

Influenza Surveillance in Ireland - Weekly Update

Influenza Week 46 2009 (9th to 15th November 2009)



Summary

- Influenza activity in Ireland continued to decrease during week 46 but still remains at higher levels than those recorded in previous seasons:
 - ♦ The sentinel GP influenza-like illness (ILI) consultation rate was 134.4 per 100,000 population in week 46, a decrease compared to the updated rate of 161.9 per 100,000 reported during week 45.*
 - ♦ The highest sentinel GP age-specific ILI consultation rates occurred in the 0-4 year age group, where a marked increase was noted during week 46.
 - ♦ The number of laboratory confirmed cases of pandemic (H1N1) 2009 decreased sharply.
 - ♦ The number of hospitalised cases of confirmed pandemic (H1N1) 2009 decreased by almost 50%.
 - ♦ The number of hospitalised cases of confirmed pandemic (H1N1) 2009 admitted to ICU this week was 9, a slight increase compared to 6 ICU admissions during the previous week.
 - ♦ An increase in the proportion of respiratory admissions from two sentinel hospitals (HSE-E and-W) was reported.
 - ♦ The number of pandemic (H1N1) 2009 and ILI outbreaks reported decreased slightly with three outbreaks reported.
 - ♦ The proportion of flu-related calls to GP Out-of-Hours services remained stable.
 - ♦ Pandemic (H1N1) 2009 is the only influenza virus circulating; in week 46, 100% of specimens positive for influenza were pandemic (H1N1) 2009.
 - ♦ The proportion of sentinel specimens testing positive for pandemic (H1N1) 2009 was 47.6% during week 46, an increase compared to 39.4% positive during week 45.*
- Based on the surveillance of laboratory confirmed cases of pandemic (H1N1) 2009, as of 14th November:
 - ♦ 3,914 confirmed cases have been notified in Ireland.
 - ♦ Children and young adults remain the most affected groups; 80.6% of cases are less than 35 years of age.
 - ♦ Clinical illness continues to be mild in the majority of cases.
- Sixteen deaths in confirmed cases of pandemic (H1N1) 2009 have been reported to date (18th November).

*Since the last report, extra information on the number of ILI consultations and positive influenza specimens occurring in week 45 was provided by sentinel GPs and the NVRL and the rate for the week was adjusted accordingly

Introduction

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

1. Irish College of General Practitioners (ICGP) sentinel surveillance system
2. GP Out-of-Hours system
3. Virological data from the National Virus Reference Laboratory (NVRL), Cork University Hospital (CUH) and University College Hospital, Galway (UCHG)
4. Enhanced surveillance system for pandemic (H1N1) 2009 using the Computerised Infectious Disease Reporting system (CIDR)
5. Outbreak reporting (CIDR)
6. Pandemic (H1N1) ICU enhanced surveillance system

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 46 2009, 59 of 61 (96.7%) ICGP sentinel general practices provided data, with 56 practices (91.8%) reporting 312 influenza-like illness (ILI) cases and 5 practices reporting no ILI cases. This corresponds to an ILI consultation rate of 134.4 per 100,000 population, which is a marked decrease compared to the updated rate of 161.9 per 100,000 population reported during week 45 2009.[†]

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), Cork University Hospital (CUH) and University College Hospital, Galway (UCHG). CUH and UCHG have reported influenza positive non-sentinel specimens since weeks 31 and 36, 2009, respectively and these are included in figure 1. Influenza A unsubtype isolates (probable pandemic (H1N1) 2009) are specimens that are awaiting laboratory confirmation as pandemic (H1N1) 2009.

[†] Since the last report, extra information on the number of ILI consultations occurring in week 45 was provided by sentinel GPs and the rate for the week was adjusted accordingly

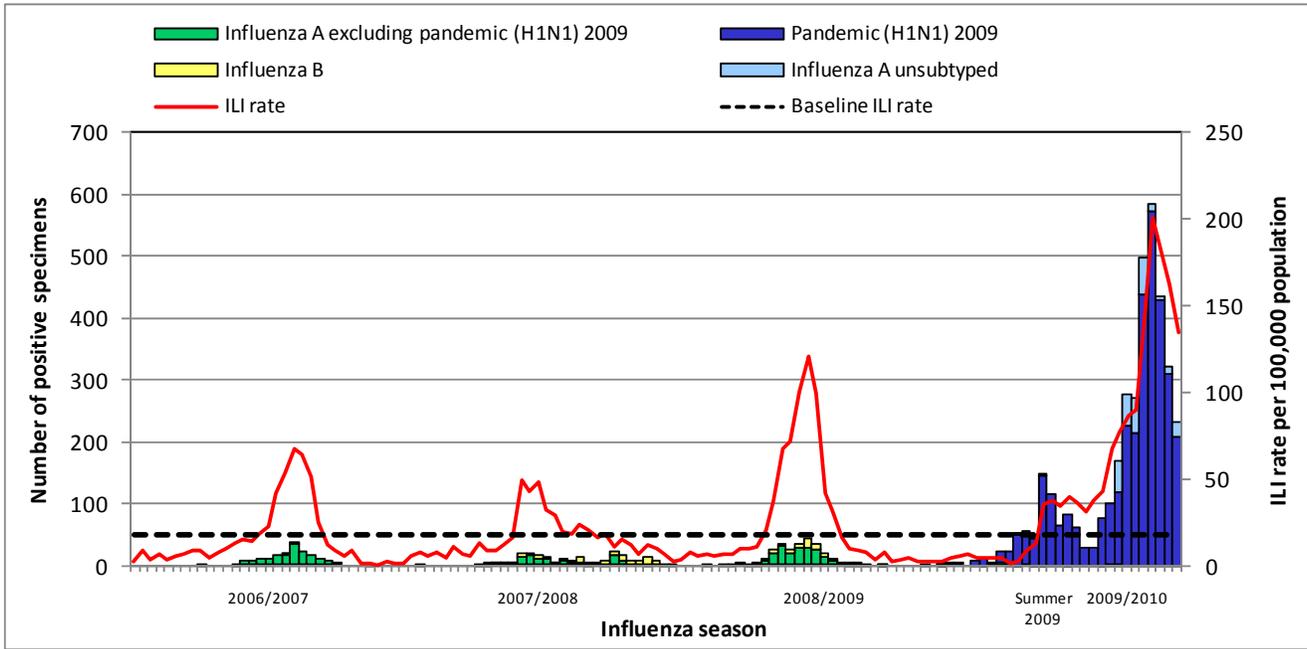


Figure 1. ILI GP consultation rates per 100,000 population, baseline ILI threshold rate, and number of positive influenza specimens, by influenza week and season[‡]

Source: NVRL, CUH and UCHG laboratory data and ICGP clinical ILI data

During week 46 2009, sentinel GPs reported 66 ILI cases in the 0-4 year age group (398.7 per 100,000 population), 74 cases in the 5-14 year age group (240.4 per 100,000 population), 162 cases in the 15-64 year age group (101.8 per 100,000 population) and 10 cases in those aged 65 years and older (39.0 per 100,000 population) (figure 2).

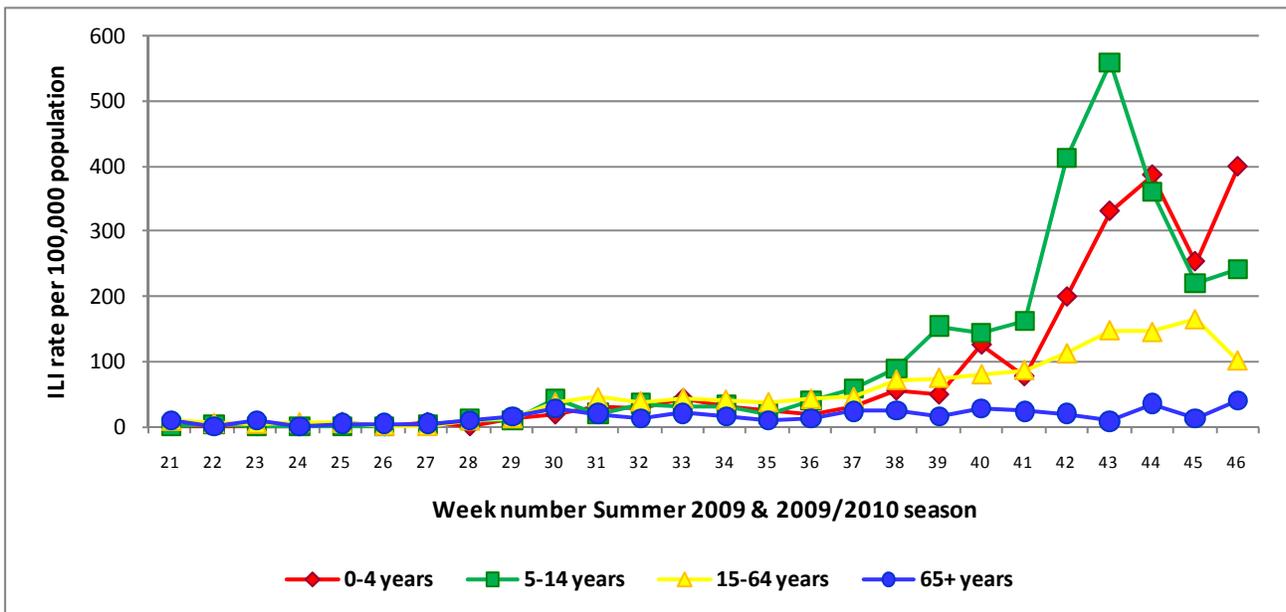


Figure 2: Age specific sentinel GP consultation rate for ILI per 100,000 population by week during the Summer 2009 and 2009/2010 influenza seasons

Source: ICGP ILI clinical data

[‡] Please note that virological data for NVRL is for all seasons, for CUH is from week 31 2009 and for UCHG is from week 36 2009.

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.

During week 46 2009, localised influenza activity (due to increases in ILI in local areas or two or more outbreaks within a HSE area and laboratory confirmed cases of influenza) was reported by HSE-M, -NW, and –W and regional activity (based on increases in ILI in one or more counties of a HSE area and laboratory confirmed cases of influenza) was reported by HSE-E, -MW, -NE, -S and –SE (figure 3).

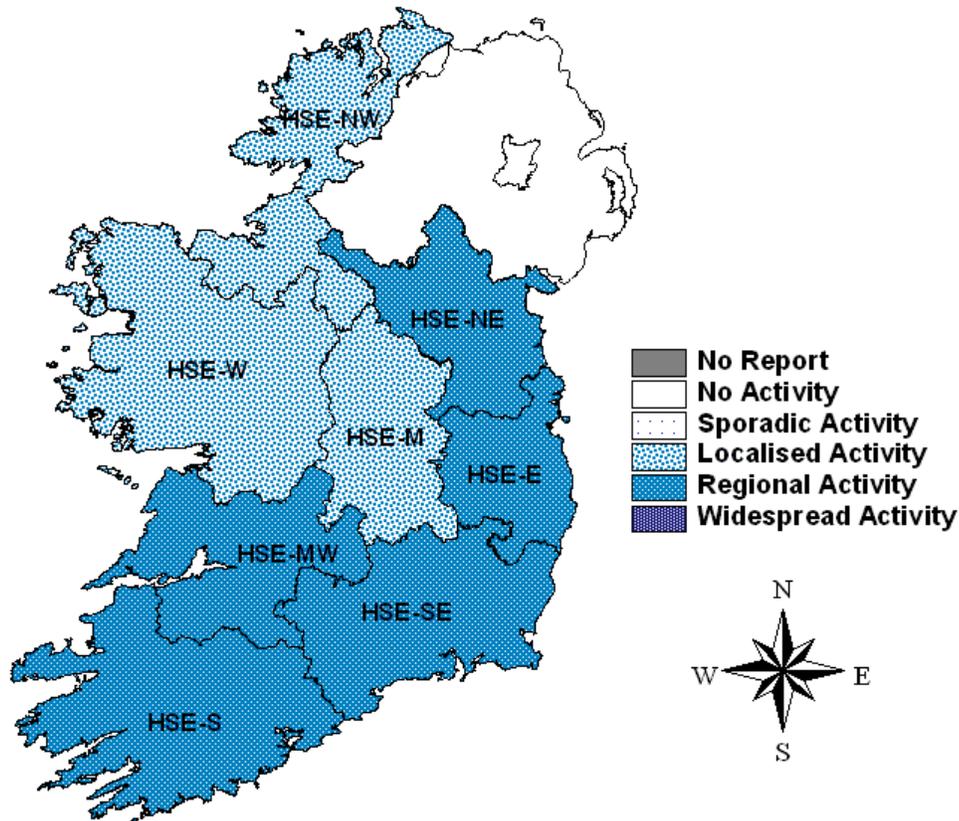


Figure 3: Map of provisional influenza activity by HSE area during influenza week 46 2009

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 46 2009, hospital and school sentinel data were received from seven of the eight HSE areas. Increases in the proportion of respiratory admissions were reported from two sentinel hospitals (HSE-E & -W) during influenza week 46 2009. One secondary school (HSE-E) and one primary school (HSE-NW) reported increases in absenteeism during week 46.

2. GP Out-Of-Hours services surveillance

The Department of Public Health in the HSE-NE is collating national data on calls to nine 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. The percentage of flu-related calls was 10.6% during week 46, identical to the proportion reported during week 45 (figure 4).

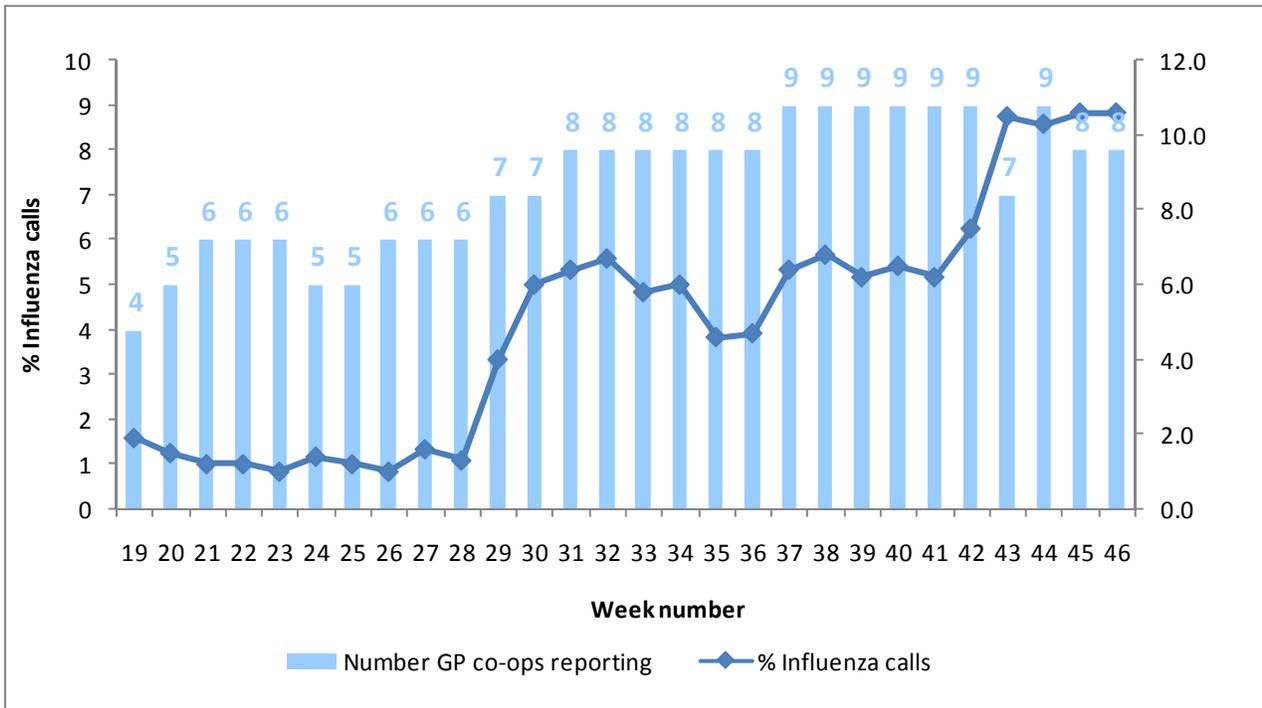


Figure 4: Flu-related calls as a proportion of total calls to Out-of-Hours GP Co-ops by week[§]

Source: HSE-NE.

[§] Week 46: data received from CARE-Doc, D-Doc, K-Doc, MI-Doc, NE-Doc, Shan-Doc, South-Doc, West-Doc. Not all services provided data for all weeks.

3. Virological Data from the National Virus Reference Laboratory (NVRL), Cork University Hospital (CUH) and University College Hospital, Galway (UCHG)

Eighty-four specimens from sentinel GPs were tested by the NVRL during week 46 2009, 40 (47.6%) of which were positive for pandemic (H1N1) 2009.

The NVRL also tested 653 non-sentinel specimens taken during the same week. Of these, 138 (21.1%) were positive for pandemic (H1N1) 2009. Sixteen specimens tested positive for RSV (2.5%) (table 1 and table 3). No specimens were positive for other influenza A subtypes, influenza B, adenovirus or parainfluenza viruses. Figure 5 shows the number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2009/2010 and Summer 2010 influenza seasons, compared to the 2008/2009 and Summer 2009 influenza seasons.**

UCHG tested 42 non-sentinel specimens taken during week 46 2009, 10 (23.8%) of which were positive for pandemic (H1N1) 2009 (table 2).

CUH tested 159 non-sentinel specimens taken during week 46 2009, 43 (27.0%) of which were positive for pandemic (H1N1) 2009 (table 2).

Pandemic (H1N1) 2009 is the main influenza virus circulating. During week 46, 100% of specimens positive for influenza were pandemic (H1N1) 2009. For summer 2009 and 2009/2010 seasons to date, confirmed pandemic (H1N1) 2009 has accounted for 99.3% of influenza positive specimens (table 1).

During week 46, the percentage of sentinel and non-sentinel specimens testing positive for pandemic (H1N1) 2009 was 24.6%, a decrease compared to 26.9% positive during week 45. Figure 6 shows the number of sentinel specimens tested by the NVRL for influenza and non-sentinel specimens tested by the NVRL, CUH and UCHG for influenza and the percentage of specimens testing positive for influenza by week number for the Summer 2009 and 2009/2010 influenza seasons.

To date, the NVRL has performed neuraminidase sequencing on 23 non-sentinel pandemic (H1N1) 2009 isolates. Oseltamivir susceptibility results are available for 23 isolates, of which all were susceptible to oseltamivir. Zanamivir susceptibility results are available for 17 isolates, of which all were susceptible to zanamivir.

** 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

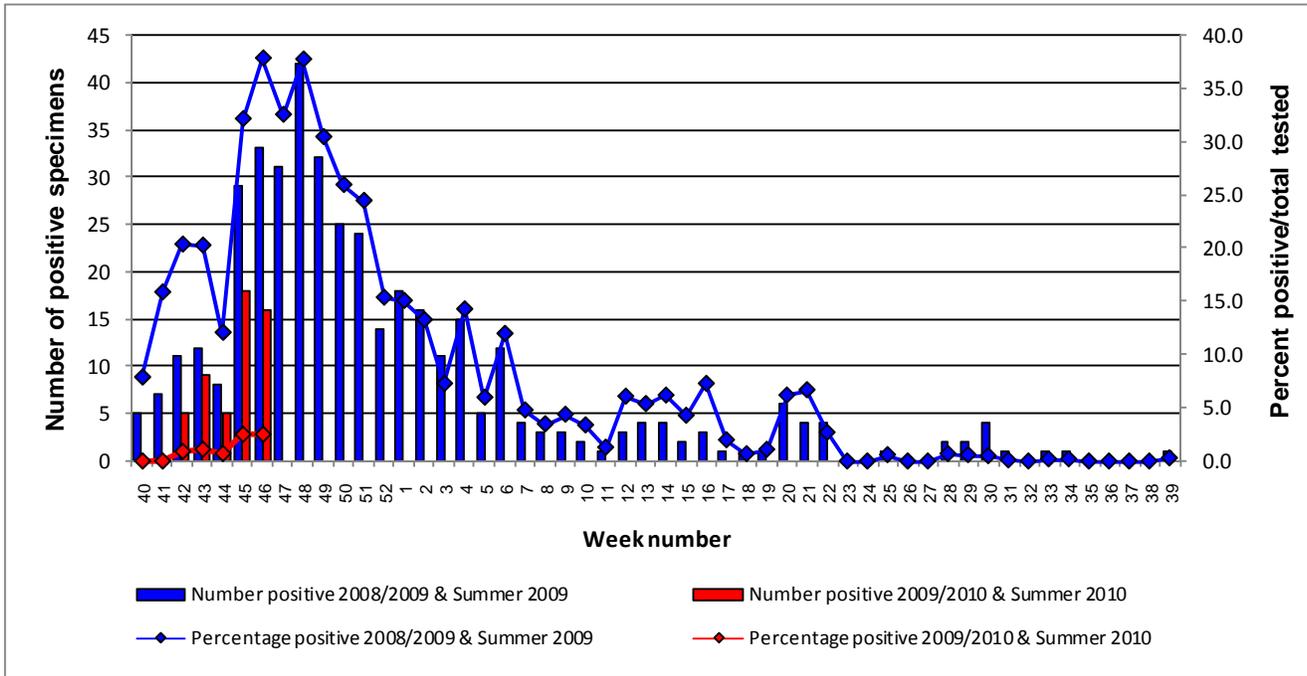


Figure 5: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2009/2010 and Summer 2010 influenza seasons, compared to the 2008/2009 and Summer 2009 influenza seasons

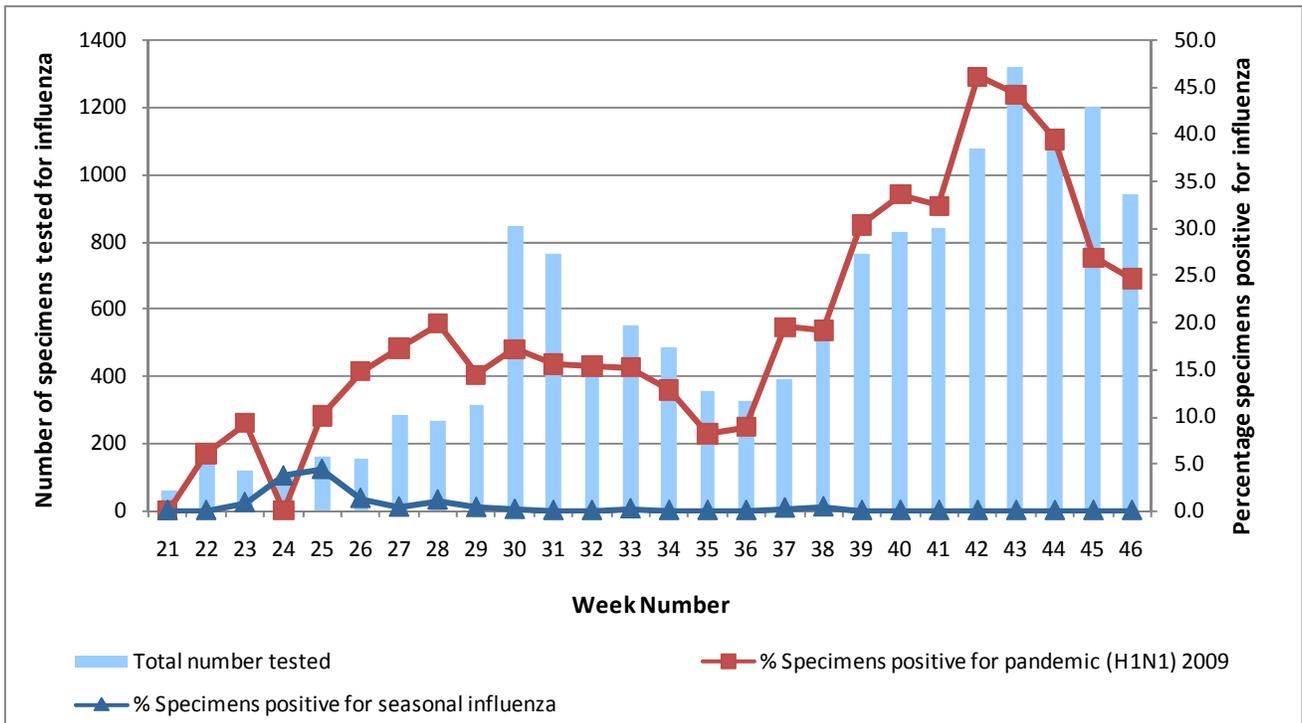


Figure 6: Number of sentinel and non-sentinel specimens tested for influenza and percentage influenza positive^{††}
 Source: NVRL, CUH & UCHG

^{††} Please note that virological data for NVRL is from week 21 2009, for CUH is from week 31 2009 and for UCHG is from week 36 2009.

Table 1: Number of sentinel and non-sentinel respiratory specimens tested and positive results, influenza week 46 2009 and Summer 2009 & 2009/2010 seasons to date**

Source: NVRL, CUH and UCHG

Week number	Specimen type	Total Specimens tested	Number Influenza Positive	% Influenza Positive	Confirmed Pandemic (H1N1) 2009	Probable Pandemic (H1N1) 2009	Influenza A(H3)	Influenza A(H1)	Influenza A (unsubtyped)	Influenza B	% Pandemic (H1N1) 2009
46 2009	Sentinel	84	40	47.6	40	0	0	0	0	0	100.0
	Non-sentinel	854	191	22.4	170	21	0	0	0	0	100.0
	Total	938	231	24.6	210	21	0	0	0	0	100.0
Summer 2009 & 2009/2010 seasons to date	Sentinel	1648	627	38.0	624	0	3	0	0	0	99.5
	Non-sentinel	13628	3398	24.9	3110	263	0	0	22	3	99.3
	Total	15276	4025	26.3	3734	263	3	0	22	3	99.3

Table 2: Number of non-sentinel respiratory specimens tested and positive results by laboratory, influenza week 46 2009 and Summer 2009 & 2009/2010 seasons to date**

Source: NVRL, CUH and UCHG

Week number	Laboratory	Total specimens tested	Number influenza positive	% Influenza positive	Confirmed Pandemic (H1N1) 2009	Probable Pandemic (H1N1) 2009	% Pandemic (H1N1) 2009	Influenza A (unsubtyped)	Influenza B
46 2009	NVRL	653	138	21.1	138	0	100.0	0	0
	CUH	159	43	27.0	22	21	100.0	0	0
	UCHG	42	10	23.8	10	0	100.0	0	0
	Total	854	191	22.4	170	21	100.0	0	0
Summer 2009 & 2009/2010 season to date	NVRL	10453	2245	21.5	2217	4	98.9	21	3
	CUH	2177	709	32.6	450	259	100.0	0	0
	UCHG	998	444	44.5	443	0	99.8	1	0
	Total	13628	3398	24.9	3110	263	99.3	22	3

Table 3: Number of non-sentinel specimens tested by the NVRL for other respiratory pathogens and positive results, influenza week 46 2009 and Summer 2009 & 2009/2010 seasons to date

Source: NVRL

Week number	Total specimens	RSV	% RSV Positive	Adenovirus	% Adenovirus positive	Parainfluenza virus type 1	% Parainfluenza virus type 1	Parainfluenza virus type 2	% Parainfluenza virus type 2	Parainfluenza virus type 3	% Parainfluenza virus type 3
46 2009	653	16	2.5	0	0.0	0	0.0	0	0.0	0	0.0
Summer 2009	6093	21	0.3	4	0.1	4	0.1	0	0.0	6	0.1
2009/2010 season to date	4360	53	1.2	2	0.0	4	0.1	0	0.0	0	0.0

** Please note that virological data for NVRL is from week 21 2009, for CUH is from week 31 2009 and for UCHG is from week 36 2009.

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

During the current pandemic phase of mitigation, testing is focused on cases hospitalised for influenza, cases with severe clinical illness and in other situations such as clusters of ILI in institutions or unusual clusters of serious illness.

As of 14th November 2009, a total of 3,914 confirmed cases of pandemic (H1N1) 2009 infection were reported.^{§§} Figure 7 shows the number of confirmed pandemic (H1N1) 2009 cases by week of notification and hospitalisation status.

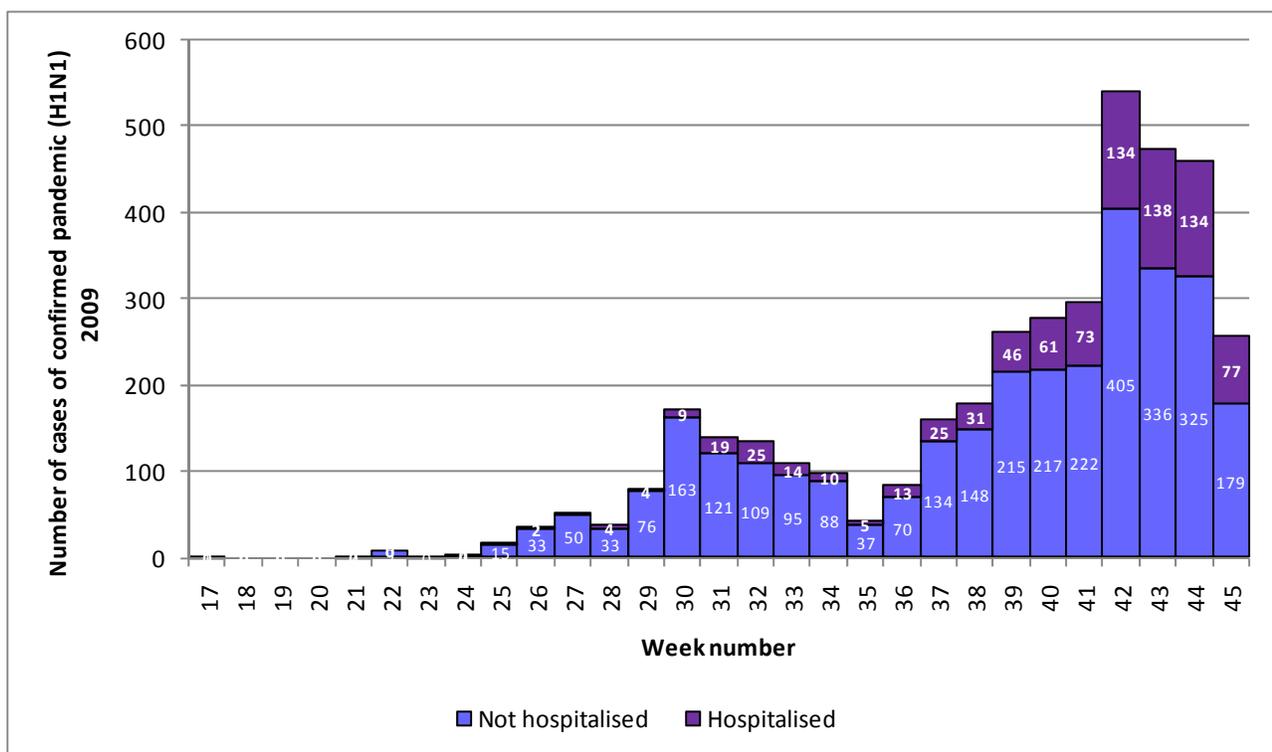


Figure 7: Number of confirmed cases of pandemic (H1N1) 2009 by week of notification and hospitalisation status^{***}
Source: CIDR

Age and Sex

Of the 3,914 confirmed cases reported to 14th November, 2,090 were female (53.4%), 1,806 were male (46.1%) and sex was not reported for 18 cases (0.5%). The median age of cases was 18 years (range: 0-84 years) and 80.6% were less than 35 years of age. Figure 8 shows the age specific rates per 100,000 population of confirmed cases of pandemic (H1N1) 2009 by week of notification.^{***} The highest age specific rates are seen in the 0-4 year age group since week 40. However, during week 45, the age specific notification rate decreased in all age groups and in particular in the 0-4 year age group.

^{§§} As WHO has advised Member States to reduce laboratory testing of suspect cases and to move to clinical diagnosis of influenza-like illness, the number of laboratory confirmed cases of pandemic (H1N1) 2009 reported here understates the actual number of cases in the population.

^{***} Week number on figure 7 is based on infectious disease notification week number, which is one week behind the international influenza week number. Therefore weeks 17-45 above is equivalent to weeks 18-46 on the influenza system.

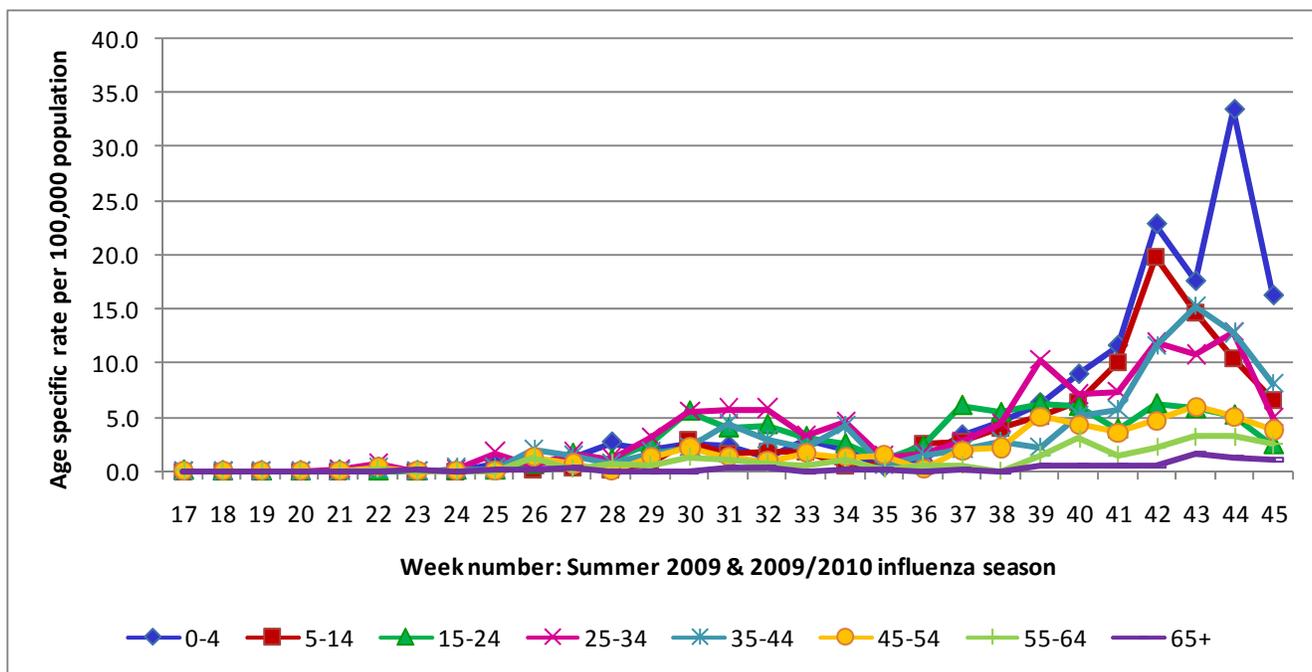


Figure 8: Age specific notification rate per 100,000 population of confirmed cases of pandemic (H1N1) 2009 by week of notification^{†††}
 Source: CIDR

HSE area

All HSE areas have reported confirmed cases. The numbers and rates by HSE area are shown in table 4. The highest rate for week 45 was in HSE-MW (8.9 per 100,000 population).

Table 4: Number and rate per 100,000 population for confirmed cases of pandemic (H1N1) 2009 by HSE area^{†††}
 Source: CIDR

HSE Area	Week 45 ^{†††} : 8 th to 14 th November 2009		Week 17 - Week 45 2009	
	Number of confirmed cases	Rate per 100,000 population	Number of confirmed cases	Rate per 100,000 population
HSE-E	92	6.1	1276	85.1
HSE-M	8	3.2	132	52.5
HSE-MW	32	8.9	253	70.1
HSE-NE	13	3.3	279	70.8
HSE-NW	11	4.6	199	83.9
HSE-SE	37	8.0	286	62.1
HSE-S	49	7.9	811	130.6
HSE-W	14	3.4	678	163.7
Total	256	6.0	3914	92.3

^{†††} Week number in figure 8 and table 4 is based on infectious disease notification week number, which is one week behind the international influenza week number. Therefore week 45 above is equivalent to week 46 on the influenza system.

Severity of illness

As of 14th November 2009, clinical illness continues to be mild in the majority of cases. Of the 3,914 confirmed cases, outcome was reported for 1,156 (29.5%) cases. Of the 1,156 confirmed cases where outcome was reported, 1,070 have recovered or are recovering (92.6%) and 70 are still ill (6.0%). To date (18th November) 16 laboratory confirmed cases have died. Table 5 shows the number of deaths in confirmed cases of pandemic (H1N1) 2009 by week.

Table 5: Number of deaths due to pandemic (H1N1) 2009

Week number	Number of deaths due to pandemic (H1N1) 2009
31	1
32	0
33	1
34	0
35	0
36	0
37	0
38	0
39	2
40	0
41	1
42	4
43	3
44	2
45	2
Total	16

Reported complications have been mostly respiratory in nature; 141 cases developed pneumonia and 49 developed acute respiratory distress syndrome (ARDS). Other reported complications included chest infections, acute renal failure and multi-organ failure.

Hospitalised cases

Of the 3,914 confirmed cases, 827 (21.1%) were admitted to hospital. Of these, 73 (8.8%) were admitted to ICU. The number of laboratory confirmed cases who were hospitalised and admitted to ICU in week 45 was 9, a slight increase compared to 6^{†††} cases admitted to ICU in week 44.^{§§§} Table 6 shows the number of hospitalised cases by age group (years), sex and age-specific hospitalisation rate while figure 9 shows the cumulative numbers and age specific rates by hospitalisation status. The highest age-specific rates for hospitalised patients are seen in the 0-4 year age group while the highest age-specific rates for non-hospitalised cases are seen in the 5-14 year age group.

^{†††} Note: 7 ICU admissions were reported for week 44 in last week's report. However, this was subsequently amended to 6 ICU admissions as the date of admission for one of these cases was not in week 44.

^{§§§} ICU figures taken from the pandemic (H1N1) ICU enhanced surveillance system.

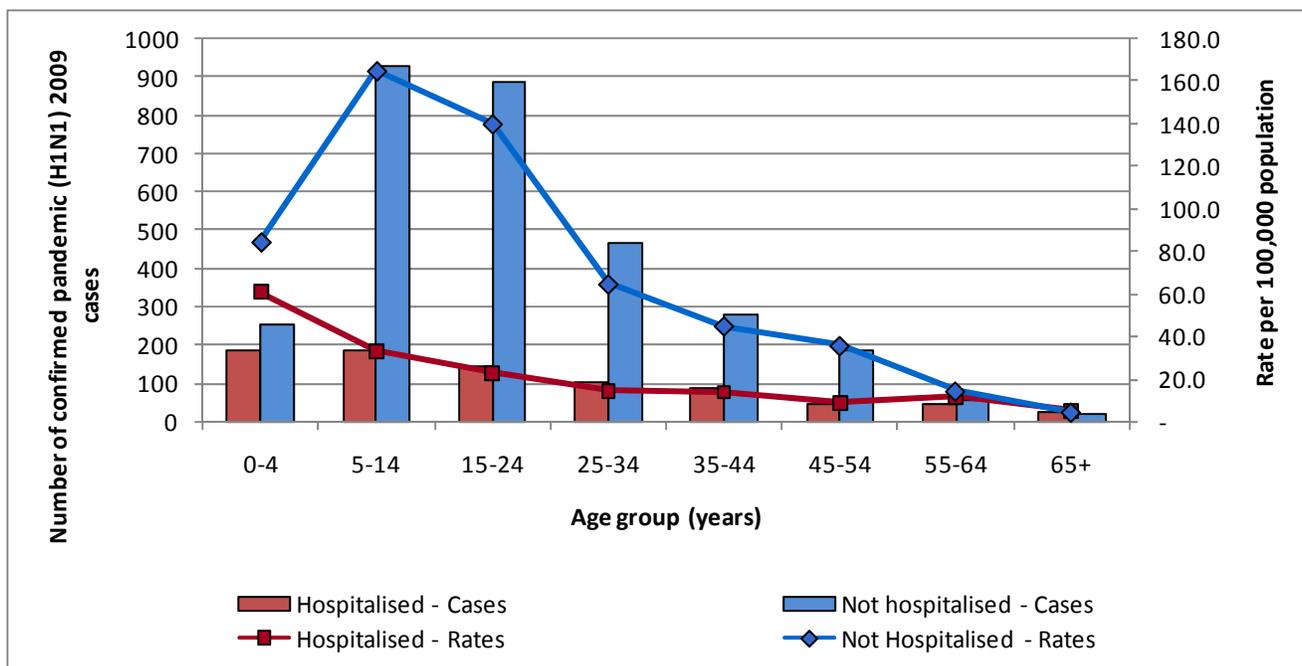


Figure 9: Cumulative numbers and age specific rates for confirmed cases of pandemic (H1N1) 2009 by hospitalisation status

Table 6: Cumulative number of hospitalised cases of confirmed pandemic (H1N1) 2009 by age group (years) and sex (Week 17 – 45)

Source: CIDR

Age group (years)	Female	Male	Unknown	Total	Age specific hospitalisation Rate per 100,000 population	% of Total
0-4	78	105	1	184	60.9	22.2
5-14	72	113	1	186	33.1	22.5
15-24	89	56	0	145	22.9	17.5
25-34	75	31	0	106	14.7	12.8
35-44	59	27	1	87	14.0	10.5
45-54	27	19	0	46	8.8	5.6
55-64	21	26	0	47	11.5	5.7
65+	11	13	0	24	5.1	2.9
Age unknown	1	1	0	2	n/a	0.2
Total	433	391	3	827	19.5	100.0

Of the 827 confirmed cases hospitalised, 357 (43.2%) of the hospitalised cases had pre-existing clinical conditions including chronic heart disease, chronic liver disease, chronic renal disease, chronic respiratory disease, chronic neurological disease, asthma, haemoglobinopathy, immunosuppression, diabetes mellitus, severe obesity (BMI ≥ 40) and pregnancy. Over 25% (11 of 42) of hospitalised cases with a chronic neurological disease were reported to have cerebral palsy. Table 7 shows the cumulative number of hospitalised cases by risk group.

Table 7: Cumulative number of hospitalised cases of confirmed pandemic (H1N1) 2009 by risk group (Wk 17 – 45)****
 Source: CIDR

Risk group	Number of cases	% of hospitalised cases
On medication for asthma	102	12.3
Chronic respiratory disease	83	10.0
Immunosuppressed	55	6.7
Pregnant	55	6.7
Chronic heart disease	44	5.3
Chronic neurological disease	43	5.2
Diabetes mellitus	27	3.3
Haemoglobinopathies	22	2.7
Renal disease	20	2.4
Chronic liver disease	11	1.3
Severely obese (BMI ≥ 40)	10	1.2

**** Cases may belong to more than one risk group

5. Outbreak surveillance (CIDR)

As of 14th November 2009, 105 general outbreaks of pandemic (H1N1) 2009 and ILI have been reported in Ireland since week 23 2009. These outbreaks involved 2,356 people in total, of which 193 (8.2%) were laboratory confirmed cases of pandemic (H1N1) 2009. The number ill per outbreak has ranged between two and 150 people.

The majority of these outbreaks (81) occurred in educational settings. Nine outbreaks occurred in residential institutions, three in crèches, three in workplaces, two were in a community hospital/long-stay unit, two were travel related, two were related to social gatherings and one each occurred in a hotel, an intellectual disability unit and a prison (figure 10). Table 7 summarises the pandemic (H1N1) 2009 and ILI outbreaks to date by location, while table 8 summarises the pandemic (H1N1) 2009 and ILI outbreaks by HSE area. Table 9 shows the number of outbreak associated pandemic (H1N1) 2009 and ILI cases by age group (years).

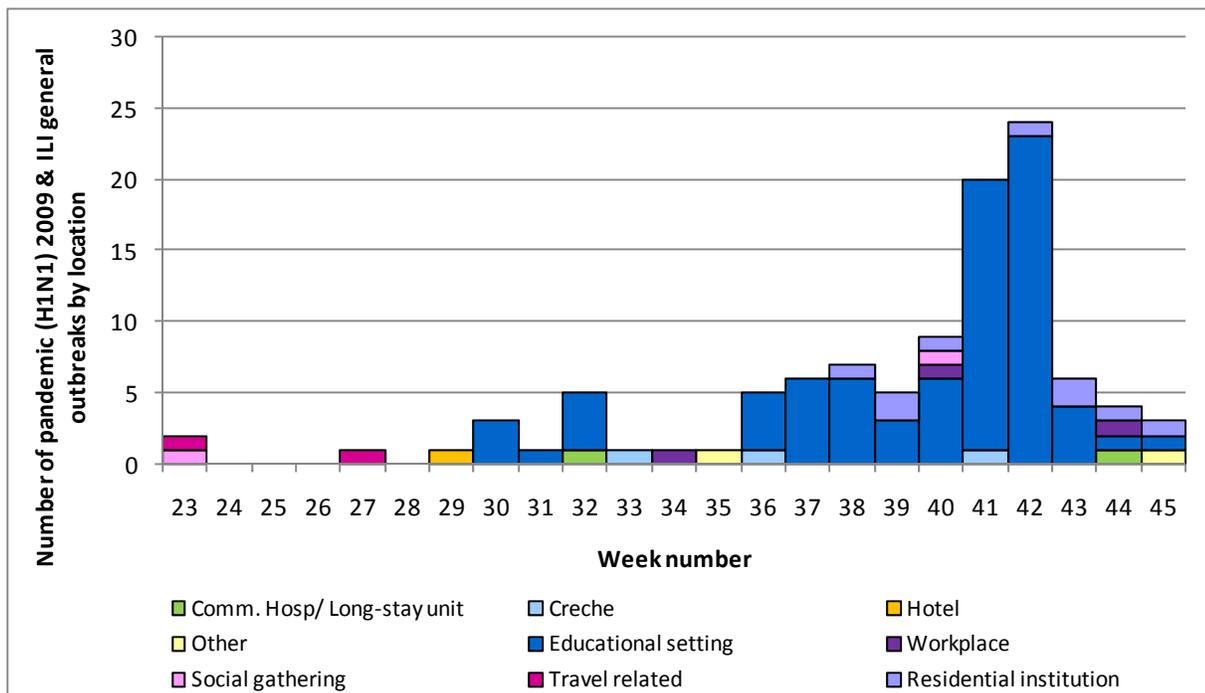


Figure 10: Number of pandemic (H1N1) 2009 and ILI general outbreaks by location and week number^{†††}

Source: CIDR

^{†††} Week number in Figure 10 is based on infectious disease notification week number, which is one week behind the international influenza week number. Therefore week 45 above is equivalent to week 46 on the influenza system.

Table 8: Summary of pandemic (H1N1) 2009 and ILI general outbreaks by location, to date

Source: CIDR

Location	Number of outbreaks	Total number ill	Total number laboratory investigated
Comm. Hosp/ Long-stay unit	2	10	4
Crèche	3	31	5
Hotel	1	3	1
Other	2	5	5
Educational setting	81	2199	131
Residential institution	9	88	34
Social gathering	2	4	3
Travel related	2	9	8
Workplace	3	7	2
Total	105	2356	193

Table 9: Summary of pandemic (H1N1) 2009 and ILI general outbreaks by HSE area, to date

Source: CIDR

HSE Area	Number of outbreaks	Total number ill	Total number laboratory confirmed
HSE-E	28	543	42
HSE-M	0	0	0
HSE-MW	7	32	21
HSE-NE	15	528	31
HSE-NW	9	359	26
HSE-SE	10	193	10
HSE-S	25	279	34
HSE-W	11	422	29
Total	105	2356	193

Table 10: Number of general outbreak associated pandemic (H1N1) and ILI cases of by age group (years), to date

Source: CIDR

Number of cases	0-1	2-4	5-9	10-19	20-49	50-64	65+	Age unknown	Total
	8	33	264	1033	90	7	0	921	2356

International summary

The total numbers of confirmed cases and deaths reported worldwide by the World Health Organization (WHO) region are shown in table 10. 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 11: Reported number of confirmed pandemic (H1N1) 2009 cases and deaths by WHO region

Source: WHO 8th November 2009

WHO Region	Cumulative total as of 8 th November 2009	
	Cases ^{***}	Deaths
Africa (AFRO)	14,868	103
Americas (AMRO)	190,765	4,512
Eastern Mediterranean (EMRO)	25,531	151
Europe (EURO)	Over 78,000	At least 300
South-East Asia (SEARO)	44,661	678
Western Pacific (WPRO)	149,711	516
Total	Over 503,536	At least 6,260

United Kingdom

During week 45 (2-8 November 2009), the weekly influenza/ILI consultation rates decreased, though remained above the winter baseline thresholds, in England, Scotland and Northern Ireland. The majority of pandemic influenza cases continue to be mild, although, the cumulative number of deaths reported to be due to pandemic (H1N1) 2009 is 180. There were a total of 1355 new patients hospitalised in England with suspected pandemic influenza in the week from 5th-11th November, a decrease from 1,431 in the previous week. The hospitalisation rates have increased in the under 5-year age group, but have decreased in most other age groups recently. The main influenza virus circulating in the UK continues to be the pandemic (H1N1) 2009 strain, with a few influenza H1 (non-pandemic), H3 and B viruses detected. Six of 2,834 (0.2%) pandemic viruses tested have been confirmed to carry a mutation which confers resistance to the antiviral drug oseltamivir.

http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb_C/1243928258754

Europe

During week 45 2009, Bulgaria, Iceland, Ireland, Norway and Sweden reported very high levels of intensity. Poland and the UK (Northern Ireland) reported high levels of intensity and 14 countries reported medium intensity. From week 40 to week 45, influenza activity above baseline levels has been reported in 24 countries, with 20 of these showing an increasing trend in week 45. Three countries, Belgium, Iceland and the UK (Northern Ireland), reported decreasing trends. In most countries where influenza activity has risen above baseline levels, the most affected age group has been 0–15 year olds.

<http://ecdc.europa.eu/en/publications/Pages/Publications.aspx>

USA

During week 45 (1-7 November), influenza activity decreased slightly in the U.S. The proportion of outpatient visits for influenza-like illness (ILI) was 6.7%, a decrease from the previous week (7.7%) and above the national baseline (2.3%). All 10 regions reported ILI above region-specific baseline levels. The proportion of deaths attributed to pneumonia and influenza (7.7%) was above the epidemic threshold (6.8%) for the sixth consecutive week. Thirty-five influenza-associated paediatric deaths were reported to CDC in week 45, 26 were associated with Pandemic (H1N1) 2009 infection, eight were associated with an influenza A virus for which the subtype was undetermined and one was associated with an influenza B virus infection. These deaths occurred

^{***} 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.

between March 15 and November 7th, 2009. During week 45, 3,834 (30.1%) specimens tested by collaborating laboratories and reported to CDC/Influenza Division were positive for influenza. All subtyped influenza A viruses being reported to CDC were pandemic (H1N1) 2009 viruses. Forty-six states reported geographically widespread influenza activity. <http://www.cdc.gov/flu/weekly/>

CDC released new estimates of 2009 influenza A (H1N1) cases, hospitalisations and deaths in the U.S. that occurred between April and 17 October 2009 as follows: cases: approximately 22 million; hospitalisations: approximately 98,000; deaths: approximately 3,900. For details see

http://www.cdc.gov/h1n1flu/pdf/details_eip_methods_plus_schematic.pdf

Canada

During week 45 (1-7 November 2009), there was a considerable increase in the influenza activity level reported with a proportion of positive influenza tests of more than 38%, the national ILI consultation rate of almost 100 per 1,000 patient visits, 25 regions reporting widespread activity and over 750 influenza outbreaks reported.

This increased activity occurred in almost all provinces and territories. The Pandemic (H1N1) 2009 strain accounted for 99.8% of the positive influenza A subtyped specimens. During week 45, the intensity of Pandemic (H1N1) 2009 in the population was high with 1,324 hospitalisations and 35 deaths reported. From August 30 to November 7 2009, a total of 2,295 hospitalised cases including 317 cases admitted to ICU (13.8%), as well as 59 deaths have been reported. Numbers of new deaths were four times higher than in the previous week. So far, the proportion of severe cases (ICU admissions and deaths) among all hospitalised cases was lower than in the period up to August 29, 2009. The activity levels reported during the previous weeks were even higher than the peak period of the first wave (i.e. the first three weeks of June 2009).

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

New Zealand

During week 45 (2-8 November 2009), there has been a slight increase in consultations for influenza-like illness through sentinel surveillance. The highest ILI consultation rates have been reported among children and teenagers aged 0 to 19 years. During week 45, two influenza viruses were reported, one as 2009 influenza A (H1N1) from the sentinel surveillance and one as seasonal A (H3N2) from the non-sentinel surveillance scheme.

http://www.surv.esr.cri.nz/virology/influenza_weekly_update.php

Australia

The number of new confirmed pandemic (H1N1) cases continues to decrease nationally with a number of jurisdictions reporting no new cases in the last week. National ILI rates were below the baseline level reached at the end of the 2007 and 2008 seasons. There were no new hospitalisations in the reporting period. Type A influenza is the predominant seasonal influenza type reported by all jurisdictions. The pandemic strain has almost replaced the current seasonal H1N1 virus. The number of respiratory tests positive for influenza A is now very low. As of 6th November 2009, there were 37,127 confirmed cases of pandemic (H1N1) 2009 and 189 (0.5%) deaths associated with pandemic (H1N1) 2009.

<http://www.healthemergency.gov.au/internet/healthemergency/publishing.nsf/Content/ozflucurrent.htm>

<http://www.healthemergency.gov.au/internet/healthemergency/publishing.nsf/Content/updates>

Other countries

As of 13th November 2009

<http://www.who.int/csr/disease/swineflu/updates/en/>

- **Ukraine:** Because of a sharp rise in pandemic influenza cases almost three weeks ago in Ukraine, the Ministry of Health requested assistance from WHO European Regional Office to evaluate and respond. The initial analysis of information indicates that the numbers of severe cases do not appear to be excessive when compared to the experience of other countries and do not represent any change in the transmission or virulence of the virus.

http://www.who.int/csr/don/2009_11_16/en/index.html

- **Western Asia:** In Western Asia, increasing activity has been observed in several countries. In Israel, sharp increases in rates of ILI and pandemic virus detections have been observed over the past three weeks. In Afghanistan, the proportion of sentinel visits for acute respiratory infections (ARI) has increased over the past 3-4 weeks, but more dramatically in the last 1-2 weeks.
- **East Asia:** In East Asia, very intense and increasing influenza activity continues to be reported in Mongolia with severe impact on the healthcare system. Flu activity is increasing in China and Japan, but flu-like illnesses seem to be leveling off in Hong Kong and on Hokkaido, Japan's northern island.
- **Africa:** Three African countries recently reported their first confirmed pandemic H1N1 cases: Somalia, Nigeria and Burundi
- **Central and South America:** Most Central and South American countries reported stable or decreasing trends in the last week with the exception of Colombia which reported an increasing trend and Argentina which reported pockets of ILI activity in Buenos Aires and Sante Fe. Mexico reported a large number of confirmed cases and deaths this week, but the overall trend of the epidemic curve appears to shift downward based on the number of confirmed cases. One hundred and thirteen new confirmed deaths in eight countries from this region were reported, in total there have been 4,512 cumulative confirmed deaths.

http://new.paho.org/hq/index.php?option=com_content&task=view&id=2005&Itemid=1167

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

Ireland	www.hpsc.ie
Europe – ECDC	http://ecdc.europa.eu/
Europe – EISN	http://ecdc.europa.eu/en/activities/surveillance/EISN/Pages/home.aspx
Northern Ireland	http://www.cdscni.org.uk/

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Appendix A

Sentinel surveillance for influenza

This is the tenth 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-one 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 provided on both sentinel and non-sentinel specimens. Influenza test results from Cork University Hospital (CUH) and University College Hospital, Galway (UCHG) are also provided on 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.

ICU enhanced surveillance system:

On October 5th 2009, enhanced ICU surveillance system of confirmed cases of pandemic (H1N1) 2009 commenced in Ireland. It is a collaborative project between ICU medical and nursing staff, hospital administrators, departments of public health and the Health Protection Surveillance Centre. Forty hospitals (35 public and 5 private) currently participate in the surveillance scheme.

This system relates to adult, paediatric and neonatal confirmed and probable cases of pandemic (H1N1) 2009 admitted to intensive care units (ICU). The principal aim of the surveillance system is to report on the demographic profile (age, sex,) of all cases of pandemic (H1N1) 2009 admitted to ICU with details of predisposing risk factors, medical interventions and complications and clinical outcome. This information is used in conjunction with surveillance data from a number of other sources as follows: mortality data, data on laboratory confirmed cases, virology data and data on ILI consultation rates from sentinel GP practices.

A more detailed description of this system is available at:

<http://ndsc.newsweaver.ie/newepsiinsight/rqnq2ayeg0sugy02flxkl0>