

# Influenza Surveillance in Ireland – Weekly Report

## Influenza Week 14 2011 (4<sup>th</sup> – 10<sup>th</sup> April 2011)



### Summary

- Influenza activity remained at low levels in Ireland during week 14 2011.
  - The sentinel GP influenza-like illness (ILI) consultation rate was 5.2 per 100,000 population in week 14 2011, a decrease compared to the updated rate of 8.3 per 100,000 reported during week 13 2011.
    - ILI rates remain below baseline levels and are low in all age groups
  - The proportion of influenza-related calls to GP Out-of-Hours services remained at low levels in week 14 2011.
  - The proportion of influenza positive specimens detected by the NVRL decreased in week 14 2011 to 1.9%, compared to 3.9% in the previous week.
  - Two positive influenza B specimens were detected in week 14 2011.
  - Two confirmed influenza cases were admitted to hospital during week 14 2011.
  - No confirmed influenza cases have been admitted to ICU since February 17<sup>th</sup> 2011.
  - To date (13<sup>th</sup> April 2011) this season, 942 confirmed influenza cases have been hospitalised, 122 cases have been admitted to ICU and 27 deaths have been reported to HPSC.
  - No new outbreaks of influenza/ILI have been reported since week 5 2011. As of 13<sup>th</sup> April 2011, 14 influenza/ILI outbreaks have been reported to HPSC this season.
  - The proportion of respiratory syncytial virus (RSV) positive detections decreased in week 14 2011, and are now at expected levels for the time of year.

### Surveillance Systems

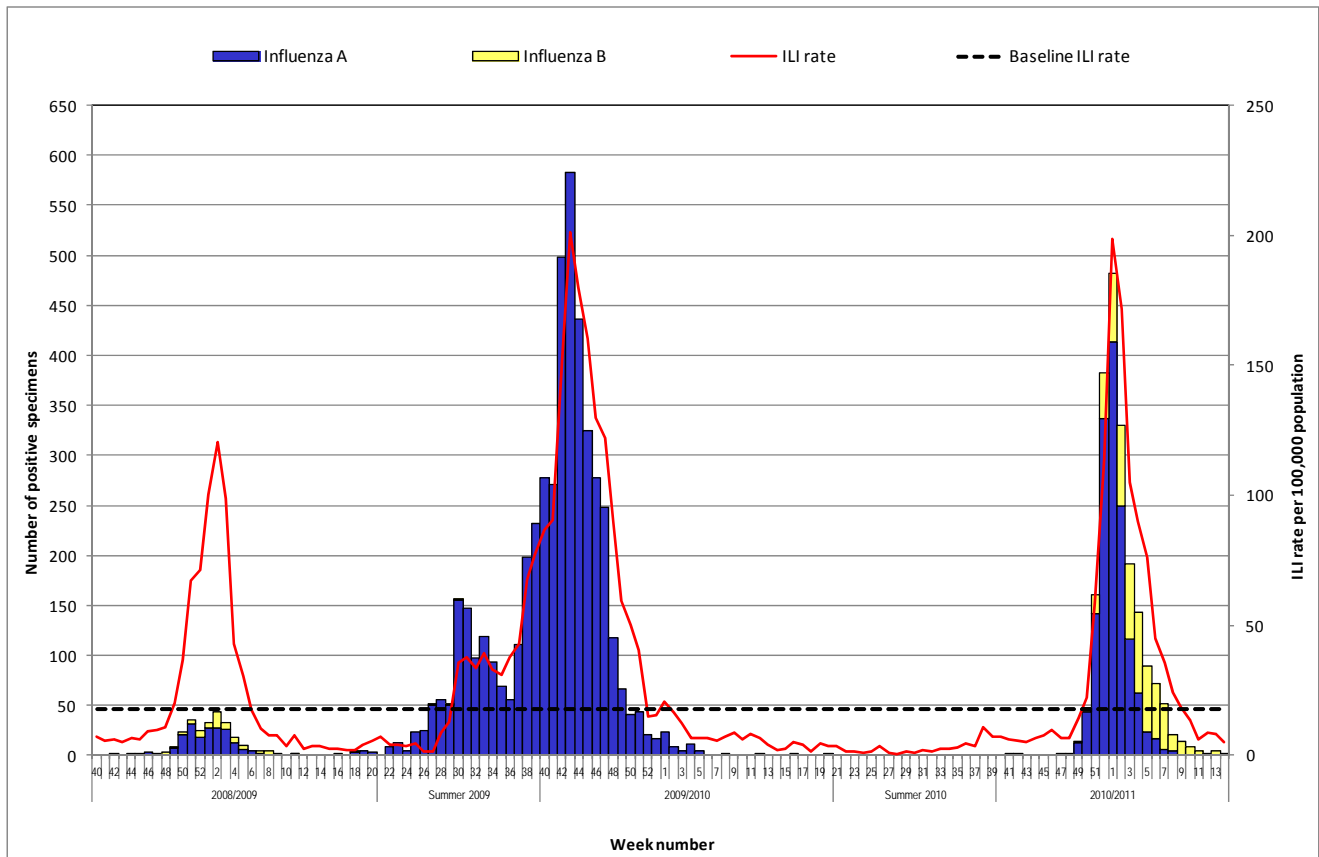
In order to monitor influenza activity in Ireland a number of surveillance systems are currently in place:

1. Irish College of General Practitioners (ICGP) GP sentinel surveillance system
2. Virological data from the National Virus Reference Laboratory (NVRL)
3. GP Out-of-Hours surveillance system
4. Influenza notifications reported on the Computerised Infectious Disease Reporting system (CIDR)
5. Enhanced surveillance of all hospitalised confirmed influenza cases aged 0-14 years
6. Intensive Care Society of Ireland (ICSI) enhanced surveillance of all critical care patients with confirmed influenza
7. Outbreak reporting on CIDR
8. Network of sentinel schools reporting absenteeism and sentinel hospitals reporting admission data

## 1. GP sentinel surveillance system

### Clinical Data

During week 14 2011, 48 of 60 (80.0%) sentinel general practices provided data, with 9 practices (18.8%) reporting 11 influenza-like illness (ILI) cases. This corresponds to an ILI consultation rate of 5.2 per 100,000 population, a decrease compared to the updated rate of 8.3 per 100,000 reported during week 13 2011. The ILI rate for week 14 2011 remains below the Irish baseline threshold (17.8 per 100,000 population). Thirty-nine (81.3%) sentinel practices reported no ILI cases during week 14 2011. Figure 1 shows the ILI consultation rates, the baseline threshold rate and the number of positive specimens detected by the NVRL.



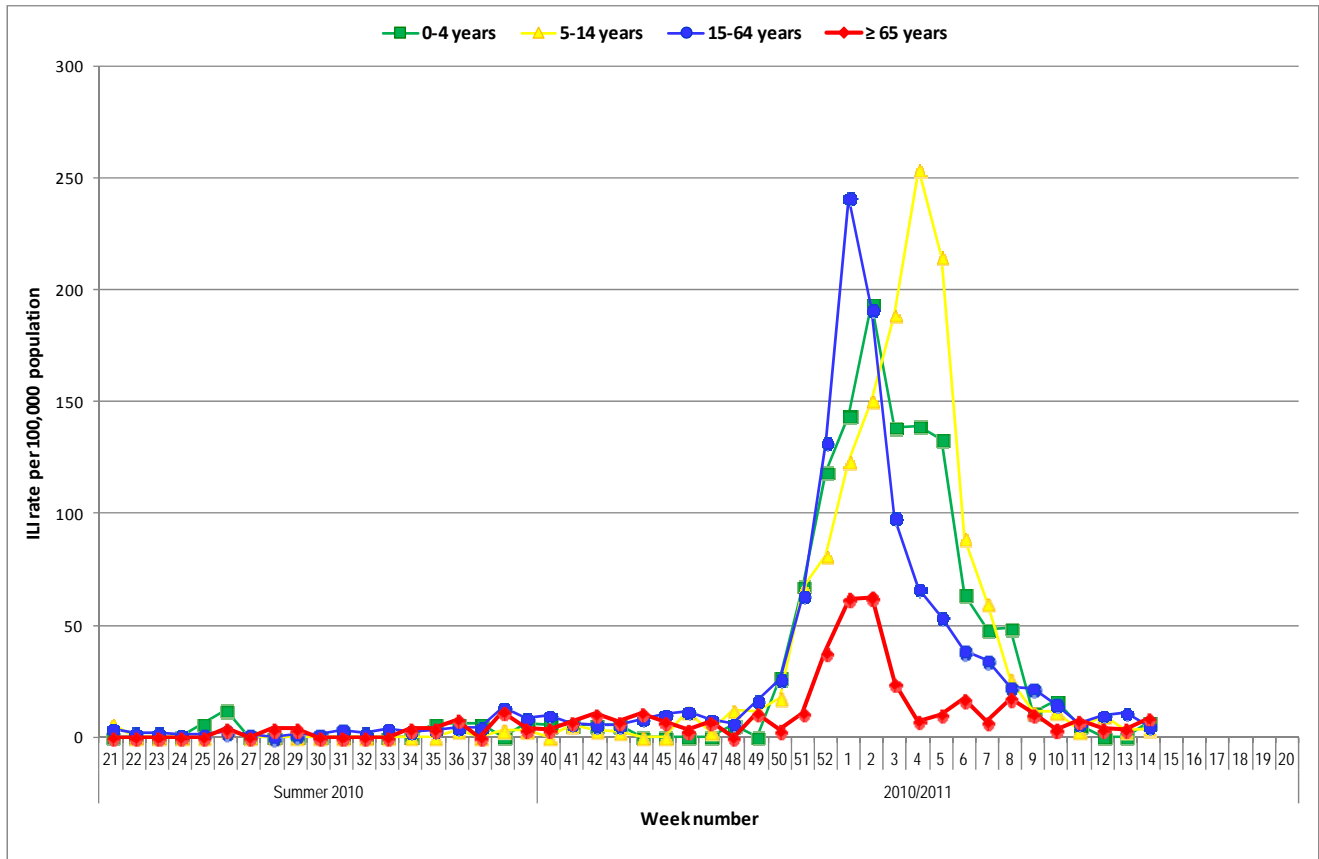
**Figure 1. ILI sentinel GP consultation rates per 100,000 population, baseline ILI threshold rate, and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season.**

Source: Clinical ILI data from ICGP and virological data from the NVRL<sup>1,2</sup>

<sup>1</sup> Please note that in addition to the NVRL, Cork University Hospital (CUH) and Galway University Hospital(s) (GUH) also tested for influenza A (H1N1 2009) during the pandemic period.

<sup>2</sup> Sentinel GP consultations and virological data are updated on an ongoing basis, ILI rates and virological data are adjusted accordingly.

ILI age specific rates were at low levels in all age groups during week 14 2011. One (6.6 per 100,000) ILI case was reported in the 0-4 year age group, one (3.6 per 100,000) in the 5-14 year age group, seven (4.8 per 100,000) in the 15-64 year age group and two (8.6 per 100,000) ILI cases in those aged 65 years or older during week 14 2011.



**Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2010 and the 2010/2011 influenza season to date**

Source: ICGP ILI clinical data

## 2. Virological Data from the National Virus Reference Laboratory (NVRL)<sup>‡</sup>

The data reported in this section for the 2010/2011 influenza season refers to specimens tested by the National Virus Reference Laboratory (NVRL). A total of 103 specimens (3 sentinel and 100 non-sentinel<sup>§</sup> specimens) were tested by the NVRL during week 14 2011. Two (1.9%) specimens were positive for influenza B and none were positive for influenza A. Influenza B has been the predominant circulating influenza type in Ireland since week 4 2011.

Of the three sentinel specimens taken during week 14 2011, one was positive for influenza B. Of the 100 non-sentinel specimens taken during week 14 2011, one specimen was positive for influenza B.

To date this season, 7,682 sentinel and non-sentinel specimens have been tested by the NVRL, 2,027 (26.4%) specimens tested positive for influenza: 1,366 influenza A (H1N1 2009), 39 influenza A (H3), 30 influenza A (unsubtyped) and 592 influenza B. Of the 2,027 positive influenza specimens, 1,435 (70.8%) were influenza A and 592 (29.2%) were influenza B (figures 3 & 4). To date this season, six influenza B cases were co-infected with influenza A: 5 with influenza A (H1N1 2009) and one with influenza A (unsubtyped).

The NVRL has tested eight non-sentinel specimens from six confirmed influenza A (H1N1 2009) cases for antiviral resistance. All six patients were hospitalised and admitted to intensive care. One (12.5%) of the eight specimens tested was resistant to oseltamivir, carrying the H275Y mutation.

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<sup>‡</sup> It should be noted that virological data refer to weekly data received from the NVRL on Tuesday of each week.

<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.

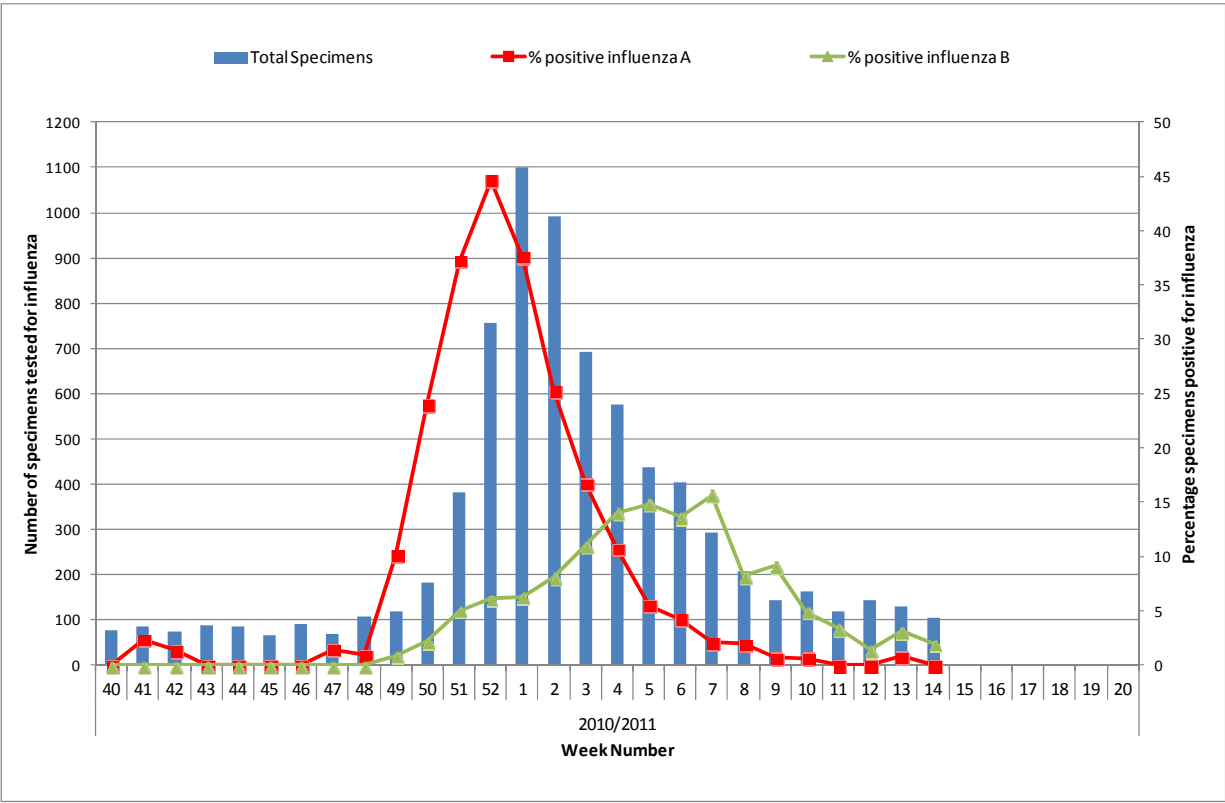


Figure 3: Number of sentinel and non-sentinel specimens tested for influenza and percentage influenza positive by week for the 2010/2011 influenza season. Source: NVRL

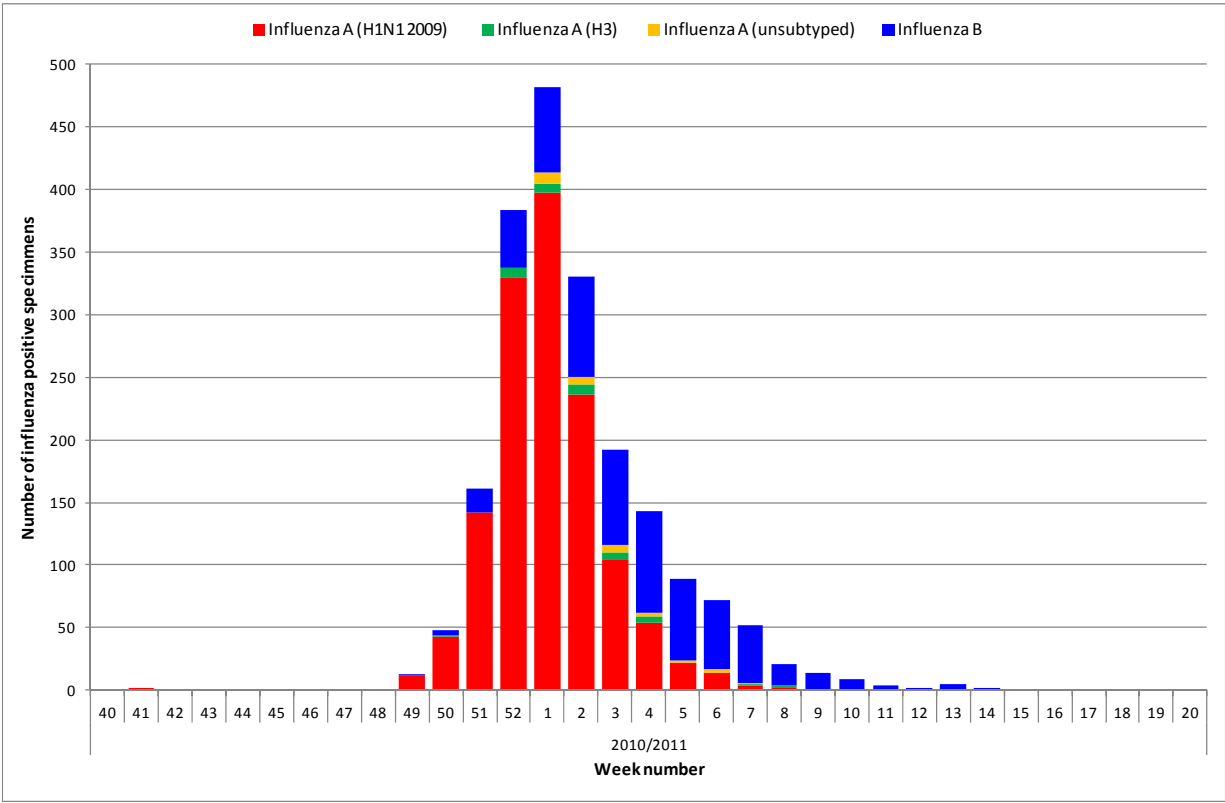
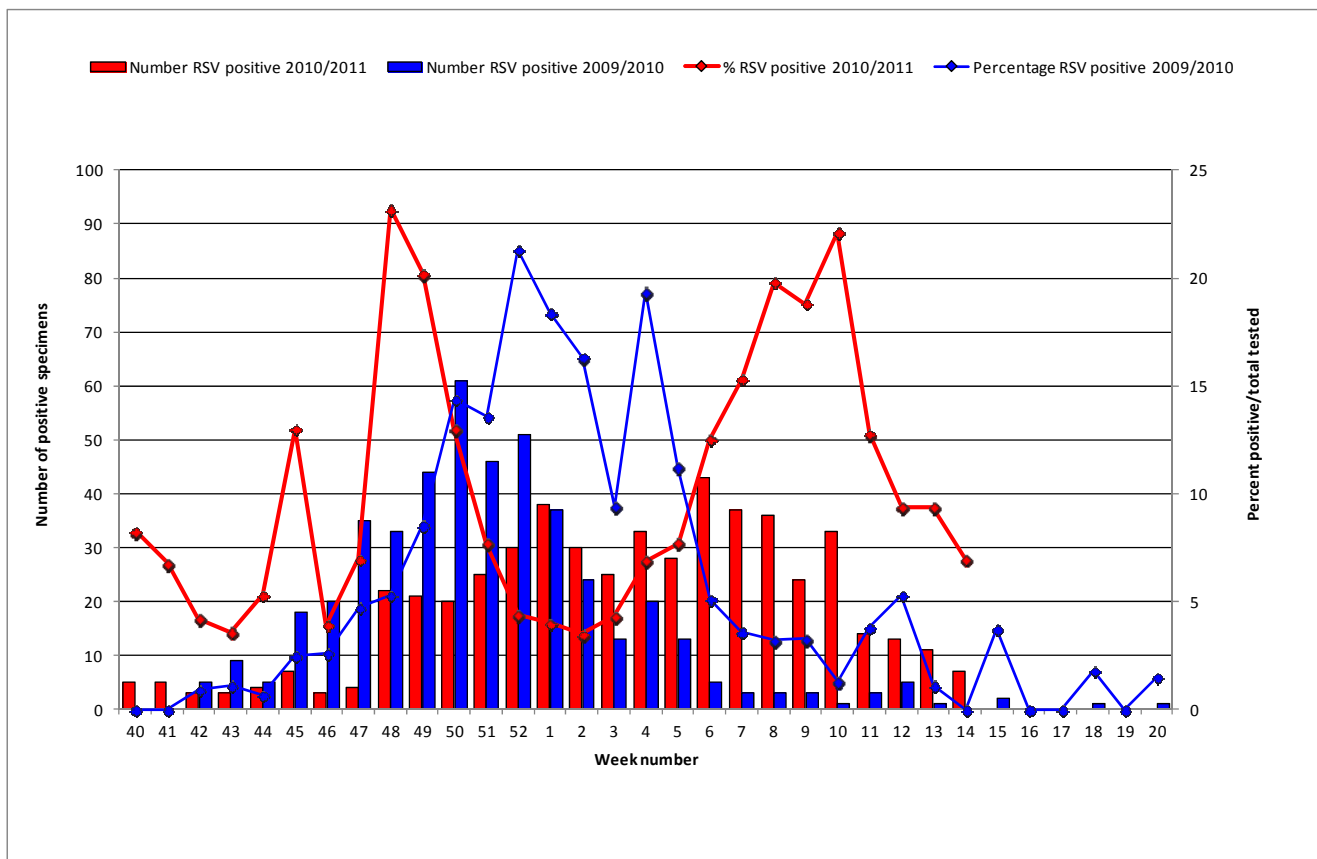


Figure 4: Number of sentinel and non-sentinel specimens positive for influenza by type/subtype and week for the 2010/2011 influenza season. Source: NVRL

Of the 100 non-sentinel specimens tested during week 14 2011, 7.0% (n=7) were positive for RSV. The proportion of RSV positive detections decreased slightly in week 14 2011 (from 9.4% in week 13 2011), and is at expected levels for the time of year (tables 1 & 2). It should be noted that RSV data only include specimens referred to the NVRL for RSV testing. Not all hospitals refer respiratory specimens for RSV testing to the NVRL. Figure 5 shows the number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2010/2011 and 2009/2010 seasons.\*\*

One non-sentinel specimen was positive for adenovirus during week 14 2011. No specimens were positive for parainfluenza virus (PIV) types -1, -2 or -3 during week 14 2011. To date this season, there have been sporadic detections of adenovirus and PIV types -1, -2 and -3.



**Figure 5: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2010/2011 season, compared to the 2009/2010 season. Source: NVRL**

\*\* 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<sup>††</sup> respiratory specimens tested by the NVRL and positive influenza results, for week 14 2011 and the season to date**  
 Source: NVRL

Week number	Specimen type	Total specimens tested	Number influenza positive	% Influenza positive	Influenza A					Influenza B
					Total influenza A	A (H1N1 2009)	A (H3)	A (H1)	A (unsubtyped)	
<b>14 2011</b>	Sentinel	3	1	33.3	0	0	0	0	0	1
	Non-sentinel	100	1	1.0	0	0	0	0	0	1
	<b>Total</b>	<b>103</b>	<b>2</b>	<b>1.9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
<b>2010/2011 season</b>	Sentinel	1036	513	49.5	279	267	9	0	3	234
	Non-sentinel	6646	1514	22.8	1156	1099	30	0	27	358
	<b>Total</b>	<b>7682</b>	<b>2027</b>	<b>26.4</b>	<b>1435</b>	<b>1366</b>	<b>39</b>	<b>0</b>	<b>30</b>	<b>592</b>

**Table 2: Number of non-sentinel specimens tested by the NVRL for other respiratory viruses and positive results, for week 14 2011 and the season to date** Source: NVRL

Week number	Total specimens tested	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
<b>14 2011</b>	100	7	7.0	1	1.0	0	0.0	0	0.0	0	0.0
<b>2010/2011 season</b>	6646	524	7.9	16	0.2	7	0.1	2	0.03	14	0.2

<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.

### 3. Regional Influenza Activity by HSE-Area

Influenza activity is reported on a weekly basis for each HSE area. Influenza activity is based on sentinel GP ILI consultation rates, laboratory confirmed influenza cases and ILI/influenza outbreaks.

During week 14 2011, sporadic influenza activity was reported from HSE-E, -M, -MW, -S and -SE, whilst HSE-NE, -NW and -W all reported no influenza activity (figure 6).

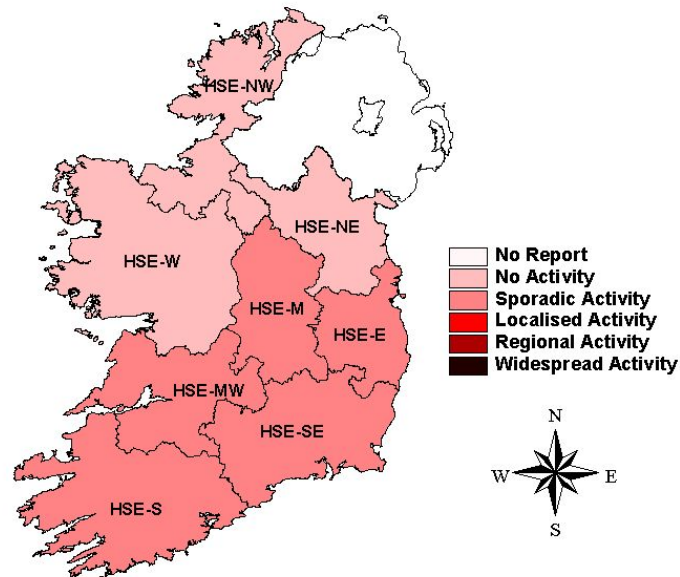


Figure 6: Map of provisional influenza activity by HSE-Area during influenza week 14 2011

#### 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, to report absenteeism data on a weekly basis. Hospital admissions and school absenteeism data act as a crude indicator for influenza activity.

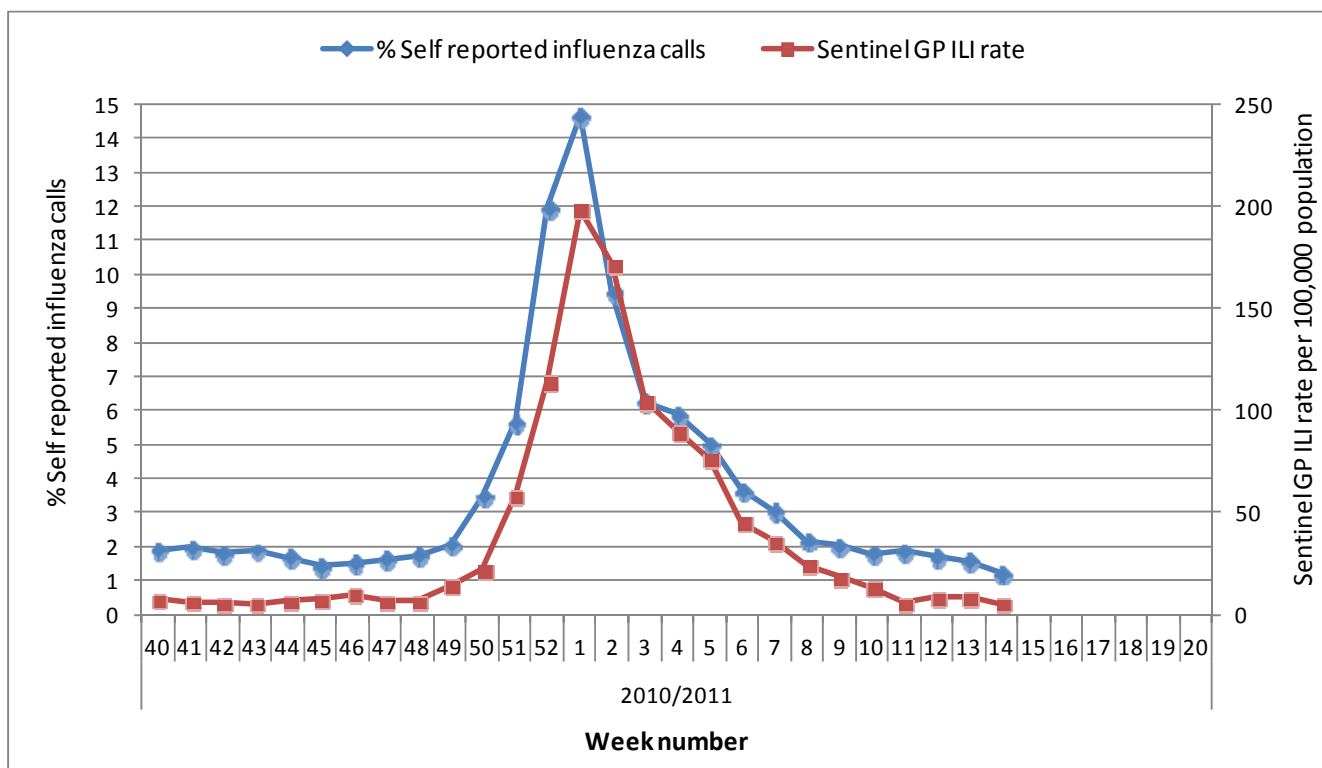
During week 14 2011, there were no significant increases in respiratory admissions reported from sentinel hospitals. Slight increases in sentinel school absenteeism were reported during weeks 13 and 14 2011, from a secondary school in HSE-E associated with gastrointestinal symptoms/colds/sore throats, a primary school in HSE-SE associated with gastrointestinal symptoms and a primary school in HSE-W associated with chickenpox (varicella). The proportion of respiratory admissions from reporting sentinel hospitals in HSE-E, -S, -SE and -W peaked during weeks 51 and 52 2010.



#### 4. GP Out-Of-Hours services surveillance

The Department of Public Health in 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 proportion of influenza-related calls to GP Out-of-Hours services remained stable at 1.2% during week 14 2011, compared to 1.6% in week 13 2011. Seven GP Out-of-Hours services reported during week 14 2011 (figure 7).

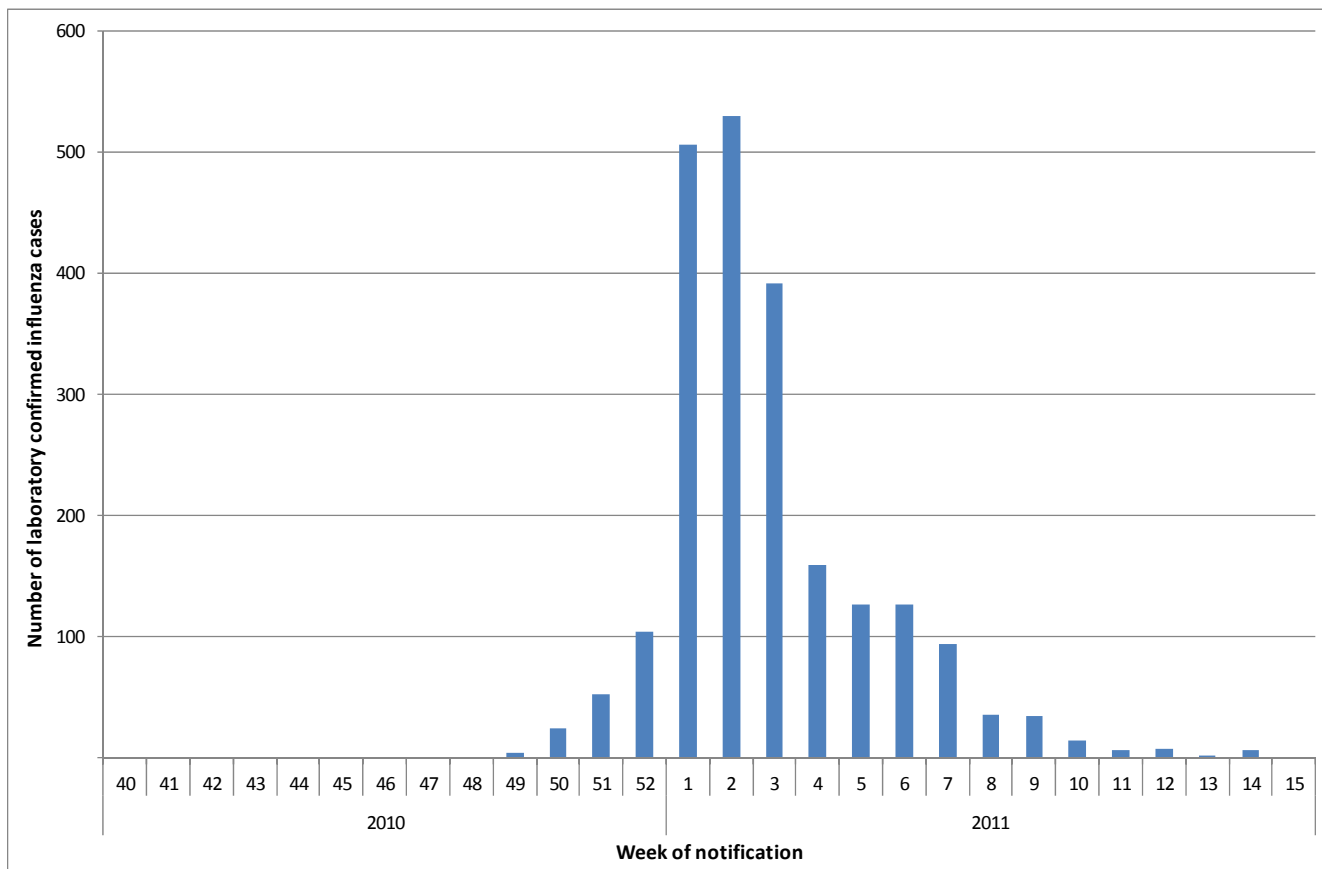


**Figure 7: Self reported influenza-related calls as a proportion of total calls to Out-of-Hours GP Co-ops and national sentinel GP ILI consultation rate per 100,000 population by week for the 2010/2011 season**

Source: GP Out-Of-Hours services in Ireland (collated by HSE-NE) & ICGP.

#### 5. Influenza notifications (CIDR)

As of 13<sup>th</sup> April 2011, 2226 confirmed influenza cases were notified on CIDR for the 2010/2011 influenza season. Laboratory confirmed influenza cases notified on CIDR include all positive influenza specimens reported from all laboratories testing for influenza and reporting to CIDR. Currently, the NVRL is the only laboratory subtyping positive influenza A specimens for *all* influenza A subtypes. Of the 2226 confirmed influenza cases, 1322 (59.4%) were confirmed influenza A (H1N1 2009), 22 (1.0%) were influenza A (H3), 203 (9.1%) were influenza A (unsubtyped), 679 (30.5%) were influenza B cases. It should be noted that data for week 15 2011 are incomplete and only include notified cases as of Wednesday 13<sup>th</sup> April 2011.



**Figure 8: Number of laboratory confirmed influenza cases by week of notification on CIDR for the 2010/2011 influenza season.** \*It should be noted that data for week 15 2011 are incomplete and only include notified cases as of 13<sup>th</sup> April 2011. Source: CIDR 13/04/2011

Nine hundred and forty-two (42.3%) of the 2226 confirmed influenza cases notified this influenza season were hospitalised (i.e. these cases were recorded on CIDR as hospital inpatients) (figure 9). Of the 942 hospitalised cases, 600 (63.7%) were influenza A (H1N1 2009) cases, 7 (0.7%) were influenza A (H3) cases, 109 (11.6%) were influenza A (unsubtyped) and 226 (24.0%) were influenza B cases.

The highest cumulative age specific rate for influenza confirmed hospitalised cases for the 2010/2011 influenza season to date is currently in the 0-4 year age group (61.5 per 100,000 population) (table 3). It should be noted that age was unknown for one hospitalised case.

To date this season, 81 (3.6%) of the 2226 laboratory confirmed influenza cases were reported as pregnant. Fifty-one (63.0%) of these cases were reported as hospitalised: 42 influenza A (H1N1 2009), 2 influenza A (unsubtyped) cases and 7 influenza B cases.\*\*

\*\* It should be noted that information on pregnancy is not completed for all cases.

Age (years)	Hospitalised		Admitted to ICU	
	Number	Age specific rate per 100,000 population	Number	Age specific rate per 100,000 population
0-4	186	61.5	12	4.0
5-14	90	16.0	2	0.4
15-24	103	16.3	3	0.5
25-34	172	23.8	21	2.9
35-44	103	16.5	18	2.9
45-54	88	16.9	23	4.4
55-64	101	24.8	25	6.1
65+	98	20.9	18	3.8

**Table 3: Age specific rate per 100,000 population by age group (years) for all influenza confirmed hospitalised cases and cases admitted to ICU for the 2010/2011 influenza season to date.** *Source: CIDR and ICU enhanced surveillance system 13/04/2011*

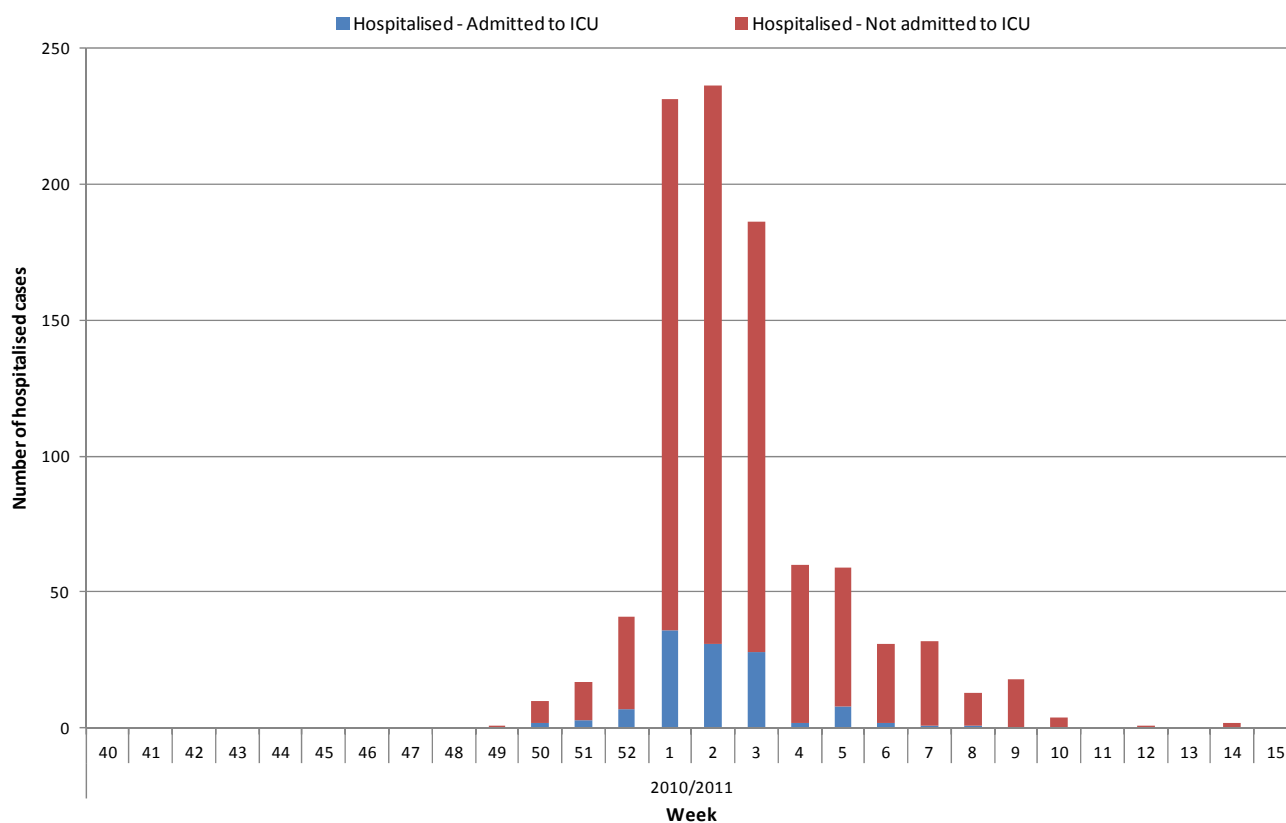
## 6. Intensive Care Society of Ireland (ICSI) enhanced surveillance of all critical care patients with confirmed influenza

The Intensive Care Society of Ireland (ICSI) are continuing with the enhanced surveillance system, set up during the 2009 pandemic, on all critical care patients with confirmed influenza, and notify any cases to HPSC, who process and report on this information on behalf of the regional Director of Public Health/Medical Officer of Health.

As of 13<sup>th</sup> April 2011, HPSC has been notified of 122 hospitalised patients admitted to critical care units with confirmed influenza, 108 of whom are adults and 14 are paediatric cases. The last confirmed influenza case admitted to ICU was on February 17<sup>th</sup> 2011. Three (2.5%) of the 122 cases are currently in ICU<sup>§§</sup>. Ninety-one of the 122 (74.6%) cases have underlying medical conditions, 82 adults and nine paediatric cases. The underlying medical conditions include: chronic respiratory disease, chronic heart disease, immunosuppression, pregnancy, metabolic disorders and morbid obesity.

The age specific rates for all cases admitted to ICU are detailed in table 3 above. The number of confirmed influenza hospitalised cases by ICU status and by week of notification on CIDR for the 2010/2011 influenza season is detailed in figure 9.

<sup>§§</sup> This information is based on the enhanced surveillance data.



**Figure 9: Number of confirmed influenza hospitalised cases by ICU status by week of notification on CIDR for the 2010/2011, influenza season.** It should be noted that data for week 15 2011 are incomplete and only include notified cases as of 13<sup>th</sup> April 2011. Source: CIDR and ICU enhanced surveillance system 13/04/2011

## 7. Mortality surveillance

HPSC has been informed of 27 influenza associated deaths to date this season (as of 07/04/2011), 21 influenza A (H1N1 2009), one co-infection of influenza A (H1N1) and influenza B, one influenza A (H3), one influenza A (unsubtyped) and three influenza B. One death was in a patient in the 0-4 year age group, 20 patients were in the 15-64 year age group and six patients were aged 65 years and older. Twenty-two deaths occurred in patients with underlying medical conditions. One death occurred in week 52 2010, three in week 1 2011, five in week 2 2011, eight in week 3 2011, four in week 4 2011, four in week 5 2011, one in week 6 2011 and one in week 11 2011. Table 4 outlines the influenza associated deaths by HSE-Area for the 2010/2011 influenza season to date.

**Table 4: Influenza associated deaths in laboratory confirmed influenza cases by HSE-Area for the 2010/2011 influenza season to date.** Source: Deaths reported to HPSC as of 13/04/2011

HSE Area	Influenza Deaths
HSE-E	14
HSE-M	3
HSE-MW	0
HSE-NE	2
HSE-NW	3
HSE-SE	2
HSE-S	2
HSE-W	1
<b>Total</b>	<b>27</b>

## 8. Outbreak surveillance

No new outbreaks of influenza/ILI have been reported since week 5 2011. To date this season, (as of 13<sup>th</sup> April 2011), 14 general outbreaks of ILI/influenza/influenza A (H1N1 2009) were reported to CIDR: eight ILI outbreaks, five influenza A (H1N1 2009) outbreaks and one outbreak associated with both influenza A (H1N1 2009) and influenza B. One outbreak was reported in week 49 2010, two in week 50 2010, four in week 51 2010, three in week 2 2011, three in week 4 2011 and one in week 5 2011. Five outbreaks were reported from HSE-E, seven from HSE-S and two from HSE-W. Two outbreaks were in healthcare settings (one of which was a maternity hospital), seven in schools, one in a community setting, one in a residential institution, one in a prison, one travel related outbreak and one outbreak reported as 'Other' setting.

## 9. International summary

### United Kingdom

Influenza activity and GP consultation rates remained low in England, Wales, Scotland and Northern Ireland during week 13 2011. The influenza A (H1N1 2009) virus strain is virologically and epidemiologically similar to that seen during the pandemic. The virus strains circulating are overall well matched to the current influenza vaccine. In week 13 2011, the weekly primary care ILI consultation rate decreased in Scotland (31.9 per 100,000) and remained stable and below baseline in England (7.7 per 100,000), Wales (6.3 per 100,000) and Northern Ireland (13.5 per 100,000). The proportion of NHS Direct calls for cold/influenza and fever remained stable and below threshold levels. No acute respiratory disease outbreaks have been reported in the UK since week 6 2011, with the total reported this season remaining at 170. The proportion of respiratory specimens reported to Data Mart (England) as positive for influenza remained low at 0.9% (4 of 448). The proportion of positive samples decreased slightly for RSV and rhinovirus and remained stable for adenovirus, parainfluenza and HMPV. Since week 36, 569 deaths in the UK associated with confirmed influenza infection have been reported. Following the excess all-cause mortality observed over the Christmas period, excess mortality remains below the upper limit of expected levels for this time of year.

<http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/SeasonallInfluenza/>

### Europe

The influenza epidemic of the 2010/2011 influenza season in Europe is subsiding. Twenty-four EU/EEA countries experienced influenza activity of low intensity during week 13 2011. Trends in all 28 reporting EU/EEA countries were unchanging or decreasing during week 13 2011. For the third consecutive week, more influenza B viruses than influenza A viruses were reported. Of the detected influenza viruses, 32.6% were of type A, and 67.4% were of type B during week 13 2011. The latter virus type was dominant or co-dominant with influenza virus A (H1N1 2009) in eleven countries. Three countries notified 22 cases with severe acute respiratory infection, of which five were associated with influenza infection. Since week 40 2010, 3,640 influenza viruses from sentinel and non-sentinel specimens have been characterised antigenically: 1,842 as A/California/7/2009 (H1N1)-like, 1,522 as B/Brisbane/60/2008-like (Victoria lineage), 138 as A/Perth/16/2009 (H3N2)-like, 136 as B/Florida/4/2006-like (Yamagata lineage) and two as B/Bangladesh/3333/2007-like (Yamagata lineage). Denmark, Germany, Ireland, Italy, Norway, the Netherlands, Spain and the UK have reported antiviral resistance data to ECDC. Ninety-one influenza A (H1 2009) viruses tested were resistant to oseltamivir but remained sensitive for zanamivir. All the resistant viruses carried the H275Y mutation. Seventeen of 55 resistant viruses, from patients for whom exposure to antivirals was known, were from patients who had not been treated with oseltamivir.

[http://ecdc.europa.eu/en/healthtopics/influenza/epidemiological\\_data/Pages/Weekly\\_Influenza\\_Surveillance\\_Overview.aspx](http://ecdc.europa.eu/en/healthtopics/influenza/epidemiological_data/Pages/Weekly_Influenza_Surveillance_Overview.aspx)

### USA

During week 13 2011, influenza activity in the United States continued to decrease. The proportion of outpatient ILI visits was 1.6%, which is below the national baseline of 2.5%. Of the 3,616 specimens tested, 399 (11.0%) were positive for influenza: 65 A (H1N1 2009), 106 A (H3), 101 A (unsubtyped) and 127 B. The

proportion of deaths attributed to pneumonia and influenza has been at or above the epidemic threshold for 10 consecutive weeks. Two influenza-associated paediatric deaths were reported, bringing the season total to 91. One of these deaths was associated with influenza A (H1N1) 2009, and one was associated with an influenza A virus for which the subtype was not determined. <http://www.cdc.gov/flu/weekly/>

### Canada

In Canada during week 13 2011, localised influenza activity was being reported in parts of Saskatchewan, Ontario, Quebec and the Atlantic provinces. The ILI consultation rate remained similar to the previous three weeks, fewer influenza/ILI outbreaks were reported, and adult hospitalisations decreased compared to the previous week. Influenza B detections continue to increase steadily in most regions of the country except the Atlantic provinces and now accounts for almost half of the positive tests for influenza (53.0% influenza A, 47.0% were influenza B). <http://www.phac-aspc.gc.ca/fluwatch/index-eng.php>

### Worldwide (WHO)

The WHO Global Influenza Programme monitors influenza activity worldwide and publishes an update every two weeks. As of 8<sup>th</sup> April 2011, influenza activity in the northern hemisphere temperate regions was continuing to decline or return to baseline levels indicating the influenza season is ending. In countries in the tropical zone, influenza activity was low in most areas. In southern hemisphere countries, influenza activity has not yet started. Viruses which have been characterised antigenically continue to be largely related to the lineages found in the current trivalent seasonal vaccine, except for a small number of influenza B viruses of the Yamagata lineage. <http://www.who.int/csr/disease/influenza/en/>

### Avian influenza

As of 11<sup>th</sup> April 2011, 549 confirmed human cases of avian influenza A (H5N1) and 320 (58.3%) deaths have been reported to WHO from 15 countries since 2003. The latest confirmed cases and deaths were reported from Bangladesh, Cambodia, Egypt and Indonesia between February and April 2011. Ongoing investigations into the source of infection indicate that all confirmed cases had exposure to poultry (suspected to have avian influenza infection). [http://www.who.int/csr/disease/avian\\_influenza/en/index.html](http://www.who.int/csr/disease/avian_influenza/en/index.html)

## 8. Northern hemisphere influenza vaccine for the 2011/2012 season:

Following a WHO Consultation, it is recommended that vaccines for use in the 2011/2012 influenza season (northern hemisphere) contain the following viruses:

- an A/California/7/2009 (H1N1)-like virus;
- an A/Perth/16/2009 (H3N2)-like virus;
- a B/Brisbane/60/2008-like virus.

The recommended 2011/2012 influenza vaccine remains unchanged from the 2010/2011 influenza vaccine. [http://www.who.int/csr/disease/influenza/recommendations\\_2011\\_12north/en/index.html](http://www.who.int/csr/disease/influenza/recommendations_2011_12north/en/index.html)

### 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>
Northern Ireland	<a href="http://www.cdscni.org.uk/">http://www.cdscni.org.uk/</a>
Europe – ECDC	<a href="http://ecdc.europa.eu/">http://ecdc.europa.eu/</a>
Europe – EISN	<a href="http://ecdc.europa.eu/en/activities/surveillance/EISN/Pages/home.aspx">http://ecdc.europa.eu/en/activities/surveillance/EISN/Pages/home.aspx</a>

### Acknowledgements

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