

# Influenza Surveillance in Ireland – Weekly Report

Influenza Week 7 2013 (11<sup>th</sup> – 18<sup>th</sup> February 2013)



## Summary

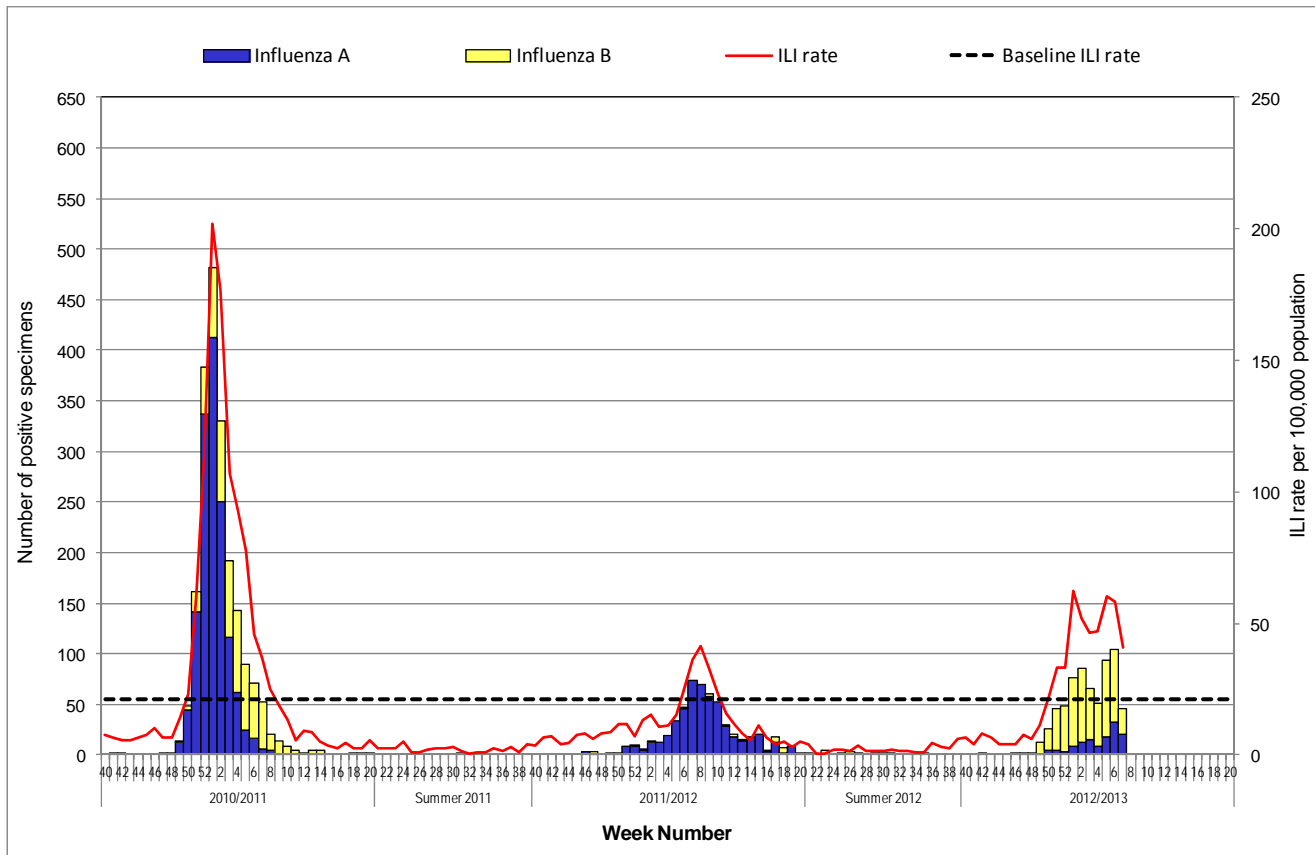
- **Several indicators of influenza activity in Ireland decreased during week 7 2013, compared to the previous week, however influenza-associated hospitalisations and outbreaks continue to be reported.**
  - The sentinel GP influenza-like illness (ILI) consultation rate was 40.9 per 100,000 population in week 7 2013, a decrease compared to the updated rate of 58.1 per 100,000 during week 6 2013.
    - ◆ ILI rates are above the Irish baseline threshold (21.0 per 100,000 population).
    - ◆ ILI age specific rates decreased in all age groups.
- The proportion of influenza-related calls to GP Out-of-Hours services decreased during week 7 2013, compared to the previous week.
- Influenza positivity decreased to 18.8% during week 7 2013, compared to 33.8% during the previous week. Twenty-four influenza B, 12 influenza A(H3) and nine influenza A(H1)pdm09 positive specimens were reported from the NVRL for week 7 2013.
- During week 7 2013, both influenza A and B were co-circulating.
- Respiratory syncytial virus (RSV) positivity peaked during week 51 2012 and has decreased significantly since. RSV continues to circulate at low levels.
- Positivity levels for adenovirus, parainfluenza viruses and human metapneumovirus have remained at low levels this season.
- During week 7 2013, 40 confirmed influenza cases were reported as hospitalised, 11 associated with influenza A and 29 with influenza B. To date this season, 167 confirmed influenza cases were reported as hospitalised, 77.2% were associated with influenza B.
- Ten adult and four paediatric confirmed influenza cases have been admitted to critical care to date this season. Of these 14 cases, 10 were associated with influenza B, one with influenza A (H1)pdm09 and three with influenza A (unsubtyped). Thirty-two RSV\* paediatric cases were also admitted to critical care this season.
- To date this season, one confirmed influenza B-associated death was reported to HPSC (during week 5 2013).
- Four acute respiratory outbreaks were reported to HPSC during week 7 2013.
- Significant influenza activity continued across Europe in week 6 2013, despite having peaked in a few countries in earlier weeks.

\*The majority of these RSV admissions to critical care were admitted during November and December 2012.

## 1. GP sentinel surveillance system

### Clinical Data

During week 7 2013, 91 influenza-like illness (ILI) cases were reported from sentinel GPs, corresponding to an ILI consultation rate of 40.9 per 100,000 population, a decrease compared to the updated rate of 58.1 per 100,000 in week 6 2013. Fifty-one of 60 (85.0%) sentinel general practices provided data during week 7 2013, with 27 practices (52.9%) reporting ILI cases. The ILI consultation rates for week 7 2013 remained above the Irish baseline threshold (21.0 per 100,000 population)<sup>†</sup>. 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 ICGPand virological data from the NVRL<sup>‡</sup>

ILI age specific rates decreased in all age groups during week 7 2013, compared to the previous week. During week 7 2013, three ILI cases were reported in the 0-4 year age group (17.5 per 100,000), 14 ILI cases were reported in the 5-14 year age group (46.7 per 100,000), 68 cases in the 15-64 year age group (46.0 per 100,000) and 6 ILI cases were reported in those aged 65 years and older (23.3 per 100,000) (figure 2).

<sup>†</sup> HPSG in consultation with the European Centre for Disease Prevention and Control (ECDC) have revised the Irish baseline threshold for the 2012/2013 influenza season to 21.0 per 100,000 population.

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

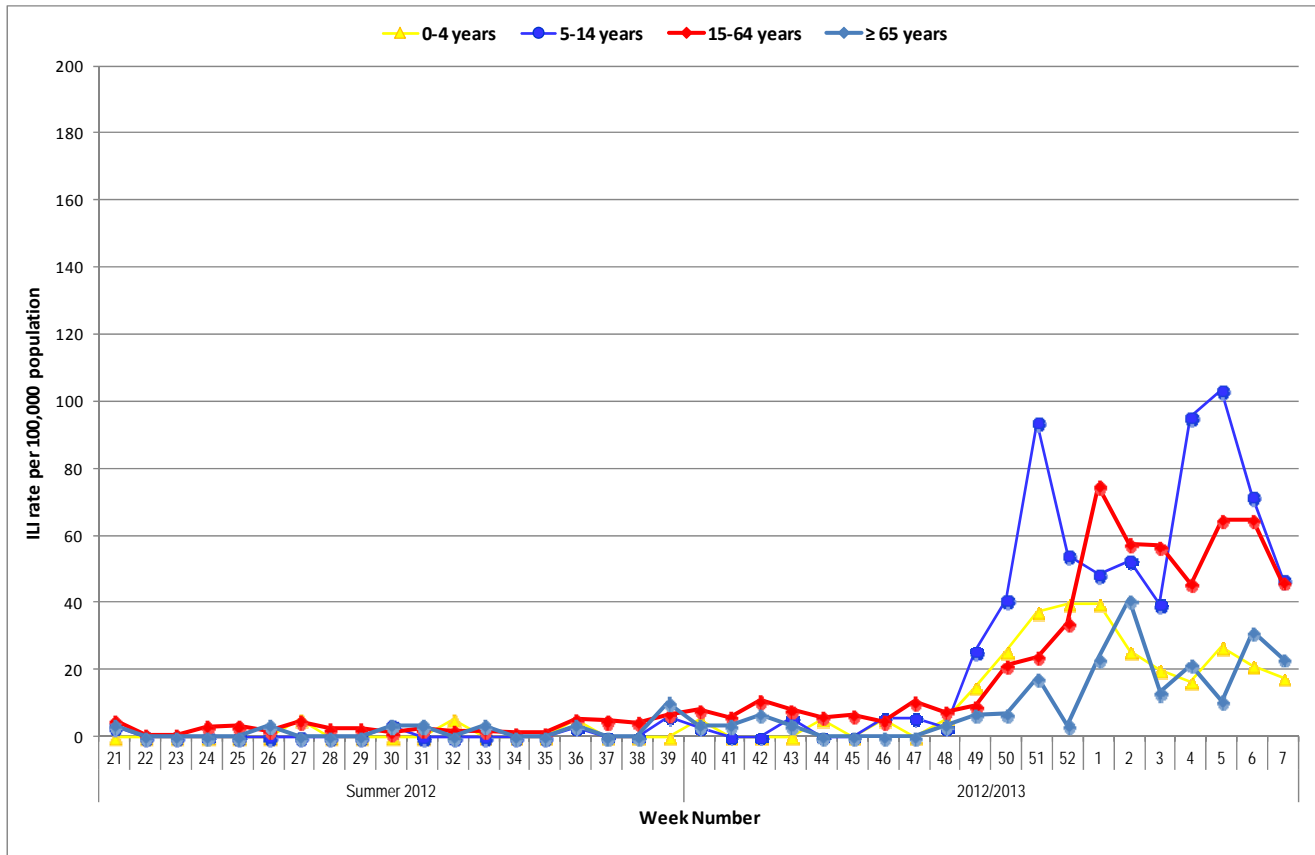


Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2012 and the 2012/2013 influenza season to date. Source: ICGP ILI clinical data

## 2. Influenza and Other Respiratory Virus Detections - National Virus Reference Laboratory

The data reported in this section for the 2012/2013 influenza season refers to specimens tested by the National Virus Reference Laboratory (NVRL). The NVRL are now testing all sentinel and non-sentinel specimens for a panel of respiratory viruses: influenza A and B, respiratory syncytial virus (RSV), adenovirus, parainfluenza viruses types 1, 2, and 3 (PIV-1, -2 & -3) and human metapneumovirus.

During week 7 2013, a total of 239 specimens (34 sentinel and 205 non-sentinel<sup>§</sup> specimens) were tested by the NVRL. Forty-five (45/239; 18.8%) sentinel and non-sentinel specimens tested positive for influenza virus during week 7 2013: 12 A(H3), 9 A(H1)pdm09 and 24 B. Eleven (11/34; 32.4%) sentinel specimens tested positive for influenza virus during week 7 2013: 2 A(H3), 1 A(H1)pdm09 and 8 B. Thirty-four (34/205; 16.6%) non-sentinel specimens tested positive for influenza virus during week 7 2013: 10 A(H3), 8 A(H1)pdm09 and 16 B (tables 1 & 2).

During week 7 2013, for the first time this season, influenza B was no longer the dominant circulating influenza virus. Both influenza A and B are co-circulating. Influenza A and B positivity decreased during week 7 2013, compared to the previous week (figures 3 & 4).

<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.

### Influenza Virus Characterisation

The National Virus Reference Laboratory (NVRL) has genetically characterised seven influenza B viruses this season to date. Of these seven influenza B viruses, six were similar to the B/Yamagata lineage which is included in the 2012/2013 influenza vaccine and one was similar to the B/Victoria lineage which is not included in the vaccine. As part of the WHO Global influenza surveillance programme, a proportion of influenza viruses are submitted to the WHO Collaborating Centre for Reference and Research on Influenza (Mill Hill, London) for characterisation of influenza strains. These viruses have been submitted for further antigenic characterisation and confirmatory testing.

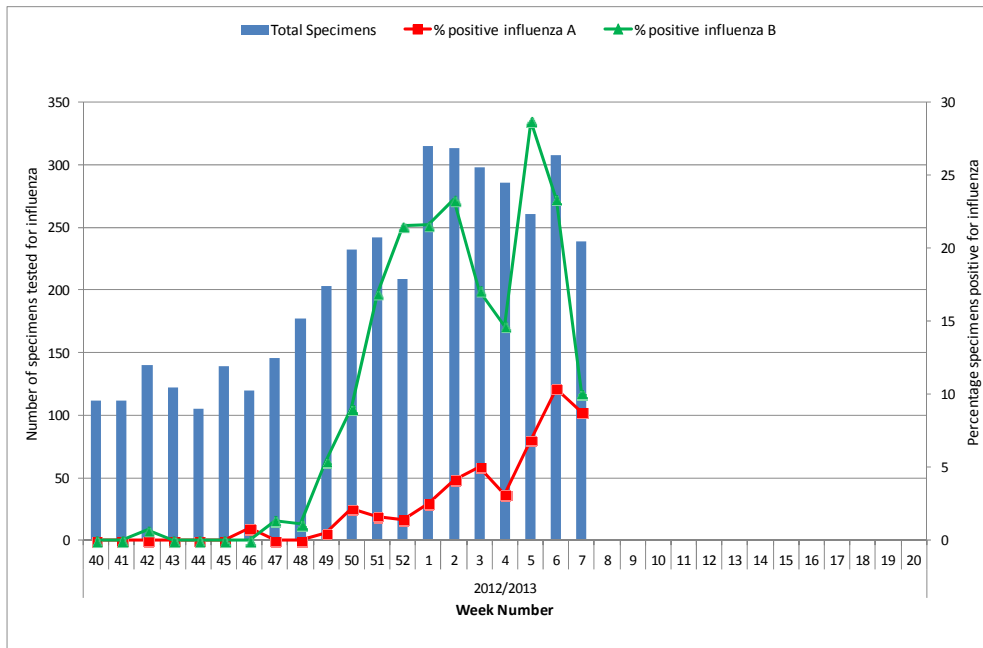


Figure 3: Number of sentinel and non-sentinel specimens tested for influenza and percentage influenza positive by week for the 2012/2013 influenza season. *Source: NVRL*

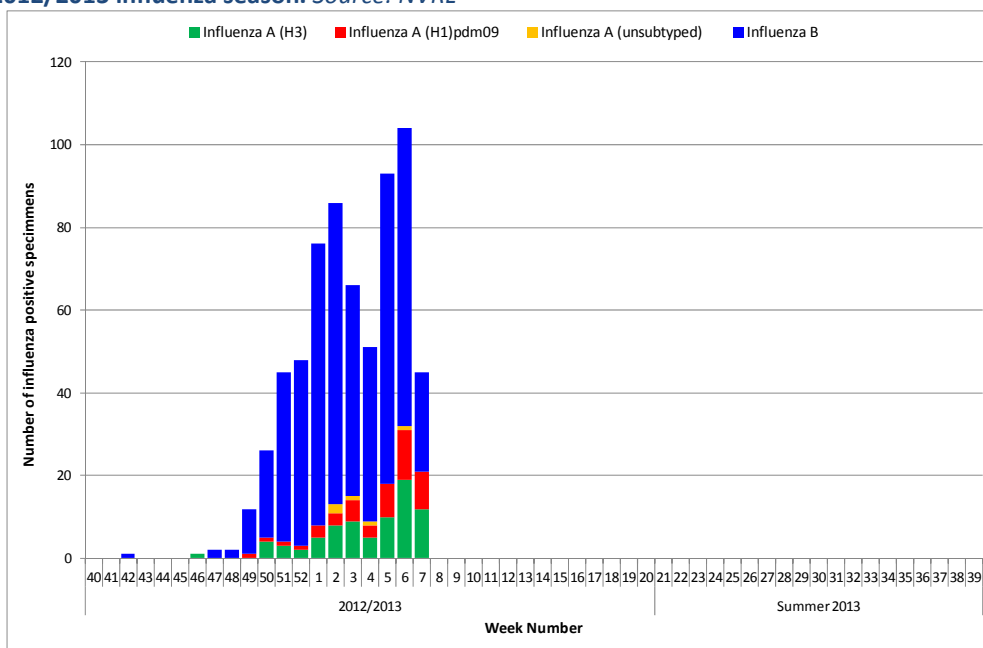


Figure 4: Number of positive influenza specimens by influenza type/subtype from sentinel and non-sentinel sources tested by the NVRL, by week for the 2012/2013 influenza season. *Source: NVRL*

## Respiratory Syncytial Virus (RSV)

Respiratory syncytial virus (RSV) positivity reported from the NVRL (non-sentinel sources) decreased to 5.9% (12/205) during week 7 2013, compared to 6.2% during week 6 2013. RSV positivity peaked at 36.7% during week 51 2012 (figure 5). Sporadic cases of RSV have been detected this season from sentinel GP sources (table 2).

RSV was made notifiable in Ireland on 1<sup>st</sup> January 2012. During week 7 2013, 38 laboratory notifications of RSV were reported on Ireland's Computerised Infectious Disease Reporting System (CIDR). Laboratory notifications of RSV are reported in more detail in the [Weekly Infectious Disease Report for Ireland](#).

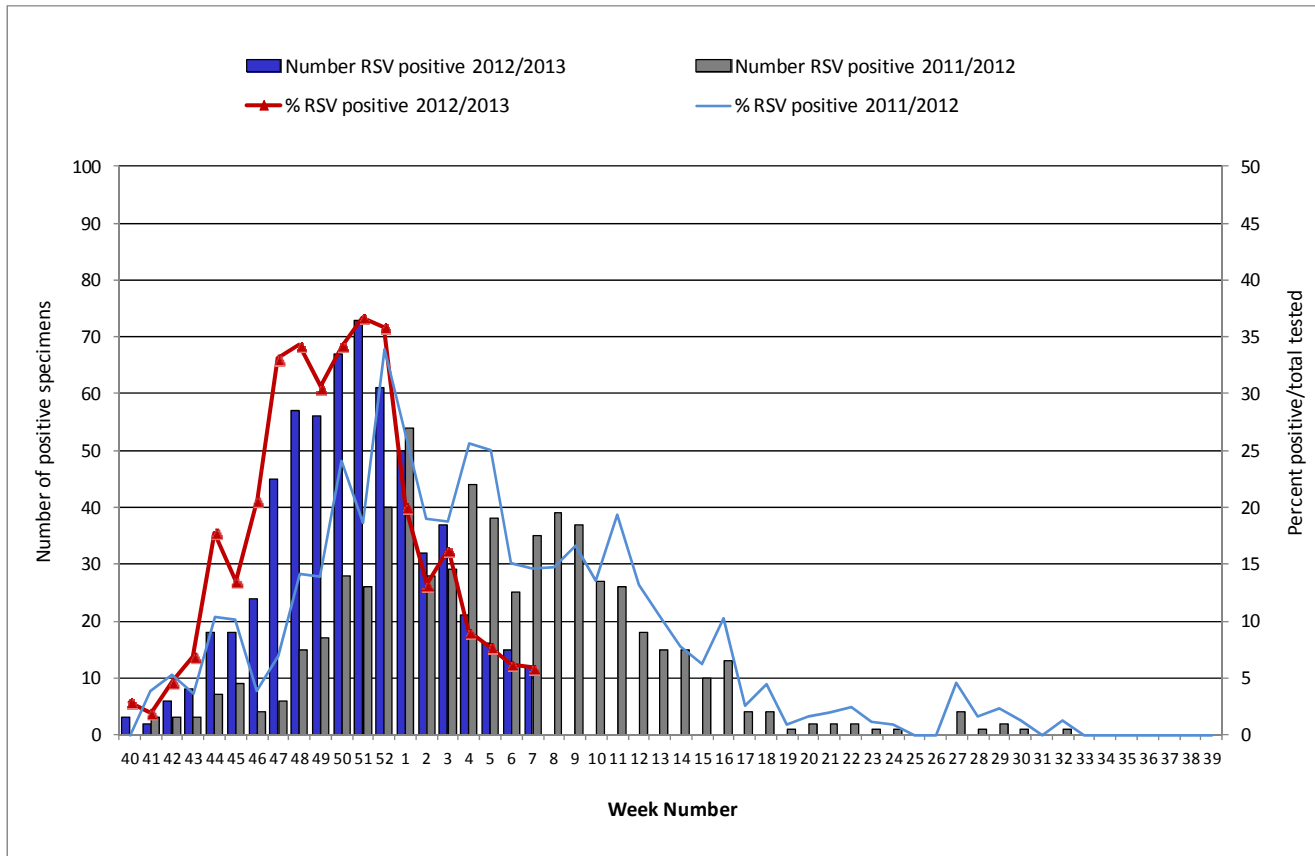


Figure 5: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2012/2013 season, compared to the 2011/2012 season. Source: NVRL

## Other Respiratory Viruses

Two adenovirus, four parainfluenza virus (PIV) type 3 and two human metapneumovirus positive specimens were reported from the NVRL from non-sentinel sources during week 7 2013. No adenovirus, parainfluenza viruses or hMPV positive detections were reported from the NVRL from sentinel GP sources during week 7 2013 (table 2). Positivity levels for adenovirus, hMPV and parainfluenza viruses have remained at low levels this season.

**Table 1: Number of sentinel and non-sentinel\*\* respiratory specimens tested by the NVRL and positive influenza results, for week 7 2013 and the 2012/2013 season to date. Source: NVRL**

Week	Specimen type	Total tested	Number influenza positive	% Influenza positive	Influenza A				Influenza B
					A (H1)pdm09	A (H3)	A (unsubtyped)	Total influenza A	
<b>7 2013</b>	Sentinel	34	11	32.4	1	2	0	3	8
	Non-sentinel	205	34	16.6	8	10	0	18	16
	<b>Total</b>	<b>239</b>	<b>45</b>	<b>18.8</b>	<b>9</b>	<b>12</b>	<b>0</b>	<b>21</b>	<b>24</b>
<b>2012/2013</b>	Sentinel	622	340	54.7	22	30	1	53	287
	Non-sentinel	3457	318	9.2	25	48	4	77	241
	<b>Total</b>	<b>4079</b>	<b>658</b>	<b>16.1</b>	<b>47</b>	<b>78</b>	<b>5</b>	<b>130</b>	<b>528</b>

**Table 2: Number of sentinel and non-sentinel specimens tested by the NVRL for other respiratory viruses and positive results, for week 7 2013 and the 2012/2013 season to date. Source: NVRL**

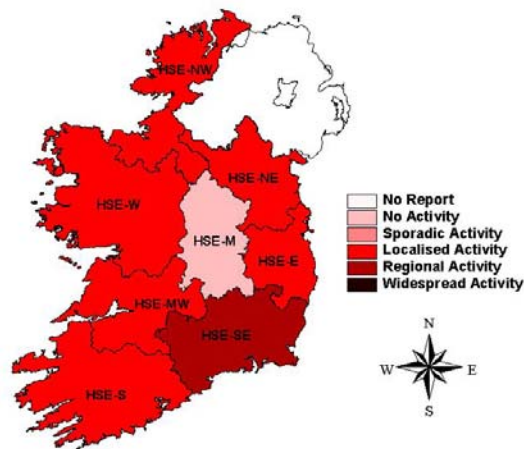
Week	Specimen type	Total tested	RSV	% RSV	Adenovirus	% Adenovirus	PIV-1	% PIV-1	PIV-2	% PIV-2	PIV-3	% PIV-3	hMPV	% hMPV
<b>7 2013</b>	Sentinel	34	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Non-sentinel	205	12	5.9	2	1.0	0	0.0	0	0.0	4	2.0	2	1.0
	<b>Total</b>	<b>239</b>	<b>12</b>	<b>5.0</b>	<b>2</b>	<b>0.8</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>4</b>	<b>1.7</b>	<b>2</b>	<b>0.8</b>
<b>2012/2013</b>	Sentinel	622	13	2.1	16	2.6	1	0.2	0	0.0	1	0.2	7	1.1
	Non-sentinel	3457	621	18.0	50	1.4	2	0.1	3	0.1	41	1.2	60	1.7
	<b>Total</b>	<b>4079</b>	<b>634</b>	<b>15.5</b>	<b>66</b>	<b>1.6</b>	<b>3</b>	<b>0.1</b>	<b>3</b>	<b>0.1</b>	<b>42</b>	<b>1.0</b>	<b>67</b>	<b>1.6</b>

\*\* 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.

Regional influenza activity was reported from HSE-SE, localised influenza activity was reported from HSE-E, -MW, -NE, -NW, -S and -W and no influenza activity was reported from HSE-M during week 7 2013 (figure 6).

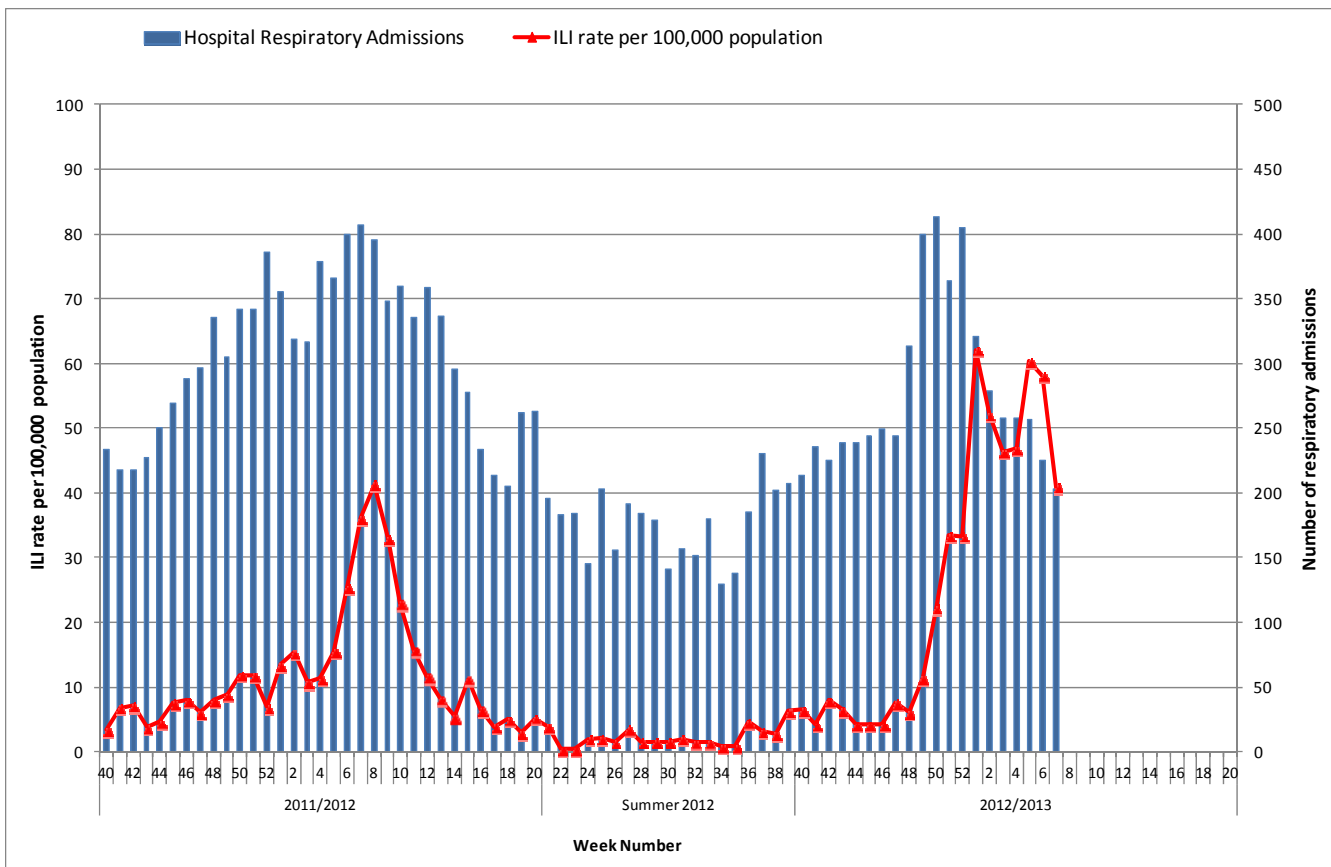


**Figure 6: Map of provisional influenza activity by HSE-Area during week 7 2013**

#### Sentinel hospitals

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. Hospital admissions data act as a crude indicator for influenza activity.

Overall, the total number of respiratory admissions reported from sentinel hospitals was 203 during week 7 2013, a slight decrease compared to 225 during week 6 2013. It should be noted that data for week 7 2013 were incomplete. To date this season, hospital respiratory admissions peaked at 413 during week 50 2012 (figure 7).



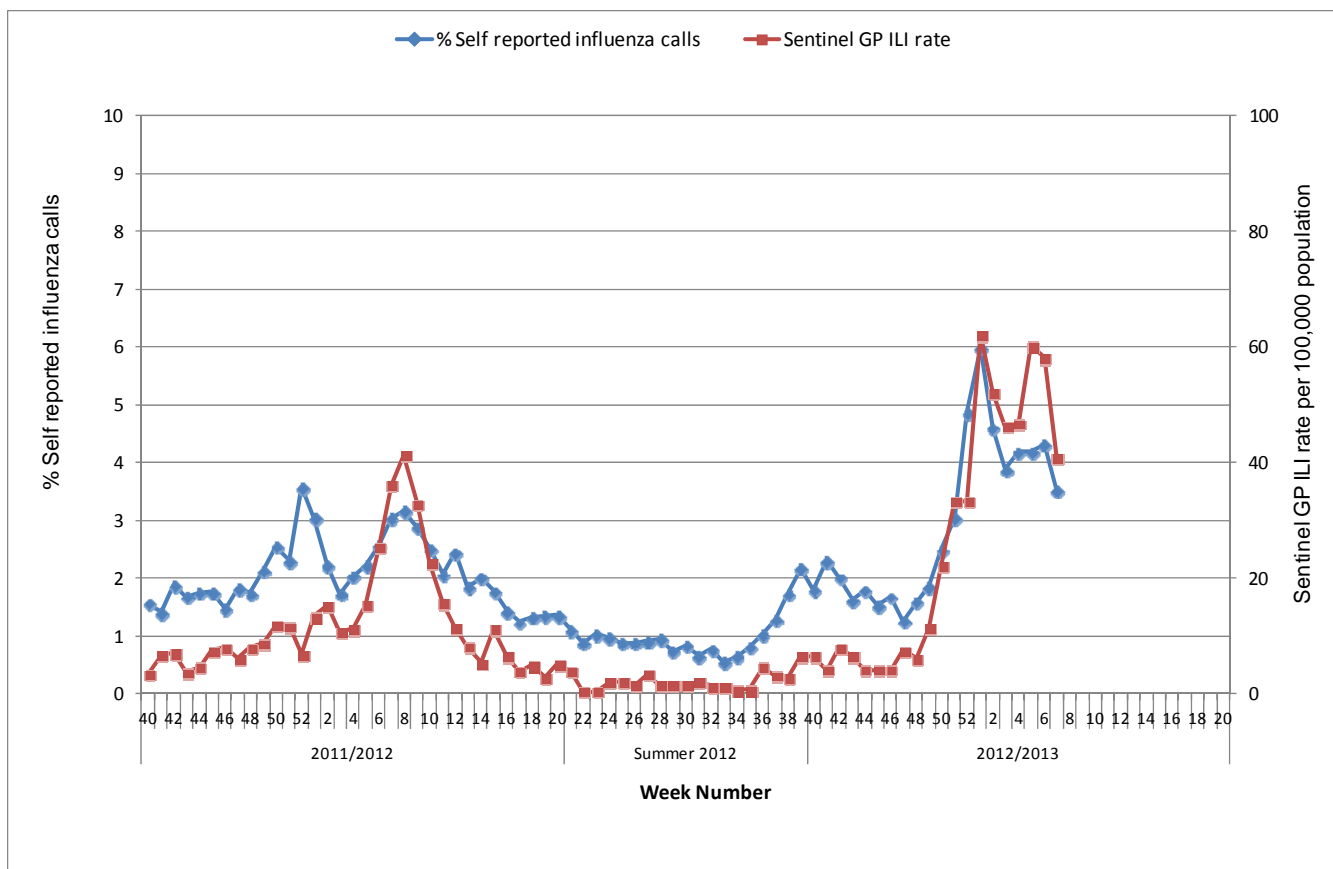
**Figure 7: Number of respiratory admissions reported from sentinel hospitals and national sentinel GP ILI consultation rate per 100,000 population by week for the 2011/2012 season, summer 2012 and the 2012/2013 season to date.**  
 Source: Departments of Public Health - Sentinel Hospitals & ICGP.

#### 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 during week 7 2013 decreased to 3.5%, compared to the updated proportion of 4.3% in the previous week. Six GP Out-of-Hours services reported during week 7 2013. To date this season, the proportion of influenza-related calls to GP Out-of-Hours services peaked at 6.0% during week 1 2013 (figure 8).





**Figure 8: 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 2011/2012 and 2012/2013 seasons**

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

## 5. Influenza notifications and hospitalisation status

Laboratory confirmed influenza cases notified on Ireland’s Computerised Infectious Disease Reporting System (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.

One hundred and seventeen laboratory confirmed influenza cases were notified during week 7 2013, 30 influenza A (9 A(H3), 15 A(H1)pdm09 & 6 A(unsubtyped)) and 87 influenza B. The number of confirmed influenza cases reported as hospitalised during week 7 2013 was 40, compared to 26 during week 6 2013. Of the 40 cases reported as hospitalised during week 7 2013, 11 were associated with influenza A (5 A(H3), 5 A(H1)pdm09 & 1 A(unsubtyped)) and 29 were associated with influenza B. To date this season, 167 confirmed influenza cases (129 influenza B, 18 A (H1)pdm09, 16 influenza A (H3), and 4 influenza A (unsubtyped)) have been reported as hospitalised, 77.2% of these cases were associated with influenza B.

## 6. Critical care surveillance

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. A study on severe acute respiratory infections (SARI) in critical care at two pilot ICU sites which commenced during the 2011/2012 season will continue during the 2012/2013 season. HPSC process and report on this information on behalf of the regional Directors of Public Health/Medical Officers of Health and ICSI.

To date this season, ten adult and four paediatric confirmed influenza cases have been admitted to critical care and reported to HPSC, ten were associated with influenza B, one with influenza A (H1)pdm09 and three influenza A (unsubtyped). Thirty-two RSV paediatric cases were also admitted to critical care this season. The majority (90.6%) of these reported RSV admissions to critical care were admitted during November and December 2012.

## 7. Mortality surveillance

To date this season, one confirmed influenza B-associated death was reported to HPSC (during week 5 2013). Influenza-associated deaths include all deaths where influenza is reported as the primary/main cause of death by the physician or if influenza is listed anywhere on the death certificate as the cause of death.

HPSC receives daily mortality data from the General Register Office (GRO) on all deaths from all causes registered in Ireland. These data have been used to monitor excess all-cause and influenza and pneumonia deaths as part of the influenza surveillance system and the European Mortality Monitoring Project (Euro MoMo). During week 7 2013, no excess all-cause mortality was reported in Ireland after correcting GRO data for reporting delays with the standardised EuroMOMO algorithm. However, during week 52 2012, excess all-cause mortality in those aged 65 years and older and excess mortality due to influenza and pneumonia were reported. These data are provisional due to the time delay in deaths' registration in Ireland. <http://www.euromomo.eu/>

## 8. Outbreak surveillance

Four acute respiratory outbreaks were reported to HPSC during week 7 2013. Of the four outbreaks, two were associated with influenza A (one A(H1)pdm09 and one A(H3)) in HSE-NW and two were ILI outbreaks, one in HSE-E and one in HSE-W. All four outbreaks occurred in residential care facilities/long stay units. To date this influenza season, 21 acute respiratory outbreaks have been reported to HPSC, six associated with influenza B, three influenza A(H3), one influenza A(H1)pdm09, one RSV, one hMPV and nine associated with unidentified pathogens (three of which were not associated with influenza). The majority of these outbreaks have been associated with residential care facilities/long stay units for the elderly. It should be noted that family outbreaks are not recorded in this report.

## 9. International summary

### United Kingdom

Indicators of influenza activity across England continued to show influenza is circulating during week 7 2013. In week 7 2013, the weekly primary care ILI consultation rate increased slightly in England (22.3 per 100,000), decreased slightly in Northern Ireland (58.4 per 100,000) and remained stable in Wales (13.6 per 100,000) and Scotland (39.9 per 100,000). In week 7 2013, the weekly proportion of NHS Direct calls for colds/influenza and fever (in 5-14 year olds) remained below their respective influenza thresholds of 1.6% and 11.7%. Ten acute respiratory disease outbreaks have been reported during week 7 2013. Eight had a virological result available (two B and six influenza A (unsubtyped)). Two hundred and twenty-six influenza positive detections (81 B, 70 A(H3), 55 A subtype not known and 20 A(H1N1)pdm09) were recorded through the DataMart scheme (overall positivity of 19.6% compared to 21.9% the previous week). The proportion of samples positive in DataMart (England) remained stable for hMPV, parainfluenza, RSV, adenovirus and rhinovirus. Eight influenza positive detections were recorded through the two English GP-based sentinel schemes in week 7 (5 B, 2 A(H1N1)pdm09 and 1 A(H3)), a positivity of 47.1%. Fifty-five new admissions to ICU/HDU with confirmed influenza (20 A(subtype not known), 15 B, 12 A(H1N1)pdm09, 8 A(H3N2)) were reported across the UK (142 Trusts in England) in week 7. Eighty-four new hospitalised confirmed influenza cases have been reported across England. Since week 40 2012, the HPA Respiratory Virus Unit (RVU) has isolated and antigenically characterised eighty-nine influenza A(H3N2) viruses, all similar to the A/Victoria/361/2011 vaccine strain, and eleven influenza A(H1N1)pdm09 viruses similar to the A/California/07/2009 vaccine strain. Of 197 influenza B viruses isolated, 180 (91%) belong to the B-Yamagata lineage, and are antigenically related to the influenza B vaccine strain,

B/Wisconsin/1/2010, and seven (9%) to the B-Victoria lineage. In week 7 2013, no overall excess all-cause mortality was reported across the UK through the EuroMOMO algorithm. This data is provisional due to the time delay in death registration.

### Europe

Significant influenza activity continued across Europe in week 6 2013, despite having peaked in a few countries in earlier weeks. Twenty of 28 countries reported high/medium-intensity of influenza transmission and wide geographic spread. Thirteen of 28 reporting countries reported increasing trends while six reported decreasing trends. The proportion of influenza-positive sentinel specimens was slightly less than in week 5 2013 (53% compared with 55%). Since the start of the season, the proportions of influenza A and B viruses have remained similar (51% vs. 49%), however among influenza A viruses, the percentage of A(H1N1)pdm09 has continued to increase to 65%, compared with 52% in week 2 2013. Of 125 hospitalised laboratory-confirmed influenza cases reported by seven countries, 70 (56%) tested positive for influenza A virus and 55 (44%) for type B virus. ECDC published its [annual risk assessment](#) for seasonal influenza 2012/2013 based on data up to week 3 2013.

### United States of America

During week 6 2013, influenza activity remained elevated in the United States, but decreased in most areas. The proportion of outpatient visits for ILI was 3.2%, which is above the national baseline of 2.2%. Of 7608 specimens tested and reported, 1499 (19.7%) were positive for influenza: 449 A(H3N2), 39 A(H1N1)pdm09, 505 A(untyped) and 506 B. The proportion of deaths attributed to pneumonia and influenza was above the epidemic threshold. Five paediatric deaths were reported. A cumulative rate for the season of 32.1 laboratory-confirmed influenza-associated hospitalisations per 100,000 population was reported. Of reported hospitalisations, more than 50% were among adults 65 years and older. CDC has antigenically characterised 1088 influenza viruses to date this season: 86 (100%) influenza A(H1N1)pdm09 viruses were similar to the vaccine strain A/California/7/2009-like, 673 (99.4%) (H3N2) viruses were similar to the vaccine strain A/Victoria/361/2011-like, 230 (70.8%) influenza B viruses were similar to the vaccine strain B/Wisconsin/1/2010-like and 95 (29.2%) influenza B viruses were similar to the B/Victoria lineage of viruses.

### Canada

In Canada, during week 6 2013, the percentage of laboratory detections positive for influenza continued to decrease; whereas the percentage of tests positive for RSV continued to increase. The number of regions reporting widespread and localised influenza activity decreased. Fewer new influenza/ILI outbreaks were reported compared to the past 5 weeks. The ILI consultation rate decreased and is now within the expected range for this time of year. The number of paediatric influenza-associated hospitalisations decreased. During the 2012/2013 season, 374 influenza A(H3N2) viruses were antigenically similar to the vaccine strain A/Victoria/361/2011 and the 60 A(H1N1)pdm09 viruses were antigenically similar to the vaccine strain A/California/07/09. Among the influenza B viruses, 64 were antigenically similar to the vaccine strain B/Wisconsin/01/2010 (Yamagata lineage) and 15 were similar to B/Brisbane/60/2008 (Victoria lineage; component of the 2011/2012 seasonal influenza vaccine).

### Worldwide

The WHO Global Influenza Programme monitors influenza activity worldwide and publishes an update every two weeks. The most recent update of 15<sup>th</sup> February 2013 stated that influenza activity in North America, although high with A(H3N2) virus predominant, started decreasing. In the United States, the number of pneumonia and influenza-related hospitalisations among adults aged 65+ years continued to increase. In Europe influenza activity continued to increase in the majority of countries, with A(H1N1)pdm09 virus predominant. Most countries reported medium-intensity transmission, wide geographic spread and increasing trends. Influenza activity throughout the temperate region of Asia is ongoing. In the Caribbean, Central America and tropical South America, influenza activity remained at low levels. Most countries in Africa experienced decreasing influenza activity. Influenza in the southern hemisphere remained at inter-seasonal levels.

## Human Avian Influenza and Novel Coronavirus Updates

### Human Avian Influenza

WHO report monthly risk assessments on influenza at the human-animal interface (HAI). The latest summary on 15<sup>th</sup> February 2013, stated that 620 laboratory-confirmed human cases with avian influenza A(H5N1) virus infection have been officially reported to WHO between 2003 and 15<sup>th</sup> February 2013 from 15 countries, of which 367 died.

### Novel Coronavirus

Three cases of novel coronavirus have been diagnosed in UK residents in the UK. The first case had recently travelled to the Middle East and Pakistan. The two further cases are family members in contact with the first case, with no recent travel history. These latest three cases bring the total number of confirmed cases globally to 12. Information from the WHO on novel coronaviruses can be found here: <http://www.euro.who.int/en/what-we-do/health-topics/communicable-diseases/influenza/coronavirus-infections>

## 2012/2013 seasonal influenza vaccine recommendations – WHO

The WHO vaccine strain selection committee recommended that vaccines for use in the 2012/2013 influenza season (northern hemisphere winter) contain the following:

- an A/California/7/2009 (H1N1)pdm09-like virus;
- an A/Victoria/361/2011 (H3N2)-like virus;
- a B/Wisconsin/1/2010-like virus.

## 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 and enhanced surveillance of all severe acute respiratory infections (SARI) in two pilot ICU sites.
7. Outbreak reporting on CIDR
8. Network of sentinel hospitals reporting admission data

## Further information on influenza in Ireland and internationally

Ireland	<a href="http://www.hpsc.ie">www.hpsc.ie</a>
Northern Ireland	<a href="http://www.fluawareni.info/">http://www.fluawareni.info/</a>
Europe – ECDC	<a href="http://ecdc.europa.eu/">http://ecdc.europa.eu/</a>

### Acknowledgements

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