

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

Influenza Week 28 2009 (6th July-12th July 2009)

Summary

During *influenza week 28 2009*, influenza-like illness (ILI) consultation rates remained below baseline thresholds levels (17.8/100,000): 9.4 per 100,000 population.

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

Forty-eight of 60 (80%) sentinel general practices reported during *influenza week 28 2009*, with 12 practices reporting the 19 ILI cases. This corresponds to an ILI consultation rate of 9.4 per 100,000 population, which is an increase in comparison to the updated rate of 1.9 per 100,000 population reported during *influenza week 27 2009* (figure 1). This rate is below the baseline threshold of 17.8 per 100,000 population.

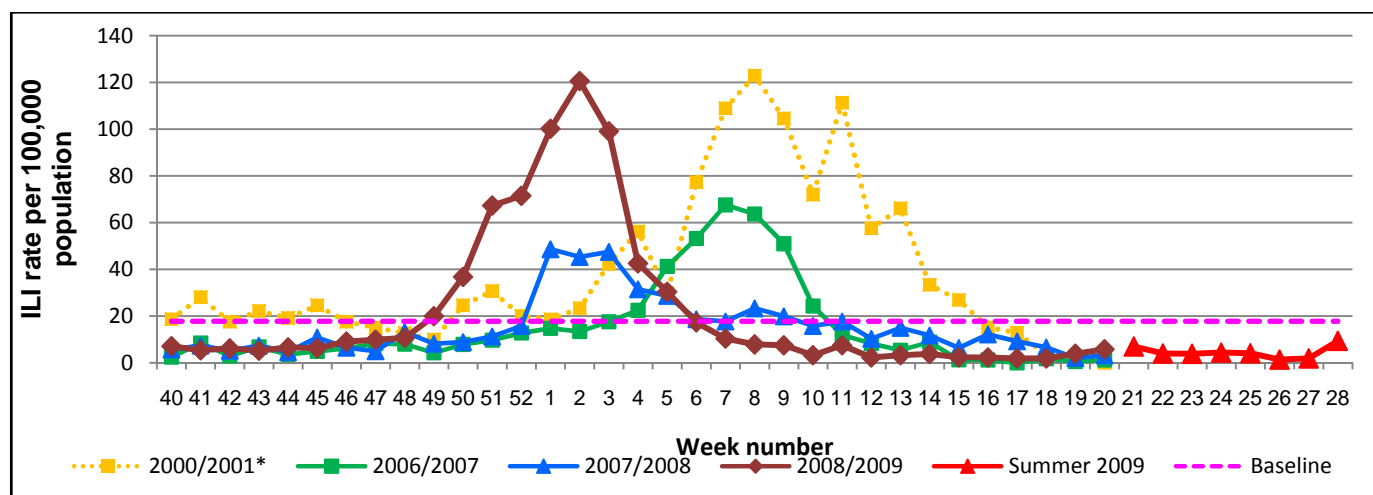


Figure 1: Influenza baseline activity threshold and GP consultation rate for ILI per 100,000 population by week, during the 2000/2001*, 2006/2007, 2007/2008, 2008/2009 and Summer 2009 influenza seasons

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

Results (continued)

During *influenza week 28* 2009, three ILI cases were reported in the 5-14 year age group (11.2 per 100,000 population), 14 cases in the 15-64 year age group (10.1 per 100,000 population) and two cases in the 65+ years and older age group (9.0 per 100,000 population). No ILI cases were reported in the 0-4 year age group as shown in figure 2.

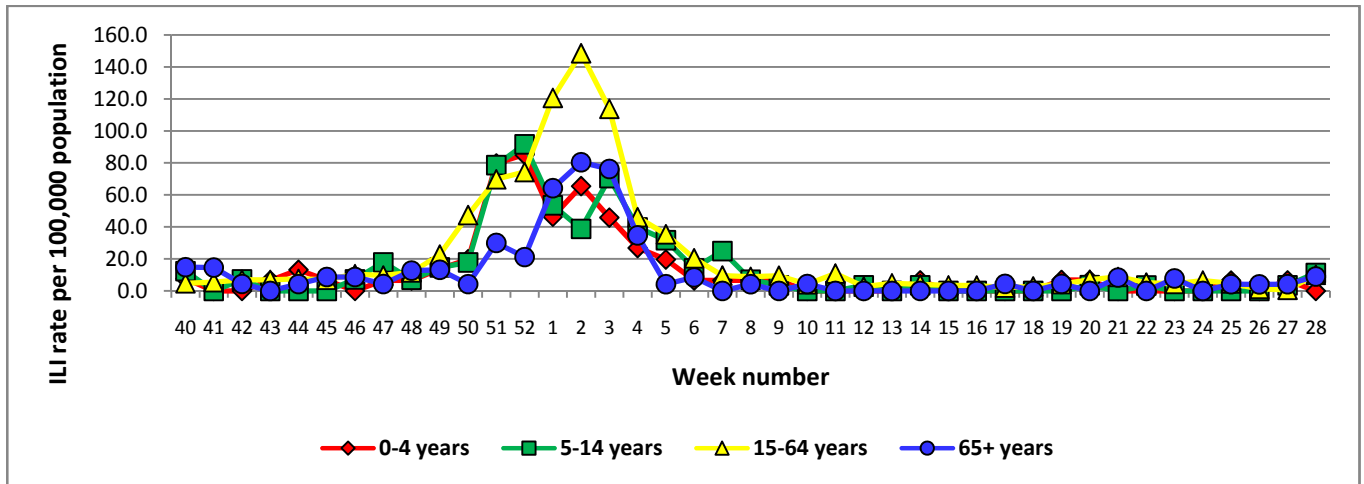


Figure 2: Age specific GP consultation rate for ILI per 100,000 population by week during the 2008/2009 and Summer 2009 influenza seasons

Influenza A(H1N1)v infection

Please see separate report by HPSC on Influenza A(H1N1)v infection for *epidemiological 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 *influenza 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

Five sentinel specimens were tested by the NVRL during *influenza week 28 2009*, none of which were positive for influenza. The NVRL tested 239 non-sentinel specimens taken during *influenza week 28 2009*. Source details were available on only a subset of these non-sentinel specimens, but of these most were from GP clinics. Forty-four non-sentinel specimens tested positive for A(H1N1)v (41 cases). One specimen tested positive for respiratory syncytial virus (RSV) during *influenza week 28 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 *influenza week 28 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 *influenza week 28 2009* and Summer 2009 season to date

Influenza week Number	Specimen Type	Total Specimens	No. Influenza Positive	% Influenza Positive	Influenza A	Influenza B	RSV	% RSV Positive
28 2009	Sentinel	5	0	0.0	0	0	NA	NA
	Non-Sentinel	239	44	18.4	44	0	1	0.4
	Total	244	44	18.0	44	0	1	0.4
Summer 2009 season to date	Sentinel	36	0	0	0	0	NA	NA
	Non-Sentinel	1243	168	13.5	167	1	8	0.6
	Total	1279	168	13.1	167	1	8	0.6

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 *influenza week 28 2009* and the Summer 2009 season to date

	Influenza week 28 2009			Summer 2009 season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
HSE-ER	29	0	29	67	1	68
HSE-M	1	0	1	3	0	3
HSE-MW	1	0	1	10	0	10
HSE-NE	3	0	3	16	0	16
HSE-NW	0	0	0	6	0	6
HSE-SE	2	0	2	25	0	25
HSE-S	4	0	4	16	0	16
HSE-W	4	0	4	21	0	21
HSE area unknown	0	0	0	3	0	3
Total	44	0	44	167	1	168

* 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 = 36

Table 4: Total number of sentinel and non-sentinel† influenza A and B positive specimens by age group (in years) for influenza week 28 2009 and the Summer 2009 season to date

	Influenza week 28 2009			Summer 2009 season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
0-4 years	6	0	6	14	0	14
5-14 years	2	0	2	13	0	13
15-64 years	33	0	33	124	1	125
65 years and older	1	0	1	5	0	5
Age group unknown	2	0	2	11	0	11
Total	44	0	44	167	1	168

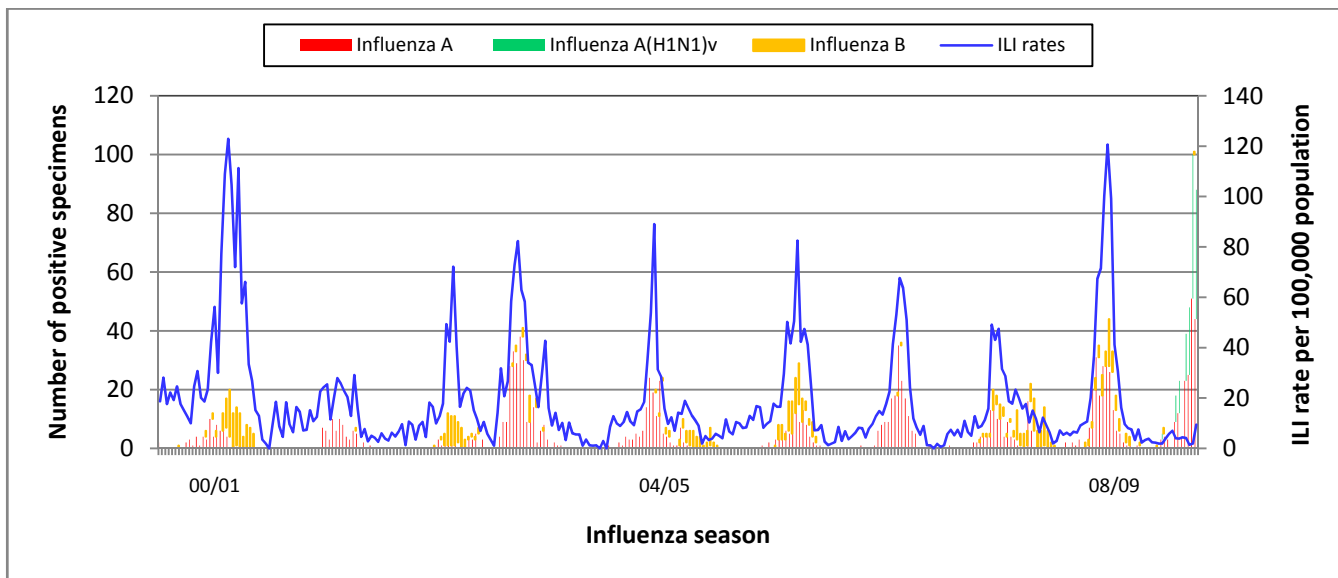


Figure 3: GP ILI consultation rate per 100,000 population and the number of positive influenza specimens detected by the NVRL by influenza week and season, 2000/2001 - 2008/2009, including Summer 2009

†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

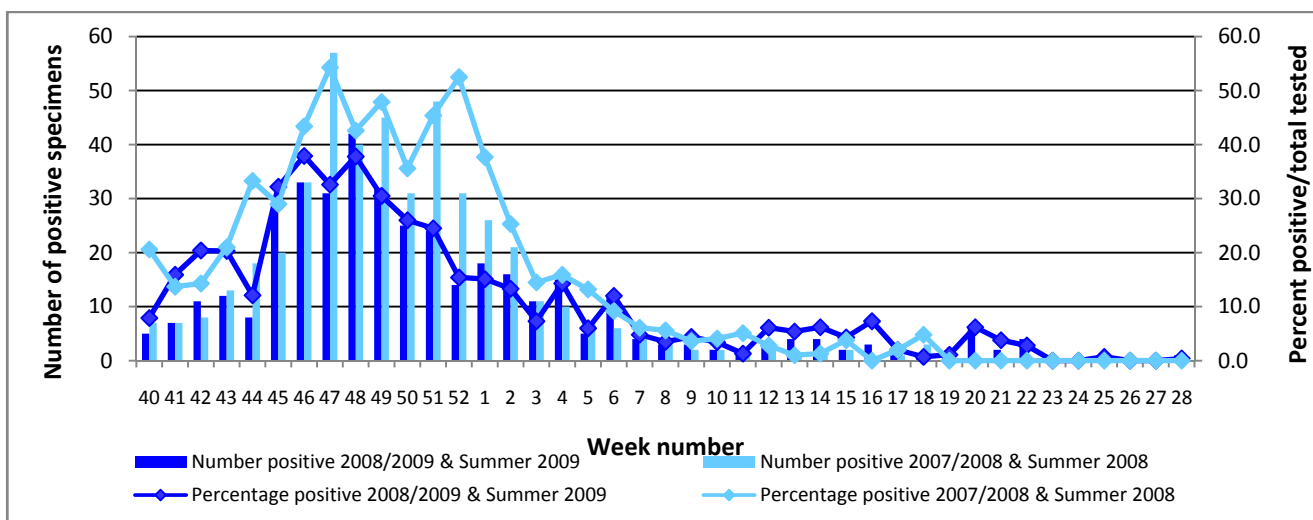


Figure 4. Number and percentage of non-sentinel RSV positive specimens detected during the 2007/2008 and 2008/2009 influenza seasons (data points from influenza week number 21 onwards represent the summer seasons for 2008 and 2009)

Weekly Influenza Notifications

During *influenza week 28 2009* (week 27 2009 of epidemiological calendar), 51 influenza A(H1N1)v cases (23 in HSE-E, 7 each in HSE-S and -W, 5 each in HSE-NE and -SE and 4 in HSE-MW), one influenza B case and one influenza unspecified case (both in HSE-E) were notified to HPSC. Influenza cases, including those with influenza A(H1N1)v, notified to HPSC during the 2008/2009 and Summer 2009 influenza seasons are shown in figure 5 and compared to GP ILI consultation rates.

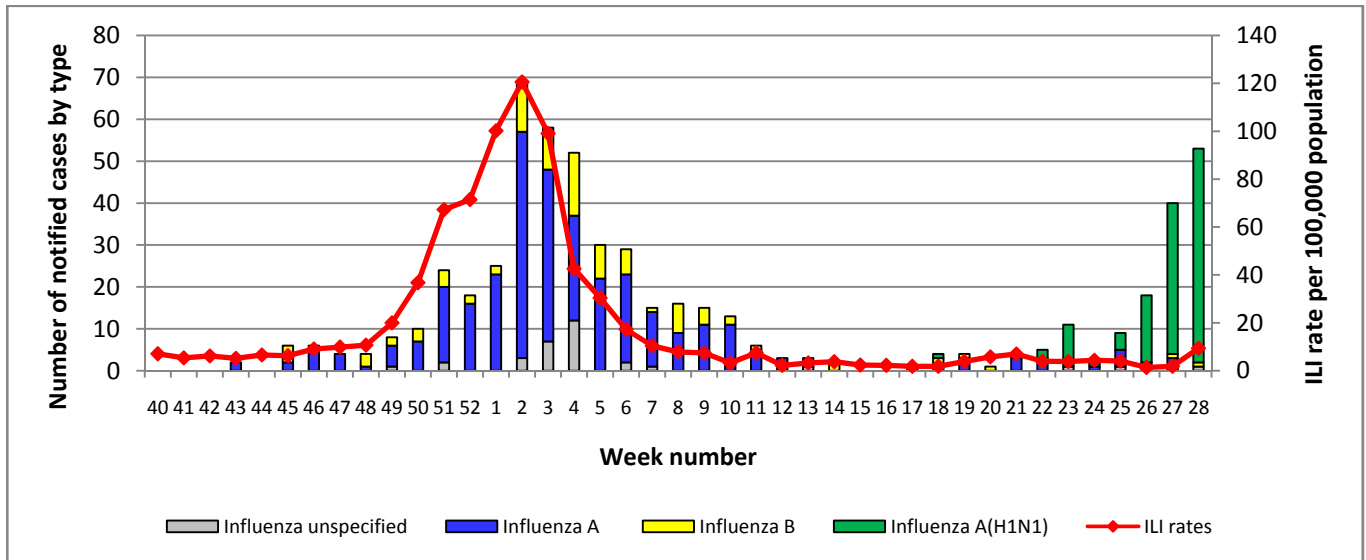


Figure 5: Number of notifications of influenza by type and week of notification compared to sentinel GP ILI consultation rates per 100,000 population during the 2008/2009 and the Summer 2009 influenza seasons[‡]

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 *influenza week 28 2009*.

Outbreak Reports

No seasonal influenza/ILI outbreaks were reported to HPSC during *influenza week 28 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 27 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 while sporadic influenza activity (based on isolated cases of ILI and/or virological results) was reported by HSE-E, -HSE-MW, -NE, -NW, -S, -SE and -W during *influenza week 27 2009* (figure 6).

[‡] Notification data are provisional and were extracted from [CIDR](#) on the 15/07/2009 at 12.15

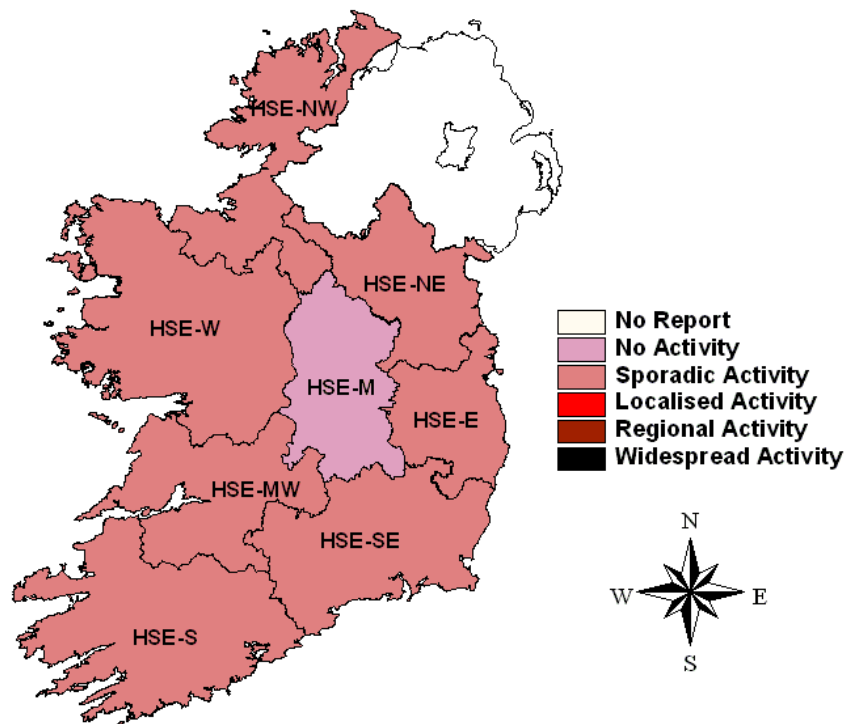


Figure 6: Map of influenza activity by HSE area during *influenza week 27 2009*

Influenza Activity in Northern Ireland

During *influenza week 28 2009*, 30 ILI cases were reported in Northern Ireland, corresponding to a combined rate of 34.9 per 100,000 population, an increase compared to the updated rate of 25.4 per 100,000 population reported during *influenza week 27 2009*. During *influenza week 28 2009*, four specimens tested positive for influenza A(H1N1)v and one tested positive for influenza A(H3). For more details see: <http://www.cdscni.org.uk/>

Influenza Activity in England, Scotland & Wales

In *influenza week 27* GP consultation rates for influenza and influenza-like illness increased in England, Wales and Northern Ireland, but decreased in Scotland. The threshold level in England and Wales is 30 consultations per 100,000 population and in Scotland it is 50 consultations per 100,000 population. The rate for England is now above the baseline threshold for normal seasonal flu activity, while in Scotland and Wales rates remain below baseline levels and in Northern Ireland rates remain relatively low compared to winter levels: England and Wales, 51.9 per 100,000 population (compared to 29.6 per 100,000 population in *influenza week 26*); and Scotland, 15 per 100,000 population (compared to 27 per 100,000 population for *influenza week 26*). The QSurveillance® UK rate was 30.4 per 100,000 population in *influenza week 27* compared to 17.4 per 100,000 population in *influenza week 26*. 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 where thresholds have not been set. The Centre for Infections' Respiratory Virus Unit (RVU) reported 8 positive specimens for *influenza week 27* [6 A(H1N1)v and 2 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)v 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.cgiUU>

Influenza A(H1N1)v 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)v 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)v 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://gamapserver.who.int/GlobalAtlas/home.asp>

Global influenza A(H1N1)v 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

HPSC, ICGP and NVRL wish to thank the sentinel GPs who have participated in the GP sentinel surveillance system and who have contributed towards this report

This report was produced by Piaras O’Lorcain and Dr. Aidan O’Hora HPSC