

Influenza Surveillance in Ireland – Weekly Report

Influenza Week 6 2013 (4th – 10th February 2013)



Summary

- **Several indicators of influenza activity in Ireland decreased slightly during week 6 2013, compared to the previous week, however influenza-associated hospitalisations continue to be reported.**
 - The sentinel GP influenza-like illness (ILI) consultation rate was 58.8 per 100,000 population in week 6 2013, a slight decrease compared to the updated rate of 60.7 per 100,000 during week 5 2013.
 - ◆ ILI rates are above the Irish baseline threshold (21.0 per 100,000 population).
 - ◆ ILI age specific rates were highest in the 5-14 year age group.
- The proportion of influenza-related calls to GP Out-of-Hours services decreased slightly during week 6 2013, compared to the previous week.
- Influenza positivity decreased to 26.8% during week 6 2013, compared to 35.6% during the previous week. Forty-eight influenza B, 15 influenza A(H3), seven influenza A(H1)pdm09 and one influenza A (unsubtyped) positive specimens were reported from the NVRL for week 6 2013.
- Influenza B remains the dominant circulating influenza virus to date this season, accounting for 82.8% of all influenza positive specimens detected by the NVRL this season.
- 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 6 2013, 26 confirmed influenza cases were reported as hospitalised, six associated with influenza A and 20 with influenza B. To date this season, 127 confirmed influenza cases were reported as hospitalised, 78.7% were associated with influenza B.
- Nine adult and four paediatric confirmed influenza cases have been admitted to critical care to date this season. Of these 13 cases, 10 were associated with influenza B, one with influenza A (H1)pdm09 and two 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).
- One acute respiratory outbreak was reported to HPSC during week 6 2013.
- Influenza activity continued to rise across Europe during week 5 2013. In a few European countries, influenza epidemics have passed their peaks, although some countries have experienced a resurgence of ILI activity.

*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 6 2013, 133 influenza-like illness (ILI) cases were reported from sentinel GPs, corresponding to an ILI consultation rate of 58.8 per 100,000 population, a slight decrease compared to the updated rate of 60.7 per 100,000 in week 5 2013. Fifty of 60 (83.3%) sentinel general practices provided data during week 6 2013, with 33 practices (66.0%) reporting ILI cases. The ILI consultation rates for week 6 2013 remained above the Irish baseline threshold (21.0 per 100,000 population)[†]. Figure 1 shows the ILI consultation rates, the baseline threshold rate and the number of positive specimens detected by the NVRL.

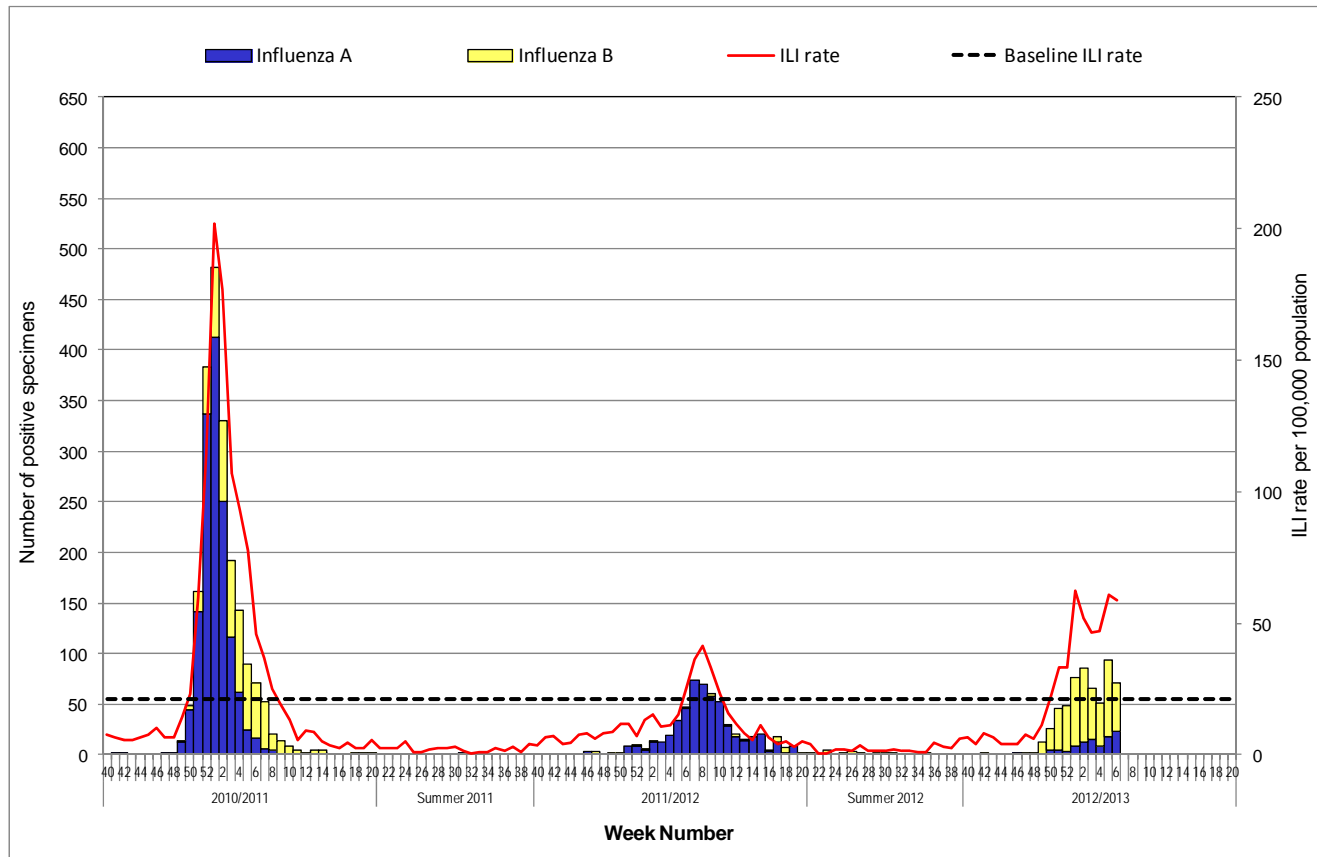


Figure 1. ILI sentinel GP consultation rates per 100,000 population, baseline ILI threshold rate, and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season.

Source: Clinical ILI data from ICGP and virological data from the NVRL[‡]

ILI age specific rates were highest in the 5-14 year age group during week 6 2013, reaching 72.1 per 100,000 population, a decrease from 104.0 per 100,000 population during the previous week. During week 6 2013, four ILI cases were reported in the 0-4 year age group (22.9 per 100,000), 22 ILI cases were reported in the 5-14 year age group (72.1 per 100,000), 98 cases in the 15-64 year age group (65.1 per 100,000) and 9 ILI cases were reported in those aged 65 years and older (34.3 per 100,000) (figure 2).

[†] 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.

[‡] Sentinel GP consultations and virological data are updated on an ongoing basis, ILI rates and virological data are adjusted accordingly.

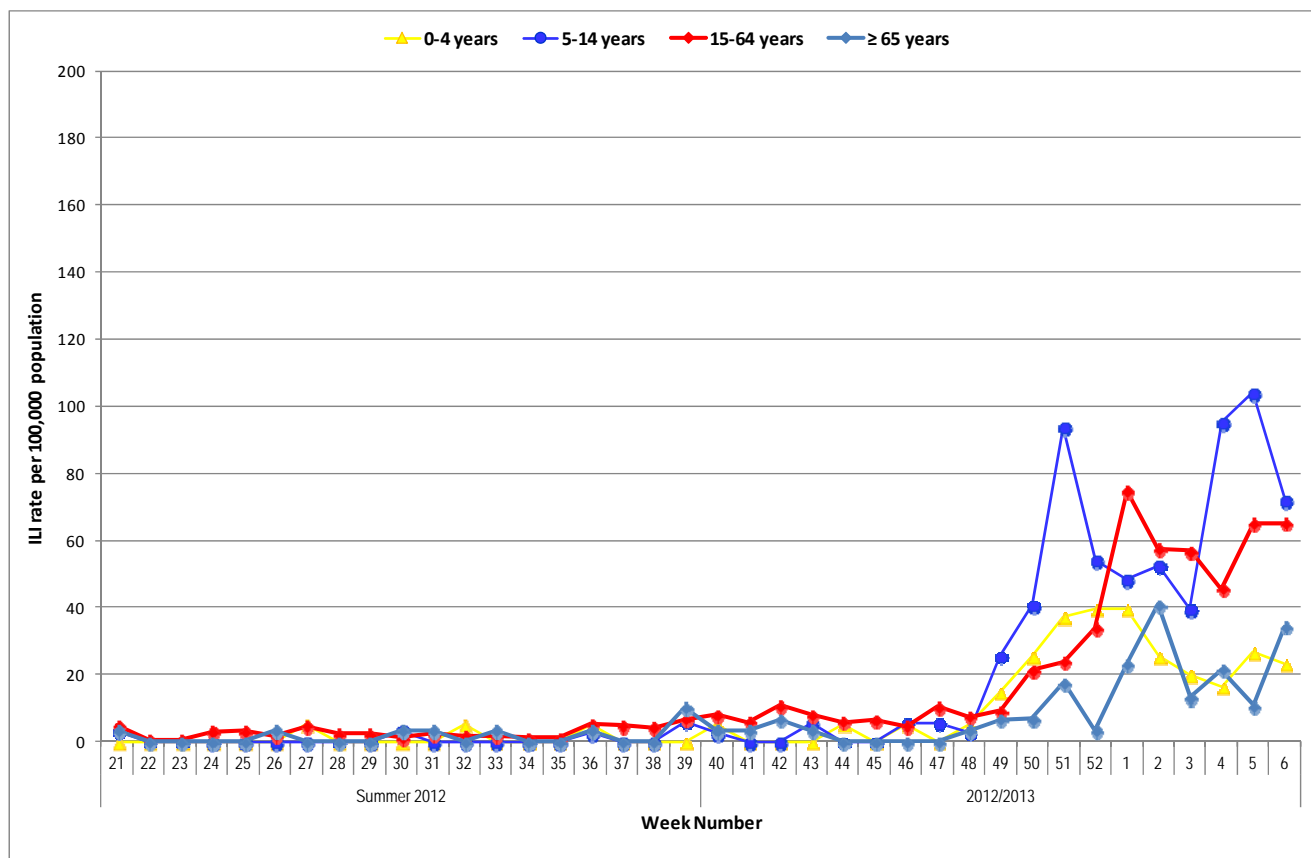


Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2012 and the 2012/2013 influenza season to date. Source: ICGP ILI clinical data

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 6 2013, a total of 265 specimens (53 sentinel and 212 non-sentinel[§] specimens) were tested by the NVRL. Seventy-one (71/265; 26.8%) sentinel and non-sentinel specimens tested positive for influenza virus during week 6 2013: 15 A(H3), 7 A(H1)pdm09, 1 A(untypeded) and 48 B. Twenty-nine (29/53; 54.7%) sentinel specimens tested positive for influenza virus during week 6 2013: 5 A(H3), 5 A(H1)pdm09 and 19 B. Forty-two (42/212; 19.8%) non-sentinel specimens tested positive for influenza virus during week 6 2013: 10 A(H3), 2 A(H1)pdm09 and 1 A(untypeded)) and 29 B (tables 1 & 2).

Influenza B remains the dominant influenza virus circulating this season. Eighty-three percent (480/580) of all influenza positive sentinel and non-sentinel specimens detected by the NVRL this season were influenza B. Influenza A positivity increased slightly, whilst influenza B decreased during week 6 2013, compared to the previous week (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.

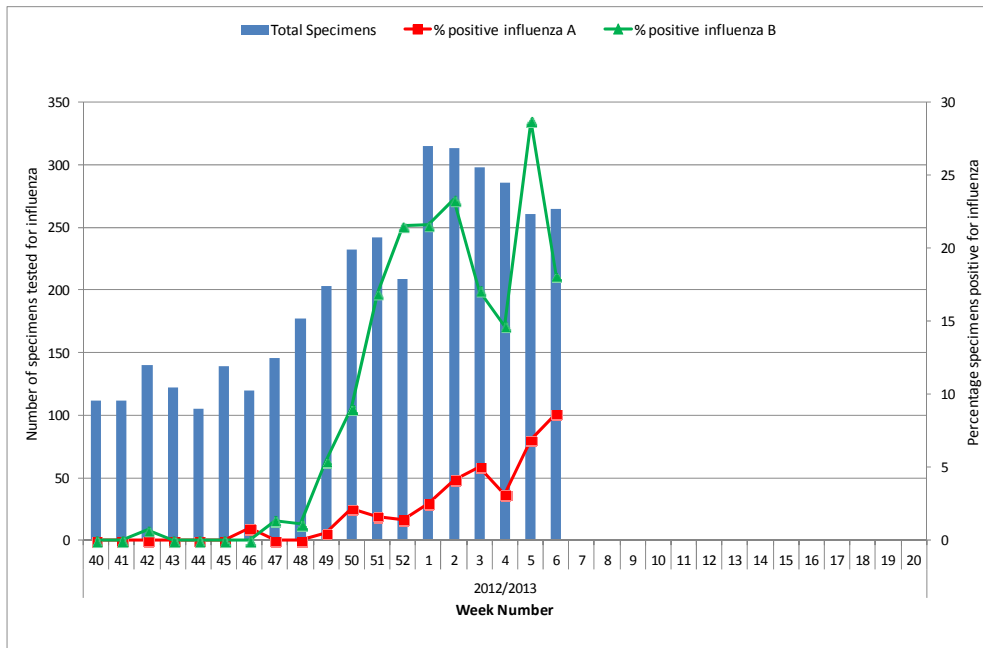


Figure 3: Number of sentinel and non-sentinel specimens tested for influenza and percentage influenza positive by week for the 2012/2013 influenza season. *Source: NVRL*

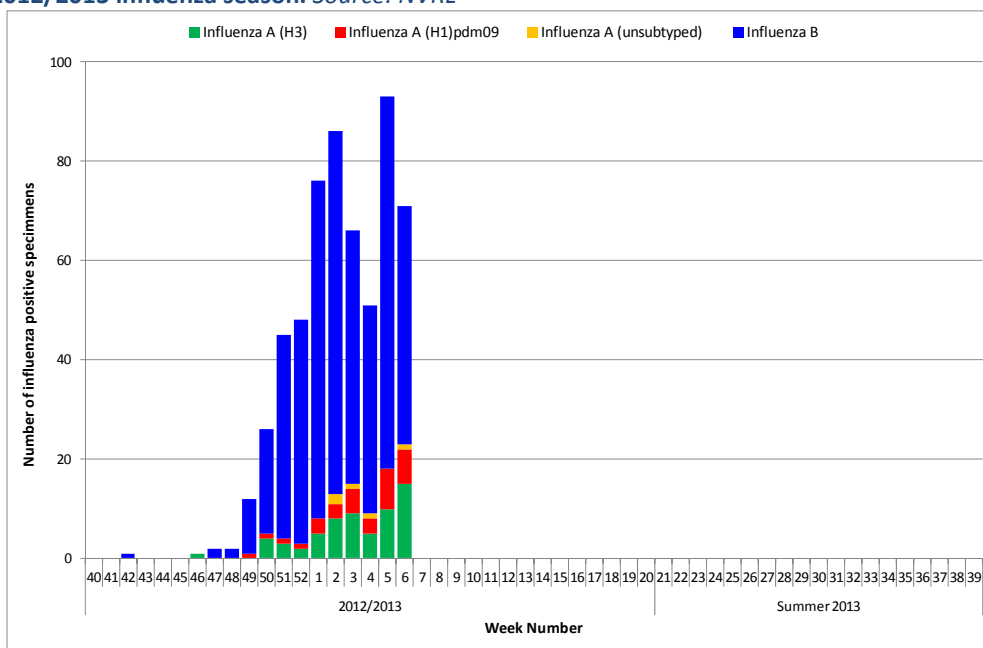


Figure 4: Number of positive influenza specimens by influenza type/subtype from sentinel and non-sentinel sources tested by the NVRL, by week for the 2012/2013 influenza season. *Source: NVRL*

Respiratory Syncytial Virus (RSV)

Respiratory syncytial virus (RSV) positivity reported from the NVRL (non-sentinel sources) decreased to 6.6% (14/212) during week 6 2013, compared to 7.7% during week 5 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 1st January 2012. During week 6 2013, 39 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](#).

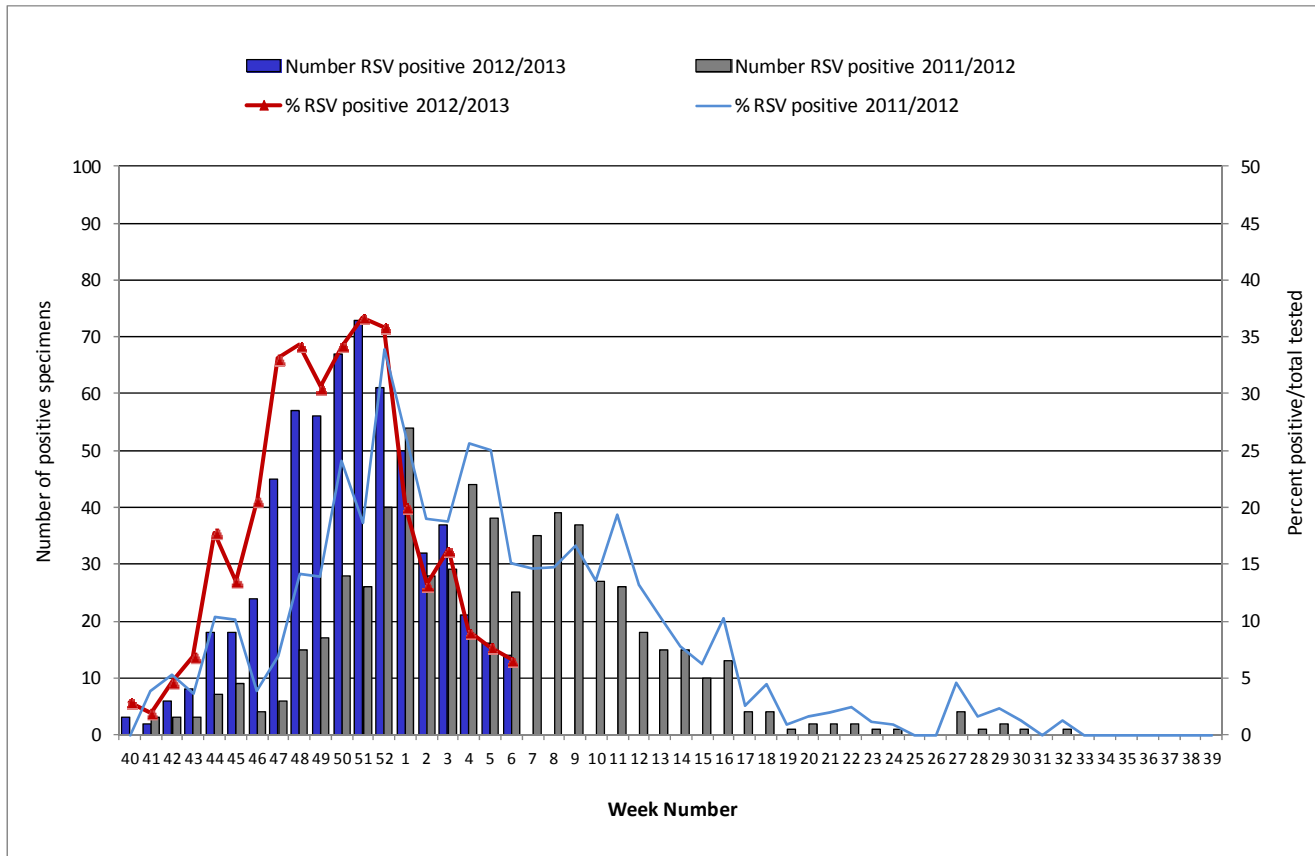


Figure 5: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2012/2013 season, compared to the 2011/2012 season. Source: NVRL

Other Respiratory Viruses

Five adenovirus, one parainfluenza virus (PIV) type 2, three PIV-3 and three human metapneumovirus positive specimens were reported from the NVRL from non-sentinel sources during week 6 2013. No adenovirus, parainfluenza viruses or hMPV positive detections were reported from the NVRL from sentinel GP sources during week 6 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 6 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 | |
| 6 2013 | Sentinel | 53 | 29 | 54.7 | 5 | 5 | 0 | 10 | 19 |
| | Non-sentinel | 212 | 42 | 19.8 | 2 | 10 | 1 | 13 | 29 |
| | Total | 265 | 71 | 26.8 | 7 | 15 | 1 | 23 | 48 |
| 2012/2013 | Sentinel | 576 | 313 | 54.3 | 18 | 26 | 1 | 45 | 268 |
| | Non-sentinel | 3221 | 267 | 8.3 | 15 | 36 | 4 | 55 | 212 |
| | Total | 3797 | 580 | 15.3 | 33 | 62 | 5 | 100 | 480 |

Table 2: Number of sentinel and non-sentinel specimens tested by the NVRL for other respiratory viruses and positive results, for week 6 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 |
|------------------|---------------|--------------|------------|-------------|------------|--------------|----------|------------|----------|------------|-----------|------------|-----------|------------|
| 6 2013 | Sentinel | 53 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | Non-sentinel | 212 | 14 | 6.6 | 5 | 2.4 | 0 | 0.0 | 1 | 0.5 | 3 | 1.4 | 2 | 0.9 |
| | Total | 265 | 14 | 5.3 | 5 | 1.9 | 0 | 0.0 | 1 | 0.4 | 3 | 1.1 | 2 | 0.8 |
| 2012/2013 | Sentinel | 576 | 13 | 2.3 | 16 | 2.8 | 1 | 0.2 | 0 | 0.0 | 1 | 0.2 | 7 | 1.2 |
| | Non-sentinel | 3221 | 608 | 18.9 | 47 | 1.5 | 2 | 0.1 | 3 | 0.1 | 37 | 1.1 | 58 | 1.8 |
| | Total | 3797 | 621 | 16.4 | 63 | 1.7 | 3 | 0.1 | 3 | 0.1 | 38 | 1.0 | 65 | 1.7 |

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

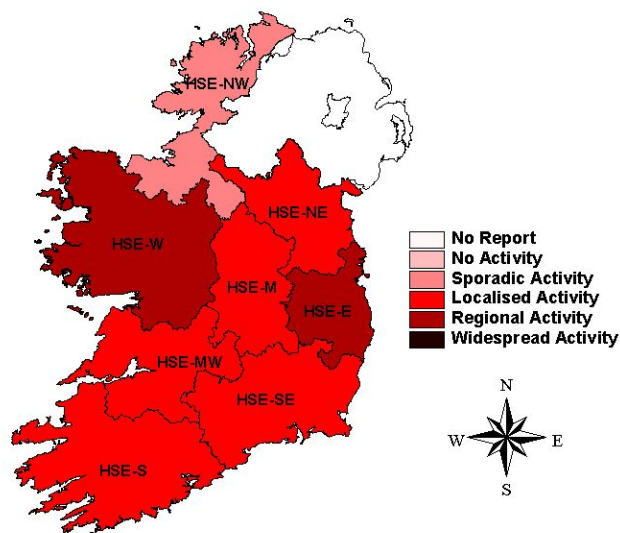


Figure 6: Map of provisional influenza activity by HSE-Area during week 6 2013

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 225 during week 6 2013, a slight decrease compared to 257 during week 5 2013. It should be noted that data for week 6 2013 were incomplete. To date this season, hospital respiratory admissions peaked at 413 during week 50 2012 (figure 7).

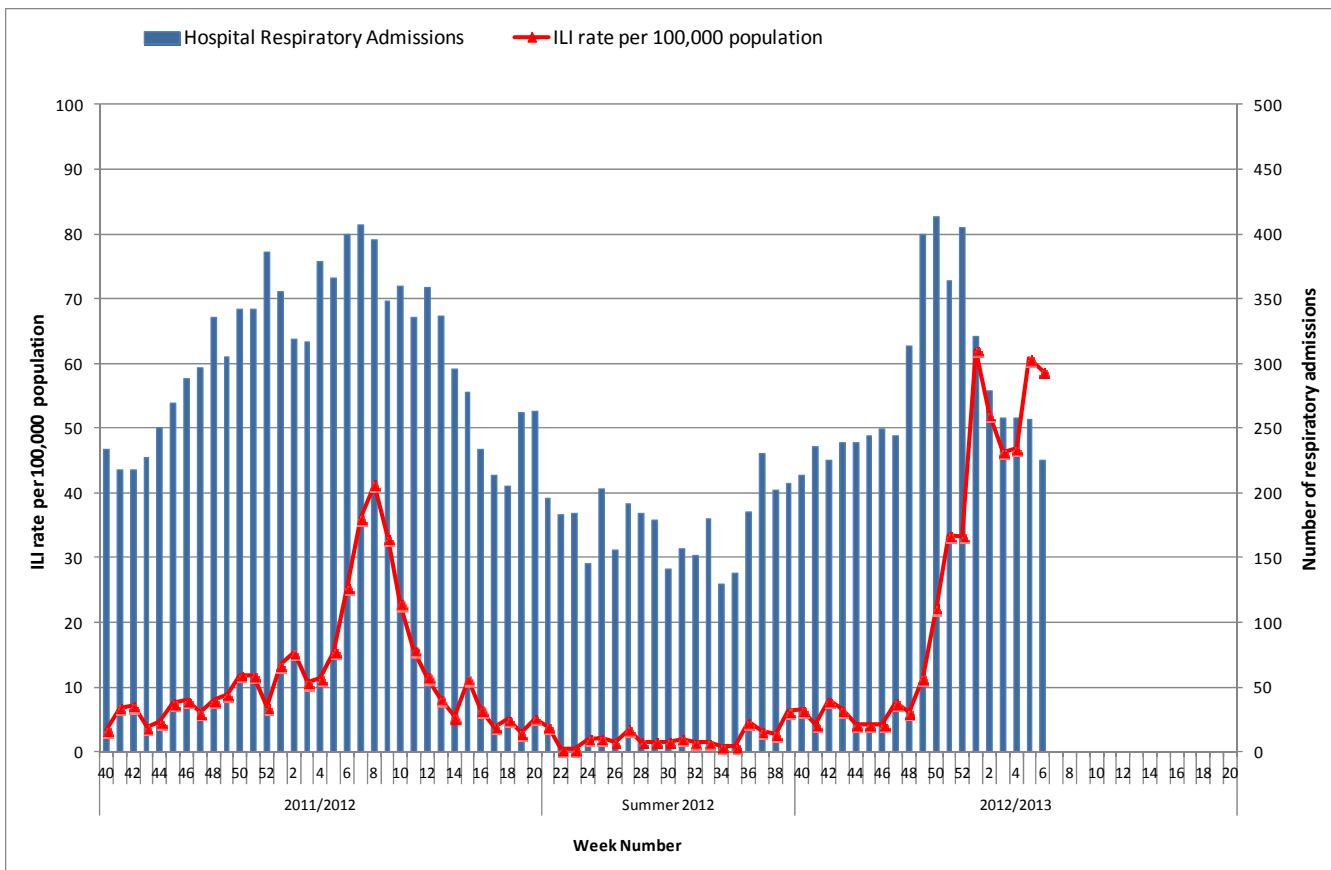


Figure 7: Number of respiratory admissions reported from sentinel hospitals and national sentinel GP ILI consultation rate per 100,000 population by week for the 2011/2012 season, summer 2012 and the 2012/2013 season to date.
 Source: Departments of Public Health - Sentinel Hospitals & ICGP.

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 6 2013 decreased to 3.8%, compared to 4.2% in the previous week. Five GP Out-of-Hours services reported during week 6 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).

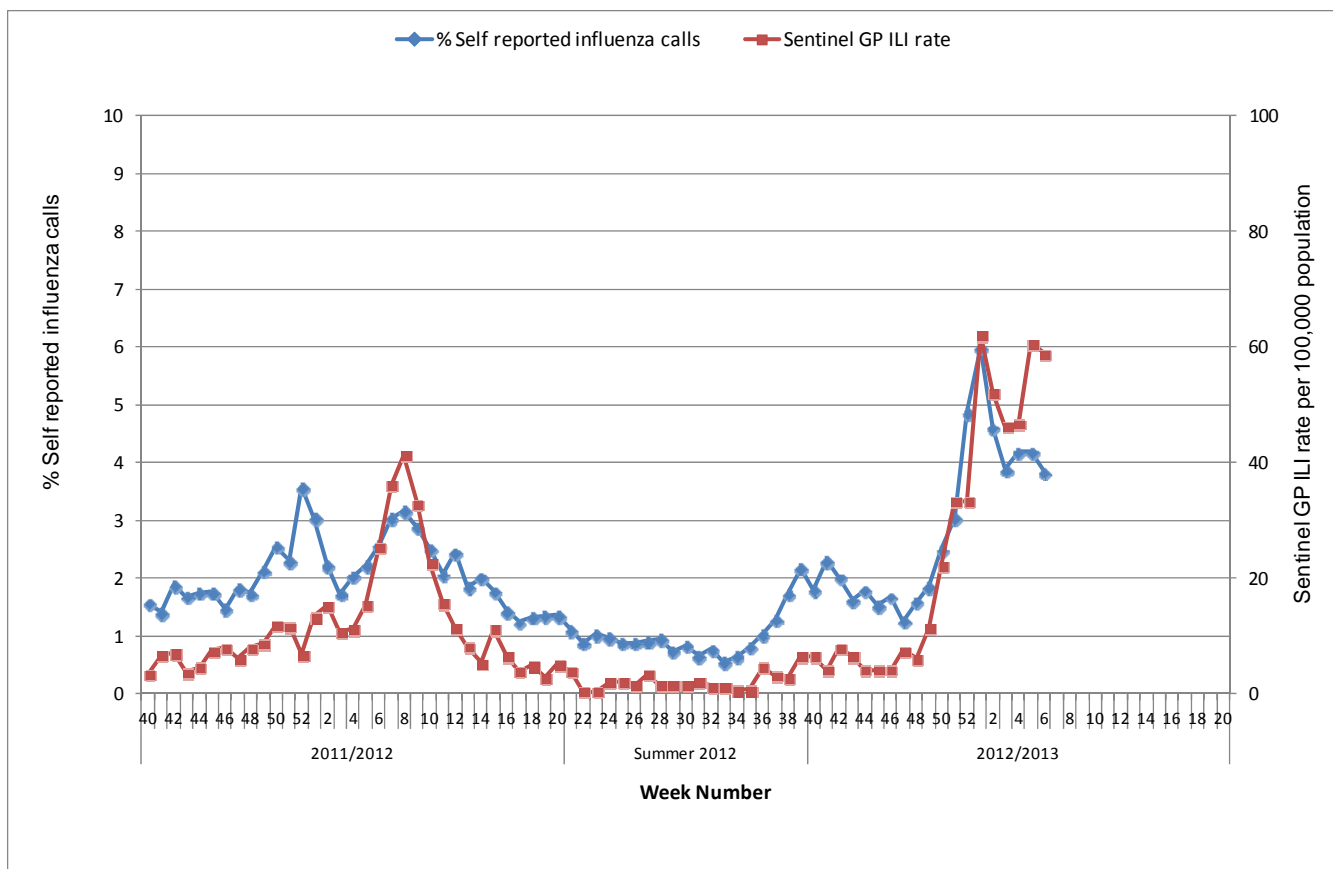


Figure 8: Self-reported influenza-related calls as a proportion of total calls to Out-of-Hours GP Co-ops and national sentinel GP ILI consultation rate per 100,000 population by week for the 2011/2012 and 2012/2013 seasons

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.

Ninety-four laboratory confirmed influenza cases were notified during week 6 2013, 21 influenza A (6 A(H3), 10 A(H1)pdm09 & 5 A(unsubtyped)) and 73 influenza B. The number of confirmed influenza cases reported as hospitalised during week 6 2013 was 26, compared to 16 during week 5 2013. Of the 26 cases reported as hospitalised during week 6 2013, six were associated with influenza A (all A(H1)pdm09) and 20 were associated with influenza B. To date this season, 127 confirmed influenza cases (100 influenza B, 11 influenza A (H3), 13 A (H1)pdm09 and 3 influenza A (unsubtyped)) have been reported as hospitalised, 78.7% 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, nine 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 two 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 6 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

One acute respiratory outbreak (an ILI outbreak) in a residential care facility/long stay unit for the elderly in HSE-W was reported to HPSC during week 6 2013. To date this influenza season, 17 acute respiratory outbreaks have been reported to HPSC, six with influenza B, two influenza A (H3), one associated with RSV, one hMPV and seven 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

While some indicators of influenza activity across England remained stable compared to the previous week, some indicators increased slightly and outbreaks and hospitalisations continued to be reported during week 5 2013. The weekly primary care ILI consultation rate remained stable in England (12.7 per 100,000) and Northern Ireland (48.4 per 100,000) and increased in Wales (19.9 per 100,000) and Scotland (44.2 per 100,000). In week 5 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%. Twenty-eight respiratory disease outbreaks were reported during week 5 2013, compared to 18 the previous week. Eleven had a virological result available (four influenza A(unsubtyped), four B, two A(H3) and one A(H1N1)pdm09). 218 influenza positive detections (97 B, 66 A subtype not known, 38 A(H3) and 17 A(H1N1)pdm09) were recorded through the DataMart scheme (overall positivity of 23.2% compared to 19.2% the previous week). Forty-two influenza positive detections were recorded through the two English GP-based sentinel schemes in week 5 (18 B, 17 A(H3) and 7 A(H1N1)pdm09), giving a positivity of 42% compared to 44% in week 4. 36 new admissions to ICU/HDU with confirmed influenza (14 A(subtype not known), 12 B, five A(H1N1)pdm09 and five A(H3N2)) were reported in week 5. 78 new hospitalised confirmed influenza cases were reported across England. In week 5 2013, overall excess all-cause mortality was reported in Northern Ireland and no excess was reported in England, Scotland and Wales. Since week 40 2012, the HPA 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 were antigenically related to the influenza B vaccine strain, B/Wisconsin/1/2010, and seven (9%) to the B-Victoria lineage.

Europe

Influenza activity continued to rise across Europe in week 5 2013. In a few countries, the influenza epidemics have passed their peaks, although some countries experienced a resurgence of ILI rates. In week 5 2013, 19 countries reported concomitantly high/medium-intensity transmission and wide geographic spread. Twenty-two countries reported increasing trends in influenza activity. The proportion of influenza-positive sentinel specimens continued to increase during week 5 2013, reaching 55%. Since week 40 2012, the proportions of influenza A and B viruses have remained similar (51% vs. 49%), but among influenza A, the percentage of A(H1N1)pdm09 has continued to increase (64%), compared to 52% in week 2 2012. For week 5 2013, of 71 hospitalised laboratory-confirmed influenza cases reported by six countries, 33 (46%) tested positive for influenza A viruses and 38 (54%) for type B viruses.

As the group of influenza B viruses from the B/Victoria lineage circulating in Europe this season was not included in the 2012/2013 influenza vaccine, the antigenic match this season between the circulating strains and the vaccine components is imperfect. However, the B Victoria-lineage accounts for only a small proportion of all viruses circulating this season. Following replacement of the A(H3N2) component of the 2011/2012 vaccine, the vaccine effectiveness of the 2012/2013 influenza vaccine is expected to be higher against influenza A(H3) infection than the especially low levels observed in Europe for the 2011/2012 season. [See ECDC influenza risk assessment for further details.](#)

United States of America

During week 5 2013, influenza activity remained elevated in the United States, but decreased in most areas. The proportion of outpatient visits for ILI was 3.6%, which is above the national baseline of 2.2%. Of 10,132 specimens tested and reported, 2,362 (23.3%) were positive for influenza: 1026 A(H3), 74 A(H1N1)pdm09, 640 A(unsubtyped) and 622 B. The proportion of deaths attributed to pneumonia and influenza was above the epidemic threshold. Fourteen paediatric deaths were reported. A cumulative rate for the season of 29.8 laboratory-confirmed influenza-associated hospitalisations per 100,000 population was reported. Of all hospitalisations, more than 50% were among adults 65 years and older. CDC has antigenically characterised 972 influenza viruses to date this season: 66 (100%) influenza A(H1N1)pdm09 viruses were similar to the vaccine strain A/California/7/2009-like, 606 (99.7%) (H3N2) viruses were similar to the vaccine strain A/Victoria/361/2011-like, 211 (70.8%) influenza B viruses were similar to the vaccine strain B/Wisconsin/1/2010-like and 87 (29.2%) influenza B viruses were similar to the B/Victoria lineage of viruses.

Canada

In week 5 2013, the ILI consultation rate increased and remained above the expected range for this time of year. Many regions across Canada continued to report widespread and localised influenza activity and 99 new influenza outbreaks were reported. The percentage of laboratory detections positive for influenza was similar to the previous week; the percentage of tests positive for RSV increased sharply. Cumulative influenza virus detections by type/subtype to date this season are as follows: 97.3% influenza A [34.8% A(H3), 2.5% A(H1N1)pdm09 and 62.7% A(unsubtyped)] and 2.7% influenza B. During the 2012/2013 season, all 297 influenza A(H3N2) viruses tested were antigenically similar to the vaccine strain A/Victoria/361/2011 and all 56 A(H1N1)pdm09 viruses tested were antigenically similar to the vaccine strain A/California/07/09. Among the influenza B viruses, 58 were antigenically similar to the vaccine strain B/Wisconsin/01/2010 (Yamagata lineage) and 14 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 1st February 2013 stated that most indicators of influenza transmission began to decrease in North America, although continued to remain high regionally. Influenza A(H3N2) was the most commonly detected virus subtype. The United States of America reported a sharp increase in the number

of pneumonia and influenza-related deaths among adults aged 65+ years. In Europe, increasing influenza virus detections were reported over recent weeks, however activity started to decrease in some countries in the northwest. The most commonly detected virus across the continent was A(H1N1)pdm09, while influenza B virus predominated in several countries of western Europe. In the temperate countries of Asia influenza virus detections increased in recent weeks, while remained low in most of tropical Asia. Influenza activity in North Africa and the Middle East has declined overall, although a few countries reported increases. Influenza A(H1N1)pdm09 was the most commonly detected virus in the region. Low level activity was noted in most tropical countries, with slight increases observed in the Plurinational State of Bolivia and Paraguay. Influenza activity in countries of the southern hemisphere was 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 1st February 2013, stated that 615 laboratory-confirmed human cases with avian influenza A(H5N1) virus infection have been officially reported to WHO between 2003 and 1st February 2013 from 15 countries, of which 364 died.

Novel Coronavirus

During week 6 2013, two cases of novel coronavirus have been diagnosed in UK residents in the UK. These latest two cases bring the total number of confirmed cases globally to 11. 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

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| Ireland | www.hpsc.ie |
| Northern Ireland | http://www.fluawareni.info/ |
| Europe – ECDC | http://ecdc.europa.eu/ |

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