

# Influenza Surveillance in Ireland - Weekly Update

## Influenza Week 50 2009 (7<sup>th</sup> to 13<sup>th</sup> December 2009)



### Summary

- Influenza activity in Ireland continued to decrease during week 50:
  - ◆ The sentinel GP influenza-like illness (ILI) consultation rate was 51.4 per 100,000 population during week 50, a decrease compared to the updated rate of 60.6 per 100,000 reported during week 49\*.
  - ◆ The highest sentinel GP age-specific ILI consultation rates occurred in the 0-4 year age group.
  - ◆ The number of laboratory confirmed cases of pandemic (H1N1) 2009 continued to decrease.
  - ◆ The number of hospitalised cases of confirmed pandemic (H1N1) 2009 continued to decrease.
  - ◆ One hospitalised case of confirmed pandemic (H1N1) 2009 was admitted to ICU.
  - ◆ The proportion of sentinel specimens testing positive for pandemic (H1N1) 2009 decreased from 21.1% in week 49 to 12.2% during week 50.
  - ◆ The proportion of flu-related calls to GP Out-of-Hours services decreased.
  - ◆ No pandemic (H1N1) 2009, influenza or ILI outbreaks were reported
  - ◆ Pandemic (H1N1) 2009 is the only influenza virus circulating; 100% of specimens positive for influenza were pandemic (H1N1) 2009
  - ◆ Respiratory Syncytial Virus (RSV) activity continued to increase.
- Based on the surveillance of laboratory confirmed cases of pandemic (H1N1) 2009, as of 12<sup>th</sup> December:
  - ◆ 4,455 confirmed cases have been notified in Ireland.
  - ◆ Children and young adults remain the most affected groups; 80.4% of cases are less than 35 years of age.
  - ◆ Clinical illness continues to be mild in the majority of cases.
- Twenty-two deaths in confirmed cases of pandemic (H1N1) 2009 have been reported to date (16<sup>th</sup> December).

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\* Since the last report, extra information on the number of ILI consultations and positive influenza specimens occurring in week 49 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

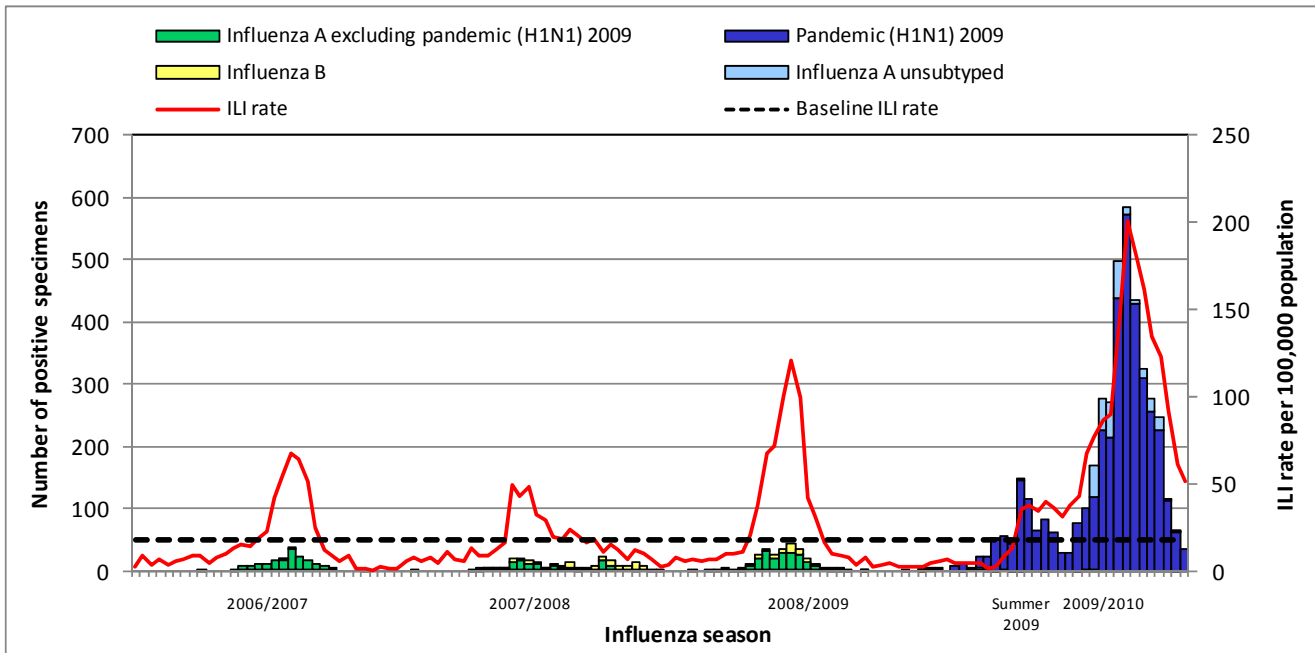
#### Clinical Data

During week 50 2009, 54 of 61 (88.5%) ICGP sentinel general practices provided data, with 36 practices (59.0%) reporting 113 influenza-like illness (ILI) cases and 25 practices reporting no ILI cases. This corresponds to an ILI consultation rate of 51.4 per 100,000 population, which is a decrease compared to the updated rate of 60.6 per 100,000 population reported during week 49 2009<sup>†</sup>.

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 untyped isolates (probable pandemic (H1N1) 2009) are specimens that are awaiting laboratory confirmation as pandemic (H1N1) 2009.

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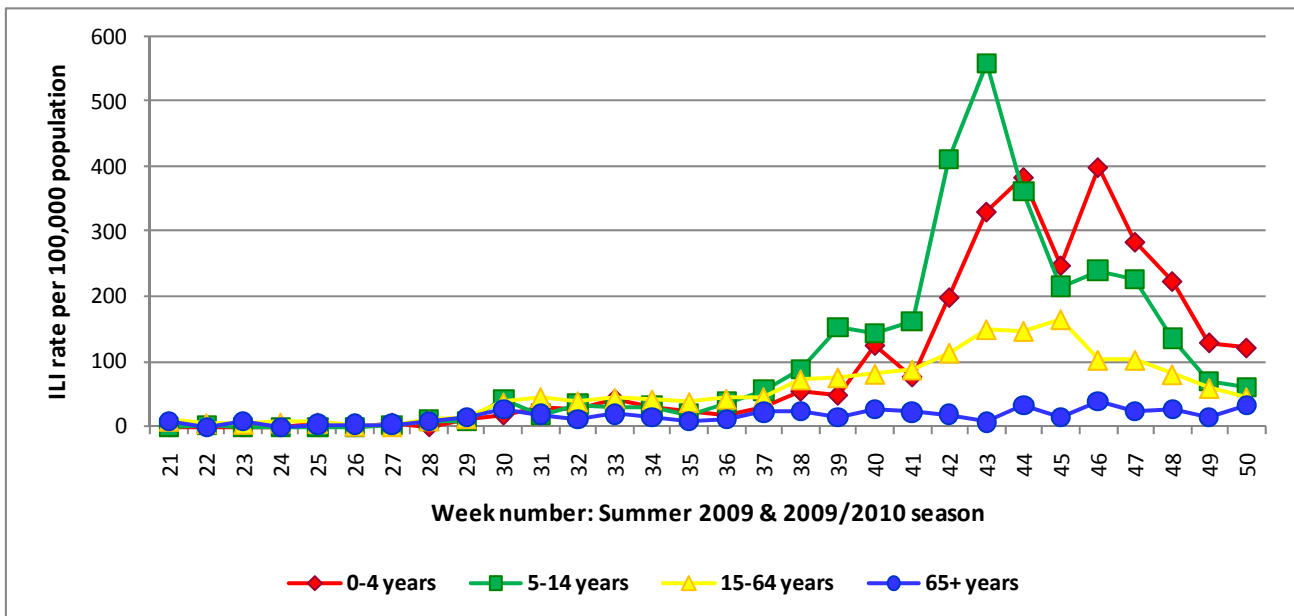
<sup>†</sup> Since the last report, extra information on the number of ILI consultations and positive influenza specimens occurring in week 49 was provided by sentinel GPs and the NVRL and the rate for the week was adjusted accordingly



**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<sup>‡</sup>**

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

During week 50 2009, sentinel GPs reported 19 ILI cases in the 0-4 year age group (121.2 per 100,000 population), 18 cases in the 5-14 year age group (61.8 per 100,000 population), 68 cases in the 15-64 year age group (45.1 per 100,000 population) and 8 cases in those aged 65 years and older (33.0 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

<sup>‡</sup> 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 50 2009, no activity was reported in HSE-W, sporadic activity (due to isolated cases of ILI and/or isolated laboratory confirmed cases of influenza) was reported by HSE-M, -MW, -NE, -NW, -S and -SE, while 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-E (figure 3).

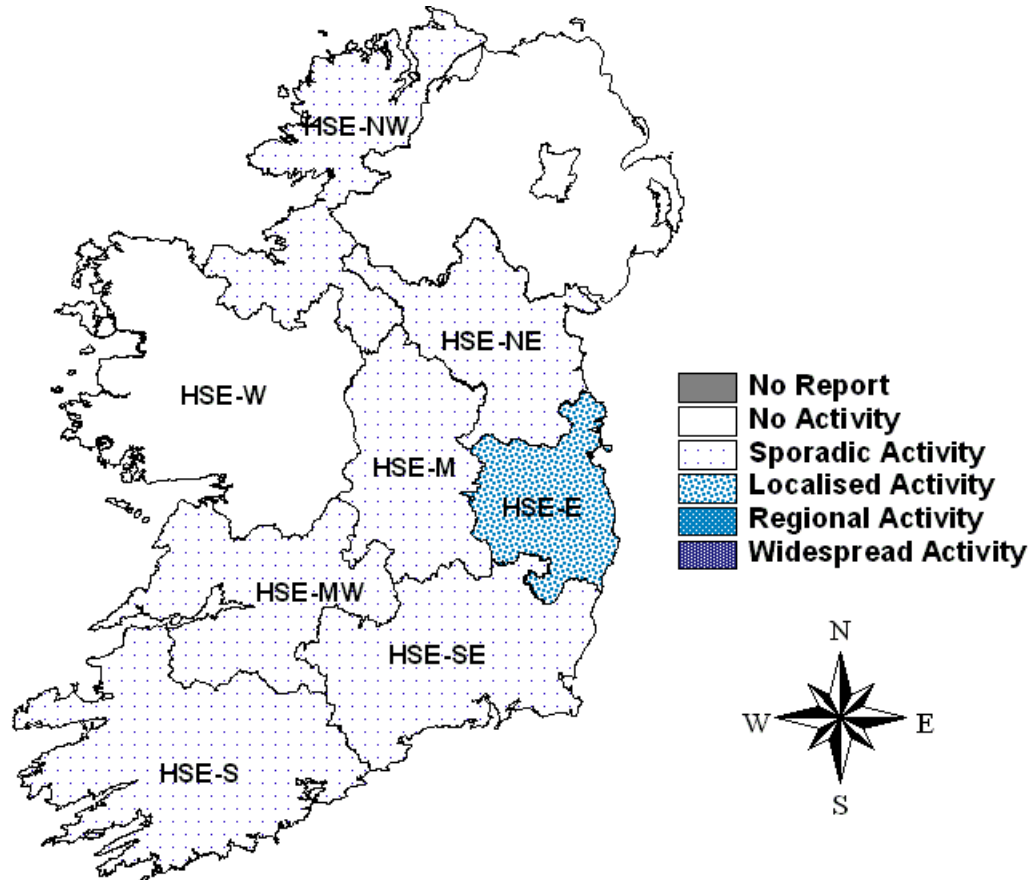


Figure 3: Map of provisional influenza activity by HSE area during influenza week 50 2009

### 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 50 2009, hospital and school sentinel data were received from six of the eight HSE areas. One sentinel hospital in HSE-M reported an increase in the proportion of respiratory admissions and three sentinel primary schools in HSE-NW reported an increase in absenteeism during week 50 compared with week 49.

## 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 6.0% during week 50, a slight decrease compared to the proportion (6.6%) reported during week 49 (figure 4).

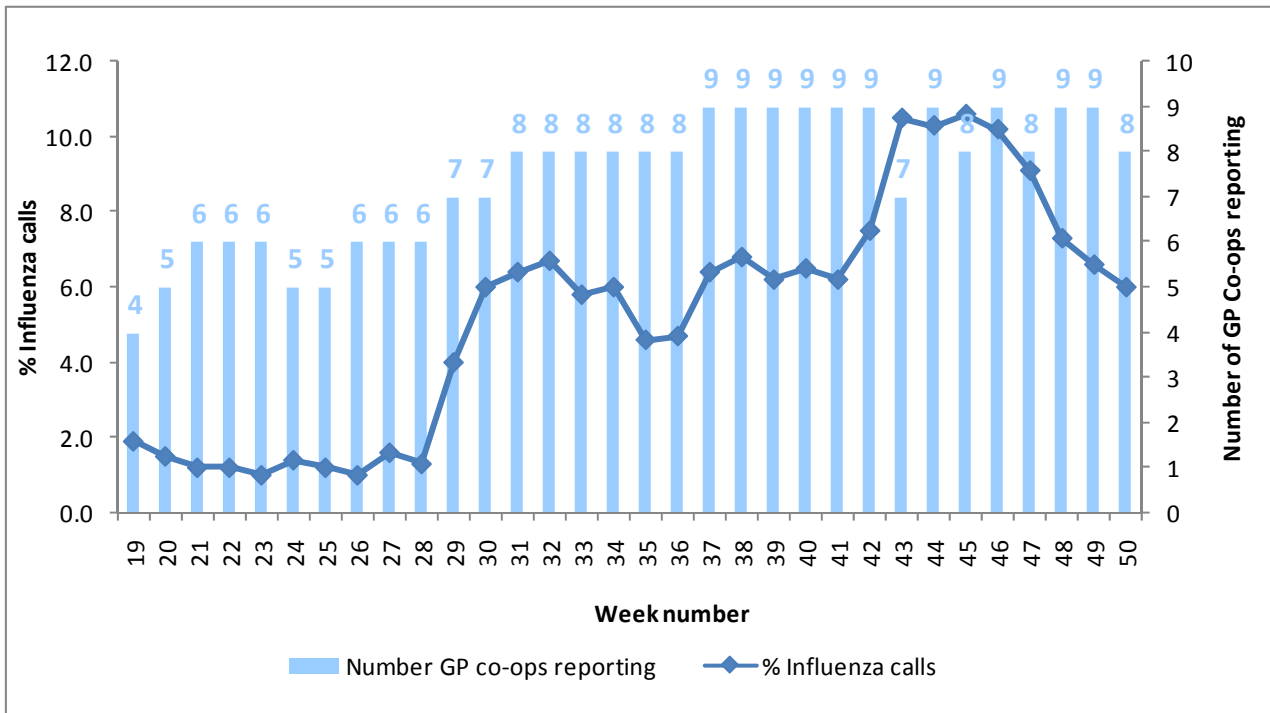


Figure 4: Flu-related calls as a proportion of total calls to Out-of-Hours GP Co-ops by week<sup>§</sup>

Source: HSE-NE.

<sup>§</sup> Week 50: data received from CARE-Doc, D-Doc, K-Doc, MI-Doc, NE-Doc, NoW-Doc, Shan-Doc, South-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)

Forty-nine specimens from sentinel GPs were tested by the NVRL during week 50 2009, 6 (12.2%) of which were positive for pandemic (H1N1) 2009.

The NVRL also tested 372 non-sentinel specimens taken during the same week. \*\* Of these, 23 (6.2%) were positive for pandemic (H1N1) 2009 and 45 specimens (12.1%) tested positive for RSV (table 1 and table 3). No specimens were positive for other influenza A subtypes, influenza B, adenovirus or parainfluenza virus. 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 11 non-sentinel specimens taken during week 50 2009, none of which were positive for pandemic (H1N1) 2009 (table 2).

CUH tested 75 non-sentinel specimens taken during week 50 2009, 6 (8.0%) of which were positive for pandemic (H1N1) 2009 (table 2).

Pandemic (H1N1) 2009 is the only influenza virus circulating. During week 50, 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 99.4% of influenza positive specimens (table 1).

During week 50, the percentage of sentinel and non-sentinel specimens testing positive for pandemic (H1N1) 2009 was 6.9%, a decrease compared to 8.2% positive during week 49. 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.

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\*\* 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

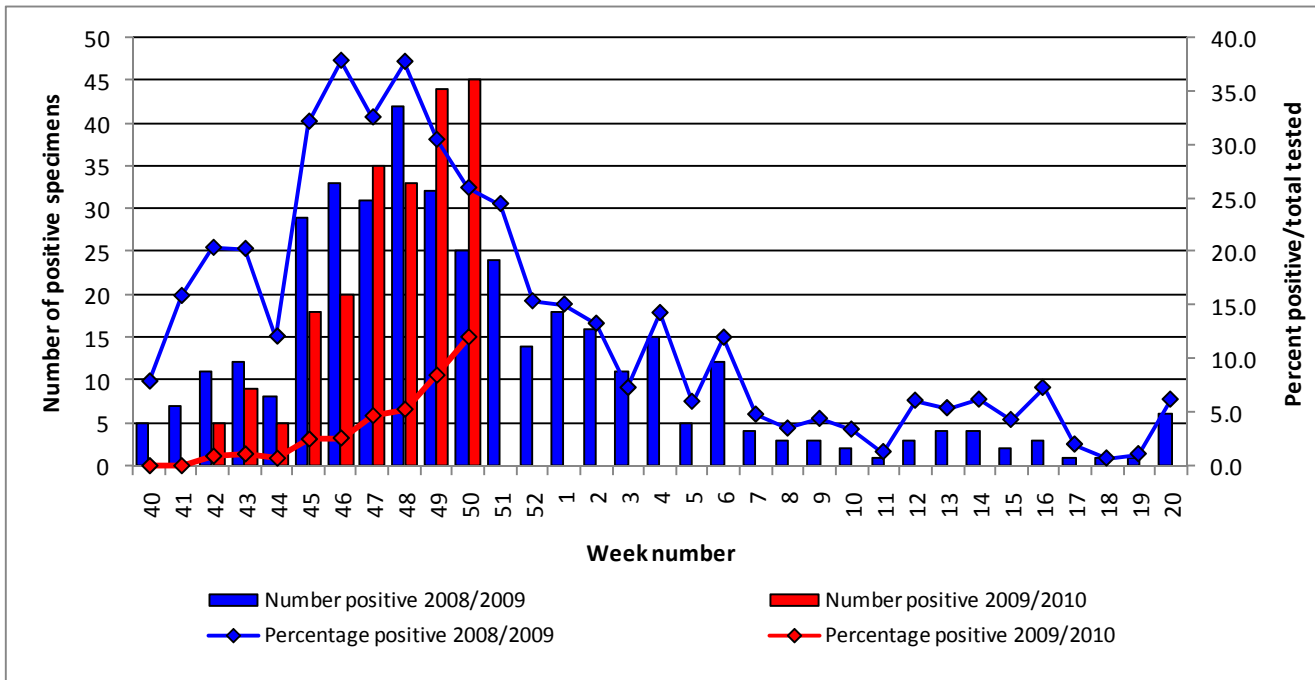


Figure 5: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2009/2010 influenza season, compared to the 2008/2009 influenza seasons

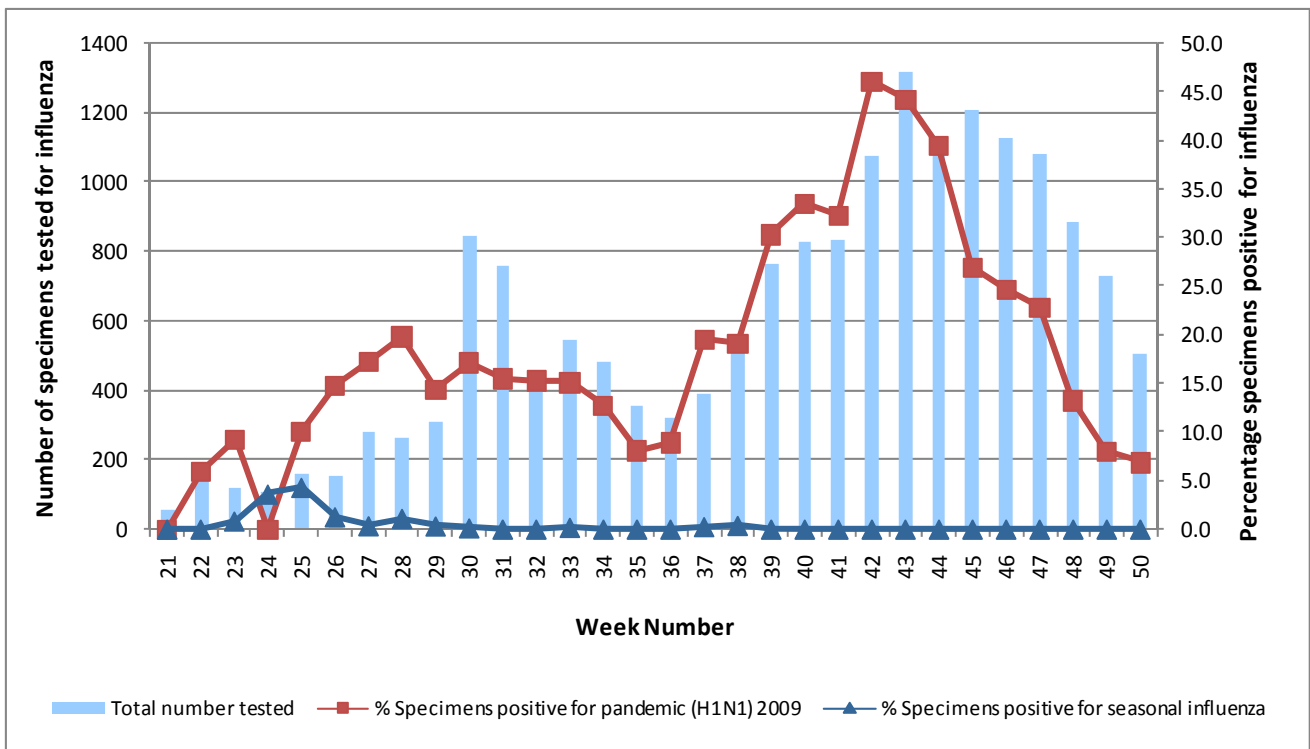


Figure 6: Number of sentinel and non-sentinel specimens tested for influenza and percentage influenza positive<sup>††</sup>  
 Source: NVRL, CUH & UCHG

<sup>††</sup> 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 50 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
50 2009	Sentinel	49	6	12.2	6	0	0	0	0	0	100.0
	Non-sentinel	458	29	6.3	29	0	0	0	0	0	100.0
	<b>Total</b>	<b>507</b>	<b>35</b>	<b>6.9</b>	<b>35</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>100.0</b>
Summer 2009 & 2009/2010 seasons to date	Sentinel	2018	741	36.7	738	0	3	0	0	0	99.6
	Non-sentinel	16668	3802	22.8	3484	292	0	0	23	3	99.3
	<b>Total</b>	<b>18686</b>	<b>4543</b>	<b>24.3</b>	<b>4222</b>	<b>292</b>	<b>3</b>	<b>0</b>	<b>23</b>	<b>3</b>	<b>99.4</b>

**Table 2: Number of non-sentinel respiratory specimens tested and positive results by laboratory, influenza week 50 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
50 2009	NVRL	372	23	6.2	23	0	100.0	0	0
	CUH	75	6	8.0	6	0	100.0	0	0
	UCHG	11	0	0.0	0	0	0.0	0	0
	<b>Total</b>	<b>458</b>	<b>29</b>	<b>6.3</b>	<b>29</b>	<b>0</b>	<b>100.0</b>	<b>0</b>	<b>0</b>
Summer 2009 & 2009/2010 season to date	NVRL	12830	2523	19.7	2494	4	99.0	22	3
	CUH	2678	800	29.9	512	288	100.0	0	0
	UCHG	1160	479	41.3	478	0	99.8	1	0
	<b>Total</b>	<b>16668</b>	<b>3802</b>	<b>22.8</b>	<b>3484</b>	<b>292</b>	<b>99.3</b>	<b>23</b>	<b>3</b>

**Table 3: Number of non-sentinel specimens tested by the NVRL for other respiratory pathogens and positive results, influenza week 50 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
50 2009	372	45	12.1	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	6737	214	3.2	2	0.0	4	0.1	1	0.0	1	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 for influenza is focused on cases hospitalised, cases with severe clinical illness and in other situations such as clusters of ILI in institutions or unusual clusters of serious illness.

As of 12<sup>th</sup> December 2009, a total of 4,455 confirmed cases of pandemic (H1N1) 2009 infection were reported.<sup>§§</sup> Figure 7 shows the number of confirmed pandemic (H1N1) 2009 cases by week of notification and hospitalisation status.

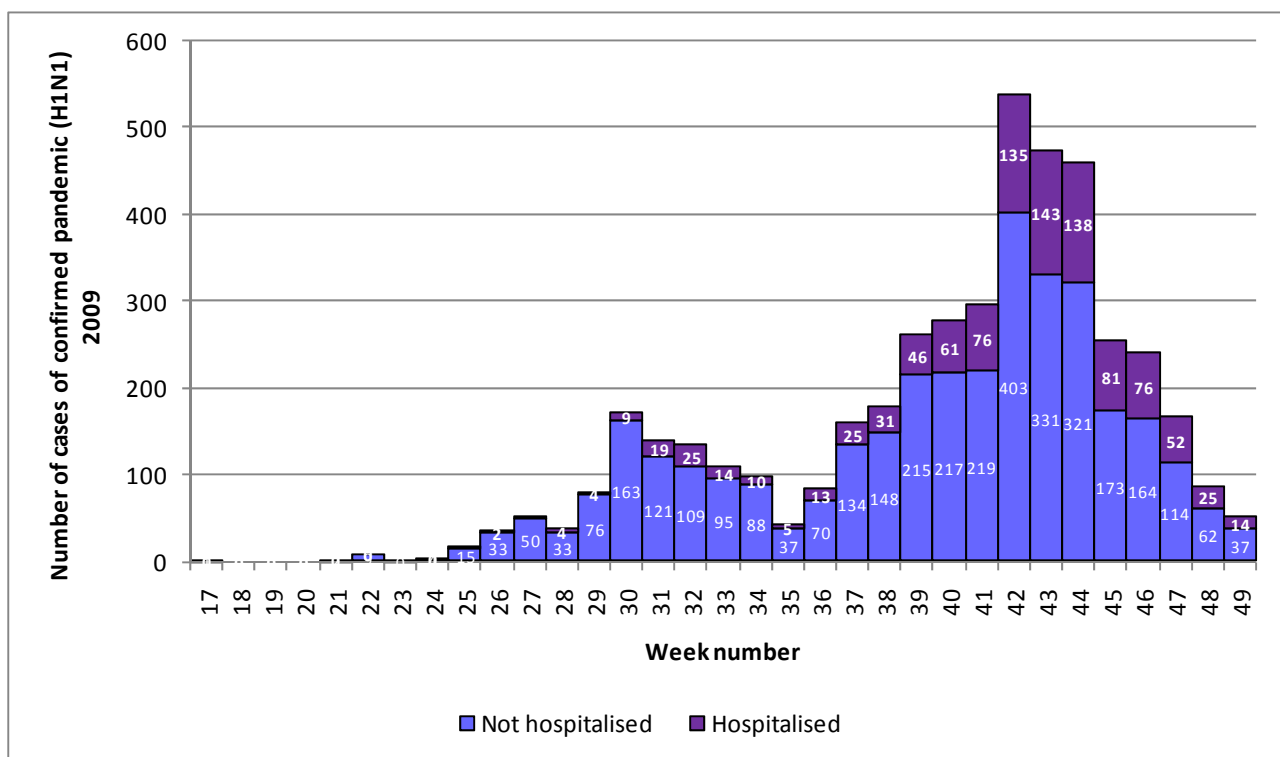


Figure 7: Number of confirmed cases of pandemic (H1N1) 2009 by week of notification and hospitalisation status \*\*\*

Source: CIDR

#### Age and Sex

Of the 4,455 confirmed cases reported to 12<sup>th</sup> December, 2,374 were female (53.3%), 2,052 were male (46.1%) and sex was not reported for 29 cases (0.7%). The median age of cases was 17 years (range: 0-84 years) and 80.4% 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 in the 0-4 year age group since week 40 but have recently decreased. During week 49, the age specific notification rate decreased in all age groups.

<sup>§§</sup> 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 17-49 above is equivalent to weeks 18-50 on the influenza system.

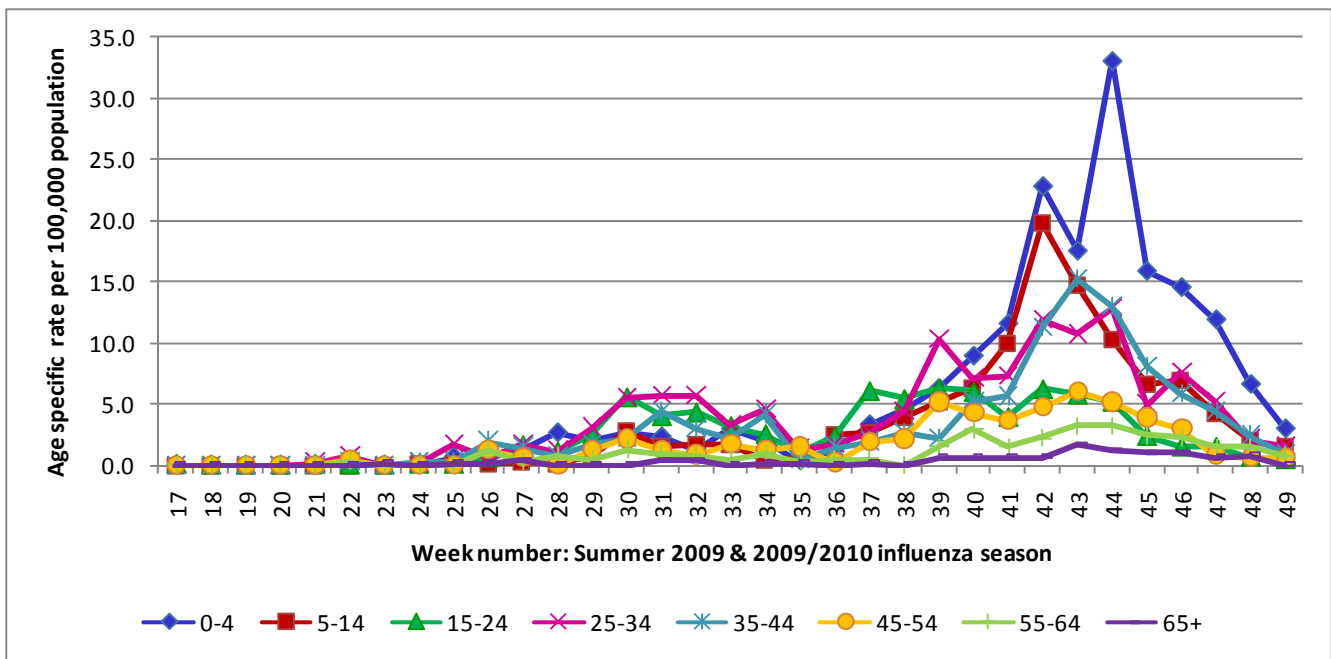


Figure 8: Age specific notification rate per 100,000 population of confirmed cases of pandemic (H1N1) 2009 by week of notification<sup>+++</sup>

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 49 was in HSE-S (2.4 per 100,000 population).

Table 4: Number and rate per 100,000 population for confirmed cases of pandemic (H1N1) 2009 by HSE area<sup>+++</sup>

Source: CIDR

HSE Area	Week 49: 6 <sup>th</sup> to 12 <sup>th</sup> December 2009		Week 17 - Week 49 2009	
	Number of confirmed cases	Rate per 100,000 population	Number of confirmed cases	Rate per 100,000 population
HSE-E	15	1.0	1436	95.8
HSE-M	4	1.6	164	65.2
HSE-MW	5	1.4	317	87.8
HSE-NE	2	0.5	316	80.2
HSE-NW	2	0.8	217	91.5
HSE-SE	8	1.7	382	82.9
HSE-S	15	2.4	899	144.7
HSE-W	0	0.0	724	174.8
<b>Total</b>	<b>51</b>	<b>1.2</b>	<b>4455</b>	<b>105.1</b>

<sup>+++</sup> 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 49 above is equivalent to week 50 on the influenza system.

### Severity of illness

As of 12<sup>th</sup> December 2009, clinical illness continues to be mild in the majority of cases. Of the 4,455 confirmed cases, outcome was reported for 1,333 (29.9%) cases. Of the 1,333 confirmed cases where outcome was reported, 1,245 have recovered or are recovering (93.3%) and 66 are still ill (5.0%). To date (16<sup>th</sup> December) 22 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	4
46	2
47	0
48	0
49	2
<b>Total</b>	<b>22</b>

Reported complications have been mostly respiratory in nature; 164 cases developed pneumonia and 61 developed acute respiratory distress syndrome (ARDS). Other reported complications included chest infections, acute renal failure and multi-organ failure.

### Hospitalised cases

Of the 4,455 confirmed cases, 1,011 (22.7%) were admitted to hospital. Of these, 84 (8.34%) were admitted to ICU. The number of laboratory confirmed cases who were hospitalised and admitted to ICU in week 50 was 1, the same as the number of cases admitted to ICU in week 49.<sup>+++</sup> 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. The median age of hospitalised cases was 17 years. Of the 1,011 hospitalised cases, 513 (50.7%) were female, 492 (48.7%) were male and sex was not reported for 6 cases (0.6%).

<sup>+++</sup> ICU figures taken from the pandemic (H1N1) ICU enhanced surveillance system.

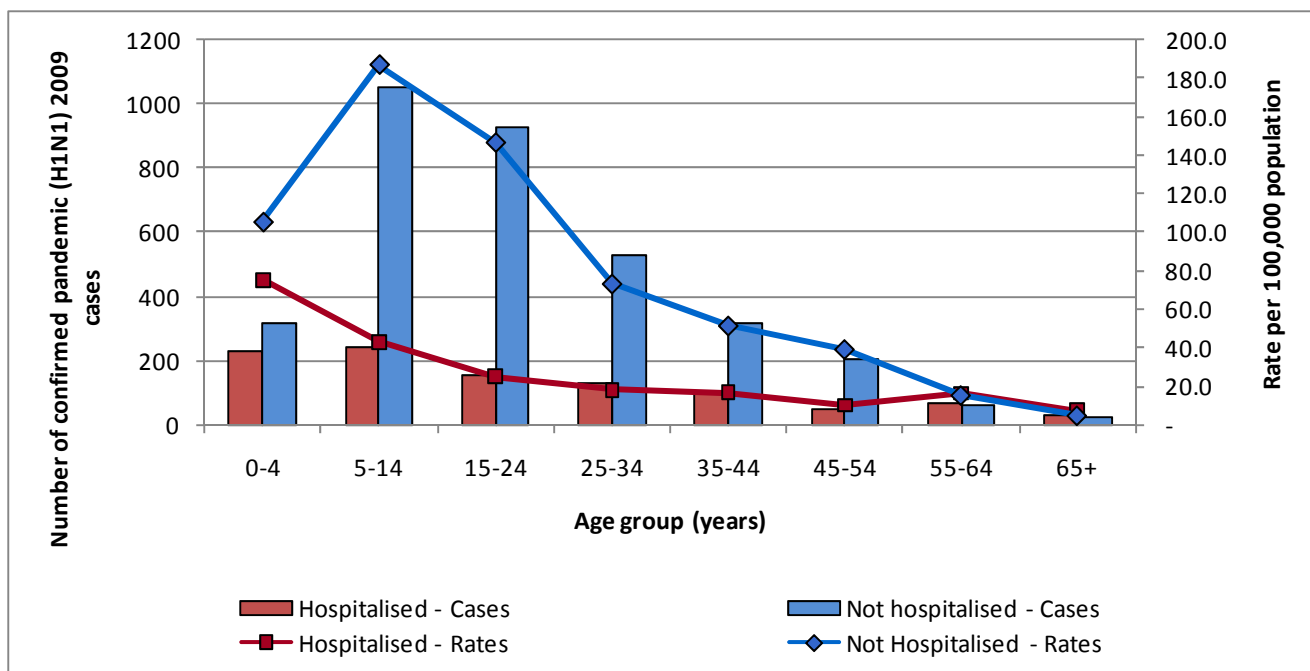


Figure 9: Cumulative numbers and age specific rates for confirmed cases of pandemic (H1N1) 2009 by hospitalisation status

Table 6: Cumulative number of hospitalised cases of confirmed pandemic (H1N1) 2009 by age group (years) and sex (Week 17 – 49)

Source: CIDR

Age group (years)	Female	Male	Unknown	Total	Age specific hospitalisation Rate per 100,000 population	% of Total
0-4	94	132	2	<b>228</b>	75.4	22.6
5-14	91	148	2	<b>241</b>	42.9	23.8
15-24	96	62	0	<b>158</b>	25.0	15.6
25-34	88	41	1	<b>130</b>	18.0	12.9
35-44	67	34	1	<b>102</b>	16.4	10.1
45-54	28	23	0	<b>51</b>	9.8	5.0
55-64	32	34	0	<b>66</b>	16.2	6.5
65+	16	17	0	<b>33</b>	7.1	3.3
Age unknown	1	1	0	<b>2</b>	n/a	0.2
<b>Total</b>	<b>513</b>	<b>492</b>	<b>6</b>	<b>1011</b>	<b>23.8</b>	<b>100.0</b>

Of the 1,011 confirmed cases hospitalised, 426 (42.1%) 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  $\geq 40$ ) and pregnancy.

**Table 7: Cumulative number of hospitalised cases of confirmed pandemic (H1N1) 2009 by risk group (Wk 17 – 49)<sup>sss</sup>**

Source: CIDR

Risk group	Number of cases	% of hospitalised cases
Medication for asthma	119	11.8
Chronic respiratory disease	105	10.4
Pregnant	64	6.3
Immunosuppressed	62	6.1
Chronic heart disease	56	5.5
Chronic neurological disease	50	4.9
Diabetes mellitus	38	3.8
Haemoglobinopathies	27	2.7
Renal disease	22	2.2
Severely obese (BMI ≥40)	13	1.3
Chronic liver disease	11	1.1

## 5. Outbreak surveillance (CIDR)

No new outbreaks of pandemic (H1N1) 2009, influenza or ILI were reported during week 49 2009. As of 12<sup>th</sup> December 2009, 109 general outbreaks of pandemic (H1N1) 2009 and ILI have been reported in Ireland since week 23 2009. These outbreaks involved 2,399 people in total, of which 200 (8.3%) were laboratory confirmed cases of pandemic (H1N1) 2009. The number ill per outbreak has ranged between two and 150 people.

## International summary

The total numbers of confirmed deaths reported worldwide by the World Health Organization (WHO) region are shown in table 8.

**Table 8: Reported number of confirmed pandemic (H1N1) 2009 deaths by WHO region**

Source: WHO 6<sup>th</sup> December 2009

WHO Region	Cumulative total as of 6 <sup>th</sup> December 2009
	Deaths
Africa (AFRO)	109
Americas (AMRO)	At least 6131
Eastern Mediterranean (EMRO)	452
Europe (EURO)	At least 1242
South-East Asia (SEARO)	814
Western Pacific (WPRO)	848
<b>Total</b>	<b>At least 9596</b>

## United Kingdom

During week 49 (30<sup>th</sup> November – 6<sup>th</sup> December 2009), the weekly influenza/ILI consultation rate decreased slightly in England, Wales and Northern Ireland and remained stable in Scotland. The majority of pandemic influenza cases continue to be mild. The cumulative number of deaths reported to be due to pandemic (H1N1) 2009 is 282. There were 1,223 new patients hospitalised in England with suspected pandemic influenza in the week from 03 to 09 December, a decrease from 1,384 in the previous week. The hospitalisation rates have decreased in most age groups, including the under 5-year age group. The main influenza virus circulating in the

<sup>sss</sup> Cases may belong to more than one risk group

UK continues to be the pandemic (H1N1) 2009 strain, with few influenza H1 (non-pandemic), H3 and B viruses detected. An increase in respiratory syncytial virus detections has been observed in recent weeks.

[http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb\\_C/1243928258754](http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb_C/1243928258754)

## Europe

During week 49 (30<sup>th</sup> November – 6<sup>th</sup> December 2009), Lithuania reported very high intensity activity. Estonia, Greece, Latvia, Luxembourg, Norway, Poland, Slovenia and Sweden reported high intensity and the remaining 17 countries reported medium intensity.

Two countries (Hungary and Slovakia) reported an increase in influenza activity compared to eleven countries in the previous week. Czech Republic, Estonia, France, Greece, Portugal, Slovenia and Scotland reported stable activity. Seventeen countries (Austria, Belgium, Bulgaria, Denmark, Germany, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Romania, Spain, Sweden) and parts of the UK (England and Northern Ireland) reported decreasing trends.

In most European countries where influenza activity has risen above baseline levels, the most affected group includes those younger than 15 years. The proportion of sentinel specimens that were confirmed influenza was 32%. This represents a decrease of 17% compared to the peak (49%) observed in week 44.

As of the 14<sup>th</sup> December 2009 the cumulative number of deaths reported in Europe and EFTA countries was 1333. (Source:

[http://ecdc.europa.eu/en/publications/Publications/091211\\_EISN\\_Weekly\\_Influenza\\_Surveillance\\_Overview.pdf](http://ecdc.europa.eu/en/publications/Publications/091211_EISN_Weekly_Influenza_Surveillance_Overview.pdf))

Oseltamivir resistance was found in 13 of the 913 viruses tested and reported to EISN so far. Resistance to zanamivir was not detected in any of the 291 strains tested.

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

## USA

During week 49 (November 29-December 5, 2009), influenza activity continued to decrease in the U.S. The proportion of outpatient visits for influenza-like illness (ILI) was 2.7% which is above the national baseline of 2.3%. Six of the ten regions reported ILI at or above region-specific baseline levels. The proportion of deaths attributed to pneumonia and influenza (7.8%) in week 49 was above the epidemic threshold (7.1%) for the tenth consecutive week. Of the sixteen influenza-associated paediatric deaths which were reported to CDC during week 49, 13 of these deaths were associated with pandemic influenza A (H1N1) 2009 infection and two were associated with an influenza A virus for which the subtype is undetermined and one was associated with an influenza B virus infection. This brings the total of paediatric deaths to 224. During week 49, 478 (8.9%) specimens tested by collaborating laboratories and reported to CDC/Influenza Division were positive for influenza. Over 99% of all subtyped influenza A viruses being reported to CDC were pandemic influenza A (H1N1) 2009 viruses. Fourteen states reported geographically widespread influenza activity.

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

The United States Centers for Disease Control and Prevention on December 10th published new estimates of the numbers of symptomatic cases, hospitalisations and deaths due to influenza in the USA from April to October 17th this year. They estimated that between 34 million and 67 million cases of symptomatic 2009 H1N1 occurred between April and November 14, 2009. The mid-level in this range is about 47 million people. At the same time the estimate is that between about 154,000 and 303,000 2009 H1N1-related hospitalisations occurred between April and November 14, 2009. The mid-level in this range is about 213,000 H1N1-related

hospitalisations. Finally CDC estimated that between about 7,070 and 13,930 2009 H1N1-related deaths occurred between April and November 14, 2009. The mid-level in this range was about 9,820 2009 H1N1-related deaths. More information available at: [http://www.cdc.gov/h1n1flu/estimates\\_2009\\_h1n1.htm](http://www.cdc.gov/h1n1flu/estimates_2009_h1n1.htm)

### Canada

During week 49 (29 November – 05 December 2009), the activity level decreased compared to the previous week. All influenza indicators decreased for at least the third consecutive week. The ILI consultation rate was within the expected range for this time of the year. A possible influenza peak has been reached by all provinces and territories. The Pandemic (H1N1) 2009 strain accounted for nearly 100% of the positive influenza A subtyped specimens. During week 49, the intensity of Pandemic (H1N1) 2009 in the population was moderately high. There was a decrease from the previous week in the number of reported hospitalisations (307 vs. 804), ICU admissions (83 vs. 139) and deaths (33 vs. 56). From August 30 to December 05 2009, a total of 6,621 hospitalised cases including 1,041 cases admitted to ICU (15.7%), as well as 292 (4.4%) deaths have been reported.

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

### New Zealand

During week 49 (30 November – 06 December 2009), there was 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 49, one influenza virus was reported as pandemic (H1N1) 2009 from the non-sentinel surveillance system.

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

### Australia

During week 49, (28 November – 04 December 2009), ILI rates at a national level were below the baseline level reached at the end of the 2007 and 2008 seasons. There were seven new laboratory confirmed Pandemic (H1N1) 2009 cases reported in week 49. The number of people with Pandemic (H1N1) requiring hospitalisation continued to decrease. In total, 4,855 people have been hospitalised, with 13% admitted to ICU. Type A influenza is the predominant seasonal influenza type reported by all jurisdictions and the pandemic strain has almost replaced the current seasonal H1N1 virus. As of 4<sup>th</sup> December 2009, there were 37,462 confirmed cases of pandemic (H1N1) 2009 and 191 (0.5%) deaths associated with pandemic (H1N1) 2009.

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

### Other countries

As of 11<sup>th</sup> December 2009 <http://www.who.int/csr/disease/swineflu/updates/en/>

- **Western and Central Asia:** Influenza transmission remains active. Disease activity continues to increase in Kazakhstan and Kyrgyzstan, but may have peaked in Afghanistan, Israel, and Oman. Pandemic influenza virus continues to circulate in Iran, Iraq, Jordan, and in much of the surrounding region.
- **East Asia:** Increasing influenza activity has been reported in Japan and has recently begun to increase in Hong Kong SAR and Chinese Taipei both of which previously experienced a peak of transmission. Elevated but stable ILI activity has been reported in southern China, but declines in activity continue to be observed in northern China and Mongolia. In South Asia, influenza activity has begun to increase in the north-western parts of India and in Sri Lanka.
- **Central and South America and the Caribbean:** Influenza transmission remains geographically widespread but overall disease activity has been declining in most areas.

- **Africa:** Limited data suggest that pandemic H1N1 2009 virus continues to be detected from all parts of the continent (except South Africa where the winter season has passed). Pandemic H1N1 2009 virus appears to be the predominant influenza virus circulating in northern and eastern Africa.

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

Ireland [www.hpsc.ie](http://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/>

### **Acknowledgements**

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



## 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 5<sup>th</sup> 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/newepiinsight/rqnq2ayeg0sugy02flxkl0>