

# 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 2 2009 (5<sup>th</sup> to 11<sup>th</sup> January 2009)

## Summary

During week 2 2009, influenza activity continued to increase in Ireland. Influenza-like illness (ILI) consultation rates continued to increase and are at higher levels than normally observed at this time of year. Thirty-three specimens tested by the NVRL were positive for influenza during week 2 2009. 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

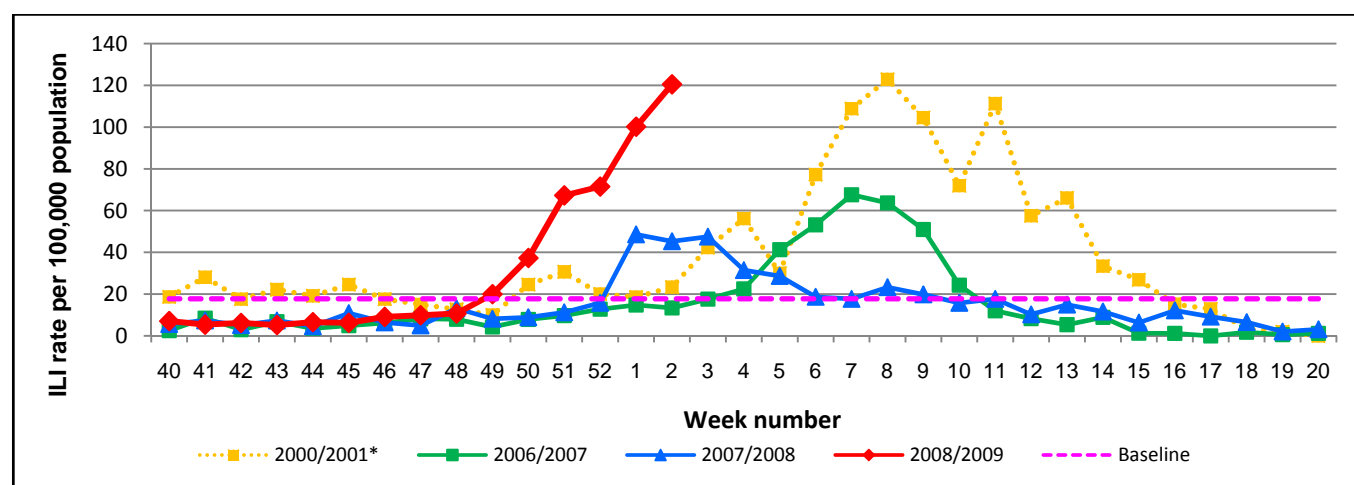
This is the ninth season of influenza surveillance using computerised sentinel general practices in Ireland. The Health Protection Surveillance Centre (HPSC) is working in collaboration with the Irish College of General Practitioners (ICGP), the National Virus Reference Laboratory (NVRL) and the Departments 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

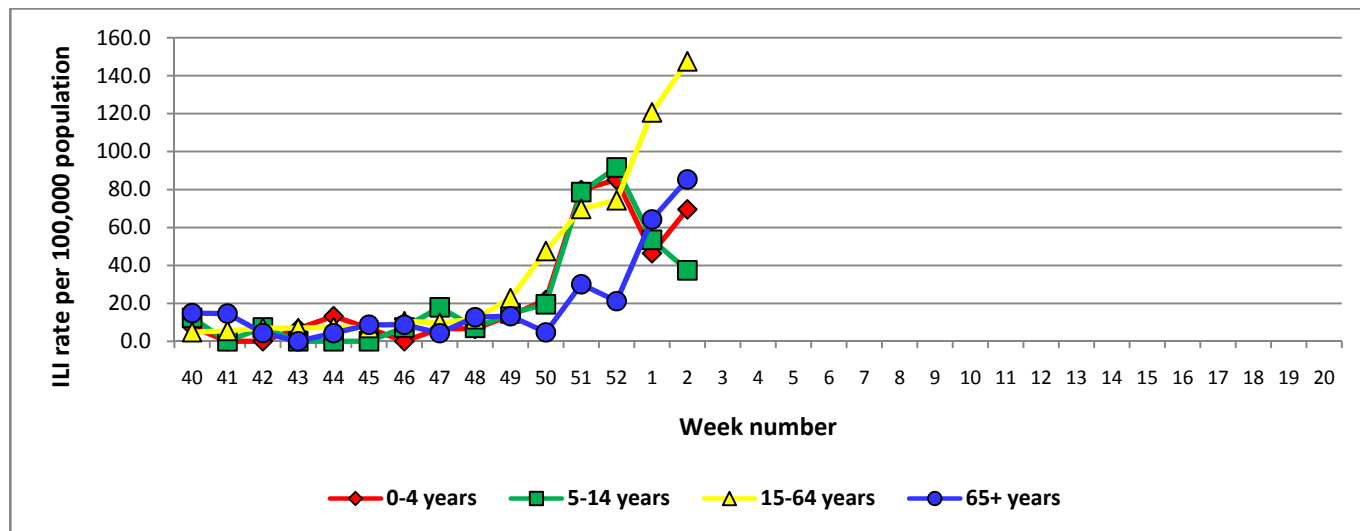
Sentinel GPs reported 243 ILI cases during week 2 2009, corresponding to an ILI consultation rate of 120.5 per 100,000 population, an increase from the updated rate of 100.2 per 100,000 population reported during week 1 2009 (figure 1). This ILI rate is significantly higher than the baseline threshold of 17.8 per 100,000 population. Fifty-two of 54 (96.3%) sentinel general practices reported during week 2 2009, with 43 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)

During week 2 2009, 10 ILI cases were reported in the 0-4 year age group (69.6 per 100,000 population), 10 ILI cases were reported in the 5-14 year age group (37.4 per 100,000 population), 204 ILI cases were reported in the 15-64 year age group (147.6 per 100,000 population) and 19 ILI cases were reported in those aged 65 years or older (85.4 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. <http://www.ndsc.ie/hpsc/A-Z/Respiratory/Influenza/SeasonalInfluenza/Guidance/NICEguidanceontheuseofantiviraldrugs/>

### **Oseltamivir Resistance in Europe**

During the 2008/2009 influenza season, the NVRL has conducted nucleotide sequencing on two influenza A(H1N1) 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, forty-two A(H3N2) viruses have been tested for antiviral susceptibility so far this season. All those tested were sensitive to neuraminidase inhibitors (42 for oseltamivir, 40 for zanamivir) and resistant to the M2 inhibitor amantadine (40). Of the 29 A(H1N1) viruses tested, all were sensitive to zanamivir and 28 were resistant to oseltamivir, whilst all of the 19 tested against amantadine were sensitive. Both B viruses tested have been sensitive to neuraminidase inhibitors (one was tested against both zanamivir and oseltamivir and one against oseltamivir only). Apart from two oseltamivir resistant A(H1N1) viruses from Norway, all other viruses tested have been from the UK. 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/Seasonal%20Influenza/Epidemiological\\_updates.aspx](http://ecdc.europa.eu/en/Health_topics/Seasonal%20Influenza/Epidemiological_updates.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.

In the UK, neuraminidase inhibitor susceptibility testing has been carried out on 40 influenza A (H1) specimens since week 40 2008. Of the 40 A(H1), 39 were resistant to oseltamivir and all were sensitive to zanamivir and amantadine. One hundred and one influenza A (H3) specimens have been found resistant to amantadine, of these 74 have been tested and found sensitive to oseltamivir and zanamivir. Two influenza B specimens have been tested so far and were sensitive to oseltamivir and zanamivir. Please note these data are provisional.

Latest information on oseltamivir resistance in UK:

[http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb\\_C/1222154877315?p=1191942171484](http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1222154877315?p=1191942171484)

### ***Virological Data from the NVRL***

The NVRL tested 34 sentinel specimens during week 2 2009, 17 of which tested positive for influenza A (1 (A(H1) and 16 influenza A untyped) and nine were positive for influenza B. The NVRL also tested 95 non-sentinel specimens taken during week 2 2009, mainly from hospitalised paediatric cases. Six of the non-sentinel specimens were positive for influenza A, one was positive for influenza B and 14 non-sentinel specimens tested positive for respiratory syncytial virus (RSV) in week 2 2009 (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 2 2009 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<sup>†</sup> respiratory specimens and positive results for week 2 2009 and season to date

Week Number	Specimen Type	Total Specimens	No. Influenza Positive	% Influenza Positive	Influenza A	Influenza B	RSV	% RSV Positive
<b>2 2009</b>	Sentinel	34	26	76.5	17	9	NA	NA
	Non-Sentinel	95	7	7.4	6	1	14	14.7
	<b>Total</b>	<b>129</b>	<b>33</b>	<b>25.6</b>	<b>23</b>	<b>10</b>	<b>14</b>	<b>10.9</b>
<b>Season to date</b>	Sentinel	214	134	62.6	101	33	NA	NA
	Non-Sentinel	1273	36	2.9	33	3	308	24.2
	<b>Total</b>	<b>1487</b>	<b>170</b>	<b>11.5</b>	<b>134</b>	<b>36</b>	<b>308</b>	<b>20.7</b>

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

2008/2009 Season to date <sup>‡</sup>						
Influenza (all types)		Influenza A (all subtypes)	Influenza B	Influenza A Unsubtyped	Influenza A(H1)	Influenza A(H3)
		(n=134)		(n=101)		
<b>Number positive</b>	134	101	33	30	8	63
<b>% Positive</b>	<b>62.6</b>	<b>75.4</b>	<b>24.6</b>	<b>29.7</b>	<b>7.9</b>	<b>62.4</b>

<sup>†</sup> 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

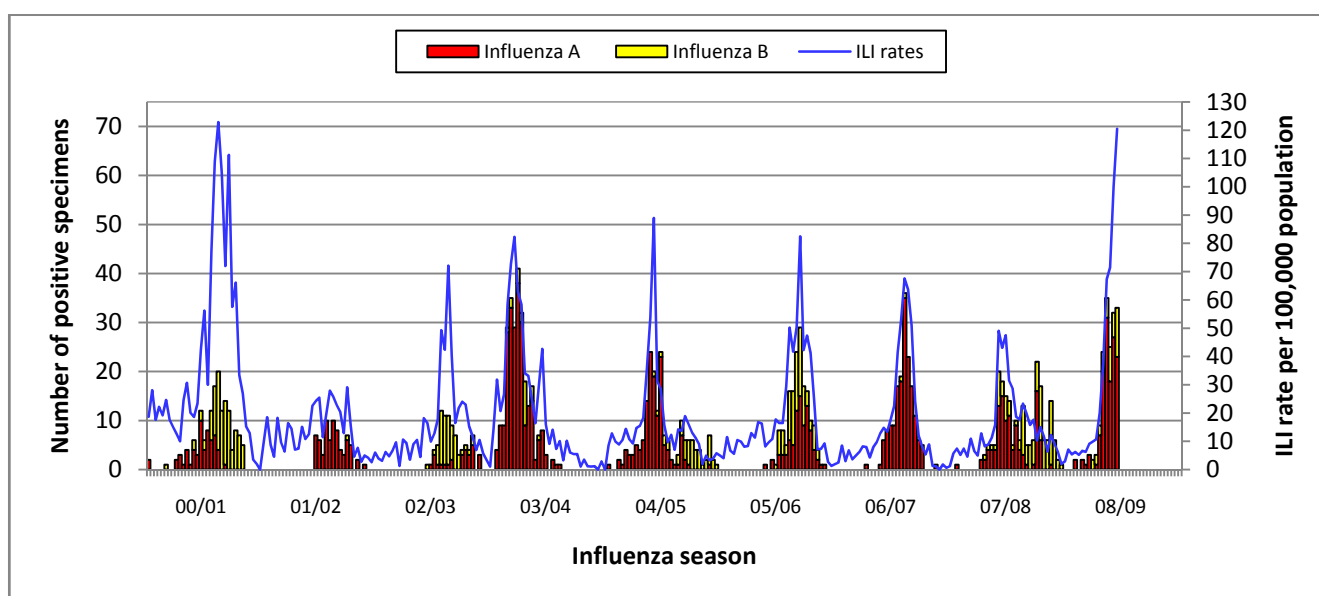
<sup>‡</sup> Number of sentinel specimens tested = 214

**Table 3:** Total number of sentinel and non-sentinel† influenza A and B positive specimens by HSE area for week 2 2009 and the 2008/2009 season to date

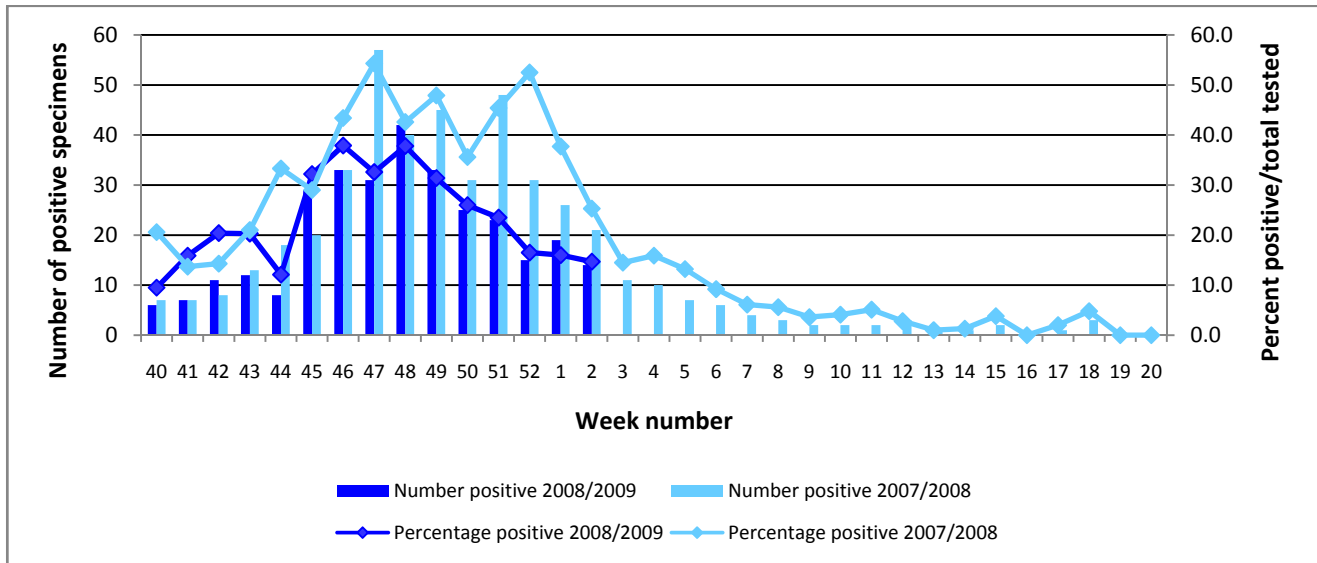
	Week 2 2009			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
HSE-ER	9	3	12	49	7	56
HSE-M	2	1	3	11	7	18
HSE-MW	0	0	0	10	0	10
HSE-NE	2	0	2	17	0	17
HSE-NW	0	1	1	6	5	11
HSE-SE	4	0	4	22	0	22
HSE-S	5	3	8	10	5	15
HSE-W	1	2	3	2	12	14
HSE area unknown	0	0	0	7	0	7
<b>Total</b>	<b>23</b>	<b>10</b>	<b>33</b>	<b>134</b>	<b>36</b>	<b>170</b>

**Table 4:** Total number of sentinel and non-sentinel† influenza A and B positive specimens by age group (in years) for week 2 2009 and the 2008/2009 season to date

	Week 2 2009			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
0-4 years	2	0	2	18	2	20
5-14 years	0	0	0	8	4	12
15-64 years	15	9	24	99	29	128
65 years and older	6	0	6	6	1	7
Age group unknown	1	0	1	3	0	3
<b>Total</b>	<b>24</b>	<b>9</b>	<b>33</b>	<b>134</b>	<b>36</b>	<b>170</b>



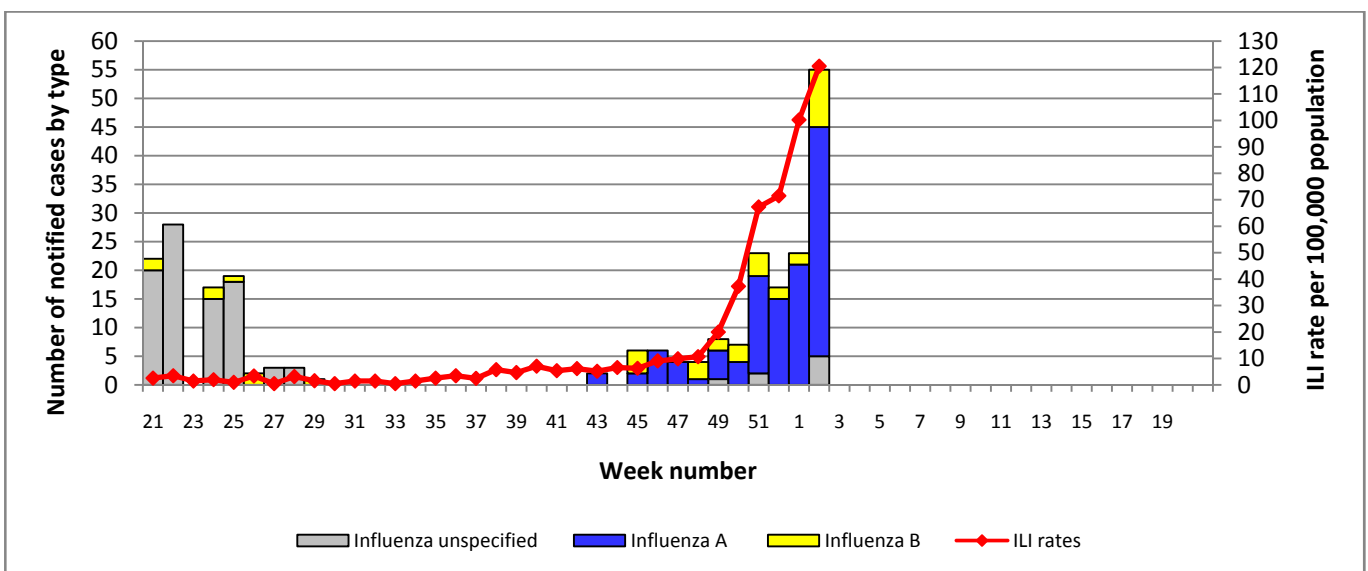
**Figure 3:** GP ILI consultation rate per 100,000 population and the number of positive influenza specimens detected by the NVRL by week and season, 2000/2001 - 2008/2009



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

### Weekly Influenza Notifications

Forty influenza A, 10 influenza B and five influenza unspecified were notified to HPSC during week 2 2009 (week 1 2009 of epidemiological calendar). During week 2 2009, 15 influenza A, one influenza B and three influenza unspecified were reported from HSE-E, four influenza A and four influenza B from HSE-M, five influenza A from HSE –NE, three influenza A and one influenza B from HSE NW, four influenza A, four influenza B and two influenza unspecified from HSE-S and nine 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<sup>§</sup>

<sup>§</sup> Notification data are provisional and were extracted from [CIDR](#) on the 13/01/2009 at 17.56

<sup>†</sup>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

### **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**

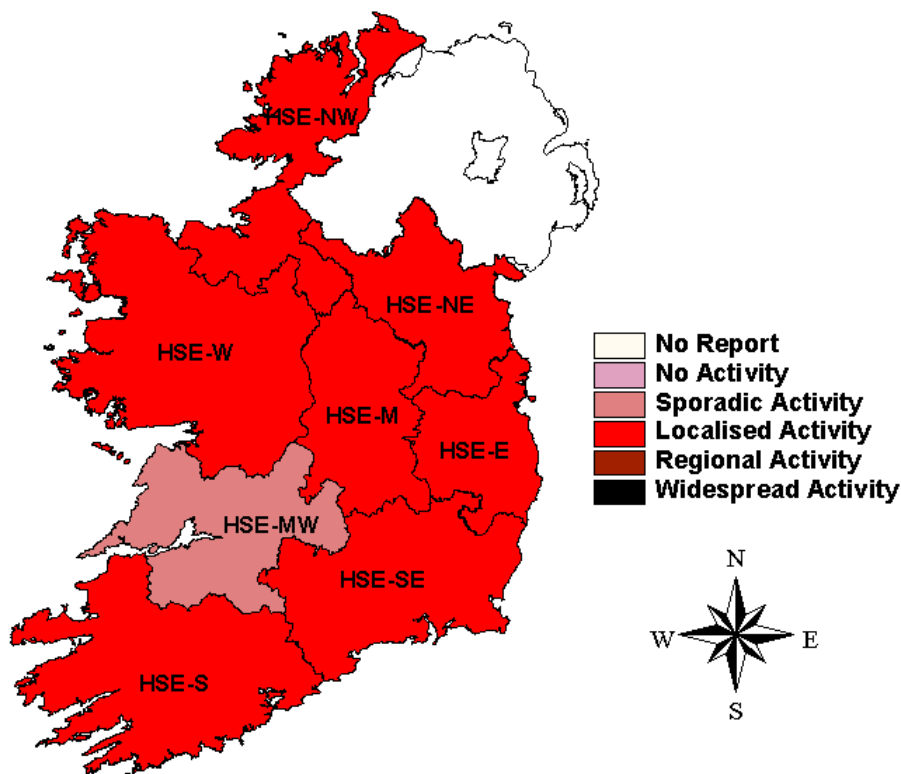
No deaths attributed to influenza were registered with the General Register Office during week 2 2009.

### **Outbreak Reports**

No ILI/influenza outbreaks were reported to HPSC during week 2 2009.

### **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 1 2009, increases in respiratory admissions were reported by sentinel hospitals in HSE-E, -M, -NE, -NW, -S and -W. During week 1 2009 sporadic influenza activity (based on isolated cases of ILI and virological results) was reported in HSE-MW while localised influenza activity was reported by HSE-E, -M, -NE, -NW, -S, -SE and -W (figure 6).



**Figure 6:** Map of influenza activity by HSE area during week 1 2009

### **Influenza Activity in Northern Ireland**

During week 2 2009, 186 ILI cases and 47 clinical influenza cases were reported in Northern Ireland, corresponding to a combined rate of 157.3 per 100,000 population, a decrease compared to the updated rate of 204.9 per 100,000 population reported during week 1 2009. During week 2 2009, six sentinel specimens tested

positive for influenza A and 19 non-sentinel specimens tested positive for influenza, 15 influenza A and four influenza B. <http://www.cdscni.org.uk>

### ***Influenza Activity in England, Scotland & Wales***

In England, an overall ILI incidence rate of 44.3 per 100,000 population was reported during week 2 2009, a decrease from the rate of 51.0 per 100,000 population reported in week 1 2009. This rate is above the baseline activity threshold of 30 per 100,000 population. In Scotland, GP consultation rates for influenza were 92.0 per 100,000 population during week 2 2009, an increase from the rate of 79.0 per 100,000 population reported during week 1 2009. This rate is above the Scottish baseline threshold of 50 consultations per 100,000 population. Data for Wales were not available at the time of publication of this report. NHS and HPA laboratories reported 65 influenza A (4 A(H1) and 61 A(H3)) and five influenza B detections during week 2 2009.

[http://www.hpa.org.uk/infections/topics%5Faz/influenza/seasonal/activity0809/weekly\\_summary.htm](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 14<sup>th</sup> January 2009. The case is a 21-month old female from Kerdasa District whose symptoms began on 9<sup>th</sup> January 2009. She was initially hospitalised on 10<sup>th</sup> January and is currently in a stable condition. 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. Investigations into the source of her infection indicate a recent history of contact with sick and dead poultry. Of the 52 cases confirmed to date in Egypt, 23 (44.2%) have been fatal.

As of the 14<sup>th</sup> January 2009, 393 confirmed human cases and 248 (63.1%) 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.

Further information on avian influenza is available on the following websites:

WHO [http://www.who.int/csr/disease/avian\\_influenza/en/](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](http://www.who.int/csr/disease/influenza/recommendations2008_9north/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 Sarah Jackson and Dr. Joan O'Donnell, HPSC**