

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 50 2007 (10th – 16th December 2007)

Summary

During week 50 2007, influenza activity was at low levels in Ireland. Influenza-like illness (ILI) consultation rates decreased slightly during week 50 2007, but remain within expected levels for the time of year. Four influenza positive specimens were detected by the NVRL during week 50 2007. Respiratory syncytial virus (RSV) detections reached their peak during week 47 2007 and are now decreasing.

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

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

Eight ILI cases were reported from sentinel GPs during week 50 2007, corresponding to an ILI consultation rate of 7.2 per 100,000 population, a decrease from the updated rate of 8.4 per 100,000 in week 49 2007 (figure 1). Thirty of 50 (60.0%) sentinel general practices reported during week 50 2007, with seven reporting ILI cases.

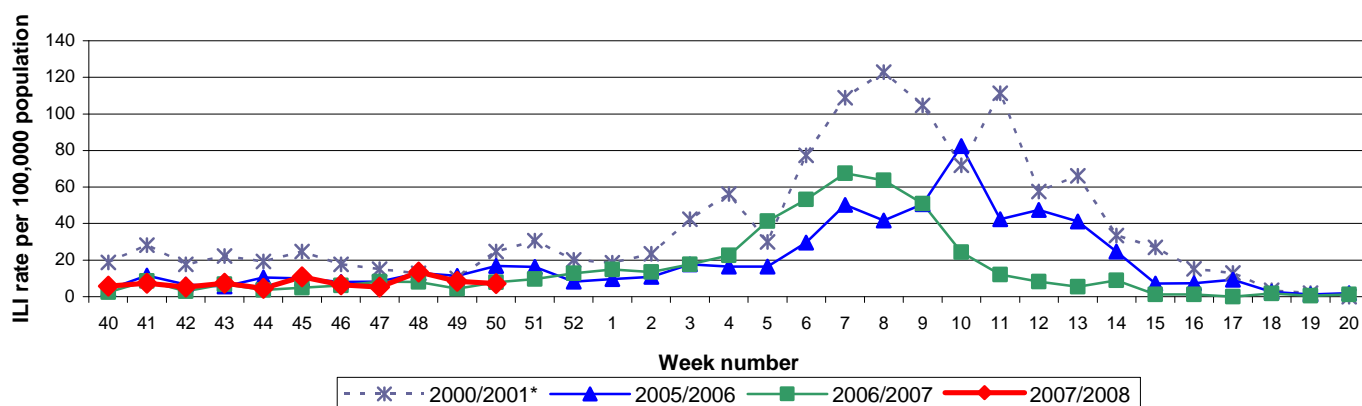


Figure 1: GP consultation rate for ILI per 100,000 population by week, during the 2000/2001*, 2005/2006, 2006/2007 & 2007/2008 influenza seasons *Highest recorded levels of ILI activity since initiation of sentinel surveillance

Results (continued)

During week 50 2007, one ILI case was reported in the 0-4 year age group (12.6 per 100,000 population) and seven ILI cases were reported in the 15-64 year age group (9.1 per 100,000 population), as shown in figure 2. No ILI cases were reported in those aged 5-14 years and 65 years or older.

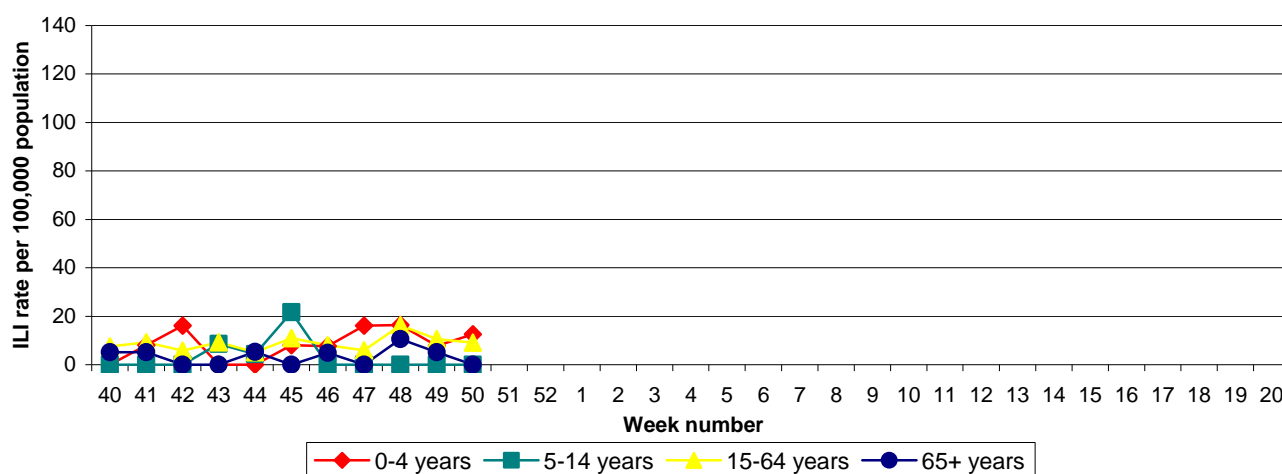


Figure 2: Age specific GP consultation rate* for ILI per 100,000 population by week during the 2007/2008 influenza season
*Please note the denominator used in the age specific consultation rate is from the 2006 census data; this assumes that the age distribution of the sentinel general practices is similar to the national age distribution.

Virological Data from the NVRL

The NVRL tested 11 specimens taken by sentinel GPs during week 50 2007, four of which were positive for influenza: three A (unsubtyped) and one B. The NVRL also tested 86 non-sentinel specimens taken during week 50 2007, mainly from hospitalised paediatric cases, all of which were negative for influenza. Thirty-four non-sentinel specimens were positive for RSV (table 1). To date this season, nine specimens have tested positive for influenza: 6 A (unsubtyped) and 1 A (H3) and 2 B viruses from sentinel and non-sentinel sources. 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: 283 RSV, 2 Adenovirus, 2 parainfluenza virus (PIV) type-1, 1 PIV-2 and 5 PIV-3. Influenza positive specimens by HSE-Area and age group (in years) for week 50 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 week 50 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
50 2007	Sentinel	11	4	36.4	3	1	NA	NA
	Non-Sentinel	86	0	0.0	0	0	34	39.5
	Total	97	4	4.1	3	1	34	35.1
Season to date	Sentinel	82	8	9.8	7	1	NA	NA
	Non-Sentinel	791	1	0.1	0	1	283	35.8
	Total	873	9	1.0	7	2	283	32.4

*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 50 2007 and the 2007/2008 season to date

	Week 50 2007			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
HSE-ER	2	0	2	3	1	4
HSE-M	0	0	0	0	0	0
HSE-MW	0	0	0	0	0	0
HSE-NE	0	0	0	2	0	2
HSE-NW	0	0	0	0	0	0
HSE-SE	1	0	1	1	0	1
HSE-S	0	0	0	1	0	1
HSE-W	0	1	1	0	1	1
Total	3	1	4	7	2	9

* 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 50 2007 and the 2007/2008 season to date

	Week 50 2007			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
0-4 years	0	0	0	0	0	0
5-14 years	1	0	1	1	0	1
15-64 years	2	1	3	6	2	8
65 years and older	0	0	0	0	0	0
Age group unknown	0	0	0	0	0	0
Total	3	1	4	7	2	9

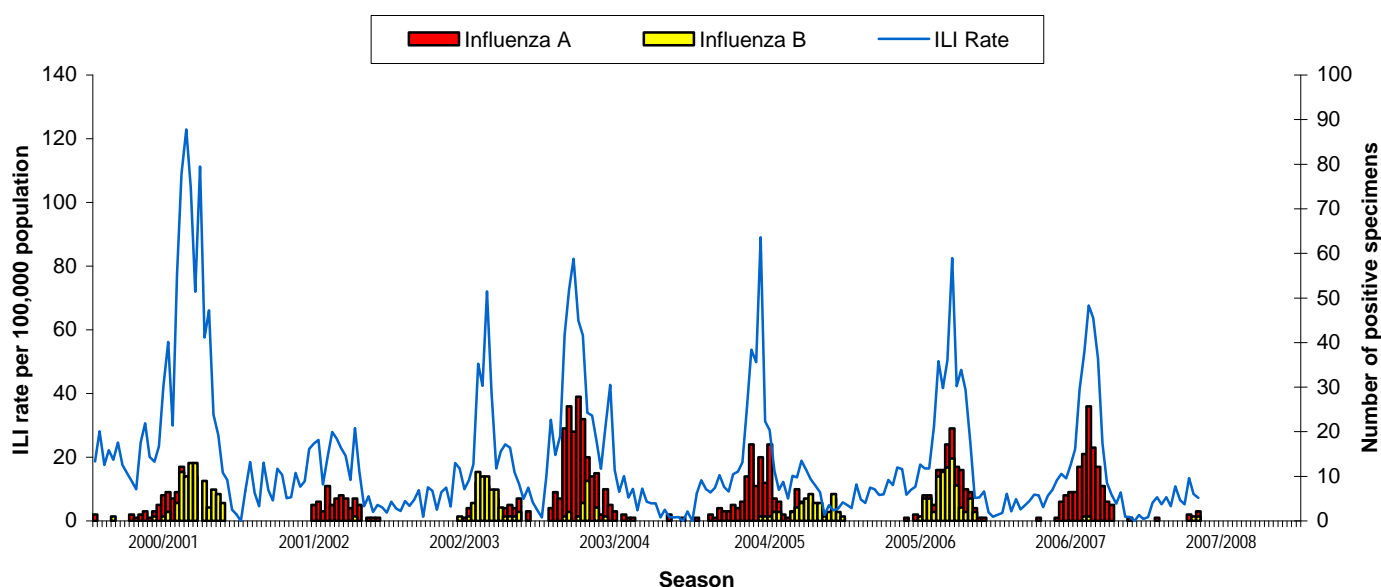


Figure 3: GP ILI consultation rate per 100,000 population and the number of positive influenza specimens detected by the NVRL by week and season, 2000/2001 - 2007/2008

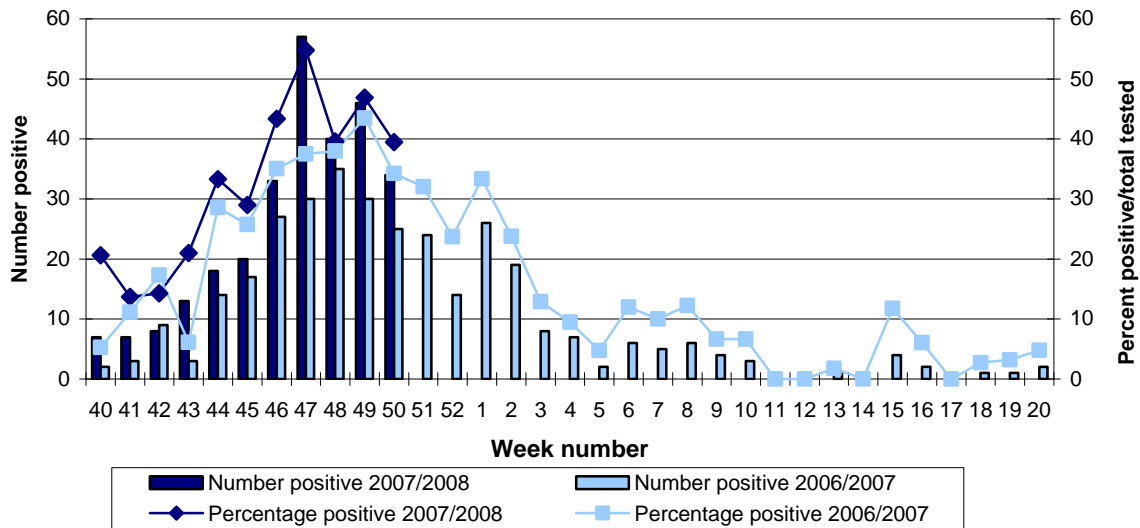


Figure 4. Number and percentage of non-sentinel RSV positive specimens detected during the 2006/2007 and 2007/2008 influenza seasons

Weekly Influenza Notifications

One influenza A and one influenza B case from HSE-E were notified to HPSC during week 50 2007. 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.

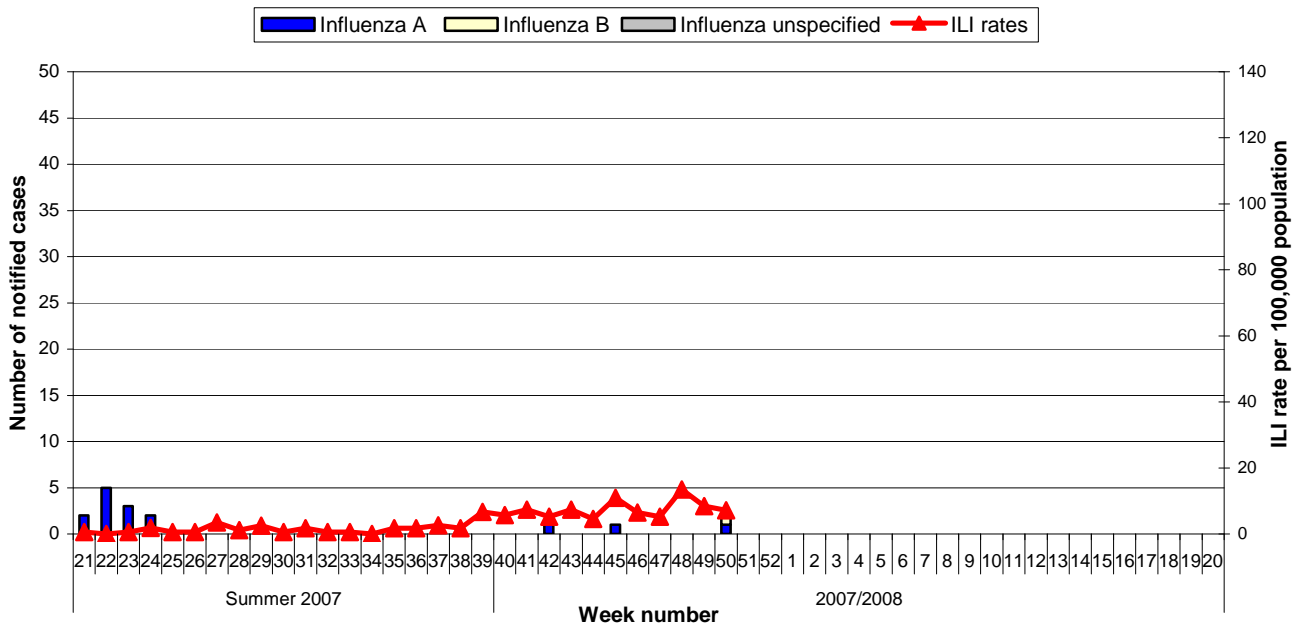


Figure 5: Number of notifications* of influenza (possible & confirmed) by type and by week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2007 and the 2007/2008 influenza season
 *Notification data are provisional and were extracted from [CIDR](#) on the 18/12/2007 at 10:30

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.

Increased respiratory admissions were reported in three sentinel hospitals, one in HSE-E and one in HSE-W during week 48 and one in HSE-W during week 49 2007. Increased absenteeism was reported in sentinel primary schools in HSE-E, -M, -MW, -NW and -W and in sentinel secondary schools in HSE-MW and -SE during week 49 2007. Three sentinel schools reported increased absenteeism due to gastrointestinal symptoms, ILI and common colds during weeks 48 and 49 2007. During week 49 2007, sporadic influenza activity was reported in six HSE-Areas: HSE-E, -MW, -NE, -NW, -SE, and -S. No influenza activity was reported in HSE-M and -W during week 49 2007 (figure 6).

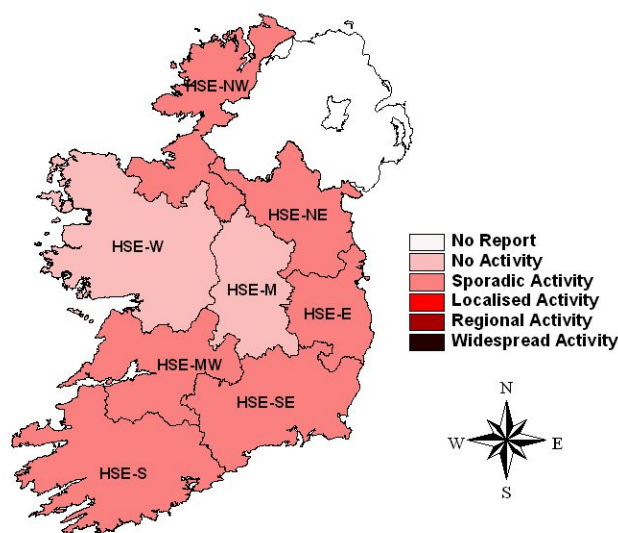


Figure 6: Map of influenza activity by HSE-Health Area during week 49 2007

Influenza Activity in Northern Ireland

During week 50 2007, 11 cases of clinical influenza and 26 ILI cases were reported in Northern Ireland, corresponding to a combined rate of 31.0 per 100,000 population, a slight decrease from the updated rate of 26.0 per 100,000 for week 49 2007. Forty non-sentinel specimens were tested during week 50 2007, all of which were negative for influenza. <http://www.cdscni.org.uk>

Influenza Activity in England, Scotland & Wales

During weeks 48 and 49 2007, clinical influenza activity remained low and below baseline thresholds in the UK, increasing in England and remaining stable in Wales and Scotland. Of the samples referred to the Centre for Infections' Respiratory Virus Unit, twenty six tested positive for influenza A (H1), three for influenza A (H3), two for influenza B and three for RSV during these weeks. Data for week 50 2007 were not available at the time of publication of this report. <http://www.hpa.org.uk/infections/topics%5Faz/influenza/seasonal/flureports0708.htm>

Influenza Activity in Europe

During week 49 2007, levels of influenza activity remained low in Europe. Localised influenza activity was reported in the Czech Republic, sporadic influenza activity in 15 countries and in the remaining 13 countries no influenza activity was reported. To date this season, the consultation rates for ILI and/or acute respiratory illness

(ARI) across the whole of Europe have been at levels usually seen outside the seasonal influenza peak period (i.e. below the national baseline threshold). The total number of respiratory specimens collected by sentinel physicians in week 49 2007 was 568, of which 69 (12.2%) were influenza virus positive: 21 A (unsubtyped), 41 type A (H1), 5 A (H3) and 2 B. In addition, 27 influenza virus detections [18 A (unsubtyped), 3 A (H1) and 6 B] were reported from non-sentinel sources. The total number of influenza virus type A detections per week has continued to increase, whereas the total number of type B virus detections per week decreased slightly over the last two weeks. To date this season, 76% of the total virus detections were influenza A of which approximately 90% were of the H1 subtype. Based on the antigenic and/or genetic characterisation of 68 influenza viruses, 59 were A/Solomon Island/3/2006 (H1N1)-like, one was A/Brisbane/10/2007 (H3N2)-like, six were B/Florida/4/2006-like (B/Yamagata/16/88 lineage) and two were B/Malaysia/2506/2004-like (B/Victoria/2/87 lineage). Detections of RSV continued to increase during week 49 2007 in a number of countries (e.g. England and the Netherlands). <http://www.eiss.org/index.cgi>

Influenza Activity in Canada

During week 49 2007, influenza activity levels remained low in Canada overall with the majority of influenza surveillance regions across the country still reporting no activity. Seventeen regions reported sporadic influenza activity and only two regions reported localised activity. The ILI consultation rate increased slightly from the previous week to 18 per 1,000 patient visits and is still within the expected rate for week 49 2007. The proportion of positive influenza tests increased from 0.6% in week 48 to 2.2% in week 49 2007. This week, the majority of influenza detections were for influenza A viruses (44/48; 91.7%). Of the influenza detections to date, 85% (83/98) were influenza A and 15% (15/98) were influenza B. Based on antigenic characterisation of 33 viruses, 18 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 49 2007, a low level of influenza activity was reported in the United States and the proportion of outpatient visits for ILI and ARI was below national and region-specific baseline levels. One state reported regional activity, six states reported localised influenza activity; 32 states, the District of Columbia, and Puerto Rico reported sporadic influenza activity; and 11 states reported no influenza activity. During week 49 2007, WHO and NREVSS laboratories reported 2,559 specimens tested for influenza viruses, 121 (4.7%) of which were positive: 97 A (unsubtyped), 12 A (H1), 2 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. The proportion of deaths attributed to pneumonia and influenza was below the epidemic threshold. <http://www.cdc.gov/flu/weekly/fluactivity.htm>

Influenza Activity Worldwide

During week 49 2007, sporadic influenza activity was reported in China (3 A unsubtyped and 13 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 during week 49 2007. <http://gamapserver.who.int/GlobalAtlas/home.asp>

Avian Influenza

As of December 14th 2007, 340 confirmed human cases and 208 (61.2%) 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, Thailand, Turkey and Viet Nam.

The Ministry of Health (MoH) in Pakistan has informed WHO of eight suspected human cases of H5N1 avian influenza infection in the Peshawar area of the country. These cases were detected following a series of culling operations in response to poultry outbreaks of H5N1. One of the cases has now recovered and a further two suspected cases have since died. Samples taken from the suspected cases have tested positive for H5N1 in the national laboratory and are being forwarded to a WHO H5 Reference Laboratory for confirmation and further analysis. The MoH is taking steps to investigate and contain this event, including case isolation and contact tracing and monitoring, detailed epidemiological investigations, providing oseltamivir for case management and prophylaxis, reviewing hospital infection control measures and enhancing health care-based and community-based surveillance for acute respiratory infections. WHO is providing technical support to the MoH in epidemiological investigations, reviewing the surveillance, prevention and control measures that have been implemented and

carrying out viral sequencing of avian and human isolates. Multiple poultry outbreaks of H5N1 influenza have been occurring in Pakistan since 2006. In 2007, there have also been outbreaks in wild birds. A majority of the outbreaks discovered have been in the 'poultry belt' of North-West Frontier Province, particularly in the Abbottabad and Mansehra area and cases of infection in wild birds have been identified in the Islamabad Capital Territory.

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/>

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