

# 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 22 2009 (25<sup>th</sup>-31<sup>st</sup> May 2009)**

## Summary

During week 22 2009, seasonal influenza activity decreased in Ireland. Influenza-like illness (ILI) consultation rates decreased and are well below baseline thresholds. Nine non-sentinel specimens, from four cases, tested by the NVRL were positive for influenza A(H1N1) during week 22 2009. See the link to the separate report on Influenza A(H1N1) infection for Week 22 2009 on page 2.

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.

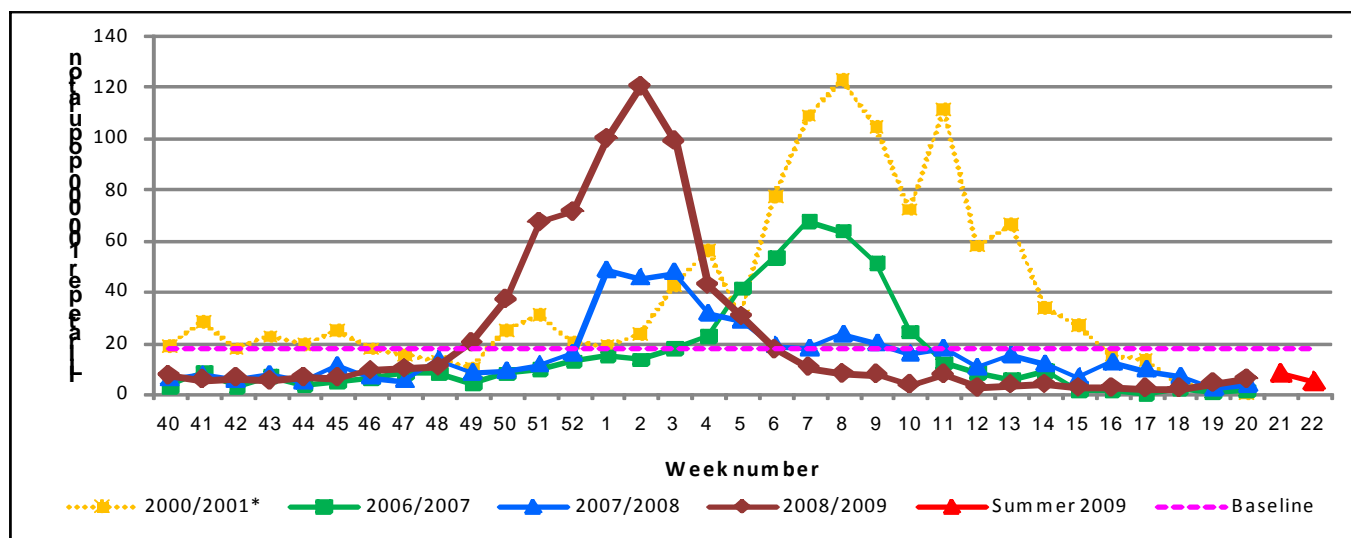
## Background

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-eight 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:

## Results

### Clinical Data

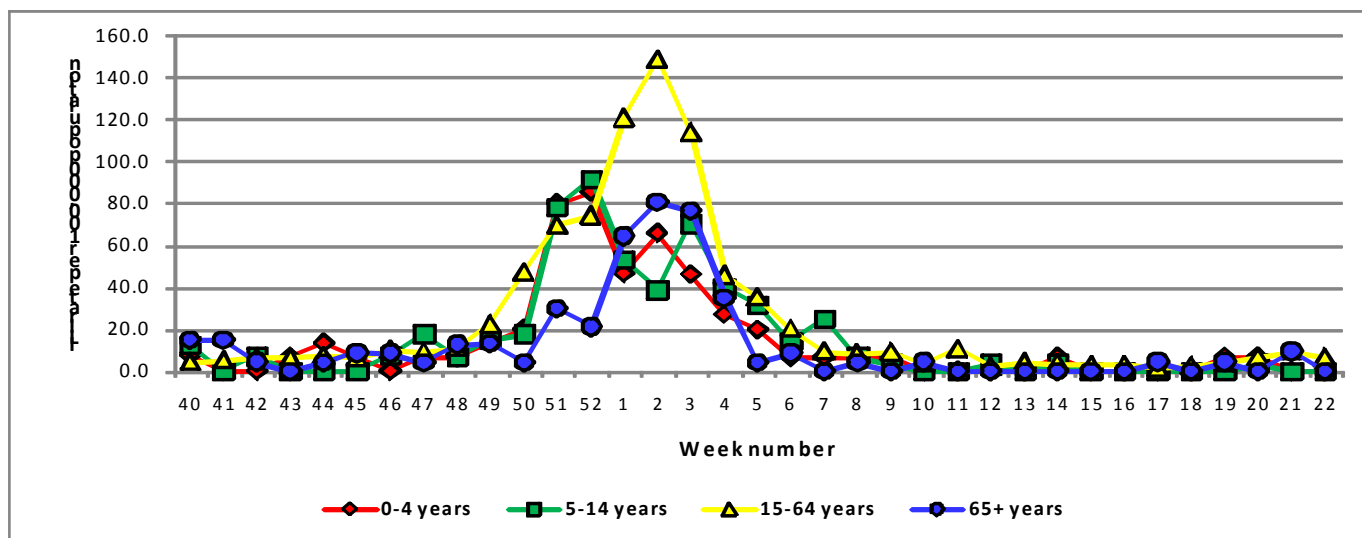
Sentinel GPs reported 8 ILI cases during week 22 2009. This corresponds to an ILI consultation rate of 4.7 per 100,000 population, which is a decrease in comparison to the updated rate of 7.9 per 100,000 population reported during week 21 2009 (figure 1). This rate is well below the baseline threshold of 17.8 per 100,000 population. Thirty-eight of 58 (65.5%) sentinel general practices reported during week 22 2009, with six 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, 2008/2009 and Summer 2009 influenza seasons  
 \*Highest recorded levels of ILI activity since initiation of sentinel surveillance

## Results (continued)

During week 22 2009, 8 ILI cases were reported in the 15-64 year age group (6.9 per 100,000 population). No ILI cases were reported in the 0-4 year, 5-14 year and 65 years and older age groups 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 22 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. 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=259). 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/Seasonal%20Influenza/Epidemiological_updates.aspx)

[http://ecdc.europa.eu/en/Health\\_Topics/influenza/antivirals.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>

\* 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***

Four sentinel specimens were tested by the NVRL during week 22 2009, none of which were positive for influenza. The NVRL tested 129 non-sentinel specimens taken during week 22 2009, mainly from hospitalised paediatric cases. Nine non-sentinel specimens, from 4 cases, tested positive for influenza A(H1N1) and three specimens tested positive for respiratory syncytial virus (RSV) during week 22 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.

The NVRL has completed genetic characterisation for two influenza A (H3) and five influenza B viruses during the 2008/2009 season. Both A(H3) viruses were characterised as A/Brisbane/10/2007-like virus which is included in the 2008/2009 influenza vaccine. All five influenza B viruses were characterised as B/Malaysia/2506/2004-like (B/Victoria/2/87 lineage) which is not included in the 2008/2009 influenza vaccine. This reflects the situation in Europe where the majority of influenza B viruses characterised to date are B/Victoria lineage.

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 22 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<sup>†</sup> respiratory specimens and positive results for week 22 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
<b>22 2009</b>	Sentinel	4	0	0.0	0	0	NA	NA
	Non-Sentinel	129	9	7.0	9	0	3	2.3
	<b>Total</b>	<b>133</b>	<b>9</b>	<b>6.8</b>	<b>9</b>	<b>0</b>	<b>3</b>	<b>2.3</b>
<b>Summer 2009 season to date</b>	Sentinel	9	0	0	0	0	NA	NA
	Non-Sentinel	182	9	4.9	9	0	5	2.7
	<b>Total</b>	<b>191</b>	<b>9</b>	<b>4.7</b>	<b>9</b>	<b>0</b>	<b>5</b>	<b>2.6</b>

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

Summer 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=0)		(n=0)		
Number positive	0	0	0	0	0	0
% Positive	0.0	0.0	0.0	0.0	0.0	0.0

<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

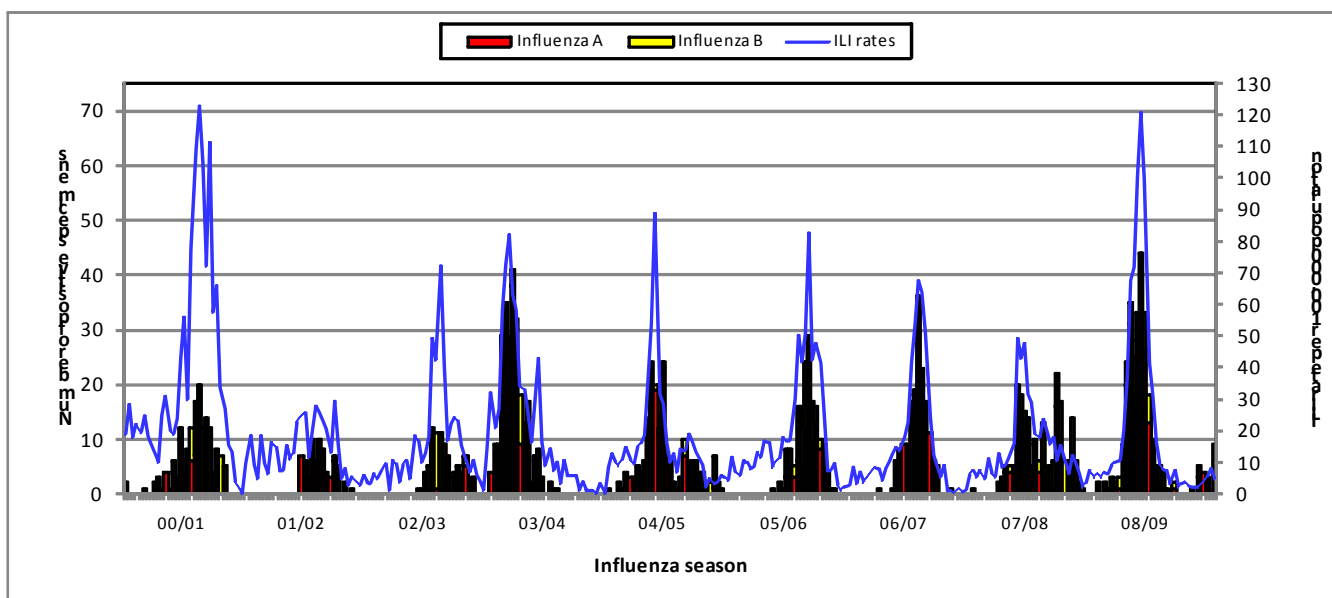
<sup>‡</sup> Number of sentinel specimens tested = 9

**Table 3:** Total number of sentinel and non-sentinel† influenza A and B positive specimens by HSE area for week 22 2009 and the Summer 2009 season to date

	Week 22 2009			Summer 2009 season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
HSE-ER	2	0	2	2	0	2
HSE-M	2	0	2	2	0	2
HSE-MW	2	0	2	2	0	2
HSE-NE	0	0	0	0	0	0
HSE-NW	0	0	0	0	0	0
HSE-SE	3	0	3	3	0	3
HSE-S	0	0	0	0	0	0
HSE-W	0	0	0	0	0	0
HSE area unknown	0	0	0	0	0	0
<b>Total</b>	<b>9</b>	<b>0</b>	<b>9</b>	<b>9</b>	<b>0</b>	<b>9</b>

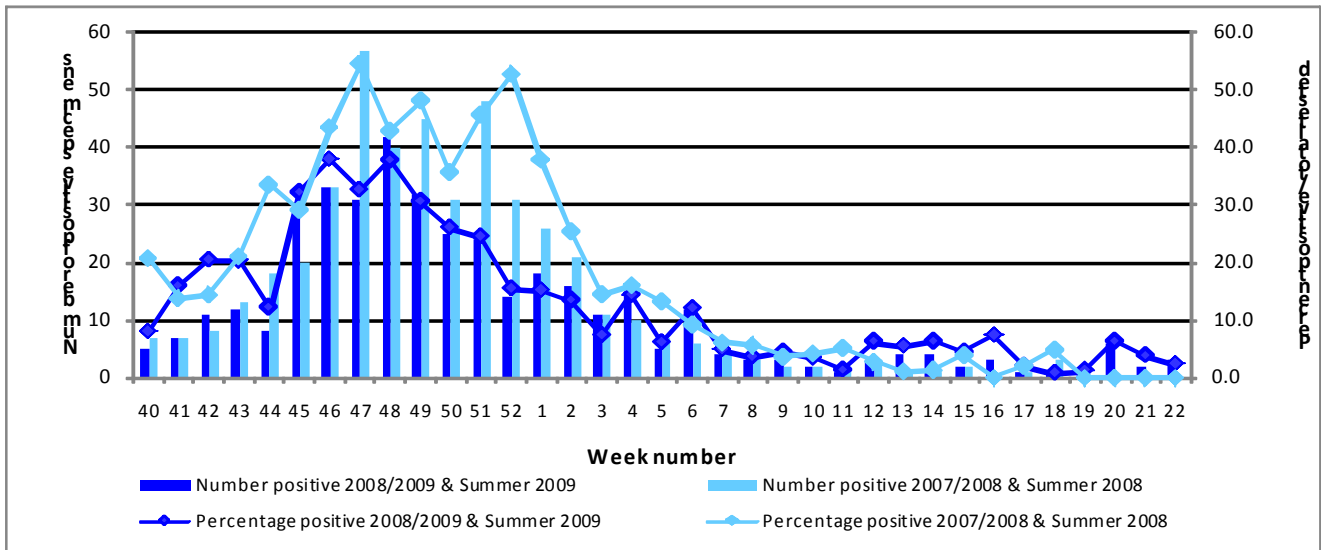
**Table 4:** Total number of sentinel and non-sentinel† influenza A and B positive specimens by age group (in years) for week 22 2009 and the Summer 2009 season to date

	Week 22 2009			Summer 2009 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	0	0	0	0	0	0
15-64 years	9	0	9	9	0	9
65 years and older	0	0	0	0	0	0
Age group unknown	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</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, including Summer 2009

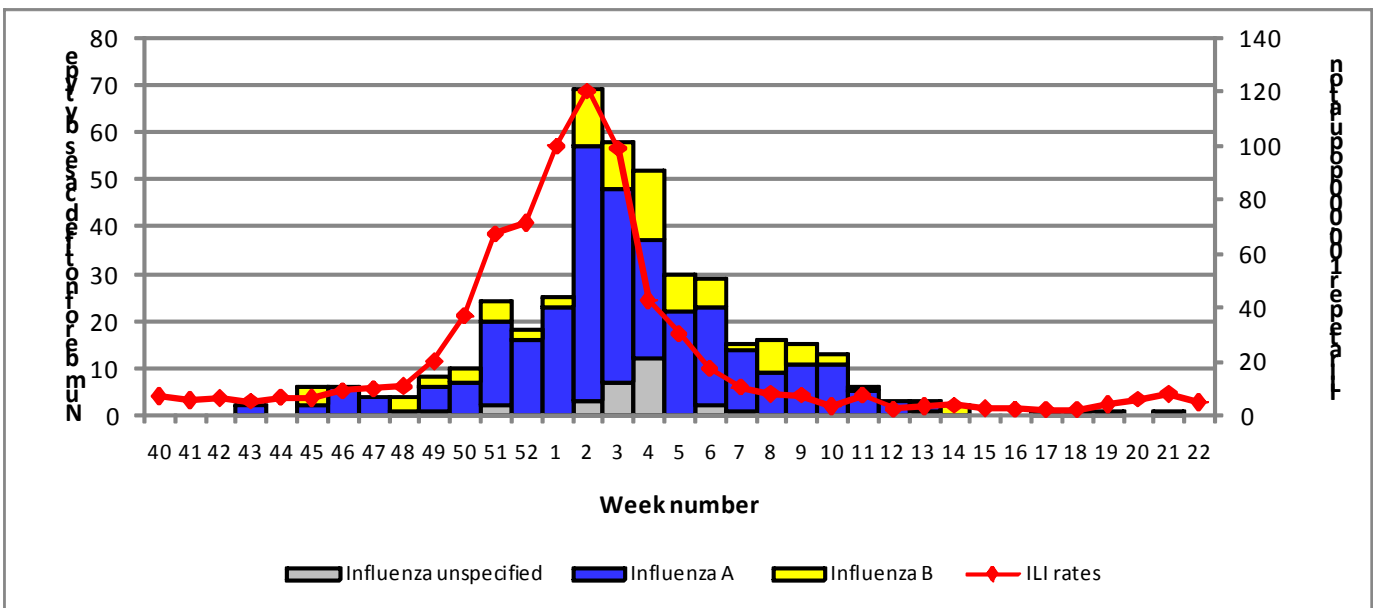
† Please note that non-sentinel specimens include all specimens referred to the NVRL, these specimens are mainly from hospitals and some GPs and may include more than one specimen from each case



**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 22 2009 (week 21 2009 of epidemiological calendar), no influenza cases were notified to HPSC. Influenza cases 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<sup>§</sup>

<sup>§</sup> Notification data are provisional and were extracted from [CIDR](#) on the 02/06/2009 at 10.30am

### **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**

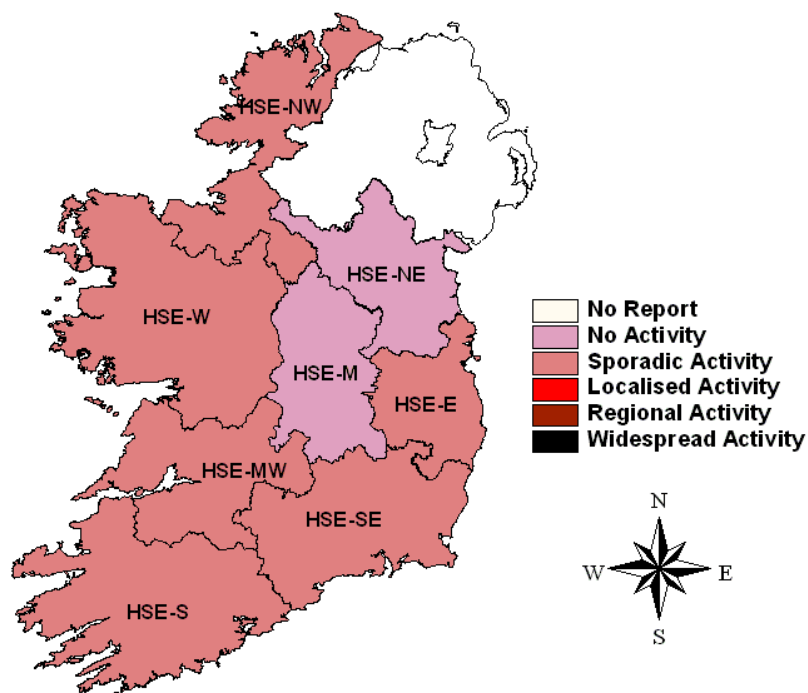
No deaths attributed to influenza were reported to HPSC by the General Register Office during week 22 2009.

### **Outbreak Reports**

No influenza/ILI outbreaks were reported to HPSC during week 22 2009. During the 2008/2009 season and the Summer 2009 influenza season to date, six 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 21 2009, no increases in respiratory admissions were reported by sentinel hospitals and no increases in school absenteeism were reported by sentinel schools still reporting. No activity was reported by HSE-M and -NE, while sporadic influenza activity (based on isolated cases of ILI and/or virological results) was reported by HSE-E, -MW, -NW, -S -SE and -W during week 21 2009 (figure 6).



**Figure 6:** Map of influenza activity by HSE area during week 21 2009

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

During week 22 2009, 22 ILI cases were reported in Northern Ireland, corresponding to a rate of 14.5 per 100,000 population, a decrease compared to the updated rate of 17.5 per 100,000 population reported during week 21 2009. During week 22 2009, no specimens tested positive for influenza. For more details see: <http://www.cdscni.org.uk/>

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

The HPA's weekly influenza report recommenced on 28<sup>th</sup> May 2009.

Clinical rates increased across the UK in week 18 when the influenza A(H1N1) outbreak was declared. In England and Wales, GP consultation rates for ILI for weeks 17-21 2009 were 4, 9.3, 14.3, 11.4 and 7.9 per 100,000 population, respectively. In Scotland, the equivalent rates were 3, 4, 7, 7 and 7 per 100,000 population, respectively. The QSurveillance® rates for the UK were 3.1, 8.4, 9.8, 8.6 and 6.5 per 100,000 population, respectively. All rates are at low levels, slightly higher than expected for this time of year but below the threshold levels, where they are set (30 and 50 consultations per 100,000 population in England and Wales, and Scotland, respectively).

The Centre for Infections' Respiratory Virus Unit (RVU) reported the following number of positive specimens for weeks 18-21: week 18, 55 [4 A(H1), 14 A(H3), 7 B, 30 A(H1N1swl)]; week 19, 42 [2 A(H1), 5 A(H3), 2 B, 33 A(H1N1swl)]; week 20, 47 [1 A(H1), 8 A(H3), 38 A(H1N1swl)]; and week 21, 67 [5 A(H3), 62 A(H1N1swl)].

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

[http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb\\_C/1243467931550](http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb_C/1243467931550)

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

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

### ***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 of Egypt has reported 2 new confirmed human cases of avian influenza.

The first case is a 14-month old girl from Dekernes District, Dkhalia Governorate. Her symptoms began on 25<sup>th</sup> May 2009. She was admitted to Mansoura Chest Hospital on 29 May where she received oseltamivir and is in a stable condition. The second case is a 4-year old female child from the Kefr El Sheikh District of Kefr El Sheikh Governorate. Her symptoms started on 30<sup>th</sup> May 2009 with fever, cough and sore throat. She was admitted to Kefr El Sheikh Fever Hospital on 31<sup>st</sup> May 2009. The patient received oseltamivir and is in a stable condition.

Investigations into the source of infection for both cases indicated that they had close contact with dead and sick poultry. The cases were confirmed by the Egyptian Central Public Health Laboratories.

Of the 78 cases confirmed to date in Egypt, 27 have been fatal.

As of 2<sup>nd</sup> June 2009, 433 confirmed human cases and 262 (60.5%) 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 and 2009/2010 Seasons***

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

- an A/Brisbane/59/2007 (H1N1)-like virus
- an A/Brisbane/10/2007 (H3N2)-like virus<sup>§§</sup>
- a B/Florida/4/2006-like virus<sup>##</sup>

<sup>§§</sup>*A/Brisbane/10/2007 is a current southern hemisphere vaccine virus.*

<sup>##</sup>*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)

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<sup>\*\*</sup>
- an A/Brisbane/10/2007 (H3N2)-like virus<sup>††</sup>
- a B/Brisbane/60/2008-like virus<sup>‡‡</sup>

<sup>\*\*</sup>*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.*

<sup>††</sup>*A/Brisbane/10/2007 and A/Uruguay/716/2007 (an A/Brisbane/10/2007-like virus) are current vaccine viruses.*

<sup>‡‡</sup>*B/Brisbane/33/2008 is a B/Brisbane/60/2008-like virus.*

[http://www.who.int/csr/disease/influenza/recommendations2009\\_10north/en/index.html](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 Stephen Murchan and Dr Suzanne Cotter, HPSC**