

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 27 2009 (29th June-5th July 2009)

Summary

During week 27 2009, seasonal influenza activity remained stable in Ireland. Influenza-like illness (ILI) consultation rates remained at low levels and are well below baseline thresholds. Forty-nine non-sentinel specimens tested positive by the NVRL for influenza during week 27 2009: 48 tested positive for A(H1N1) (39 cases) and one specimen tested positive for A(H3). See the link to the separate report on Influenza A(H1N1) infection for Week 27 2009 on page 2.

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. Sixty 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 five patients 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

Sentinel GPs reported three ILI cases during week 27 2009. This corresponds to an ILI consultation rate of 1.7 per 100,000 population, which is a slight increase in comparison to the updated rate of 1.6 per 100,000 population reported during week 26 2009 (figure 1). This rate is well below the baseline threshold of 17.8 per 100,000 population. Forty of 60 (66.6%) sentinel general practices reported during week 27 2009, with two practices reporting the three ILI cases.

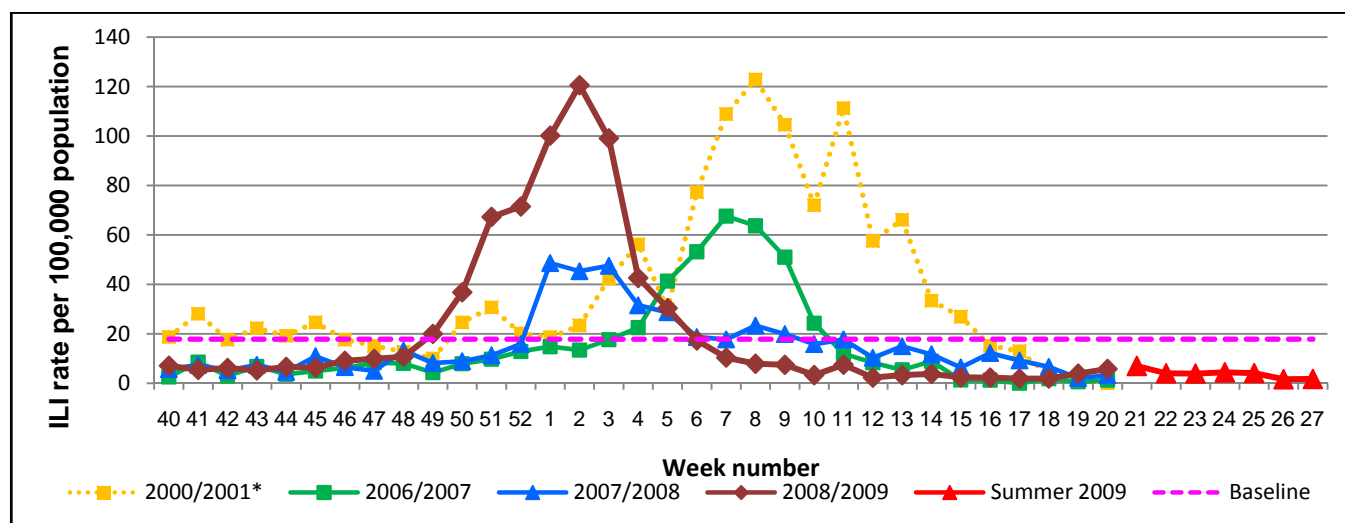


Figure 1: Influenza baseline activity threshold and GP consultation rate for ILI per 100,000 population by week, during the 2000/2001*, 2006/2007, 2007/2008, 2008/2009 and Summer 2009 influenza seasons

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

Results (continued)

During week 27 2009, one ILI case was reported in the 0-4 year age group (8.1 per 100,000 population), one case in the 5-14 year age group (4.4 per 100,000 population) and one case in the 15-64 years and older age group (0.8 per 100,000 population). No ILI cases were reported in the 65+ year age group as shown in figure 2.

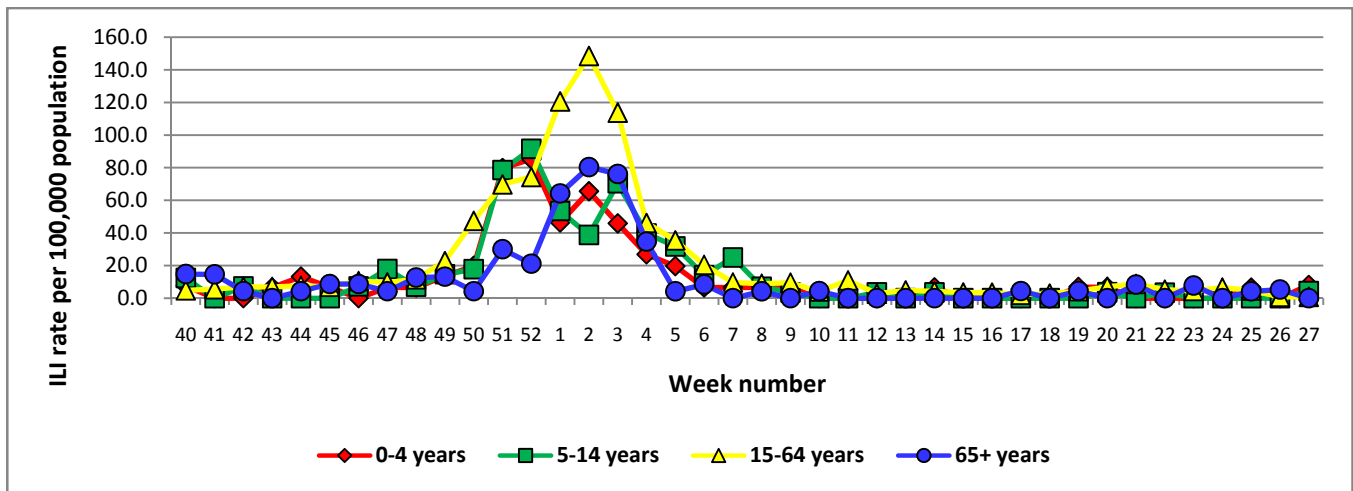


Figure 2: Age specific GP consultation rate for ILI per 100,000 population by week during the 2008/2009 and Summer 2009 influenza seasons

Influenza A(H1N1) infection

Please see separate report by HPSC on Influenza A(H1N1) infection for Week 27 2009, available at: <http://www.hpsc.ie/hpsc/A-Z/EmergencyPlanning/AvianPandemicInfluenza/SwineInfluenza/Surveillance%20Reports/>

Oseltamivir Resistance in Europe

During the 2008/2009 influenza season, the NVRL has conducted nucleotide sequencing on 10 influenza A(H1) specimens taken by sentinel GPs in Ireland, nine (90%) of which were resistant to oseltamivir and one was sensitive. 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. The latest set of figures were published on the ECDC website on the 12th June 2009. In Europe, all influenza A(H3N2) viruses tested were sensitive to oseltamivir (n=653) and zanamivir (n=612), whereas 100% of the 644 A(H3N2) viruses tested were resistant to M2 inhibitors. Of the influenza A(H1N1) viruses analysed, 100% were sensitive to zanamivir (n=259) and 99.2% were sensitive to M2 inhibitors (n=124) but 98% were resistant to oseltamivir (n=255). Of the influenza A(H1N1)v viruses analysed, 100% were sensitive to both zanamivir and oseltamivir (n=26) and 100% were sensitive to M2 inhibitors (n=28). One hundred and seventeen influenza B isolates were analysed and all were sensitive to oseltamivir and 113 influenza B isolates were all sensitive to zanamivir.

Latest information on oseltamivir resistance in Europe:

http://ecdc.europa.eu/en/Health_topics/Seasonal%20Influenza/Epidemiological_updates.aspx
http://ecdc.europa.eu/en/Health_Topics/influenza/antivirals.aspx

In the UK, since week 40 2008 all of the 237 influenza A(H3) isolates that have been tested for drug sensitivity have been found to be sensitive to oseltamivir and zanamivir, but resistant to amantadine. Eighty-six influenza A(H1) specimens have been tested for anti-viral drug resistance, 85 (98.8%) of these were resistant to oseltamivir and all were sensitive to zanamivir and amantadine. Fifty-five influenza B specimens have been tested and all were sensitive to oseltamivir and zanamivir.

Latest information on oseltamivir resistance in the UK:

<http://www.hpa.org.uk/web/HPAweb&Page&HPAwebAutoListName/Page/1191942171468>

Virological Data from the NVRL

One sentinel specimen was tested by the NVRL during week 27 2009, which was not positive for influenza. The NVRL tested 270 non-sentinel specimens taken during week 27 2009. Source details were available on only a subset of these non-sentinel specimens in week 27, but of these most were from GP clinics. Forty-nine non-sentinel specimens tested positive: 48 tested positive for A(H1N1) (39 cases) and one specimen tested positive for influenza A(H3). No specimens tested positive for respiratory syncytial virus (RSV) during week 27 2009 (table 1).

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 shows the number and percentage of sentinel specimens that tested positive for influenza, by type and subtype, for the Summer 2009 influenza season to date. Influenza positive specimens by HSE area and age group (in years), for week 27 2009 and the Summer 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 and the respective Summer 2008 and 2009 seasons.

Table 1: Number of sentinel and non-sentinel* respiratory specimens and positive results for week 27 2009 and Summer 2009 season to date

Week Number	Specimen Type	Total Specimens	No. Influenza Positive	% Influenza Positive	Influenza A	Influenza B	RSV	% RSV Positive
27 2009	Sentinel	1	0	0.0	0	0	NA	NA
	Non-Sentinel	270	49	18.1	49	0	0	0
	Total	271	49	18.1	49	0	0	0
Summer 2009 season to date	Sentinel	31	0	0	0	0	NA	NA
	Non-Sentinel	991	122	12.3	122	0	7	0.7
	Total	1022	122	11.9	122	0	7	0.7

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

Summer 2009 season to date [†]					
Influenza (all types)	Influenza A (all subtypes)	Influenza B	Influenza A Unsubtyped	Influenza A(H1)	Influenza A(H3)
	(n=0)		(n=0)		
Number positive	0	0	0	0	0
% Positive	0.0	0.0	0.0	0.0	0.0

Table 3: Total number of sentinel and non-sentinel[†] influenza A and B positive specimens by HSE area for week 27 2009 and the Summer 2009 season to date

	Week 27 2009			Summer 2009 season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
HSE-ER	14	0	14	38	0	38
HSE-M	0	0	0	2	0	2
HSE-MW	1	0	1	8	0	8
HSE-NE	9	0	9	13	0	13
HSE-NW	3	0	3	6	0	6
HSE-SE	10	0	10	23	0	23
HSE-S	3	0	3	12	0	12
HSE-W	9	0	9	17	0	17
HSE area unknown	0	0	0	3	0	3
Total	49	0	49	122	0	122

* 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

[†] Number of sentinel specimens tested = 31

Table 4: Total number of sentinel and non-sentinel† influenza A and B positive specimens by age group (in years) for week 27 2009 and the Summer 2009 season to date

	Week 27 2009			Summer 2009 season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
0-4 years	4	0	4	8	0	8
5-14 years	5	0	5	11	0	11
15-64 years	36	0	36	90	0	90
65 years and older	1	0	1	4	0	4
Age group unknown	3	0	3	9	0	9
Total	49	0	49	122	0	122

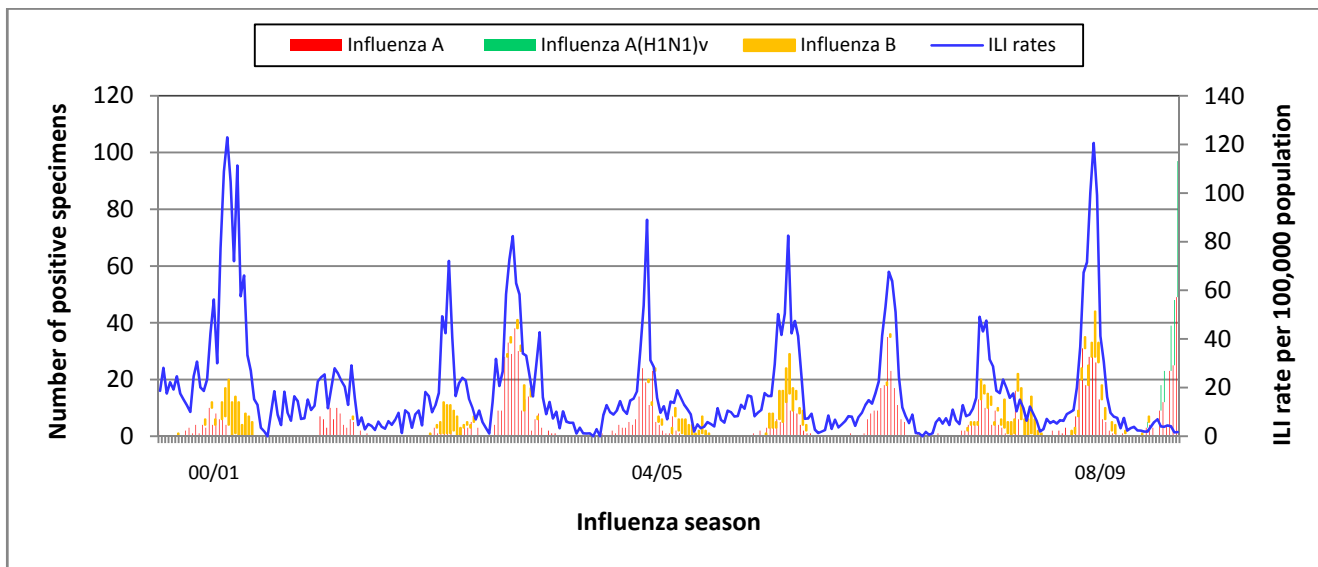


Figure 3: GP ILI consultation rate per 100,000 population and the number of positive influenza specimens detected by the NVRL by week and season, 2000/2001 - 2008/2009, including Summer 2009

†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

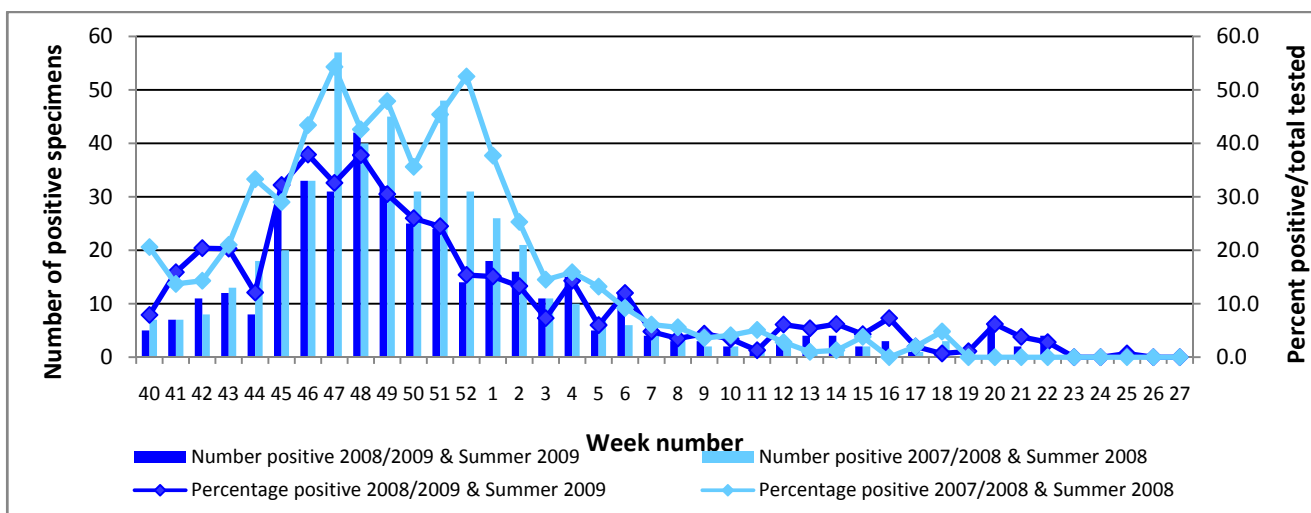


Figure 4. Number and percentage of non-sentinel RSV positive specimens detected during the 2007/2008 and 2008/2009 influenza seasons (data points from week number 21 onwards represent the summer seasons for 2008 and 2009)

Weekly Influenza Notifications

During week 27 2009 (week 26 2009 of epidemiological calendar), 37 influenza A(H1N1) cases (13 in HSE-NE, 10 in HSE-E, 6 in HSE-SE, 5 in HSE-Wm 2 in HSE-MW and 1 in HSE-S) and three influenza A cases and one influenza B case (in HSE-E) were notified to HPSC. Influenza cases, including those with influenza A(H1N1), notified to HPSC during the 2008/2009 and Summer 2009 influenza seasons are shown in figure 5 and compared to GP ILI consultation rates.

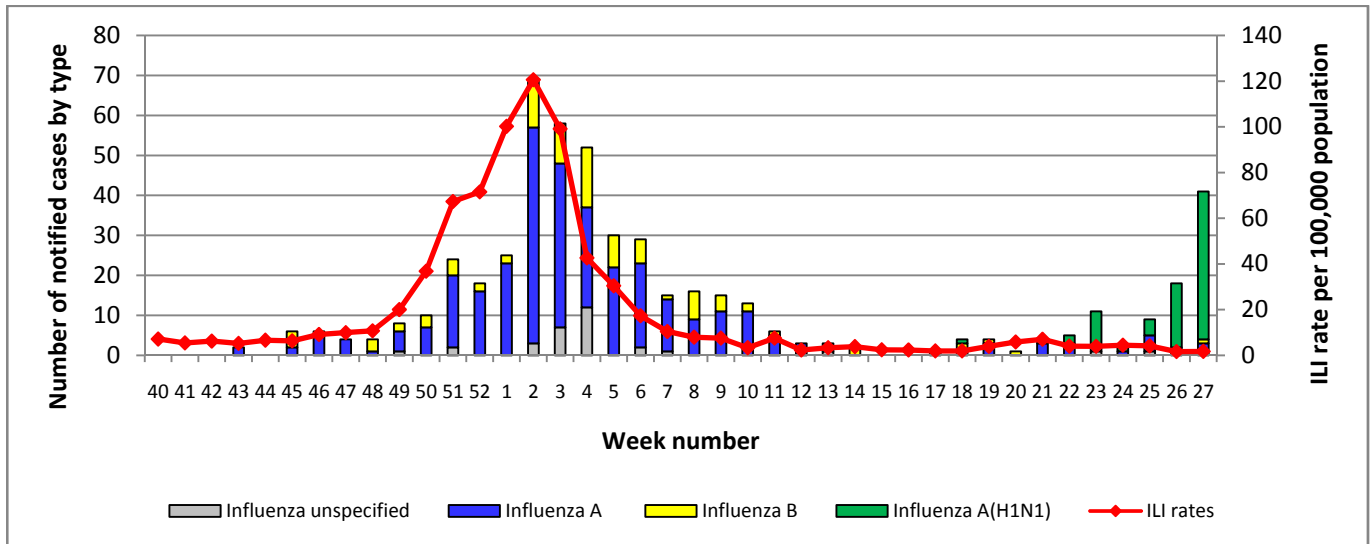


Figure 5: Number of notifications of influenza by type and week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the 2008/2009 and the summer 2009 influenza seasons[‡]

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 and Summer 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 reported to HPSC by the General Register Office during week 27 2009.

Outbreak Reports

No seasonal influenza/ILI outbreaks were reported to HPSC during week 27 2009. During the 2008/2009 season and the Summer 2009 influenza season to date, six seasonal influenza/ILI outbreaks have been reported to HPSC.

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 at least 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 influenza week 26 2009, no increases in respiratory admissions were reported by sentinel hospitals. No data on absenteeism were received from sentinel schools still open (i.e. primary schools). No activity was reported by HSE-M, -MW and -S while sporadic influenza activity (based on isolated cases of ILI and/or virological results) was reported by HSE-E, -NE, -NW, -SE and -W during week 26 2009 (figure 6).

[‡] Notification data are provisional and were extracted from [CIDR](#) on the 07/07/2009 at 14.50

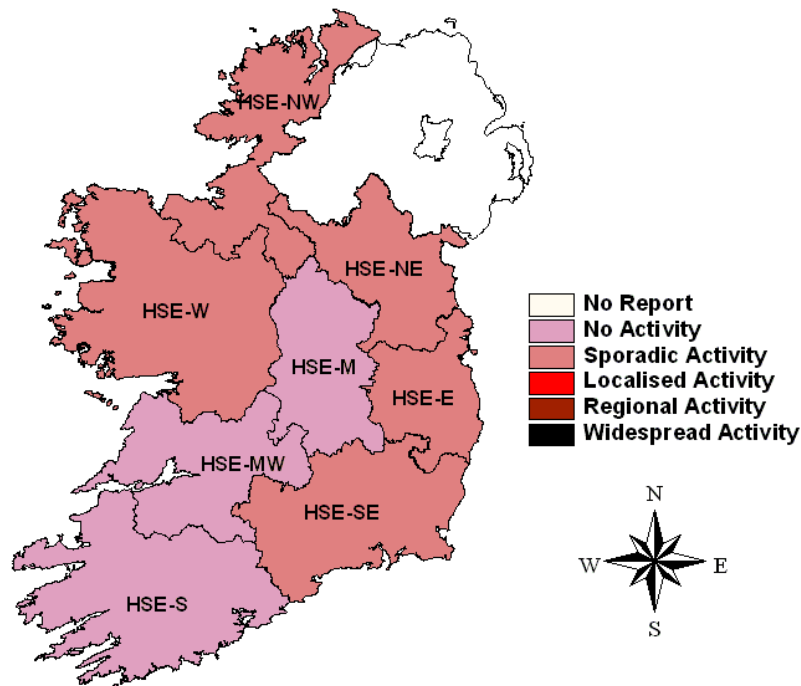


Figure 6: Map of influenza activity by HSE area during week 26 2009

Influenza Activity in Northern Ireland

During week 27 2009, 37 ILI cases were reported in Northern Ireland, corresponding to a combined rate of 25.5 per 100,000 population, an increase compared to the updated rate of 20.5 per 100,000 population reported during week 26 2009. During week 27 2009, 16 specimens tested positive for influenza A(H1N1) and one tested positive for seasonal influenza A. For more details see: <http://www.cdscni.org.uk/>

Influenza Activity in England, Scotland & Wales

In week 26 influenza like illness rates increased in England and Northern Ireland and decreased in Scotland and Wales. The threshold levels in England and Wales is 30 consultations per 100,000 population and in Scotland it is 50 consultations per 100,000 population. In week 26 influenza like illness rates in England was at the threshold level: England and Wales, 29.6 per 100,000 population (compared to 11.2 per 100,000 population in week 25); and Scotland, 27 per 100,000 population (compared to 32 per 100,000 population for week 25). The QSurveillance@UK rate was 17.4 per 100,000 population in week 26 compared to 8.9 per 100,000 population in week 25. Please note that the GP consultation rates for England and Wales, Scotland and QSurveillance@ are for ILI, while for Northern Ireland it is a combined ILI and influenza rate, which in part explains the higher rates observed in Northern Ireland. The Centre for Infections' Respiratory Virus Unit (RVU) reported 75 positive specimens for week 26 [72 A(H1N1v) and 3 A(H3)].

Seasonal influenza surveillance data for the UK can be accessed at the following link:

<http://www.hpa.org.uk/servlet/Satellite?c=Page&childpagename=HPAweb%2FPage%2FHPAwebAutoListName&cid=1153999752025&p=1153999752025&pagename=HPAwebWrapper&searchmode=simple&searchterm=National+Influenza+Report>

Influenza A(H1N1) surveillance data for the UK can be accessed at the following link:

<http://www.hpa.org.uk/webw/HPAweb&Page&HPAwebAutoListName/Page/1240732817665?p=1240732817665>

Influenza Activity in Europe

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

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

Influenza A(H1N1) surveillance data for Europe can be accessed at the following link:

<http://ecdc.europa.eu/>

Influenza Activity in Canada

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

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

Influenza A(H1N1) surveillance data for Canada can be accessed at the following link:

http://www.phac-aspc.gc.ca/alert-alerte/swine_200904-eng.php?utm_source=phac-goc-departments-eng&utm_medium=banner&utm_content=swineflu-landing-page&utm_campaign=swineflu

Influenza Activity in the United States

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

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

Influenza A(H1N1) surveillance data for the United States can be accessed at the following link:

<http://www.cdc.gov/h1n1flu/>

Influenza Activity Worldwide

Global seasonal influenza surveillance data can be accessed at the following link:

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

Global influenza A(H1N1) surveillance data can be accessed at the following link:

<http://www.who.int/en/>

Avian Influenza

No further reports of avian influenza activity on the WHO website (latest information: 1st July 2009).

As of 1st July 2009, 436 confirmed human cases and 262 (60.1%) 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.

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 2009/2010 Season

For the 2009/2010 influenza season in the Northern Hemisphere, the members of the WHO Collaborating Centres on Influenza have recommended that influenza vaccines for the contain the following strains:

- an A/Brisbane/59/2007 (H1N1)-like virus^{**}
- an A/Brisbane/10/2007 (H3N2)-like virus^{††}
- a B/Brisbane/60/2008-like virus^{‡‡}

^{**}A/Brisbane/59/2007 is a current vaccine virus; A/South Dakota/6/2007 (an A/Brisbane/59/2007-like virus) is a current vaccine virus used in live attenuated vaccines.

^{††}A/Brisbane/10/2007 and A/Uruguay/716/2007 (an A/Brisbane/10/2007-like virus) are current vaccine viruses.

^{‡‡}B/Brisbane/33/2008 is a B/Brisbane/60/2008-like virus.

http://www.who.int/csr/disease/influenza/recommendations2009_10north/en/index.html.

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

Acknowledgements

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This report was produced by Piaras O’Lorcain, Sarah Jackson and Dr. Joan O’Donnell HPSC