus and five (2%) were influenza B. In addition, 306 specimens from non-sentinel sources (e.g. specimens collected for diagnostic purposes in hospitals) tested positive for influenza virus, of which 300 (98%) were influenza A and six (2%) influenza B. Based on subtyping data of all influenza virus detections (N=1881; sentinel and non-sentinel data), 1191 (63%) were A untyped, 31 (2%) were A(H1), 28 (1%) were A(H1N1), 273 (15%) were A(H3), 310 (16%) were A(H3N2) and 48 (3%) were type B. Based on the characterisation data of all influenza virus detections, 325 have been antigenically and/or genetically characterised: 250 were A/Wisconsin/67/2005 (H3N2)-like, 52 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], 21 were A/New Caledonia/20/99 (H1N1)-like, one was 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 3, overall influenza activity in Canada was similar to that seen the previous week, with some indicators having increased slightly. Widespread influenza activity was reported in Toronto and localised activity was reported in 10 other regions across the country (in Quebec, Ontario, Alberta and British Columbia), which is an increase from the previous week. Sporadic influenza activity was reported in one or more regions in most provinces across Canada while the rest, including all of Newfoundland & Labrador and the Territories, reported no activity. In week 3, 6.7% (196/2,935) of the specimens tested for influenza virus were positive, a slight increase from the previous week. Of the influenza virus detections to date this season, 98% (1,195/1,217) were influenza A viruses. In week 3, the ILI consultation rate was 24 per 1,000 patient visits, which is lower than the rate from the previous week; however it is still within the expected range. The sentinel response rate was 70%. During week 3, eight new outbreaks were reported: four influenza outbreaks in long term care facilities (LTCFs) and four outbreaks of ILI in schools. The National Microbiology Laboratory (NML) has characterised 183 influenza viruses for the 2006-2007 influenza season: 92 were A/Wisconsin/67/05(H3N2)-like, 86 were A/New Caledonia/20/1999(H1N1)-like, 3 B/Malaysia/2506/2004-like, and 2 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, 90% of the A(H1N1) viruses were from the West and 88% 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 3, influenza activity in the United States remained at approximately the same level as in the previous week. Among specimens tested by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories for influenza, 8.7% were positive. ILI data was above baseline for week 3. Three states reported widespread influenza activity, 15 states reported regional influenza activity, 14 states reported local influenza activity, 17 states, the District of Columbia and New York City reported sporadic influenza activity and one state reported no influenza activity. The reporting of widespread or regional influenza activity increased from 15 states for week 2 to 18 states for week 3. The percent of deaths due to pneumonia and influenza remained below baseline level. During week 3, WHO and NREVSS laboratories reported 3,229 specimens tested for influenza viruses, 280 (8.7%) of which were positive: 44 influenza A (H1) viruses, 10 influenza A (H3) virus, 196 influenza A viruses that were not subtyped and 30 influenza B viruses. Since October 1, 2006, WHO and NREVSS laboratories have tested a total of 65,891 specimens for influenza viruses and 3,697 (5.6%) were positive. Among the 3,697 influenza viruses, 3,012 (81.5%) were influenza A viruses and 685 (18.5%) were influenza B viruses. Nine hundred eighty-one (32.6%) of the 3,012 influenza A viruses have been subtyped: 903 (92.0%) were influenza A (H1) viruses and 78 (8.0%) were influenza A (H3) viruses.

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

Influenza Activity Worldwide

During week 3 2007 the following influenza isolates were reported; China 61 (9 A unsubtyped, 3 A(H1), 39 A(H3 and 10 B), Iran 10 (1 A(H1), 2 A(H3) and 7 B), Israel 44 unsubtyped, Japan 11 (7 A(H3) and 4 B), Madagascar 1 B, New Caledonia 3 unsubtyped and Tunisia 13 (5 A(H1), 2 A(H3) and 6 influenza unspecified). China reported sporadic levels of ILI while Israel and Tunisia reported regional outbreaks of ILI.

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

Avian Influenza

As of the 29th January 2007, 270 confirmed human cases and 164 (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 government of Nigeria has announced the death from suspected avian influenza infection in a 22-year-old female from Lagos. She died on 16 January 2007. The mother of the 22-year-old died on 4 January with similar symptoms. Preliminary tests on the samples from the 22-year-old were positive for influenza A(H5). Samples have now been sent to a WHO Collaborating Centre for Reference and Research on Influenza for confirmation. Results are expected shortly. No samples were taken from the mother.

The Ministry of Health of Indonesia has announced a new case of human infection of H5N1 avian influenza. The 6-year-old female, whose infection was announced on 29th January, was from Magelang District in Central Java Province. She developed symptoms on 8 January and died in hospital on 19 January. Initial investigations into the source of her infection indicate exposure to dead poultry. Of the 81 cases confirmed to date in Indonesia, 63 (78%) have been fatal. Contacts have been followed up and have shown no symptoms at twice the incubation period for avian influenza infection. Samples have been tested from these contacts as well as from three other suspected cases, including one fatal case and have all been negative in preliminary tests. These samples have also been sent to a WHO Collaborating Centre for Reference and Research on Influenza.

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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