

# Influenza Surveillance in Ireland – Weekly Report

Influenza Week 3 2013 (14<sup>th</sup> – 20<sup>th</sup> January 2013)



## Summary

- **Most indicators of influenza activity in Ireland decreased during week 3 2013, compared to the previous week.**
  - The sentinel GP influenza-like illness (ILI) consultation rate was 49.8 per 100,000 population in week 3 2013, a slight decrease compared to the updated rate of 53.2 per 100,000 during week 2 2013.
    - ◆ ILI rates are above the Irish baseline threshold (21.0 per 100,000 population)
    - ◆ ILI age specific rates were highest in the 15-64 year age group.
- The proportion of influenza-related calls to GP Out-of-Hours services decreased during week 3 2013.
- Influenza positivity decreased to 20.6% during week 3 2013, compared to 26.9% during the previous week. Thirty-nine influenza B, nine influenza A (H3), four influenza A (H1)pdm09 and one influenza A (unsubtyped) positive specimens were reported from the NVRL for week 3 2013.
- Influenza B remains the dominant circulating influenza virus to date this season, accounting for 86.8% of all influenza positive specimens detected by the NVRL this season. Influenza A positivity has increased slightly in recent weeks.
- Respiratory syncytial virus (RSV) positivity peaked during week 51 2012 and has decreased significantly since. However, RSV continues to circulate at elevated levels.
- Sporadic cases of adenovirus and human metapneumovirus were reported from the NVRL during week 3 2013. Positivity levels of these viruses have remained at low levels this season.
- During week 3 2013, 21 confirmed influenza cases were reported as hospitalised, two associated with influenza A and 19 associated with influenza B. To date this season, 66 confirmed influenza cases were reported as hospitalised, 86.4% were associated with influenza B.
- Seven adult and two paediatric confirmed influenza cases have been admitted to critical care to date this season. Of these nine cases, eight were associated with influenza B and one with influenza A (H1)pdm09. Thirty-two RSV\* paediatric cases were also admitted to critical care this season.
- There were no reports of any confirmed influenza-associated deaths occurring this season to date.
- Two acute respiratory outbreaks<sup>†</sup> (one influenza A(H3) and one influenza B) in long stay units for the elderly, were reported to HPSC during week 3 2013.
- Influenza activity continued to increase in week 2 2013 across most of Europe, with reports of severe cases from a number of countries. At present, indications of higher transmission levels are mostly from North-West Europe. There are some early indications of increases in overall mortality in older people associated with influenza in Europe.

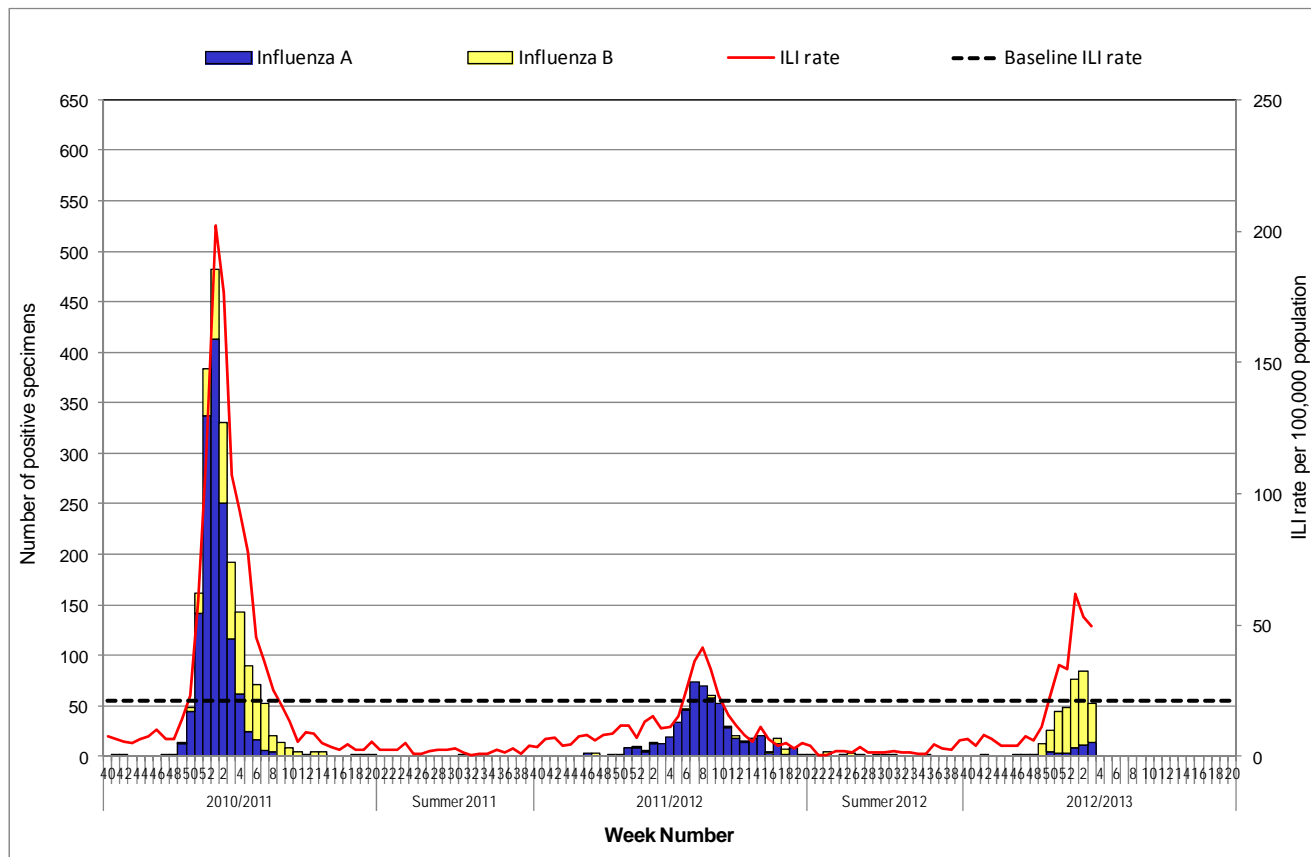
\* The majority of these RSV admissions to critical care were admitted during November and December 2012.

<sup>†</sup> Family outbreaks are not included in this report.

## 1. GP sentinel surveillance system

### Clinical Data

During week 3 2013, 111 influenza-like illness (ILI) cases were reported from sentinel GPs, corresponding to an ILI consultation rate of 49.8 per 100,000 population, a decrease compared to the updated rate of 53.2 per 100,000 in week 2 2013. Fifty-one of 60 (85.0%) sentinel general practices provided data during week 3 2013, with 40 practices (78.4%) reporting ILI cases. The ILI consultation rates for week 2 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 ICGP and virological data from the NVRL<sup>§</sup>

ILI age specific rates decreased in the 0-4 and 5-14 year age groups and in those aged 65 years or older, and increased in the 15-64 year age group during week 3 2013, compared to week 2 2013. The highest age specific ILI rates during week 3 2013 were in the 15-64 year age group. During week 3 2013, four ILI cases were reported in the 0-4 year age group (23.3 per 100,000), 14 ILI cases were reported in the 5-14 year age group (46.6 per 100,000), 89 cases in the 15-64 year age group (60.0 per 100,000) and 4 ILI cases were reported in those aged 65 years or older (15.5 per 100,000) (figure 2).

<sup>‡</sup> HPSC 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.

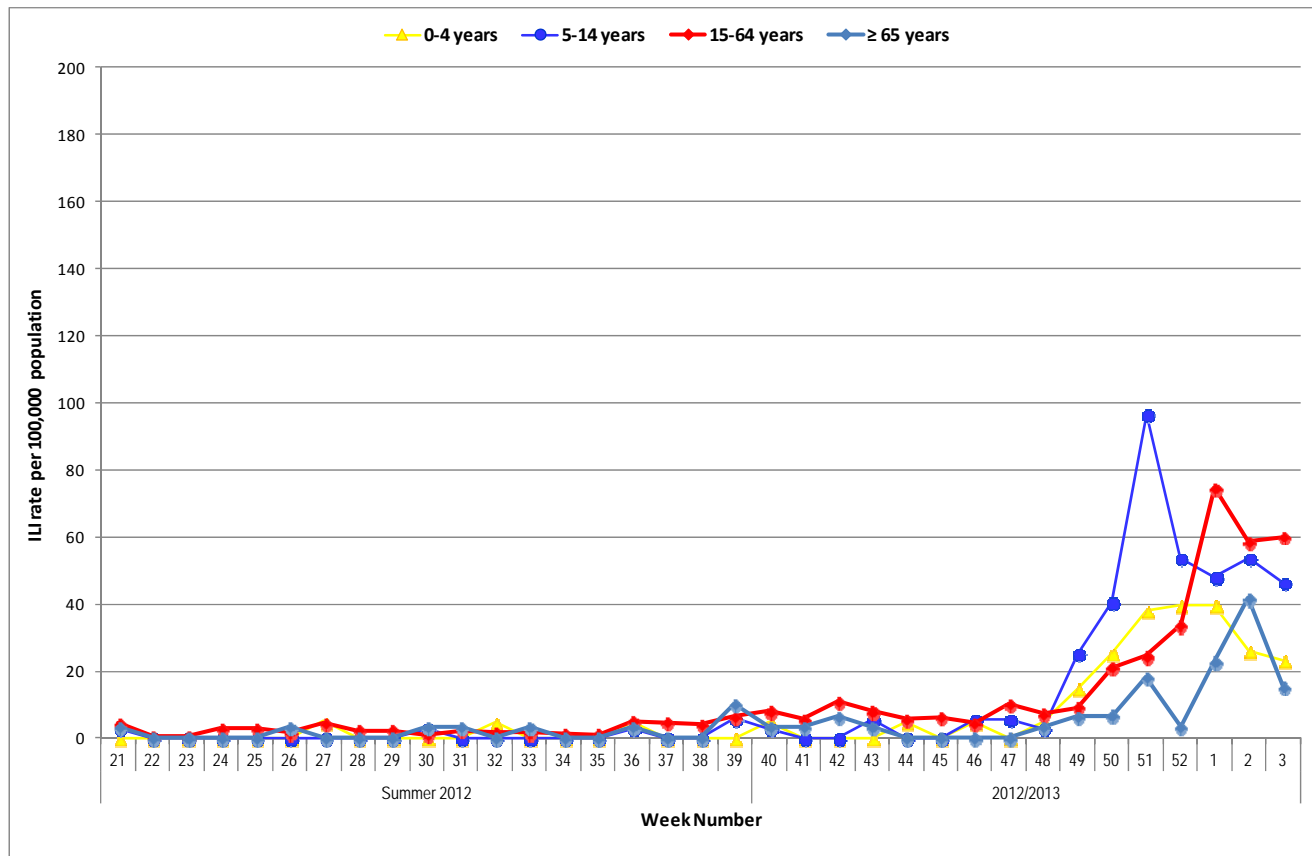


Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2012 and the 2012/2013 influenza season to date Source: ICGP ILI clinical data

## 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 3 2013, a total of 257 specimens (60 sentinel and 197 non-sentinel\*\* specimens) were tested by the NVRL. Fifty-three (53/257; 20.6%) sentinel and non-sentinel specimens tested positive for influenza virus during week 3 2013: 9 A(H3), 4 A(H1)pdm09, 1 A(unsubtyped) and 39 B. Thirty-two (32/60; 53.3%) sentinel specimens tested positive for influenza virus during week 3 2013: 4 A(H3), 2 A(H1)pdm09 and 26 B. Twenty-one (21/197; 10.7%) non-sentinel specimens tested positive for influenza virus during week 3 2013: 5 A(H3), 2 A(H1)pdm09, 1 A(unsubtyped) and 13 B (tables 1 & 2).

Influenza B remains the dominant influenza virus circulating this season. Eighty-seven percent (303/349) of all influenza positive sentinel and non-sentinel specimens detected by the NVRL this season were influenza B. However, in recent weeks, influenza A positivity has increased slightly each week, as influenza B positivity has decreased (figures 3 & 4).

\*\* 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.

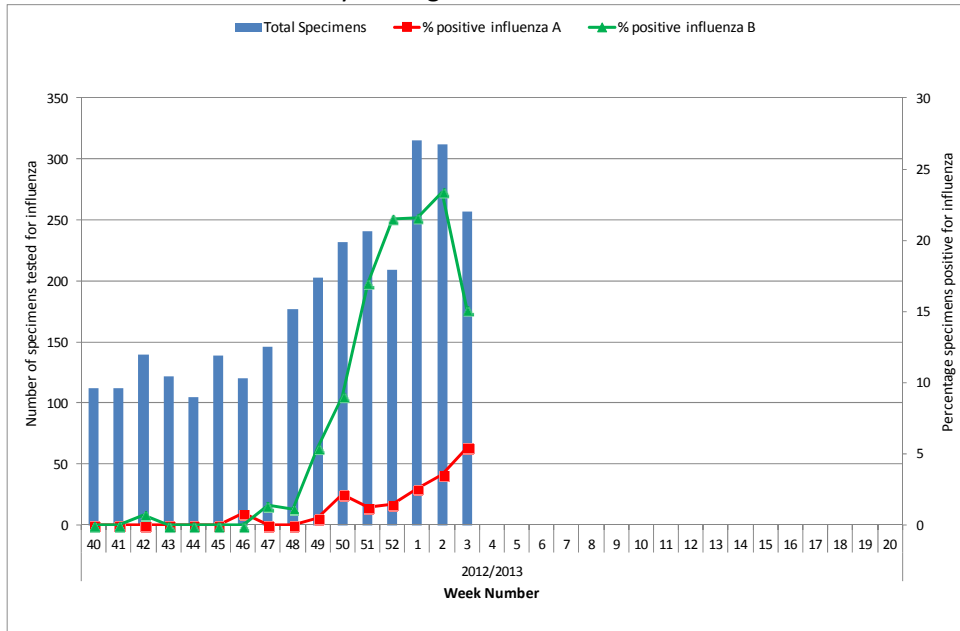


Figure 3: Number of sentinel and non-sentinel specimens tested for influenza and percentage influenza positive by week for the 2012/2013 influenza season. Source: NVRL

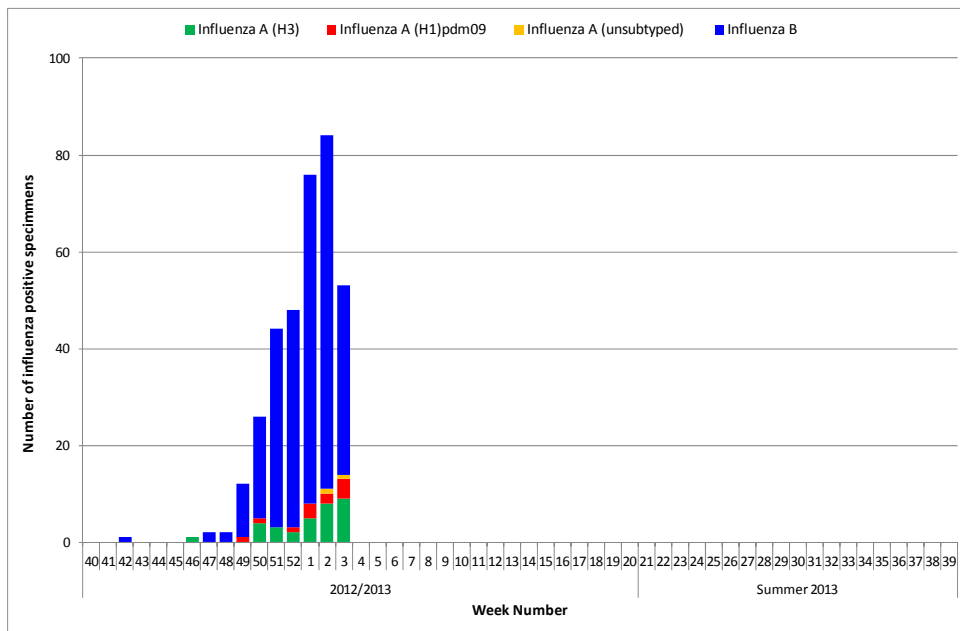


Figure 4: Number of positive influenza specimens by influenza type/subtype from sentinel and non-sentinel sources tested by the NVRL, by week for the 2012/2013 influenza season. Source: NVRL

## Respiratory Syncytial Virus (RSV)

Respiratory syncytial virus (RSV) positivity reported from the NVRL (non-sentinel sources) stabilised at 13.7% (27/197) during week 3 2013, compared to 13.2% during week 2 2013. RSV positivity peaked at 36.9% 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 3 2013, 65 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](#).

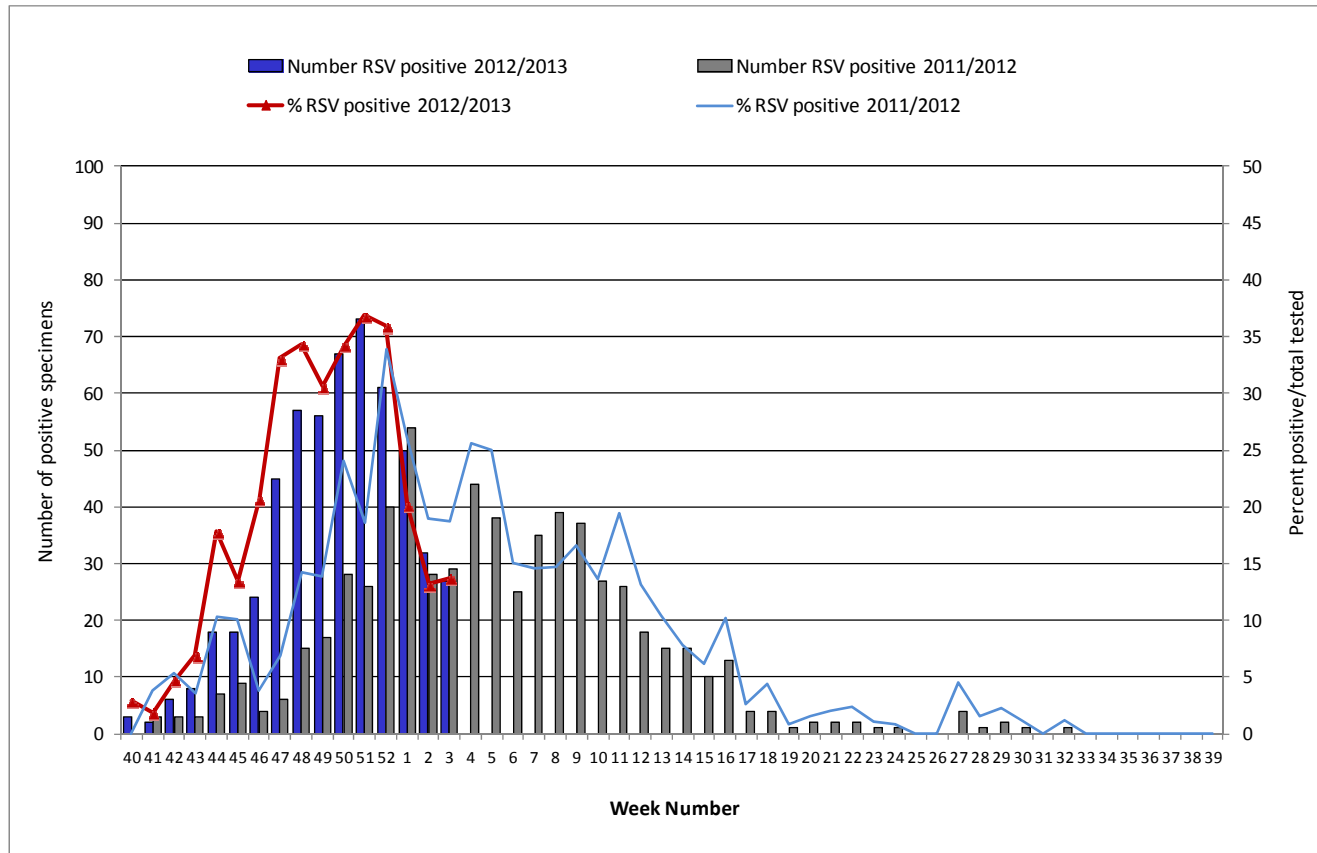


Figure 5: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2012/2013 season, compared to the 2011/2012 season. Source: NVRL

## Other Respiratory Viruses

Four adenovirus and three human metapneumovirus (hMPV) positive specimens were reported from the NVRL from non-sentinel sources during week 3 2013. Two adenovirus positive detections were also reported from the NVRL from sentinel GP sources during week 3 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<sup>††</sup> respiratory specimens tested by the NVRL and positive influenza results, for week 3 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>3 2013</b>	Sentinel	60	32	53.3	2	4	0	6	26
	Non-sentinel	197	21	10.7	2	5	1	8	13
	<b>Total</b>	<b>257</b>	<b>53</b>	<b>20.6</b>	<b>4</b>	<b>9</b>	<b>1</b>	<b>14</b>	<b>39</b>
<b>2012/2013</b>	Sentinel	403	207	51.4	8	17	0	25	182
	Non-sentinel	2539	142	5.6	4	15	2	21	121
	<b>Total</b>	<b>2942</b>	<b>349</b>	<b>11.9</b>	<b>12</b>	<b>32</b>	<b>2</b>	<b>46</b>	<b>303</b>

**Table 2: Number of sentinel and non-sentinel specimens tested by the NVRL for other respiratory viruses and positive results, for week 3 2013 and the 2012/2013 season to date. Source: NVRL**

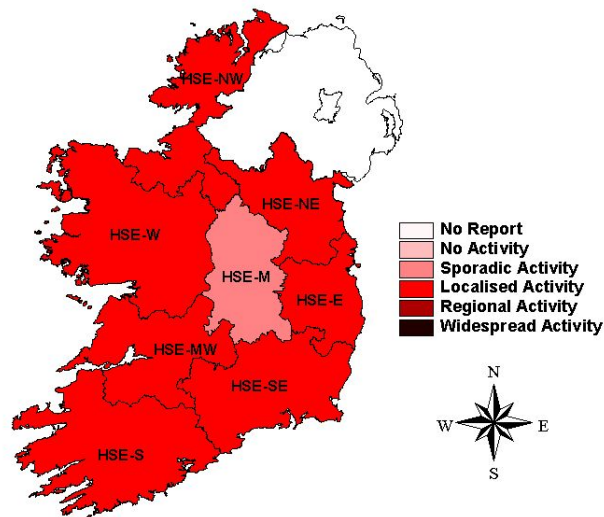
Week	Specimen type	Total tested	RSV	% RSV	Adenovirus	% Adenovirus	PIV-1	% PIV-1	PIV-2	% PIV-2	PIV-3	% PIV-3	hMPV	% hMPV
<b>3 2013</b>	Sentinel	60	0	0.0	2	3.3	0	0.0	0	0.0	0	0.0	0	0.0
	Non-sentinel	197	27	13.7	4	2.0	0	0.0	0	0.0	0	0.0	3	1.5
	<b>Total</b>	<b>257</b>	<b>27</b>	<b>10.5</b>	<b>6</b>	<b>2.3</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>3</b>	<b>1.2</b>
<b>2012/2013</b>	Sentinel	403	12	3.0	12	3.0	1	0.2	0	0.0	1	0.2	5	1.2
	Non-sentinel	2539	547	21.5	31	1.2	2	0.1	2	0.1	29	1.1	51	2.0
	<b>Total</b>	<b>2942</b>	<b>559</b>	<b>19.0</b>	<b>43</b>	<b>1.5</b>	<b>3</b>	<b>0.1</b>	<b>2</b>	<b>0.1</b>	<b>30</b>	<b>1.0</b>	<b>56</b>	<b>1.9</b>

<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.

Localised influenza activity was reported from HSE-E, NE, -NW, -MW, -S, -SE and -W and sporadic influenza activity was reported from HSE-M during week 3 2013 (figure 6).

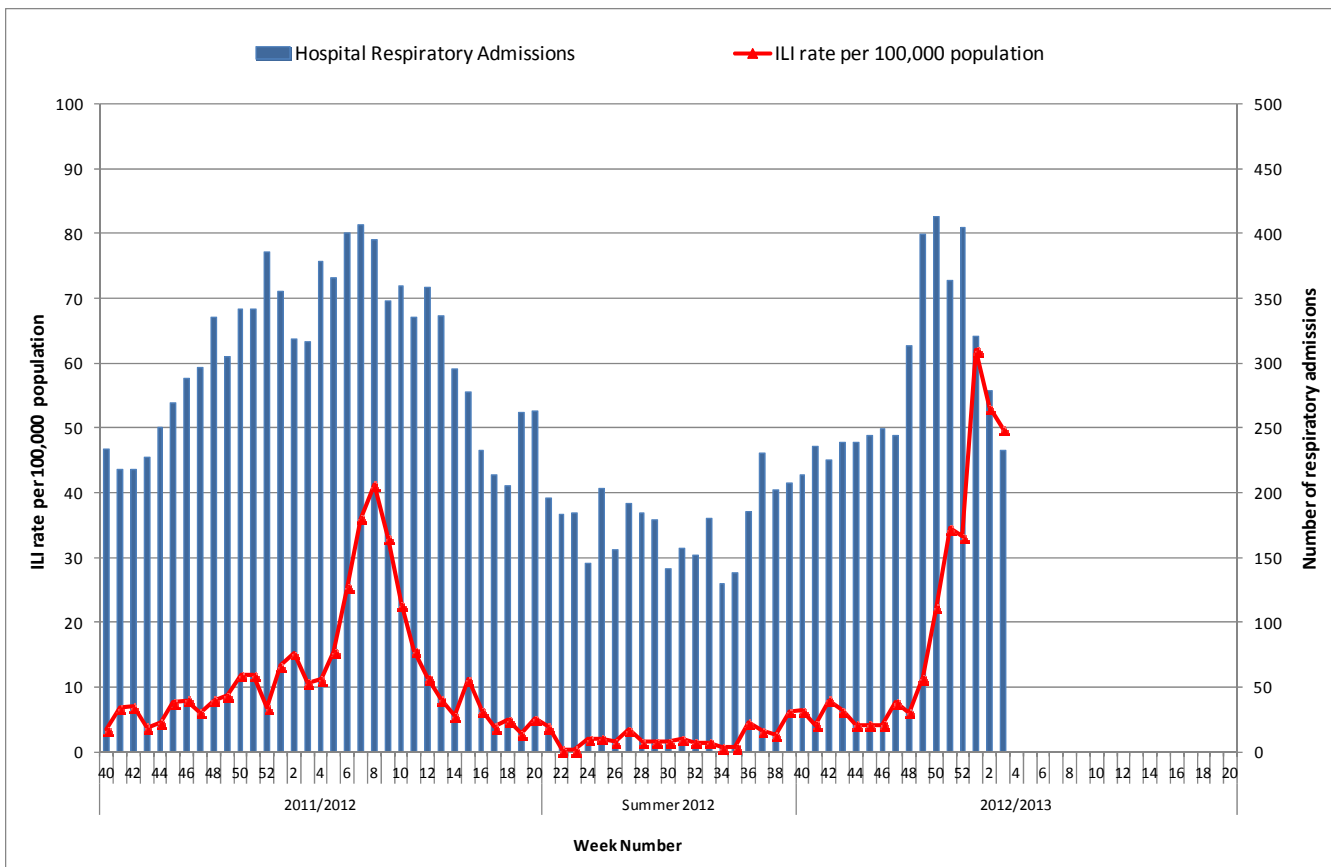


**Figure 6: Map of provisional influenza activity by HSE-Area during week 3 2013**

#### 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 233 during week 3 2013, a decrease compared to 279 during week 2 2013. To date this season, hospital respiratory admissions peaked at 413 during week 50 2012 (figure 7).



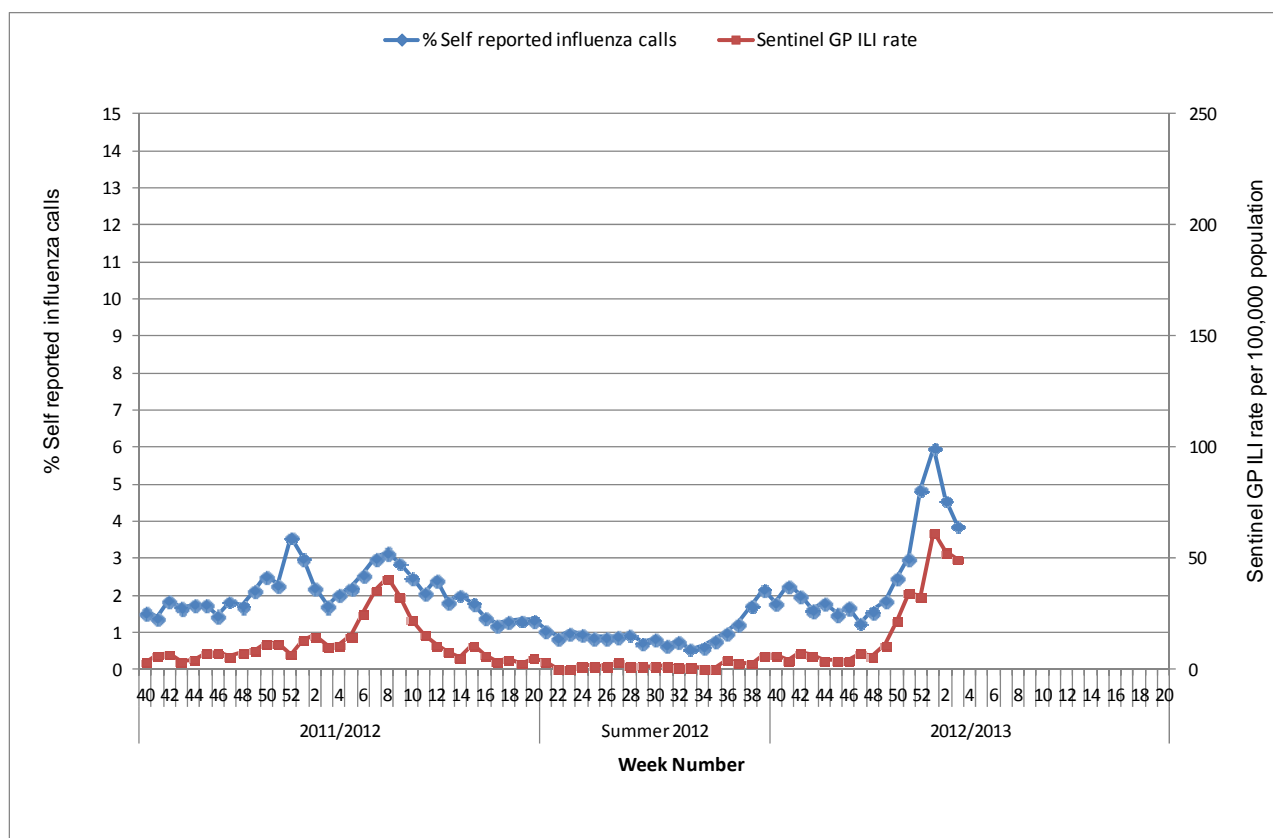
**Figure 7: Number of respiratory admissions reported from sentinel hospitals and national sentinel GP ILI consultation rate per 100,000 population by week for the 2011/2012 season, summer 2012 and the 2012/2013 season to date.**  
 Source: Departments of Public Health - Sentinel Hospitals & ICGP.

#### 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 3 2013 decreased to 3.9%, compared to 4.6% in the previous week. Six GP Out-of-Hours services reported during week 3 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.

Ninety-one laboratory confirmed influenza cases were notified during week 3 2013, 17 influenza A (7 A(H3), 5 A(H1)pdm09 & 5 A(unsubtyped)) and 74 influenza B. The number of confirmed influenza cases reported as hospitalised during week 3 2013 was 21, a slight decrease compared to 25 during week 2 2013. Of the 21 cases reported as hospitalised during week 3 2013, 2 were associated with influenza A (1 A(H1)pdm09 & 1 A(unsubtyped)) and 19 were associated with influenza B. To date this season, 66 confirmed influenza cases have been reported as hospitalised: 57 influenza B, 4 influenza A (H3), 3 A (H1)pdm09 and 2 influenza A (unsubtyped).

## 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, seven adult and two paediatric confirmed influenza cases have been admitted to critical care and reported to HPSC, eight were associated with influenza B and one with influenza A (H1)pdm09. Thirty-

two RSV paediatric cases were also admitted to critical care this season. The majority (90.6%) of these RSV admissions to critical care were admitted during November and December 2012.

## 7. Mortality surveillance

There were no reports of any confirmed influenza-associated deaths occurring during week 3 2013 or for the 2012/2013 season to date. 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 3 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 the 75-85 year age group 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

Two acute respiratory outbreaks (one associated with influenza A(H3) and one with influenza B) in long stay units for the elderly in HSE-S, were reported to HPSC during week 3 2013. To date this influenza season, 12 acute respiratory outbreaks have been reported to HPSC, six with influenza B, one influenza A (H3), one associated with RSV, one hMPV and three associated with unidentified pathogens (two 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 decreased during week 2 2013, compared to the previous week. In week 2 2013, the weekly primary care ILI consultation rate decreased slightly in England (24.8 per 100,000) and Northern Ireland (72.4 per 100,000), increased in Scotland (52.22 per 100,000) and remained stable in Wales (26.1 per 100,000). In week 2 2013, the weekly proportion of NHS Direct calls for colds/influenza decreased below the influenza threshold of 1.6%. The weekly proportion of calls for fever (in 5-14 year olds) decreased and remained below the influenza threshold of 11.7%. Three acute respiratory disease outbreaks in care homes were reported during week 2 2013: two associated with influenza A and one with an unidentified pathogen. One hundred and forty-four (17.1%) of the 843 respiratory specimens reported to DataMart (England) tested positive for influenza in week 2 (91 B, 22 A(H3), 16 A subtype not known and 15 A(H1N1)pdm09). The proportion of samples positive in DataMart (England) increased for rhinovirus, decreased for RSV and hMPV and remained stable for adenovirus and parainfluenza. Twenty-five influenza positive detections were recorded through the two English sentinel GP schemes in week 2: 18 B and 7 A(H3). Forty-four new admissions to ICU/HDU with confirmed influenza (24 B, 9 A(subtype not known), seven A(H1N1)pdm09 and four A(H3N2) were reported across the UK in week 2. Sixty-one new hospitalised confirmed influenza cases were reported across England. In week 2 2013, no excess all-cause mortality was reported by age group or region in England, an excess was reported in Scotland and no excess was reported in Wales and Northern Ireland. Since week 40 2012, the HPA has isolated and antigenically characterised forty-nine influenza A(H3N2) viruses, all similar to the A/Victoria/361/2011 vaccine strain, and five influenza A(H1N1)pdm09 viruses similar to the A/California/07/2009 vaccine strain. Of 72 influenza B viruses isolated, sixty-five (90%) belong to the B-Yamagata lineage, and are antigenically related to the influenza B vaccine strain, B/Wisconsin/1/2010, and seven (10%) to the B-Victoria lineage.

## Europe

Influenza activity continued to increase in week 2 2013 across most of Europe, with reports of severe cases from a number of countries. The patterns of virus co-circulation being identified in the EU/EEA are different from that being reported by North America where influenza A (H3) viruses are dominant. Of 26 countries reporting clinical data in week 2 2013, 14 reported medium- or high-intensity transmission and 19 reported increasing trends. At present, indications of higher transmission levels are mostly from North-West Europe. Of 1238 sentinel specimens tested across 20 countries in week 2 2013, 521 (42%) were positive for influenza virus – a high percentage and similar to that reported in the previous two weeks. Of the 2102 influenza virus detections in sentinel specimens since week 40 2012, 991 (47%) were influenza A, and 1111 (53%) were influenza B. Among the A viruses subtyped the proportions of A(H1)pdm09 (52%) and A(H3) (48%) were very similar. Since week 40 2012, 383 hospitalised laboratory-confirmed influenza cases have been reported, of which 14 had a fatal outcome. There are some early indications of increases in overall mortality in older people associated with influenza. Since week 40 2012, 168 viruses have been antigenically characterised and reported to ECDC, 98.9% (93/94) of influenza A(H3) viruses were similar to the A/Victoria/361/2011 vaccine strain, and 89% (16/18) of influenza A(H1N1)pdm09 viruses were similar to the A/California/07/2009 vaccine strain. Of 56 influenza B viruses isolated, 43 (76.8%) belong to the B-Yamagata lineage and 13 (23.2%) to the B-Victoria lineage.

## United States of America

During week 2 2012, influenza activity remained elevated in the United States, but decreased in some areas. The proportion of ILI outpatient visits was 4.6%; which is above the national baseline of 2.2%. Of 12360 specimens tested and reported, 3638 (29.4%) were positive for influenza: 1603 A(H3), 45 A(H1N1)pdm09, 1355 A(untsubtyped) and 635 B. A cumulative rate of 18.8 laboratory-confirmed influenza-associated hospitalisations per 100,000 population was reported for the season. The most affected group was in those ≥65 years. Among all hospitalisations, 4597 (87.6%) were associated with influenza A and 605 (11.5%) with influenza B. Among hospitalisations with influenza A subtype information, 1003 (98.0%) were attributed to A(H3) and 20 (2.0%) were attributed to A(H1N1)pdm09. The proportion of deaths attributed to pneumonia and influenza was above the epidemic threshold. Nine influenza-associated paediatric deaths were reported. CDC has antigenically characterised 612 influenza viruses to date this season: 41 (100%) influenza A(H1N1)pdm09 viruses were similar to the vaccine strain A/California/7/2009-like, 392 (99.5%) (H3N2) viruses were similar to the vaccine strain A/Victoria/361/2011-like, 118 (66.7%) influenza B viruses were similar to the vaccine strain B/Wisconsin/1/2010-like and 59 (33.3%) influenza B viruses were similar to the B/Victoria lineage of viruses.

## Canada

The percentage of positive laboratory tests for influenza declined in week 2 2012; however, more regions across Canada reported widespread and localised influenza activity and 130 new influenza outbreaks were reported. The ILI consultation rate increased and was well above the expected range for this time of year. A total of 3744 laboratory detections of influenza were reported, of which 97.8% were for influenza A viruses, predominantly A(H3N2). Fifty-one new paediatric and 44 new adult influenza-associated hospitalisations were reported. During the 2012/2013 season, all 172 influenza A(H3N2) viruses tested were antigenically similar to the vaccine strain A/Victoria/361/2011 and all 36 A(H1N1)pdm09 viruses tested were antigenically similar to the vaccine strain A/California/07/09. Among the influenza B viruses, 31 were antigenically similar to the vaccine strain B/Wisconsin/01/2010 (Yamagata lineage) and nine 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 18<sup>th</sup> January 2013 stated that influenza activity in North America remained high with some indications that activity might have peaked in areas. Some but not all indicators of severity in the United States of America and Canada have been slightly higher than in recent seasons. The onset

of the 2012/2013 season was earlier than usual and coincided with circulation of other respiratory viruses. Influenza A(H3N2) predominates in North America, with A(H1N1)pdm09 being uncommon. Many countries in Europe and temperate Asia are reporting increasing influenza activity with A(H1N1)pdm09. Some countries in the Eastern Mediterranean and North Africa have reported declining detections of influenza, with A(H1N1)pdm09 predominance. In tropical Asia, influenza activity was similar to previous weeks, with persistent low-level circulation. Influenza activity in sub-Saharan Africa has declined in most countries. In the Caribbean, central America and tropical south America, influenza activity decreased to low levels, except for Bolivia, where there was increasing circulation of influenza A(H3N2). Influenza in countries of the southern hemisphere are currently 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 16<sup>th</sup> January 2013, stated that 610 laboratory-confirmed human cases with avian influenza A(H5N1) virus infection have been officially reported to WHO between 2003 and 16<sup>th</sup> January 2013 from 15 countries, of which 360 died.

### Novel Coronavirus

Information from 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>

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