

Influenza Surveillance in Ireland - Weekly Update

Influenza Week 33 2009 (10th to 16th August 2009)



Summary

- The influenza-like illness (ILI) GP consultation rate increased to 42.2 per 100,000 population in week 33 (from the updated rate of 33.2/100,000 in week 32)*. This is 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.
- A small decrease was noted in flu-related calls to GP Out-of-Hours services.
- Pandemic (H1N1) 2009 is the main influenza virus circulating; in week 33, 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 15th:
 - 619 confirmed cases were notified in Ireland
 - Children and young adults remain the most affected groups; 79.3% 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: (One in week 32 and the second in week 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 33 2009, 50 of 60 (83.3%) ICGP sentinel general practices provided data, with 34 practices reporting 82 influenza-like illness (ILI) cases. This corresponds to an ILI consultation rate of 42.2 per 100,000 population, which is an increase compared to the updated rate of 33.2 per 100,000 population reported during week 32 2009. This is now 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 consultation rates, the baseline threshold rate and the number of positive specimens detected by the National Virus Reference Laboratory (NVRL) for recent influenza seasons.

* Since the last report, extra information on the number of ILI consultations occurring in Week 32 was provided by sentinel GPs and the rate for that week was adjusted accordingly.

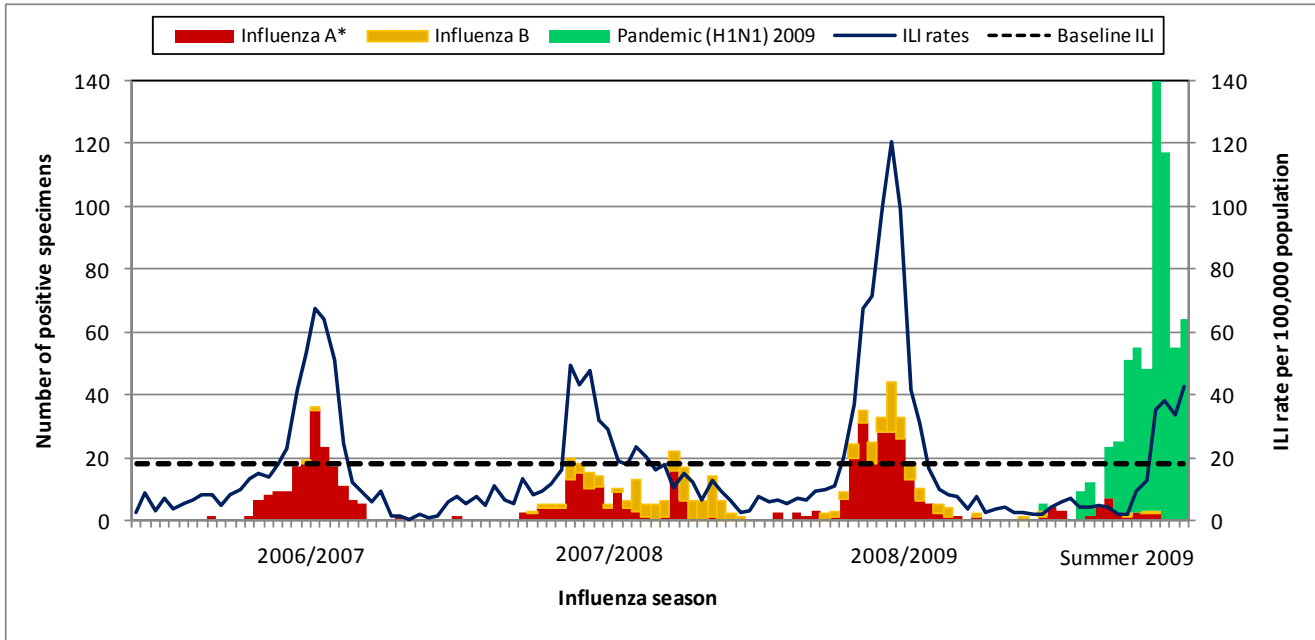


Figure 1. ILI GP consultation rates per 100,000 population, baseline ILI threshold rate, and number of positive influenza specimens detected by the NVRL, by influenza week and season (*influenza A excluding pandemic (H1N1) 2009 specimens)

During week 33 2009, sentinel GPs reported seven ILI cases in the 0-4 year age group (50.5 per 100,000 population), eight cases in the 5-14 year age group (31.0 per 100,000 population), 63 cases in the 15-64 year age group (47.2 per 100,000 population) and four cases in the 65+ years and older age group (18.6 per 100,000 population) as shown in figure 2.

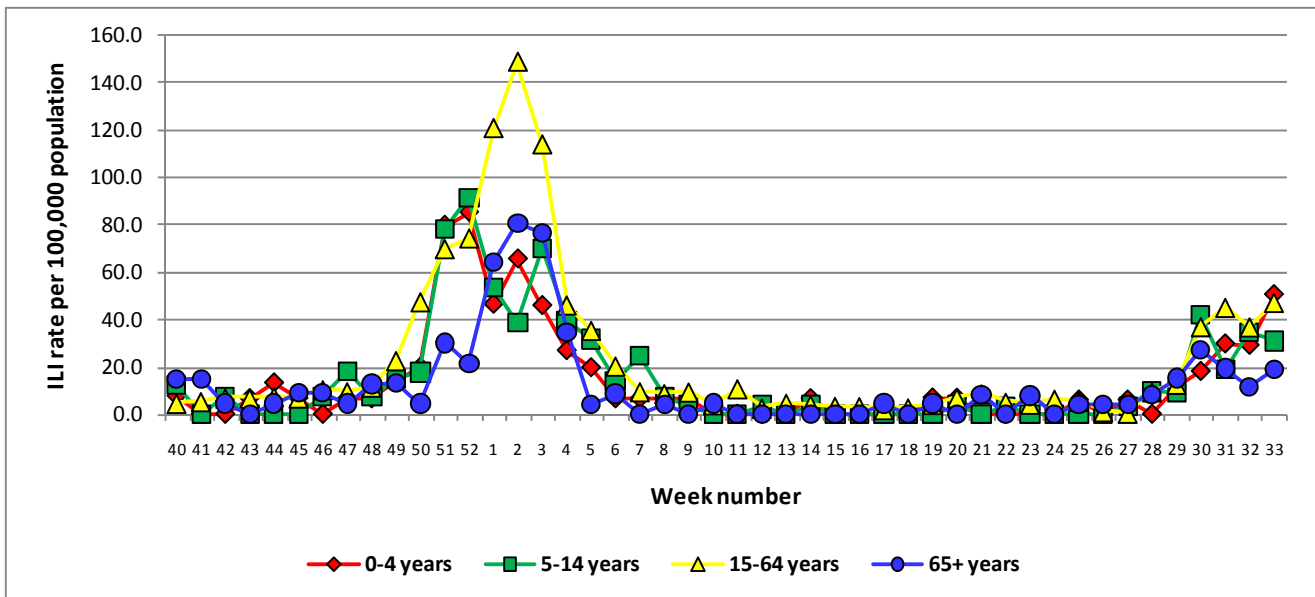


Figure 2: Age specific GP consultation rate for ILI per 100,000 population by week during the 2008/2009 and Summer 2009 influenza seasons

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 HSE-E, -M, -MW, -NE, -S and -SE while HSE-NW and -W reported localised activity (based on localised increases in ILI or two or more outbreaks within a HSE area and positive virological results) during week 33 2009 (figure 3).

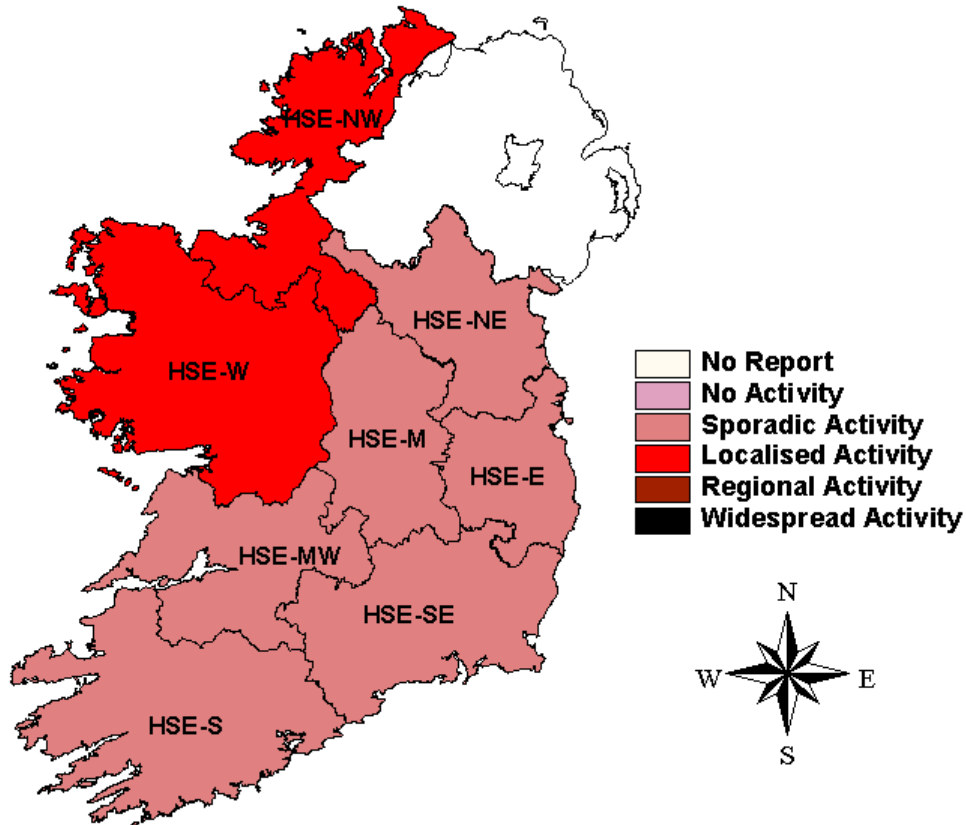


Figure 3: Map of influenza activity by HSE area during influenza week 33 2009

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 HSE area in close proximity to the sentinel GPs, reporting absenteeism data on a weekly basis. During influenza week 32 2009, data was received from four HSE areas (HSE-MW, HSE-NE, HSE-SE and HSE-W). No increases in respiratory admissions were reported by sentinel hospitals in these areas. All sentinel schools are now closed for the summer holidays.

2. GP out-of-hours services surveillance

On a weekly basis 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. Since the week ending July 19th (week 29) there has been a marked increase in the number of flu-related calls (figure 4). However, a small decrease in flu-related calls to GP Out-of-Hours services has been noted during week 33.

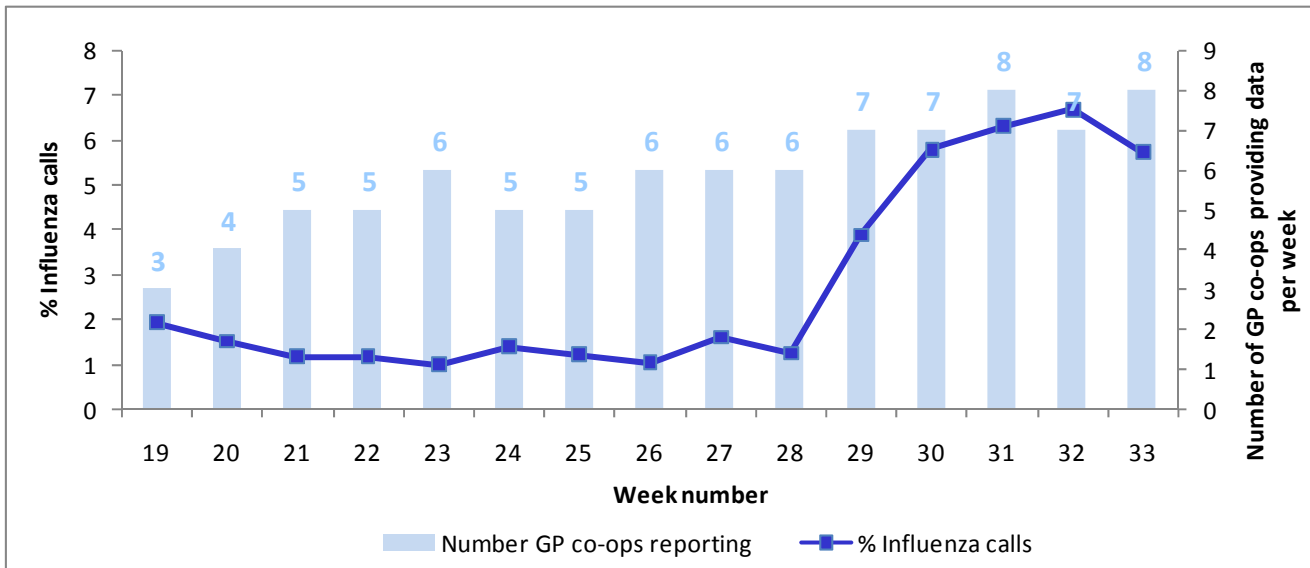


Figure 4: Flu related call as a proportion of total calls to Out-of-Hours GP Co-ops by week

Source: HSE-NE. Not all services provided data for all weeks.

For week 33, data were 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)

Forty-three specimens from sentinel GPs were tested by the NVRL during influenza week 33 2009, six (14.0%) of which were positive for pandemic (H1N1) 2009.

The NVRL tested 404 non-sentinel specimens taken during influenza week 33 2009. Fifty-eight (14.4%) of non-sentinel specimens tested positive for pandemic (H1N1) 2009[†]. No specimens were positive for other influenza A subtypes or influenza B. One non-sentinel specimen (0.2%) tested positive for respiratory syncytial virus (RSV) during week 33 2009 (table 1).

Pandemic (H1N1) 2009 is the main influenza virus circulating; in week 33, 100% of specimens positive for influenza were pandemic (H1N1) 2009, while for the summer 2009 season to date pandemic (H1N1) 2009 has accounted for 96.4% of influenza positive specimens (table 1).

[†] 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 33 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
33 2009	Sentinel	43	6	14.0	6	0	0	0	0	100.0	NA	NA
	Non-sentinel	404	58	14.4	58	0	0	0	0	100.0	1	0.2
	Total	447	64	14.3	64	0	0	0	0	100.0	1	0.2
Summer season to date	Sentinel	254	40	15.7	37	3	0	0	0	92.5	NA	NA
	Non-sentinel	3779	567	15.0	548	13	2	1	3	96.6	17	0.4
	Total	4033	607	15.1	585	16	2	1	3	96.4	17	0.4

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

4. Laboratory confirmed cases of pandemic (H1N1) 2009

As of August 15th 2009, a total of 619 confirmed cases of pandemic (H1N1) 2009 infection were reported. Fifty-six percent (n=206) were travel related (imported) and 7.4% (n=27) were contacts of an imported case (secondary import related). A further 4.4% (n=16) were linked to a non-imported case (tertiary indigenous) and 32.0% (n=117) had no history of travel and no known links to other confirmed cases (sporadic indigenous). Mode of transmission was not reported for 253 (40.9%) pandemic (H1N1) 2009 cases. Figure 5 shows the number of confirmed pandemic (H1N1) 2009 cases by week of notification and mode of transmission.

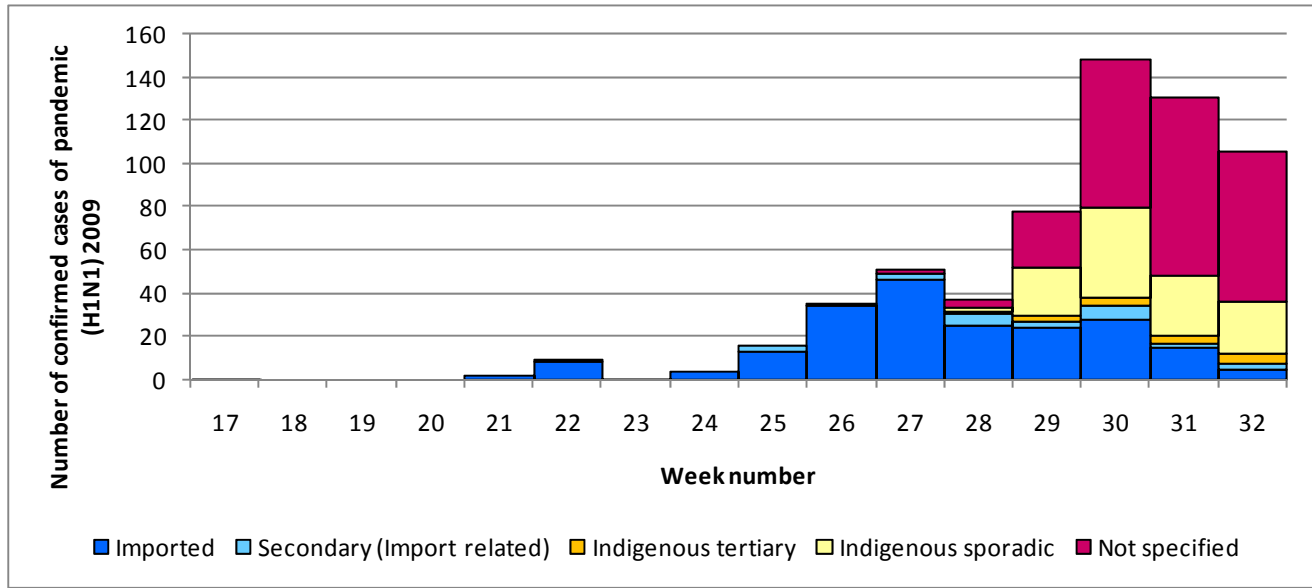


Figure 5: Number of confirmed cases of pandemic (H1N1) 2009 by mode of transmission and week of notification

(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 17-32 above is equivalent to weeks 18-33 on the influenza system)

Age and Sex

Of the 619 confirmed cases reported to date, 307 were female (49.6%) and 303 were male (48.9%). The median age was 21 years (range: 0-77 years) and 79.3% of cases were less than 35 years of age. Figure 6 shows the number of cases and notification rates per 100,000 population by age group.

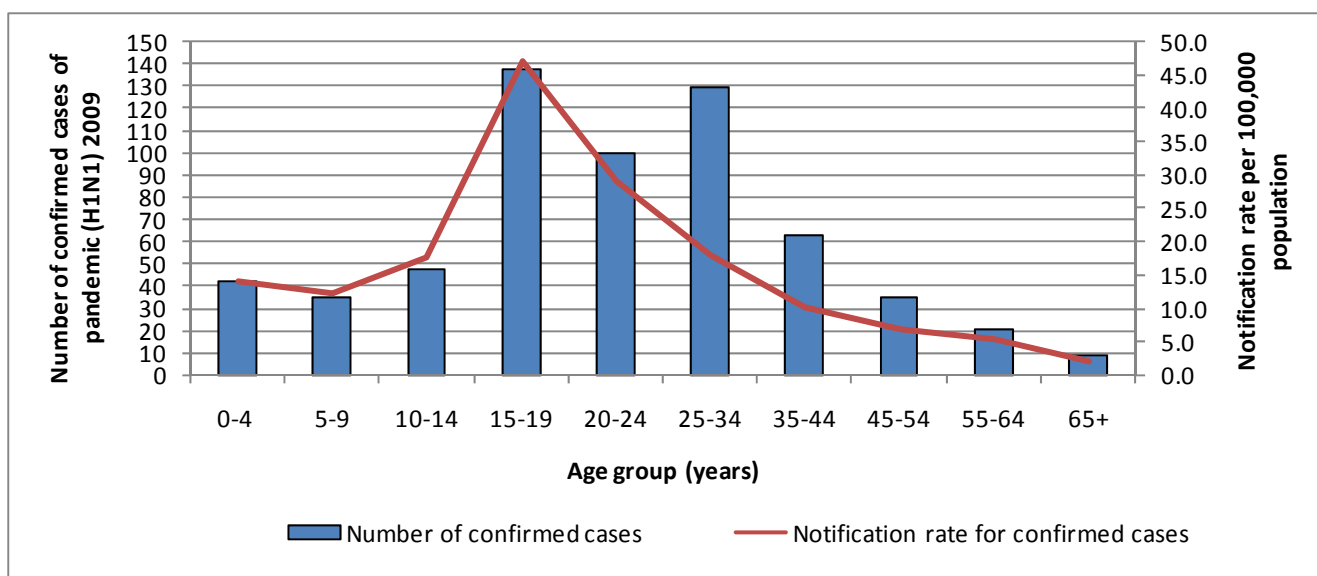


Figure 6: Number of confirmed cases of pandemic (H1N1) 2009 and notification rate per 100,000 population by age group (years)

HSE area

All HSE areas have reported confirmed cases. The numbers and rates by HSE area for the week ending August 15th and to date are shown in table 2.

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

HSE area	Week 32: Aug 9 th to 15 th		To date: up to Aug 15 th	
	Number of confirmed cases	Rate per 100,000 population	Number of confirmed cases	Rate per 100,000 population
HSE-E	39	2.6	257	17.1
HSE-M	3	1.2	23	9.1
HSE-MW	13	3.6	46	12.7
HSE-NE	10	2.5	72	18.3
HSE-NW	19	8.0	47	19.8
HSE-S	16	2.6	78	12.6
HSE-SE	5	1.1	46	10.0
HSE-W	2	0.5	50	12.1
Total	107	2.5	619	14.6

(Week number on table 2 is based on infectious disease notification week number, which is one week behind the international influenza week number. Therefore week 32 above is equivalent to week 33 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 2009.

Reported complications were mostly respiratory in nature; 15 cases developed pneumonia, five developed acute respiratory distress syndrome (ARDS), 10 cases developed other respiratory problems/dehydration and one developed otitis media.

Of the 619 confirmed cases, 55 cases were reported as having been admitted to hospital. Forty-one hospitalised cases have recovered or are recovering (74.5%), six are still ill (10.9%), outcome is awaited for seven (12.7%) and one case is deceased (1.8%). A second person with pandemic (H1N1) 2009 died during week 34. Table 3 shows the number of hospitalised cases by age group (years) and sex. Twenty-five (45.5%) 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	Unknown	Total
<1 yrs	1	1	0	2
1-4 yrs	-	3	0	3
5-9 yrs	2	5	0	7
10-14 yrs	2	2	0	4
15-19 yrs	5	3	0	8
20-24 yrs	1	4	0	5
25-34 yrs	8	3	0	11
35-44 yrs	2	3	0	5
45-54 yrs	-	1	0	1
55-64 yrs	1	4	0	5
65+ yrs	2	2	0	4
Total	24	31	0	55

5. Outbreak surveillance

Twenty-six outbreaks of pandemic (H1N1) 2009 have been reported in Ireland to date, involving 358 people in total, of which 66 were laboratory confirmed cases. The number ill per outbreak has ranged between two and 150 persons. Fifteen outbreaks occurred in family settings, one was in a community hospital/long-stay unit, one was in a hotel, one involved travelling companions and eight occurred in educational settings.

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 6th August 2009)

WHO Region	Cumulative total as of 6 th August 2009	
	Cases*	Deaths
Africa (AFRO)	591	1
Americas (AMRO)	102,905	1,274
Eastern Mediterranean (EMRO)	2,346	7
Europe (EURO)	>32000	53
South-East Asia (SEARO)	11,432	83
Western Pacific (WPRO)	28,120	43
Total	177,457	1,461

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

USA

During week 31 (2nd – 8th August 2009), influenza activity decreased slightly in the United States; however, there were still higher levels of ILI than is normal for this time of year. Over 98% of all subtyped influenza A viruses being reported to CDC were pandemic (H1N1) 2009 viruses.

Canada

The overall influenza activity remained stable during week 32 (2nd to 8th August 2009), with the reported activity level (4 regions reported localised activity) and the national ILI consultation rate (15 consultations per 1,000 visits) remaining stable compared to last week. The proportion of influenza positive tests decreased from 9.9% during week 31 to 5.5% during week 32. Pandemic influenza activity also decreased during week 32.

New Zealand

There has been a continuing decline in consultations for ILI through sentinel surveillance in week 32 (3-9 August 2009). However, the weekly ILI consultation rate is still higher than previous years for the same week. So far, the highest ILI consultation rates have been reported among children and teenagers aged 0 to 19 years. Among 45 influenza viruses reported from sentinel surveillance in week 32, 33 (73%) were novel A (H1N1) 2009 lineage. Among 138 influenza viruses reported from non-sentinel surveillance in week 32, 93 (67%) were novel A (H1N1) 2009 lineage. Novel A (H1N1) 2009 lineage has become the predominant strain among all influenza viruses. Seasonal A (H1N1) strain has been the predominant strain among all seasonal influenza viruses.

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

Ireland	www.hpsc.ie
World –WHO	www.who.int/topics/influenza/en/
Europe – ECDC	http://ecdc.europa.eu/
Europe – EISN	www.eiss.org/index.cgi
United States	www.cdc.gov/flu/weekly/fluactivity.htm

Canada www.phac-aspc.gc.ca/fluwatch/index.html
Northern Ireland <http://www.cdscni.org.uk/>
United Kingdom www.hpa.org.uk/
Australia <http://www.health.gov.au/>
New Zealand http://www.surv.esr.cri.nz/virology/influenza_weekly_update.php

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 and enhanced data are collected on all 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.