

# Influenza Surveillance in Ireland - Weekly Update

## Influenza Week 34 2009 (17<sup>th</sup> to 23<sup>rd</sup> August 2009)



### Summary

- The influenza-like illness (ILI) GP consultation rate decreased to 33.4 per 100,000 population in week 34 (from the updated rate of 38.8/100,000 for week 33)\*
- Overall, the ILI rates in the past four weeks have remained relatively stable and would be considered to be normal seasonal activity for the winter period.
- The proportion of flu-related calls to GP Out-of-Hours services increased significantly between weeks 28 and 30, but has remained relatively stable for the past four weeks.
- Pandemic (H1N1) 2009 is the main influenza virus circulating; in week 34, 100% of specimens positive for influenza were pandemic (H1N1) 2009.
- Based on the surveillance of laboratory confirmed cases of pandemic (H1N1) 2009, as of August 22<sup>nd</sup>:
  - 713 confirmed cases were notified in Ireland
  - Children and young adults remain the most affected groups; 80% of cases were less than 35 years of age
  - Clinical illness continues to be mild in the majority of cases
- Two deaths from pandemic (H1N1) 2009 have been reported to date (in weeks 32 and 34).

### Introduction

In order to monitor influenza activity in Ireland a number of surveillance systems are in place:

1. GP Sentinel surveillance system
2. GP Out-of-Hours system
3. Virological data from the NVRL
4. Enhanced surveillance system for pandemic (H1N1) 2009

Details of these surveillance systems are provided in Appendix A at the back of this report.

### 1. GP Sentinel surveillance system

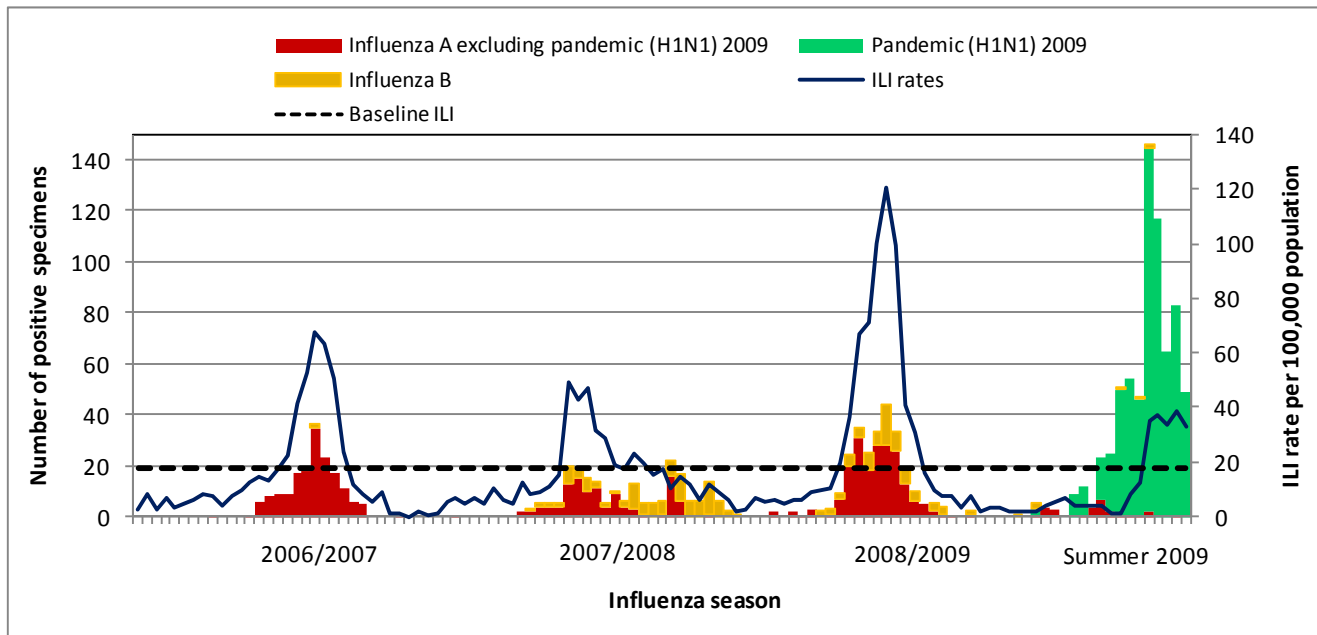
#### Clinical Data

During week 34 2009, 55 of 60 (92%) ICGP sentinel general practices provided data, with 34 practices reporting 72 influenza-like illness (ILI) cases. This corresponds to an ILI consultation rate of 33.4 per 100,000 population, which is a decrease compared to the updated rate of 38.8 per 100,000 population reported during week 33 2009.\* The ILI rate remains above the baseline threshold level of 17.8 per 100,000 population and would be considered to be normal seasonal activity for the winter period. Figure 1 shows the ILI

---

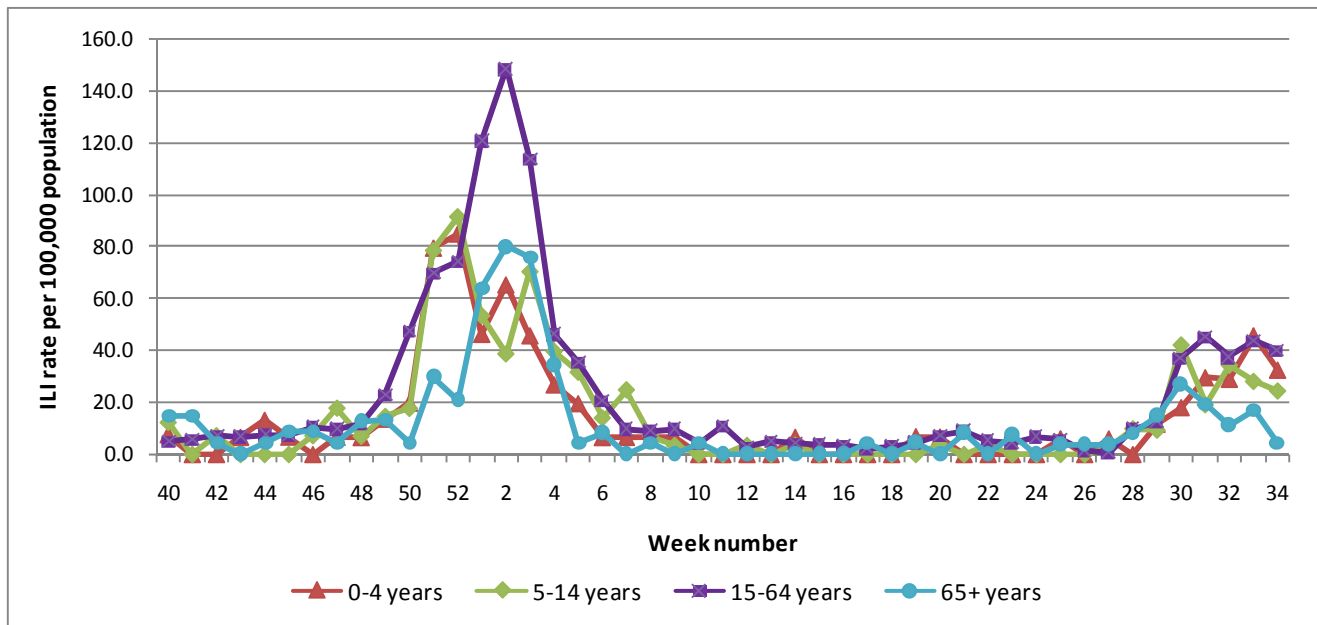
\* Since the last report, extra information on the number of ILI consultations occurring in Week 33 was provided by sentinel GPs and the rate for that week was adjusted accordingly.

consultation rates, the baseline threshold rate and the number of positive specimens detected by the National Virus Reference Laboratory (NVRL) for recent influenza seasons.



**Figure 1. ILI GP consultation rates per 100,000 population, baseline ILI threshold rate, and number of positive influenza specimens detected by the NVRL, by influenza week and season**

During week 34 2009, sentinel GPs reported five ILI cases in the 0-4 year age group (32.6 per 100,000 population), seven cases in the 5-14 year age group (24.5 per 100,000 population), 59 cases in the 15-64 year age group (40.0 per 100,000 population) and one case in the 65 years and older age group (4.2 per 100,000 population) (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**

### Regional Influenza Activity by HSE-Area

Influenza activity is reported on a weekly basis from the Departments of Public Health in each HSE area. Influenza activity is based on sentinel GP ILI consultation rates, laboratory confirmed influenza cases and ILI/influenza outbreaks. Sporadic influenza activity (based on isolated cases of ILI and/or positive virological results) was reported by all areas during week 34 2009 (figure 3).

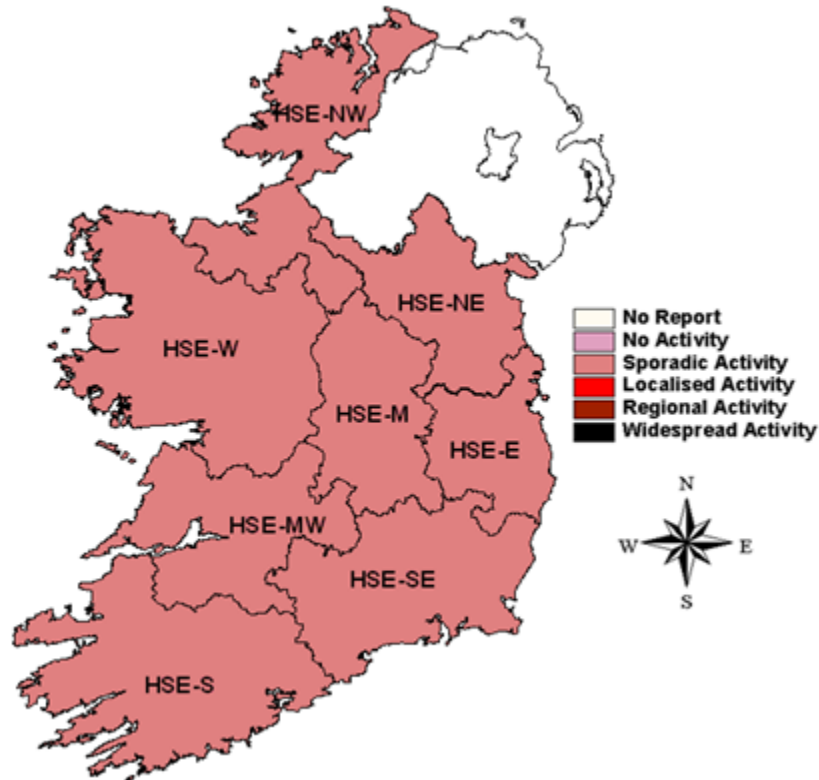


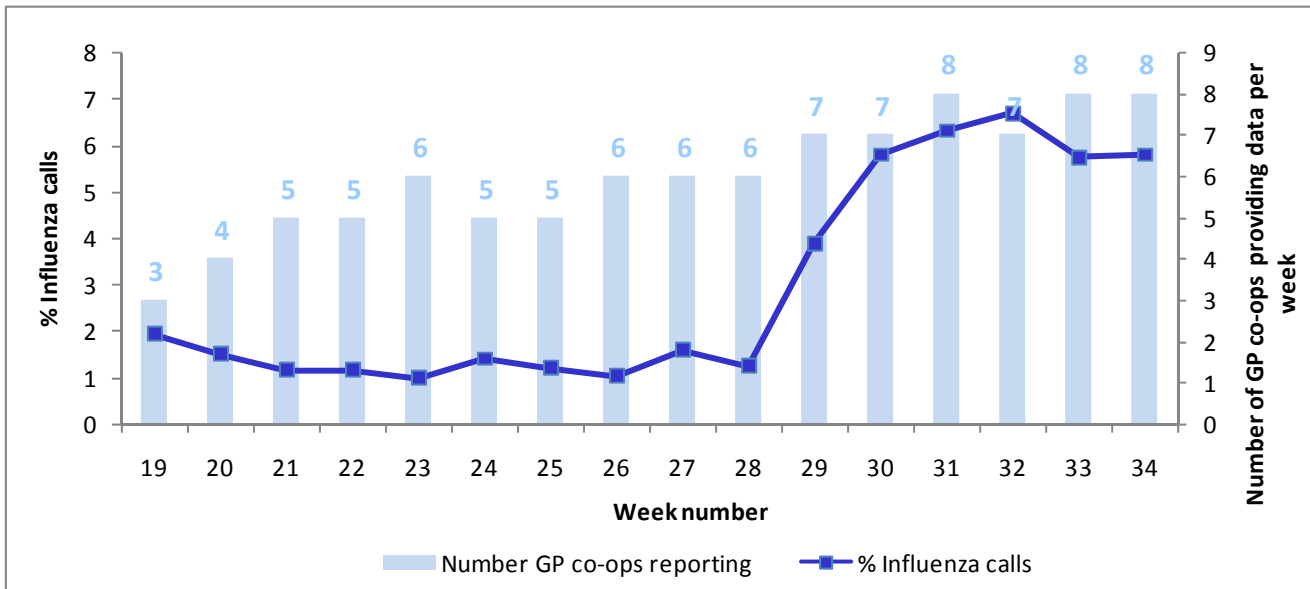
Figure 3: Map of influenza activity by HSE area during influenza week 34 2009

### Sentinel hospitals and schools

The Departments of Public Health have established at least one sentinel hospital in each HSE area, to report data on total hospital admissions, total emergency admissions and total respiratory admissions by age group on a weekly basis. Sentinel primary and secondary schools were also established in each area, in close proximity to the sentinel GPs, to report absenteeism data on a weekly basis. During influenza week 34 2009, hospital data were received from three HSE areas (HSE-MW, HSE-NE and HSE-S). The HSE-NE reported a small increase in the proportion of respiratory admissions (from 2.1% of total admissions to 3.6%). All sentinel schools are now closed for the summer holidays.

## 2. GP out-of-hours services surveillance

The Department of Public Health in the HSE-NE is collating national data on calls to eight of thirteen GP Out-of-Hours services in Ireland. Clinical details from all calls are recorded. Records with clinical symptoms reported as flu or influenza are extracted for analysis. This information may act as an early indicator of increased ILI activity. However, data are self-reported by callers and are not based on coded influenza diagnoses. There was a marked increase in the percentage of calls that were flu related between weeks 28 and weeks 30. During the past four weeks, the percentage of flu-related calls has remained relatively stable (figure 4).



**Figure 4: Flu related call as a proportion of total calls to Out-of-Hours GP Co-ops by week**

Source: HSE-NE. Not all services provided data for all weeks. Week 34: data received from CARE-Doc, D-Doc, K-Doc, NE-Doc, NoW-Doc, MI-Doc, Shannon-Doc, South-Doc

## 3. Virological Data from the National Virus Reference Laboratory (NVRL)

Thirty-three specimens from sentinel GPs were tested by the NVRL during week 34 2009, nine (27%) of which were positive for pandemic (H1N1) 2009.

The NVRL tested 374 non-sentinel specimens taken during the same week. Forty (11%) of the non-sentinel specimens tested positive for pandemic (H1N1) 2009<sup>†</sup>. No specimens were positive for other influenza A subtypes or influenza B. One non-sentinel specimen (0.3%) tested positive for respiratory syncytial virus (RSV) and one tested positive for adenovirus (table 1).

Pandemic (H1N1) 2009 is the main influenza virus circulating; in week 34, 100% of specimens positive for influenza were pandemic (H1N1) 2009, while for the summer 2009 season to date pandemic (H1N1) 2009 has accounted for 96.5% of influenza positive specimens (table 1).

<sup>†</sup> Please note that non-sentinel specimens relate to specimens referred to the NVRL (other than sentinel specimens) and may include more than one specimen from each case

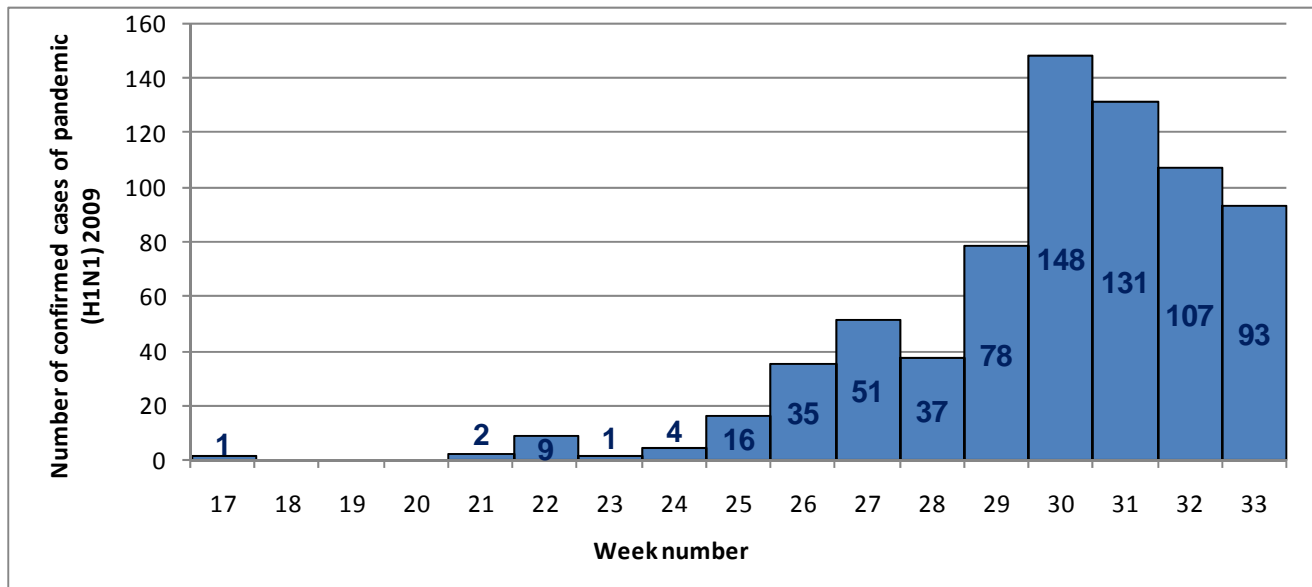
**Table 1: Number of sentinel and non-sentinel respiratory specimens and positive results, influenza week 34 2009 and Summer 2009 season to date**

Week number	Specimen type	Total specimens	No. influenza Positive	% Influenza Positive	Pandemic (H1N1) 2009	Influenza A(H3)	Influenza A(H1)	Influenza A*	Influenza B	% Pandemic (H1N1) 2009	RSV	% RSV Positive	Adenovirus	% adenovirus positive
<b>34 2009</b>	Sentinel	33	9	27.3	9	0	0	0	0	100	NA	NA	NA	NA
	Non-sentinel	374	40	10.7	40	0	0	0	0	100	1	0.3	1	0.3
	<b>Total</b>	<b>407</b>	<b>49</b>	<b>12.0</b>	<b>49</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>100</b>	<b>1</b>	<b>0.2</b>	<b>1</b>	<b>0.2</b>
<b>Summer season to date</b>	Sentinel	319	52	16.3	49	3	0	0	0	94.2	NA	NA	NA	NA
	Non-sentinel	4268	634	14.9	613	14	2	2	3	96.7	20	0.5	4	0.1
	<b>Total</b>	<b>4587</b>	<b>686</b>	<b>15.0</b>	<b>662</b>	<b>17</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>96.5</b>	<b>20</b>	<b>0.4</b>	<b>4</b>	<b>0.1</b>

\*Influenza A - not subtyped yet, but not pandemic (H1N1) 2009

#### 4. Laboratory confirmed cases of pandemic (H1N1) 2009

As of August 22<sup>nd</sup> 2009, a total of 713 confirmed cases of pandemic (H1N1) 2009 infection were reported. Figure 5 shows the number of confirmed pandemic (H1N1) 2009 cases by week of notification. During week 33, only six cases were reported as having been infected outside of Ireland.

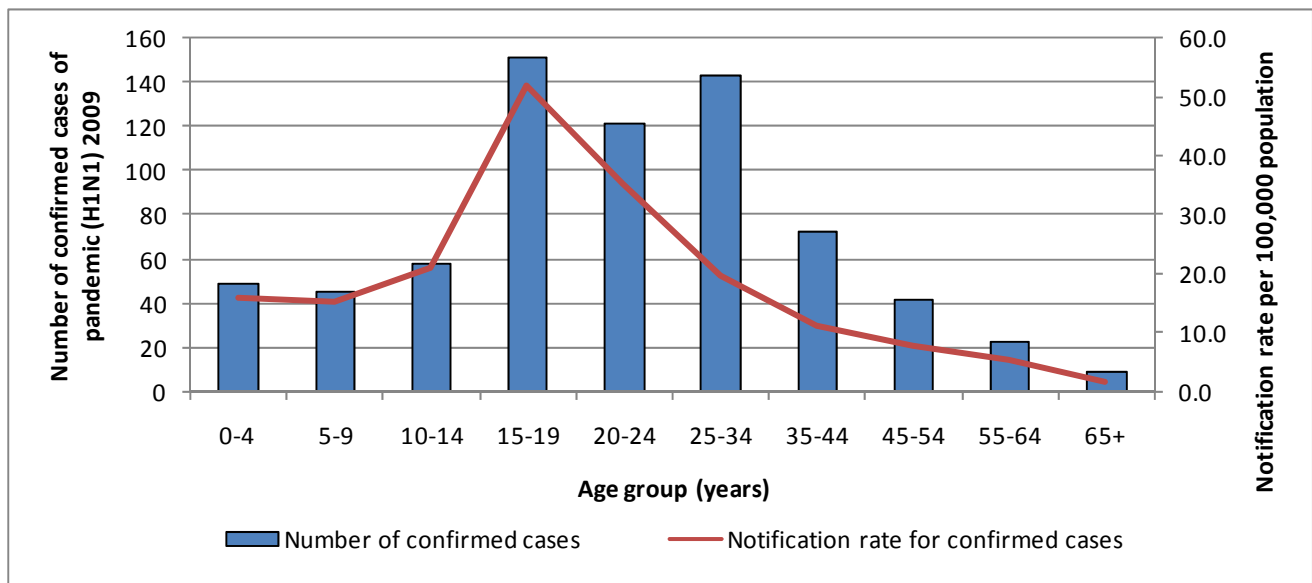


**Figure 5: Number of confirmed cases of pandemic (H1N1) 2009 by week of notification**

(Week number on figure 5 is based on infectious disease notification week number, which is one week behind the international influenza week number. Therefore weeks 17-33 above is equivalent to weeks 18-34 on the influenza system)

#### Age and Sex

Of the 713 confirmed cases reported to date, 367 were female (51.5%) and 346 were male (48.5%). The median age of cases was 21 years (range: 0-77 years) and 80% were less than 35 years of age. The median age was higher for imported cases (24 years) than for cases infected in Ireland (19 years). Figure 6 shows the number of cases and notification rates per 100,000 population by age group.



**Figure 6: Number of confirmed cases of pandemic (H1N1) 2009 and notification rate per 100,000 population by age group (years)**

## HSE area

All HSE areas have reported confirmed cases. The numbers and rates by HSE area are shown in table 2. The highest rates for week 33 were in the HSE-NW and HSE-S.

**Table 2: Number and rate per 100,000 population for confirmed cases of pandemic (H1N1) 2009 by HSE area**

HSE area	Week 33: Aug 16 <sup>th</sup> to 22 <sup>nd</sup>		Up to Aug 22 <sup>nd</sup>	
	Number of confirmed cases	Rate per 100,000 population	Number of confirmed cases	Rate per 100,000 population
HSE-E	37	2.5	293	19.5
HSE-M	2	0.8	25	9.9
HSE-MW	7	1.9	54	15
HSE-NE	12	3	84	21.3
HSE-NW	10	4.2	58	24.5
HSE-SE	3	0.7	49	10.6
HSE-S	21	3.4	99	15.9
HSE-W	1	0.2	51	12.3
<b>Total</b>	<b>93</b>	<b>2.2</b>	<b>713</b>	<b>16.8</b>

(Week number in table 2 is based on infectious disease notification week number, which is one week behind the international influenza week number. Therefore week 33 above is equivalent to week 34 on the influenza system)

## Severity of illness

Clinical illness continues to be mild in the majority of cases. Two deaths have been reported to date in Ireland. The first death occurred in a female during week 32 2009 and the second death was in a male and occurred during week 34. Reported complications have been mostly respiratory in nature; 18 cases developed pneumonia and six developed acute respiratory distress syndrome (ARDS) (three of these also had pneumonia). Other reported complications included otitis media, chest infections, acute renal failure and multi-organ failure.

Of the 713 confirmed cases, 67 (9.4%) were reported as having been admitted to hospital. Forty-nine hospitalised cases have recovered or are recovering (73%), six are still ill (9%), outcome is awaited for ten (15%) and two cases died (3%). Table 3 shows the number of hospitalised cases by age group (years) and sex. Twenty-seven (40%) of the hospitalised cases had pre-existing clinical conditions including chronic heart disease, chronic liver disease, chronic respiratory disease, chronic neurological disease, asthma, haemoglobinopathy, immunosuppression, diabetes mellitus and pregnancy.

**Table 3: Number of confirmed cases of pandemic (H1N1) 2009 admitted to hospital by age group (years) and sex**

Age group (years)	Female	Male	Total
<1 yrs	2	1	3
1-4 yrs	1	3	4
5-9 yrs	2	6	8
10-14 yrs	2	2	4
15-19 yrs	7	4	11
20-24 yrs	4	4	8
25-34 yrs	9	3	12
35-44 yrs	2	3	5
45-54 yrs	2	1	3
55-64 yrs	1	4	5
65+ yrs	2	2	4
<b>Total</b>	<b>34</b>	<b>33</b>	<b>67</b>

## 5. Outbreak surveillance

Twenty-seven outbreaks of pandemic (H1N1) 2009 have been reported in Ireland to date. These involved 362 people in total, of which 68 were laboratory confirmed cases. The number ill per outbreak has ranged between two and 150 people. Fifteen outbreaks occurred in family settings, eight occurred in educational settings and one each were in a community hospital/long-stay unit, a hotel, a crèche and one involved travelling companions.

### International summary

The total numbers of confirmed cases and deaths worldwide by World Health Organization (WHO) region are shown in table 4. The numbers shown are likely to be an underestimate of the numbers of cases as many countries are now moving to selective testing policies.

**Table 4. Reported number of confirmed pandemic (H1N1) 2009 cases and deaths by WHO region (Source: WHO 21<sup>st</sup> August 2009)**

Region	Cumulative total as of 13 <sup>th</sup> August 2009	
	Cases*	Deaths
Africa (AFRO)	1469	3
Americas (AMRO)	105882	1579
Eastern Mediterranean (EMRO)	2532	8
Europe (EURO)	Over 32000	53
South-East Asia (SEARO)	13172	106
Western Pacific (WPRO)	27111	50
<b>Total</b>	<b>Over 182166</b>	<b>1799</b>

\*Given that countries are no longer required to test and report individual cases, the number of cases reported significantly understates the actual number of cases.

### United Kingdom

During week 33, influenza activity decreased in all regions and age groups in the UK, but remained higher than usual for the time of year. Although most cases continued to be mild, 59 people have died to date. The highest hospitalisation rates have consistently been in children aged less than 5 years.

<http://www.hpa.org.uk/>

### USA

During week 32 (9<sup>th</sup> – 15<sup>th</sup> August 2009), influenza activity remained stable in the United States, with 40 states reporting localised or sporadic activity and eight states reporting regional activity. Widespread activity was reported by Alaska and Maine. Ninety eight percent of all subtyped influenza A viruses being reported to CDC were pandemic (H1N1) 2009 viruses.

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

### Canada

The national ILI consultation rate (15 consultations per 1,000 visits) remains similar to the previous week and overall influenza activity has been decreasing in Canada in recent weeks. To date, cases under 15 years have the highest rates of hospitalisation, but mortality has been highest in those 45 years and older and in cases under one year of age.

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



## **New Zealand**

ILI rates have been decreasing in New Zealand in recent weeks. This decline continued in week 33, but the ILI rate remains higher than for the same time period in previous years. To date, the highest ILI rates have been in children and teenagers aged 0 to 19 years. Of the 3053 influenza viruses subtyped to date this season, 75% were pandemic (H1N1) 2009.

[http://www.surv.esr.cri.nz/virology/influenza\\_weekly\\_update.php](http://www.surv.esr.cri.nz/virology/influenza_weekly_update.php)

## **Australia**

As of 14<sup>th</sup> August, most areas in Australia were reporting that influenza activity had peaked or plateaued. The national ILI consultation rate in week 32 was 32 per 1,000 visits. The proportion of influenza positive tests that were pandemic (H1N1) 2009 varied between areas but was on average around 80%. Of the seasonal influenza A notifications, A/H3N2 was the predominant subtype reported by most areas. The highest hospitalisation rate occurred in young children aged less than 5 years of age (34.5 per 100,000 population).

[http://www.healthemergency.gov.au/internet/healthemergency/publishing.nsf/Content/2A63E217E78BB952CA257609001BFB3F/\\$File/ozflu-no14-2009.pdf](http://www.healthemergency.gov.au/internet/healthemergency/publishing.nsf/Content/2A63E217E78BB952CA257609001BFB3F/$File/ozflu-no14-2009.pdf)

## **Other countries**

Influenza activity has decreased in recent weeks in most South American countries. India, Thailand, Malaysia and Hong Kong are reporting increasing rates of ILI as they enter their monsoon season. Tropical countries in Central America, such as Costa Rica and El Salvador are also seeing very active influenza transmission.

[www.who.int/topics/influenza/en/](http://www.who.int/topics/influenza/en/)

**Further information on influenza in Ireland and internationally can be found on the following websites:**

Ireland	<a href="http://www.hpsc.ie">www.hpsc.ie</a>
Europe – ECDC	<a href="http://ecdc.europa.eu/">http://ecdc.europa.eu/</a>
Europe – EISN	<a href="http://www.eiss.org/index.cgi">www.eiss.org/index.cgi</a>
Northern Ireland	<a href="http://www.cdscni.org.uk/">http://www.cdscni.org.uk/</a>

## **Acknowledgements**

**HPSC wishes to thank the Departments of Public Health, HSE-NE, ICGP and NVRL for providing data for this report**

## Appendix A

### **Sentinel surveillance for influenza**

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 covering 5.7% of the national population 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.

Influenza test results from the NVRL are also provided on both sentinel and non-sentinel specimens.

### **Laboratory confirmed pandemic (H1N1) 2009**

Since the end of April 2009, a case-based surveillance system for pandemic (H1N1) 2009 has been in operation in Ireland following the declaration by World Health Organization (WHO) of a public health emergency of international concern due to the virus. Basic demographic data are collected on all laboratory confirmed cases and additional enhanced data are collected on all hospitalised laboratory confirmed cases. Data are collated on the Computerised Infectious Disease Reporting (CIDR) system using information available from the National Virus Reference Laboratory (NVRL), Departments of Public Health, clinicians and a number of other laboratories. Data presented in this report are based on details recorded on the CIDR system.