

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 51 2008 (15th – 21st December 2008)

Summary

During week 51 2008, influenza activity continued to increase in Ireland. Influenza-like illness (ILI) consultation rates increased and are at higher levels than normally observed at this time of year. Eleven specimens tested by the NVRL were positive for influenza during week 51 2008. The use of antiviral drugs for the prevention or treatment of influenza in at risk groups is now recommended, as per the National Institute of Clinical Excellence (NICE) guidelines, UK.

Background

This is the ninth 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-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 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

One hundred and seventeen ILI cases were reported from sentinel GPs during week 51 2008, corresponding to an ILI consultation rate of 61.6 per 100,000 population, which is a marked increase compared to the rate of 38.1 per 100,000 population reported during week 50 2008 (figure 1). This ILI rate is also significantly higher than the baseline threshold of 17.8 per 100,000 population. Forty-seven of 54 (87.0%) sentinel general practices reported during week 51 2008, with 29 reporting ILI cases.

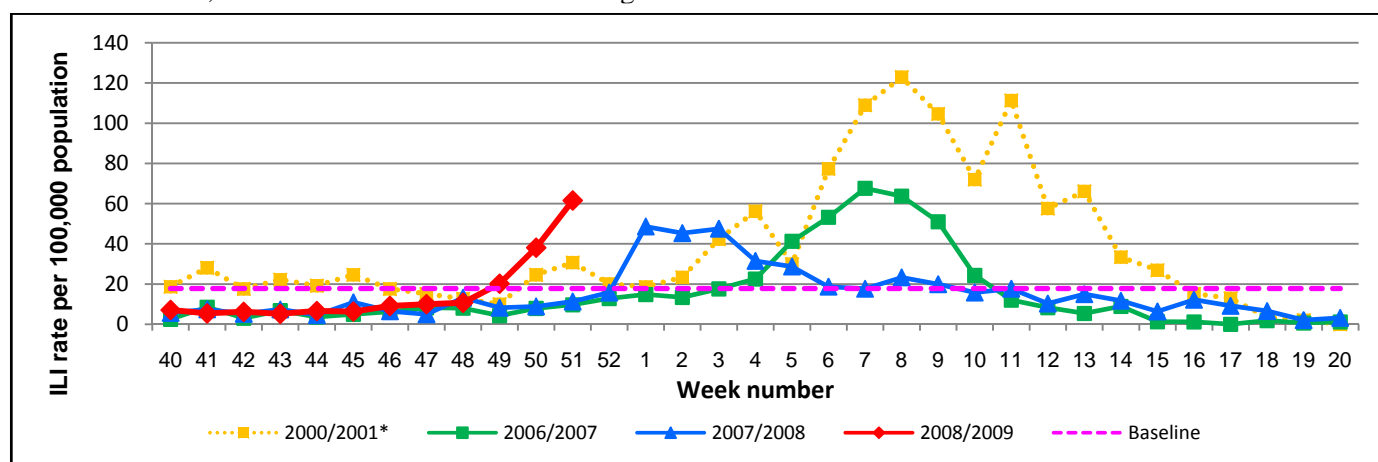


Figure 1: Influenza baseline activity threshold and GP consultation rate for ILI per 100,000 population by week, during the 2000/2001*, 2006/2007, 2007/2008 and 2008/2009 influenza seasons.

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

Results (continued)

Eleven ILI cases were reported in the 0-4 year age group (81.3 per 100,000 population), 22 ILI cases were reported in the 5-14 year age group (87.4 per 100,000 population), 79 ILI cases were reported in the 15-64 year age group (60.7 per 100,000 population) and five ILI cases were reported in those aged 65 years or older (23.9 per 100,000 population) as shown in figure 2.

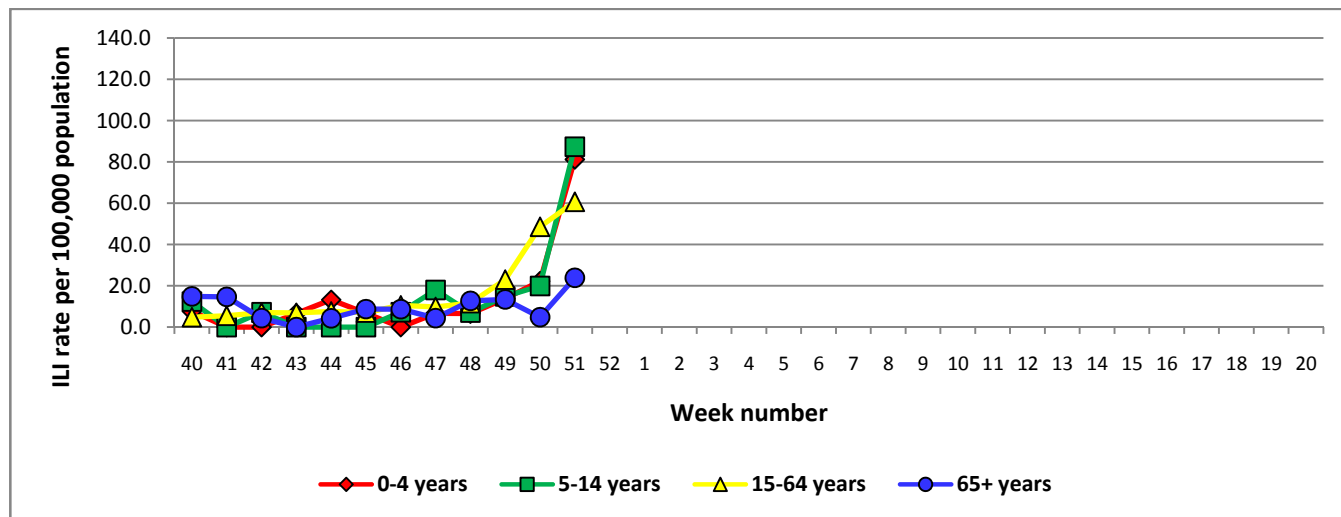


Figure 2: Age specific GP consultation rate* for ILI per 100,000 population by week during the 2008/2009 influenza season

NEWS: Recommendations on the use of antiviral drugs

The use of antiviral drugs for the prevention or treatment of influenza in at risk groups is now recommended, as per the National Institute of Clinical Excellence (NICE) guidelines, UK. When ILI rates increase to levels currently observed and when influenza is known to be circulating in the community, it is recommended that antiviral drugs are used in at-risk groups. Further information on the use of antiviral neuraminidase inhibitors, oseltamivir and zanamivir for the prevention and/or treatment of influenza in at-risk groups is available on the HPSC website. www.hpsc.ie

Oseltamivir Resistance in Europe

During the 2008/2009 influenza season, the NVRL has conducted nucleotide sequencing on two influenza A(H1) specimens taken by sentinel GPs in Ireland, both of which were resistant to oseltamivir. During the 2007/2008-influenza season, seven of 63 specimens (11.1%) tested by the NVRL showed resistance to oseltamivir.

Preliminary results from antiviral drug susceptibility testing among seasonal influenza viruses circulating in Europe have revealed that some of the influenza A (H1N1) viruses in circulation this season are resistant to the antiviral drug, oseltamivir. In Europe, analyses of antiviral susceptibility by genetic or phenotypic methods have been reported for 15 influenza viruses during the 2008/2009 influenza season to date, 11 A(H1N1) and three A(H3N2) from the UK and one A(H1N1) from Norway. Eleven of the 12 A(H1N1) viruses were resistant to oseltamivir (10 from the UK and 1 from Norway) and one was sensitive. All A(H1N1) specimens tested were sensitive to zanamivir (4) and amantadine (2). The two A(H3N2) viruses tested against amantadine were resistant but all three A(H3N2) viruses were shown to be sensitive to oseltamivir and zanamivir. During the 2008/2009-influenza season to date, oseltamivir resistant viruses have been detected in four European countries (Austria, Ireland, Norway and the UK), as well as in Australia, Canada, Hong Kong and the USA.

Latest information on oseltamivir resistance in Europe: http://ecdc.europa.eu/en/Health_Topics/influenza/antivirals.aspx

* 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 seven specimens taken by sentinel GPs during week 51 2008, five of which tested positive for influenza A and one tested positive for influenza B. The NVRL also tested 69 non-sentinel specimens taken during week 51 2008, mainly from hospitalised paediatric cases. Five of the non-sentinel specimens were positive for influenza A and 15 were positive for respiratory syncytial virus (RSV) (table 1).

The NVRL has completed genetic characterisation for two influenza A (H3) viruses so far this season. Both have been characterised as A/Brisbane/10/2007-like virus which is included in the 2008/2009 influenza vaccine. Table 2 shows the number and percentage of sentinel specimens that tested positive for influenza, by type and subtype, for the the 2008/2009-influenza season to date.

Influenza positive specimens by HSE area and age group (in years), for week 51 2008 and the 2008/2009 season to date are shown in tables 3 and 4, 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 2007/2008 and 2008/2009 influenza seasons.

Table 1: Number of sentinel and non-sentinel[†] respiratory specimens and positive results for week 51 2008

Week Number	Specimen Type	Total Specimens	No. Influenza Positive	% Influenza Positive	Influenza A	Influenza B	RSV
51 2008	Sentinel	7	6	85.7	5	1	NA
	Non-Sentinel	69	5	7.2	5	0	15
	Total	76	11	14.5	10	1	15
40-51 2008	Sentinel	84	43	51.2	33	10	NA
	Non-Sentinel	939	11	1.2	10	1	252
	Total	1023	54	5.3	43	11	252

Table 2: Number and percentage of positive sentinel specimens by type and subtype, 2008/2009 season to date

	2008/2009 Season to date					
	Influenza (all types)	Influenza A (all subtypes)	Influenza B	Influenza A untyped	Influenza A(H1)	Influenza A(H3)
Number positive	43	33	10	10	3	20
% Positive	51.2	76.7	23.2	23.2	6.9	46.5

Table 3: Total number of sentinel and non-sentinel[†] influenza A and B positive specimens by HSE area for week 51 2008 and the 2008/2009 season to date

	Week 51 2008			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
HSE-E	4	0	4	12	1	13
HSE-M	1	0	1	6	2	8
HSE-MW	0	0	0	4	0	4
HSE-NE	2	0	2	9	0	9
HSE-NW	0	1	1	3	3	6
HSE-SE	2	0	2	3	0	3
HSE-S	0	0	0	1	0	1
HSE-W	0	0	0	0	5	5
HSE area unknown	1	0	1	5	0	5
Total	10	1	11	43	11	54

[†] 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 4: Total number of sentinel and non-sentinel† influenza A and B positive specimens by age group (in years) for week 51 2008 and the 2008/2009 season to date

	Week 51 2008			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
0-4 years	3	0	3	5	0	5
5-14 years	0	0	0	2	2	4
15-64 years	7	1	8	32	9	41
65 years and older	0	0	0	2	0	2
Age group unknown	0	0	0	2	0	2
Total	10	1	11	43	11	54

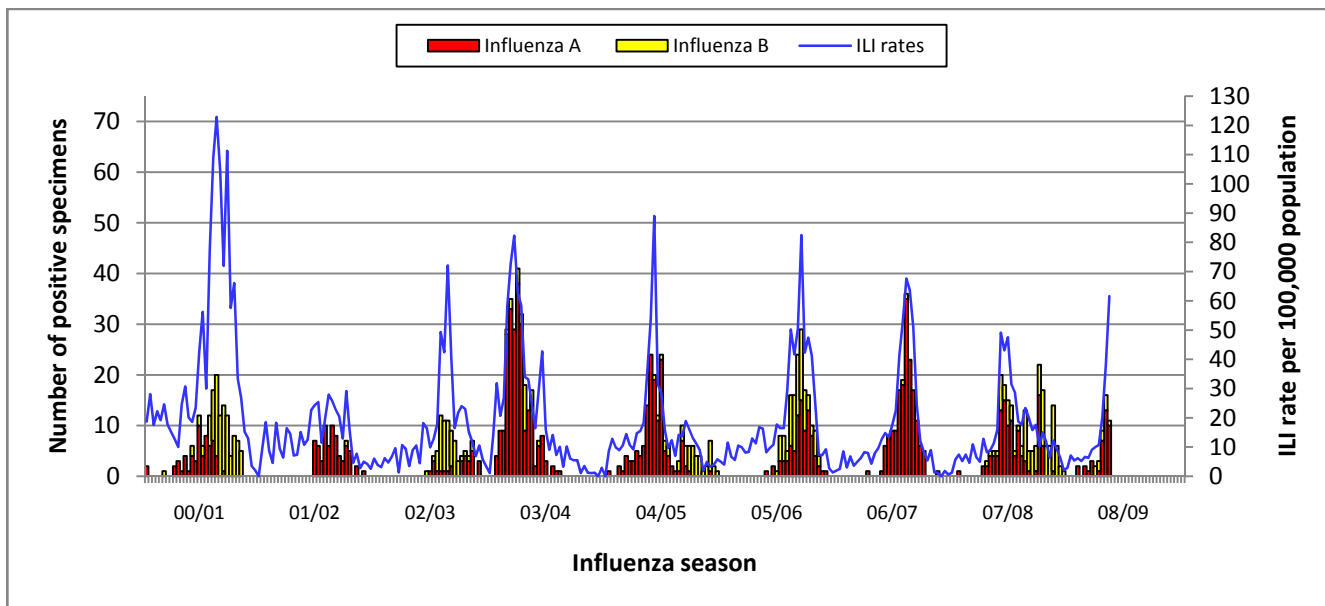


Figure 3: GP ILI consultation rate per 100,000 population and the number of positive influenza specimens detected by the NVRL by week and season, 2000/2001 - 2008/2009

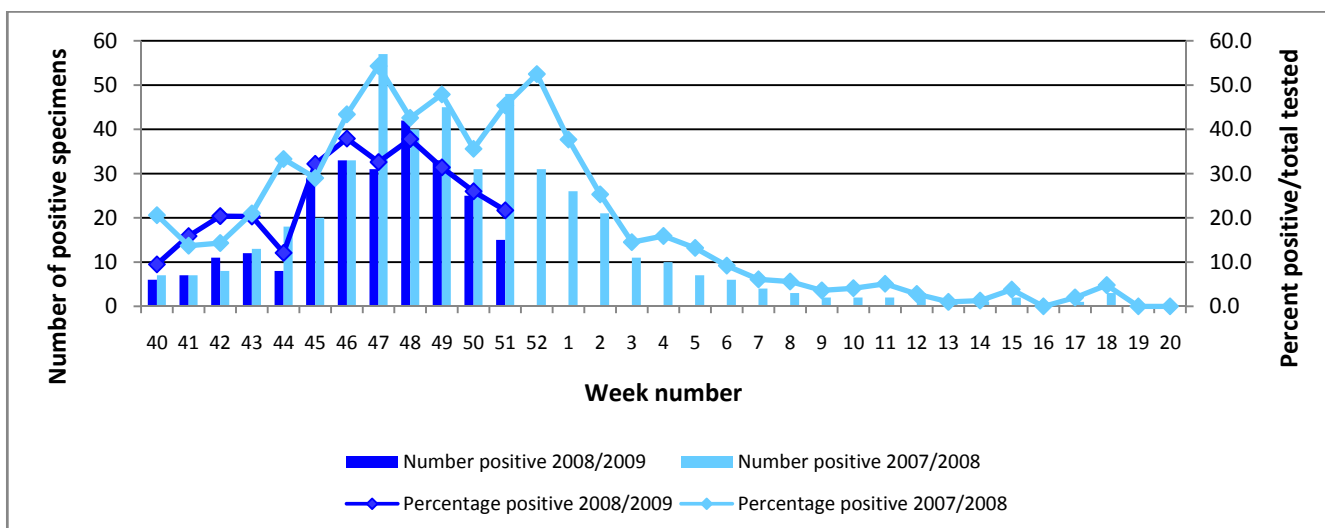


Figure 4. Number and percentage of non-sentinel RSV positive specimens detected during the 2007/2008 and 2008/2009 influenza seasons

†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

Weekly Influenza Notifications

Seventeen influenza A, two influenza B and two influenza unspecified cases were notified to HPSC during week 51 2008. Two influenza A, one influenza B and two influenza unspecified were reported from HSE-E, seven influenza A and one influenza B from HSE-M, four influenza A from HSE -NE, two influenza A from HSE NW and two influenza A from HSE-SE. It should be noted that 87 influenza (type unspecified) cases notified to HPSC during the 2008 summer season (weeks 21-39 2008) were possible cases (i.e. clinical cases with no laboratory confirmation). These were late GP notifications from HSE-E for 2007. Influenza cases notified to HPSC during the summer of 2008 and during the 2008/2009 influenza season are shown in figure 5 and compared to GP ILI consultation rates.

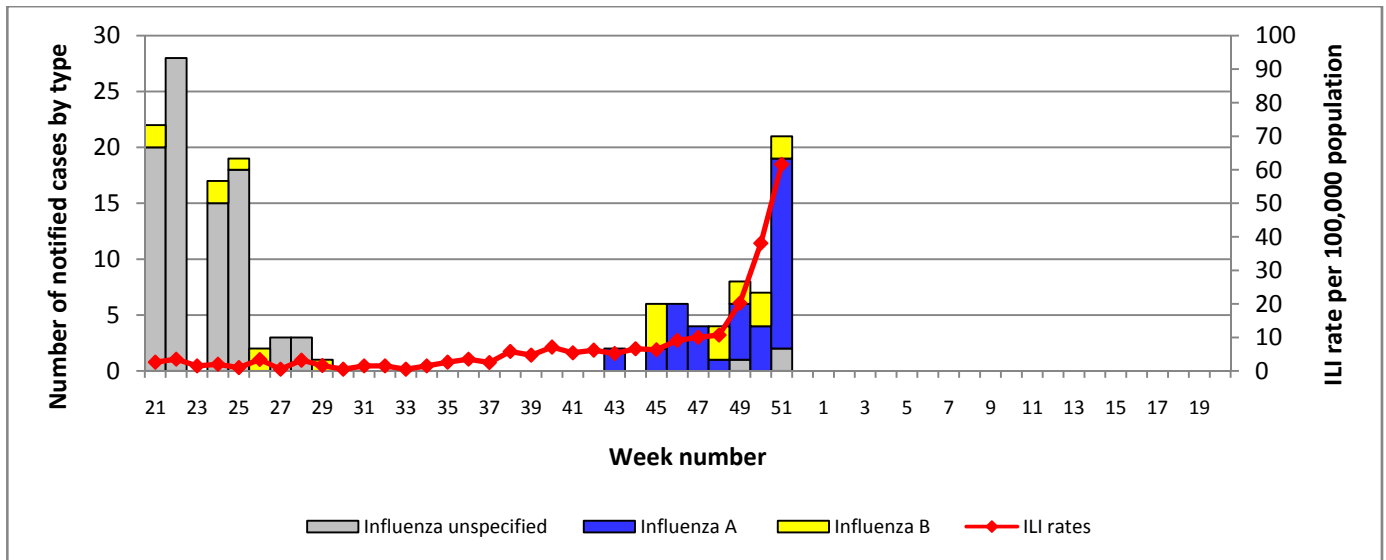


Figure 5: Number of notifications of influenza by type and week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the summer of 2008 and the 2008/2009 influenza season[‡]

Baseline thresholds

A baseline threshold of 17.8 cases per 100,000 population will be used alongside expert opinion to assess influenza activity during the 2008/2009 influenza season in Ireland. This baseline was derived from the EISS method using a mathematical algorithm to identify the influenza activity period of the previous eight seasons.

Mortality Data

No deaths attributed to influenza were registered with the General Register Office during week 51 2008.

Outbreak Reports

No ILI/influenza outbreaks were reported to HPSC during week 51 2008.

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, total emergency admissions and total 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 50 2008, increases in absenteeism were reported from sentinel schools in HSE-E, -NW and -SE while increases in respiratory admissions were reported by sentinel hospitals in HSE-E and -S. During week 50 2008 sporadic influenza activity (based on isolated cases of ILI and virological results) was reported in HSE-E, -M, -MW, -NW, -S and -W while localised influenza activity was reported by HSE-NE and -SE (figure 6).

[‡] Notification data are provisional and were extracted from [CIDR](#) on the 23/12/2008 at 14.51

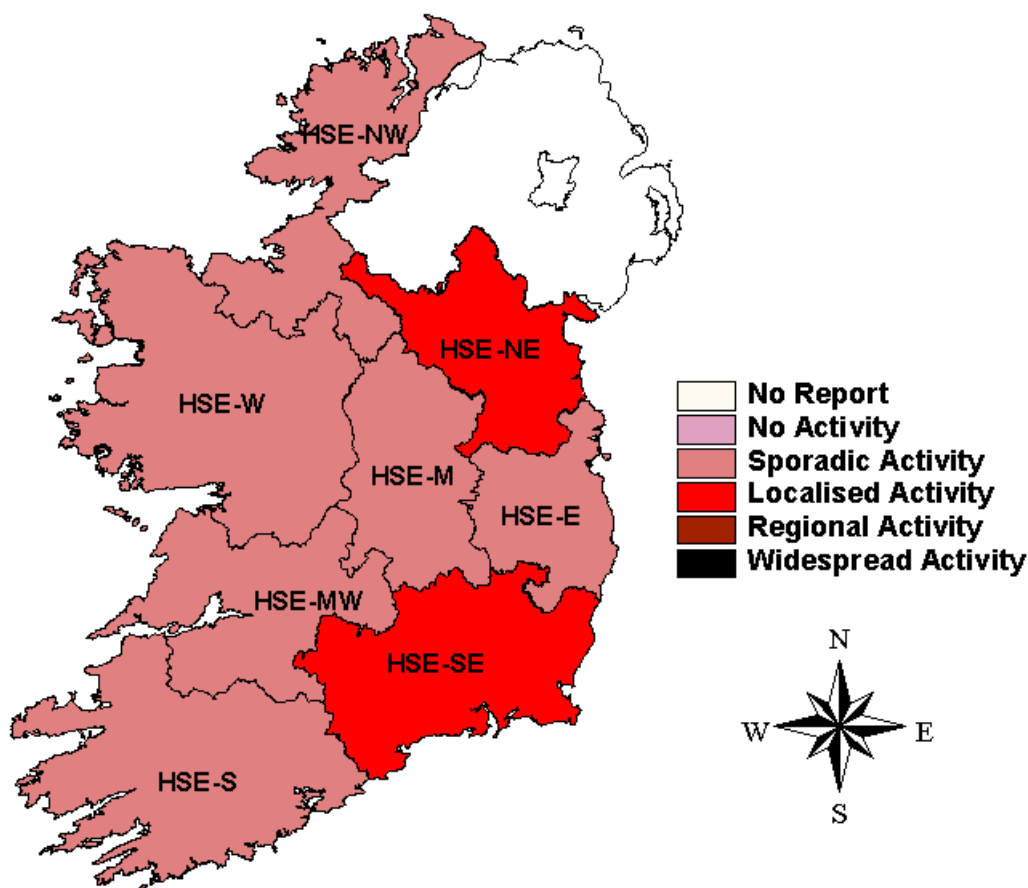


Figure 6: Map of influenza activity by HSE area during week 50 2008

Influenza Activity in Northern Ireland

During week 51 2008, 234 ILI cases and 55 clinical influenza cases were reported in Northern Ireland, corresponding to a combined rate of 196.5 per 100,000 population, a marked increase compared to the updated rate of 124.3 per 100,000 population reported during week 50 2008. During week 51 2008, 14 sentinel specimens tested positive for influenza, 12 influenza A and one influenza B. A further seven non-sentinel specimens tested positive for influenza, six influenza A and one influenza B. <http://www.cdscni.org.uk>

Influenza Activity in England, Scotland & Wales

In England, an overall ILI incidence rate of 68.5 per 100,000 population was reported during week 51 2008, an increase from the rate of 39.5 per 100,000 population reported in week 50 2008. This rate is now more than double the baseline activity threshold of 30 per 100,000 population. In Scotland, GP consultation rates for influenza were 65.0 per 100,000 population during week 51 2008, almost double the rate of 33.5 per 100,000 population reported during week 50 2008. This rate is now above Scottish baseline threshold of 50 consultations per 100,000 population. In Wales, GP consultation rates for influenza were 15.7 per 100,000 population in week 51 2008, an increase from the rate of 9.3 per 100,000 reported in week 50 2008 but well below the baseline threshold of 25 consultations per 100,000 population.

http://www.hpa.org.uk/infections/topics%5Faz/influenza/seasonal/activity0809/weekly_summary.htm

Influenza Activity in Europe

Influenza surveillance data for Europe can be accessed at the following link:

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

Influenza Activity in Canada

Influenza surveillance data for Canada can be accessed at the following link:

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

Influenza Activity in the United States

Influenza surveillance data for the United States can be accessed at the following link:

<http://www.cdc.gov/flu/weekly/fluactivity.htm>

Influenza Activity Worldwide

Global Influenza surveillance data can be accessed at the following link:

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

Avian Influenza

The Ministry of Health and Population of Egypt announced a new human case of avian influenza A(H5N1) virus infection on 16th December 2008. The case is a 16 year old female from Assuit Governorate, Upper Egypt whose symptoms began on 8th December 2008. She was initially hospitalised on 11th December and died on 15th December. Infection with the H5N1 avian influenza virus was diagnosed by PCR at the Egyptian Central Public Health Laboratory and subsequently confirmed by the US Naval Medical Research Unit No. 3 (NAMRU-3) laboratories on 15th December 2008. Investigations into the source of her infection indicate a recent history of contact with sick and dead poultry. Of the 51 cases confirmed to date in Egypt, 23 (45.1%) have been fatal.

As of the 16th December 2008, 391 confirmed human cases and 247 (63.2%) deaths from avian influenza A (H5N1) have been reported to the WHO from Azerbaijan, Bangladesh, Cambodia, China, Djibouti, Egypt, Indonesia, Iraq, Lao Peoples Democratic Republic, Myanmar, Nigeria, Pakistan, Thailand, Turkey and Viet Nam.

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://ecdc.europa.eu/en/>

Northern Hemisphere Influenza Vaccine for the 2008/2009 Season

The members of the WHO Collaborating Centres on Influenza have recommended that influenza vaccines for the 2008/2009 influenza season in the Northern Hemisphere contain the following strains:

- an A/Brisbane/59/2007 (H1N1)-like virus;
- an A/Brisbane/10/2007 (H3N2)-like virus;*
- a B/Florida/4/2006-like virus.#

* A/Brisbane/10/2007 is a current southern hemisphere vaccine virus.

B/Florida/4/2006 and B/Brisbane/3/2007 (a B/Florida/4/2006-like virus) are current southern hemisphere vaccine viruses. http://www.who.int/csr/disease/influenza/recommendations2008_9north/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 and Dr. Paul McKeown, HPSC