

Influenza Surveillance in Ireland – Weekly Report

Influenza Week 10 2013 (4th – 10th March 2013)



Summary

- **Influenza activity in Ireland decreased during week 10 2013; however influenza-associated hospitalisations and outbreaks continue to be reported.**
- The sentinel GP influenza-like illness (ILI) consultation rate was 34.7 per 100,000 population in week 10 2013, a slight decrease compared to the updated rate of 41.3 per 100,000 during week 9 2013.
 - ◆ ILI rates have now remained above the Irish baseline threshold (21.0 per 100,000 population) for 13 weeks this season.
 - ◆ ILI age specific rates were highest in the 15-64 year age group during week 10 2013.
- The proportion of influenza-related calls to GP Out-of-Hours services remained stable during week 10 2013.
- Influenza positivity decreased during week 10 2013 to 21.5%, compared to 25.7% during the previous week. Twenty-six influenza A(H3), 16 influenza A(H1)pdm09, 6 A (unsubtyped) and 24 influenza B positive specimens were reported from the NVRL for week 10 2013.
 - The percentage positivity for influenza A (66.7%) was higher than for influenza B (33.3%).
- Respiratory syncytial virus (RSV) positivity remained at low levels during week 10 2013.
- Positivity levels for adenovirus, parainfluenza viruses and human metapneumovirus have remained at low levels this season.
- During week 10 2013, 20 confirmed influenza cases were reported as hospitalised, 15 associated with influenza A and 5 with influenza B. To date this season, 259 confirmed influenza cases were reported as hospitalised, 66.0% were associated with influenza B.
- Fourteen adult and four paediatric confirmed influenza cases have been admitted to critical care to date this season. Of these 18 cases, 10 were associated with influenza B, five with influenza A (H1)pdm09, one influenza A (H3) and two with influenza A (unsubtyped). Thirty-two RSV*paediatric cases were also admitted to critical care this season.
- To date this season, two confirmed influenza B-associated deaths were reported to HPSC.
- Seven acute respiratory outbreaks in residential care facilities/community hospitals were reported to HPSC during week 10 2013.
- Influenza activity remained substantial in week 9 2013 across Europe; however an increasing number of countries reported declining transmission.

*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 10 2013, 68 influenza-like illness (ILI) cases were reported from sentinel GPs, corresponding to an ILI consultation rate of 34.7 per 100,000 population, a slight decrease compared to the updated rate of 41.3 per 100,000 in week 9 2013. Forty-five of 60 (75.0%) sentinel general practices provided data during week 10 2013, with 27 practices (60.0%) reporting ILI cases. The ILI consultation rates have now remained above the Irish baseline threshold (21.0 per 100,000 population)[†] for 13 weeks. Figure 1 shows the ILI consultation rates, the baseline threshold rate and the number of positive specimens detected by the NVRL.

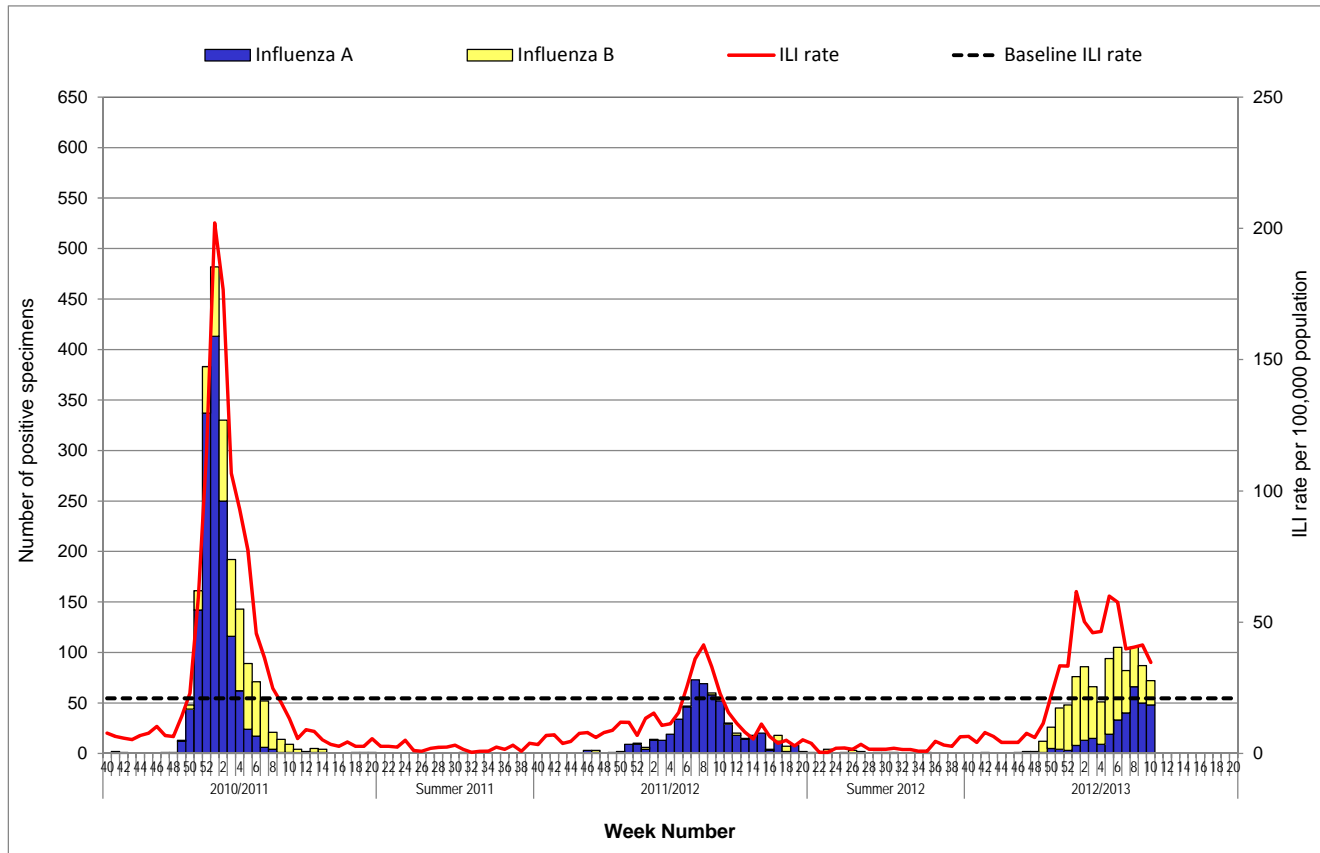


Figure 1. ILI sentinel GP consultation rates per 100,000 population, baseline ILI threshold rate, and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season.

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

ILI age specific rates were highest in the 15-64 year age group during week 10 2013. During week 10 2013, five ILI cases were reported in the 0-4 year age group (33.1 per 100,000), 7 ILI cases were reported in the 5-14 year age group (26.5 per 100,000), 52 cases in the 15-64 year age group (39.9 per 100,000) and 4 ILI cases were reported in those aged 65 years and older (17.6 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.

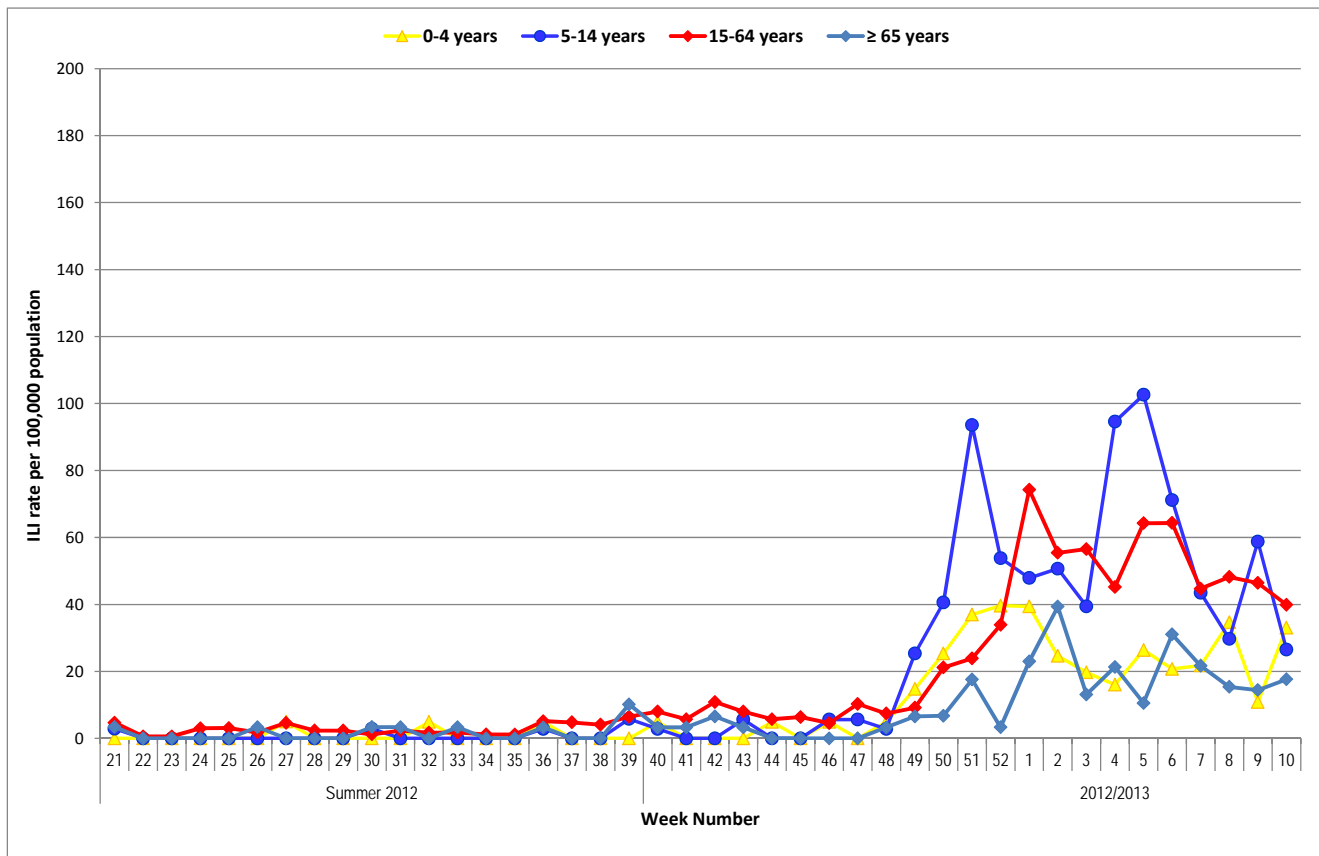


Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2012 and the 2012/2013 influenza season to date. Source: ICGP ILI clinical data

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 10 2013, a total of 335 specimens (25 sentinel and 310 non-sentinel[§] specimens) were tested by the NVRL. Seventy-two (72/335; 21.5%) sentinel and non-sentinel specimens tested positive for influenza virus during week 10 2013: 26 A(H3), 16 A(H1)pdm09, 6 A (unsubtyped) and 24 B. Fourteen (14/25; 56.0%) sentinel specimens tested positive for influenza virus during week 10 2013: 5 A(H3), 3 A(H1)pdm09 and 6 B. Fifty-eight (58/310; 18.7%) non-sentinel specimens tested positive for influenza virus during week 10 2013: 21 A(H3), 13 A(H1)pdm09, 6 A (unsubtyped) and 18 B (tables 1 & 2). During week 10 2013, influenza A positivity (66.7%) from sentinel and non-sentinel specimens positive for influenza was higher than influenza B (33.3%) (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

Influenza B viruses have dominated the 2012/2013 influenza season in Ireland, although influenza A(H3N2) and influenza A(H1N1)pdm09 viruses have also been circulating. The National Virus Reference Laboratory (NVRL) has genetically characterised 32 influenza viruses this season. Of twenty-four influenza B viruses analysed, twenty-one (87.5%) belong to the B/Yamagata lineage (which is included in the 2012/2013 influenza vaccine) and three (12.5%) belong to the B/Victoria lineage. Seven influenza A(H3N2) viruses were genetically characterised and were similar to the vaccine strain A/Victoria/361/2011. Sequence analysis of one influenza A(H1N1)pdm09 virus identified it was related to the vaccine strain A/California/07/2009. 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.

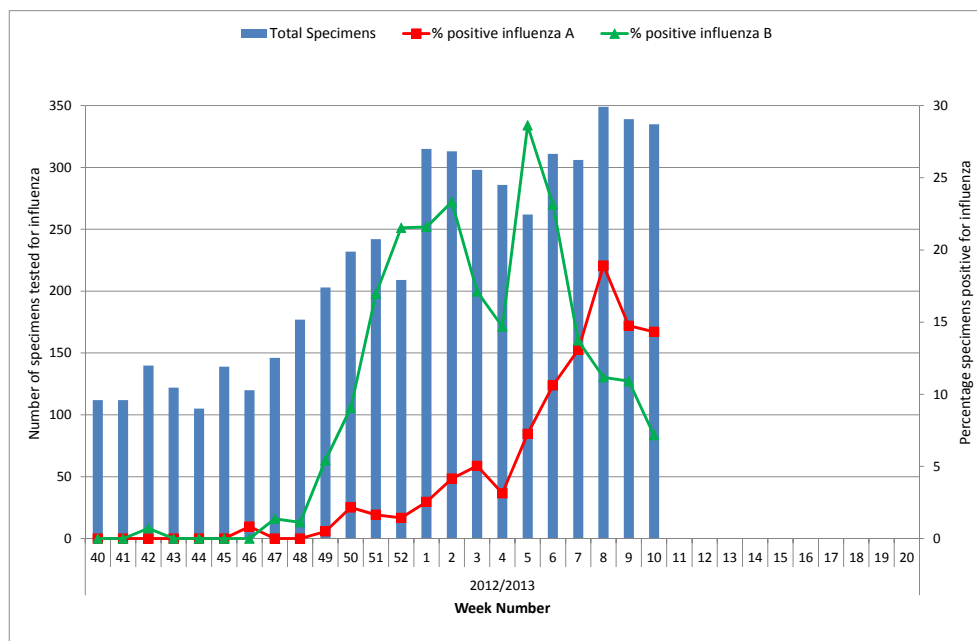


Figure 3: Number of sentinel and non-sentinel specimens tested for influenza and percentage influenza positive by week for the 2012/2013 influenza season. Source: NVRL

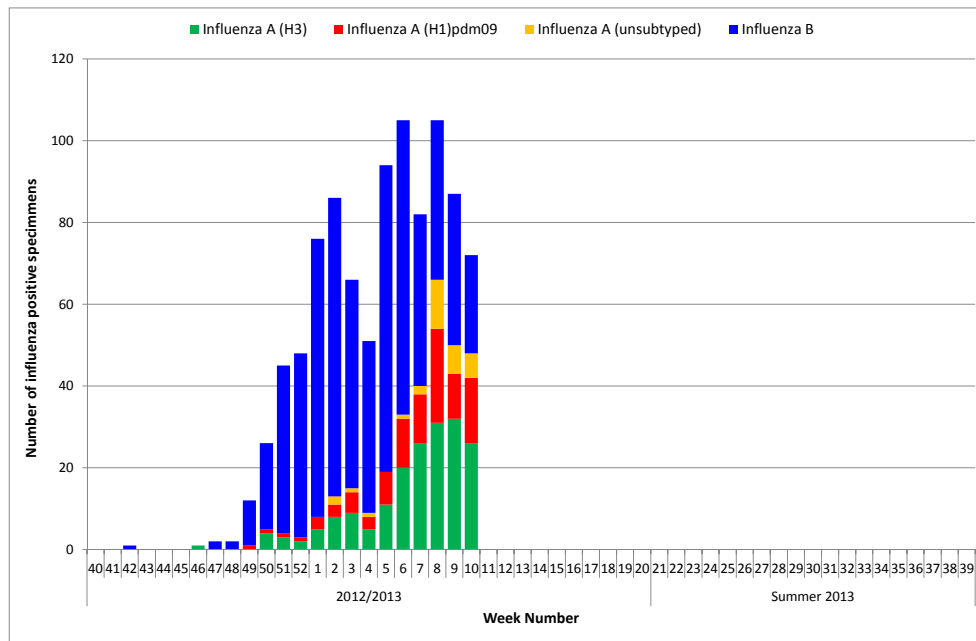


Figure 4: Number of positive influenza specimens by influenza type/subtype from sentinel and non-sentinel sources tested by the NVRL, by week for the 2012/2013 influenza season. Source: NVRL

Respiratory Syncytial Virus (RSV)

Respiratory syncytial virus (RSV) positivity reported from the NVRL (non-sentinel sources) decreased to 1.3% (4/310) during week 10 2013, compared to 2.6% during week 9 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 10 2013, 15 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](#).

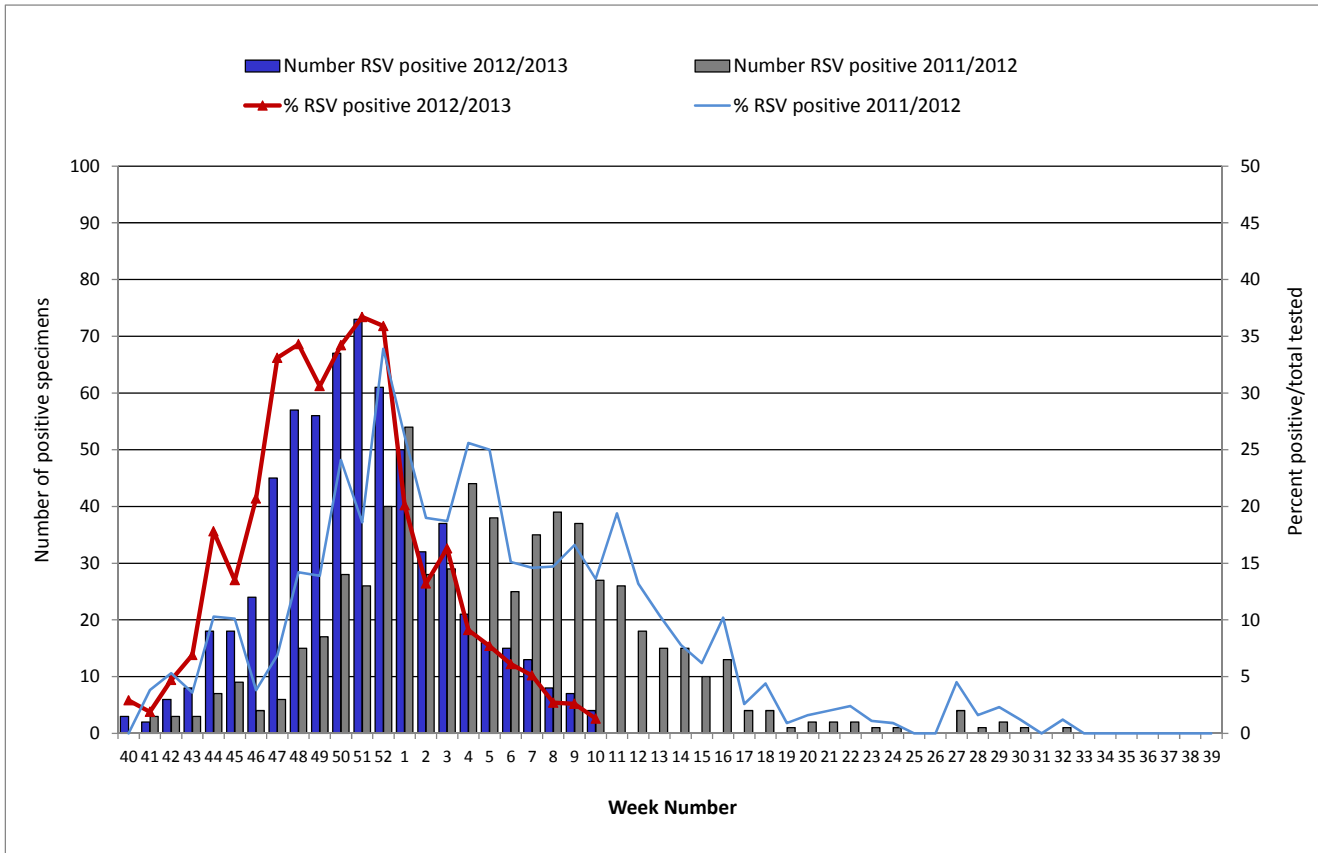


Figure 5: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2012/2013 season, compared to the 2011/2012 season. Source: NVRL

Other Respiratory Viruses

Six adenovirus, six parainfluenza virus (PIV) type 3 and four human metapneumovirus positive specimens from non-sentinel sources and one adenovirus from sentinel sources were reported from the NVRL during week 10 2013. No parainfluenza viruses or hMPV positive detections were reported from the NVRL from sentinel GP sources during week 10 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 10 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	
10 2013	Sentinel	25	14	56.0	3	5	0	8	6
	Non-sentinel	310	58	18.7	13	21	6	40	18
	Total	335	72	21.5	16	26	6	48	24
2012/2013	Sentinel	778	437	56.2	35	54	1	90	347
	Non-sentinel	4395	524	11.9	65	129	31	225	299
	Total	5173	961	18.6	100	183	32	315	646

Table 2: Number of sentinel and non-sentinel specimens tested by the NVRL for other respiratory viruses and positive results, for week 10 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
10 2013	Sentinel	25	0	0.0	1	4.0	0	0.0	0	0.0	0	0.0	0	0.0
	Non-sentinel	310	4	1.3	6	1.9	0	0.0	0	0.0	6	1.9	4	1.3
	Total	335	4	1.2	7	2.1	0	0.0	0	0.0	6	1.8	4	1.2
2012/2013	Sentinel	778	14	1.8	22	2.8	1	0.1	0	0.0	1	0.1	7	0.9
	Non-sentinel	4395	641	14.6	71	1.6	2	0.0	3	0.1	54	1.2	71	1.6
	Total	5173	655	12.7	93	1.8	3	0.1	3	0.1	55	1.1	78	1.5

** 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, localised influenza activity was reported from HSE-MW, -S, -SE and -W and sporadic influenza activity was reported from HSE-M, -NE and -NW during week 10 2013 (figure 6).

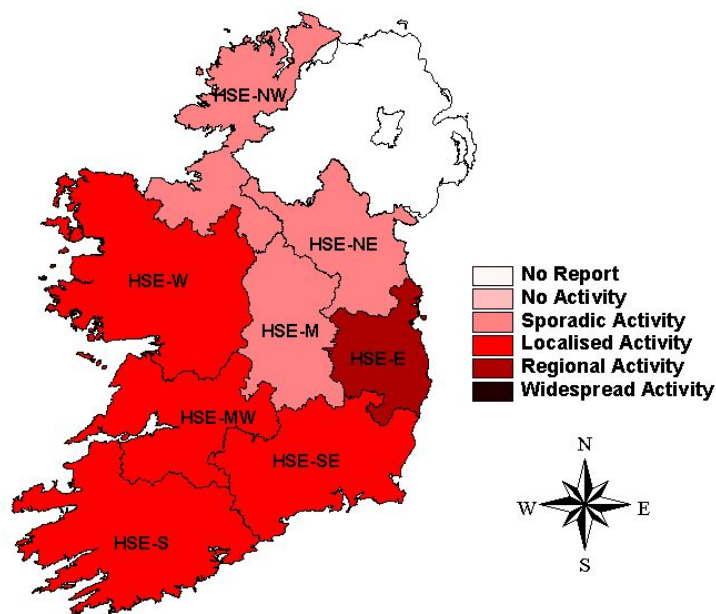


Figure 6: Map of provisional influenza activity by HSE-Area during week 10 2013

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 57 during week 10 2013, a decrease compared to 266 during week 9 2013. It should be noted that data for week 10 did not include sentinel hospitals from HSE-E. To date this season, hospital respiratory admissions peaked at 413 during week 50 2012 (figure 7).

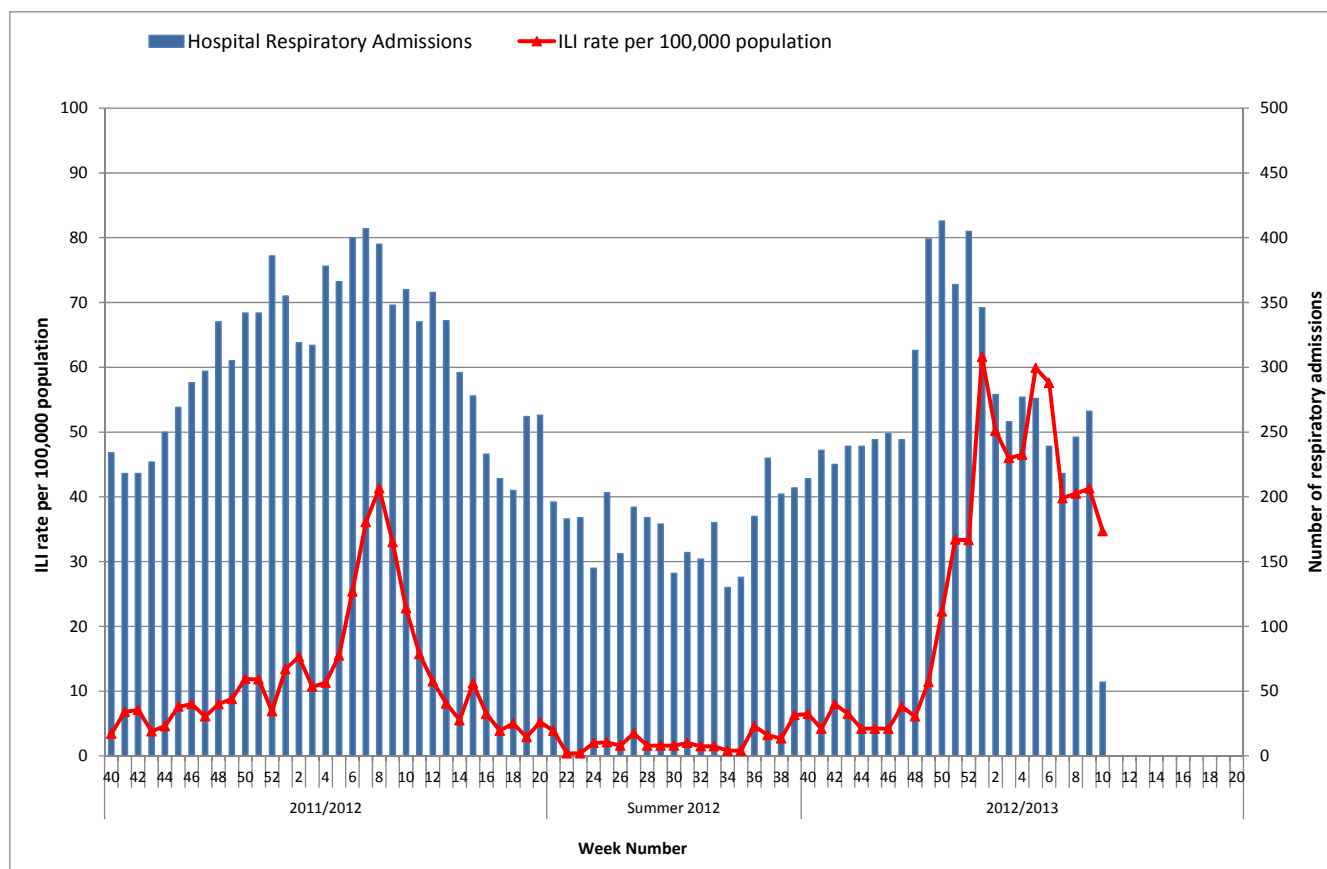


Figure 7: Number of respiratory admissions reported from sentinel hospitals and national sentinel GP ILI consultation rate per 100,000 population by week for the 2011/2012 season, summer 2012 and the 2012/2013 season to date.
 Source: Departments of Public Health - Sentinel Hospitals & ICGP.

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 10 2013 remained stable at 3.0%, compared to the updated proportion of 3.0% in the previous week. Six GP Out-of-Hours services reported during week 10 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).

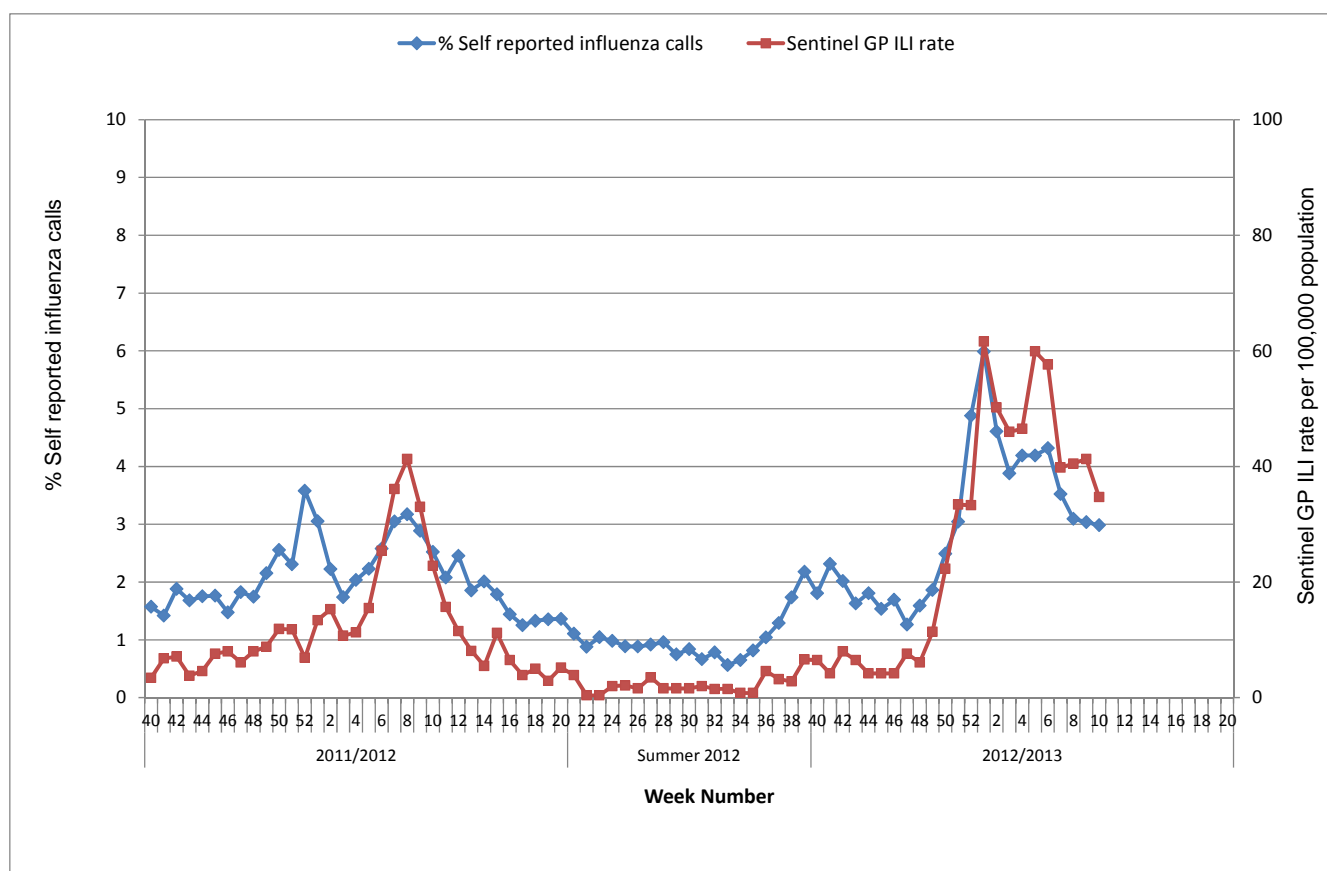


Figure 8: Self-reported influenza-related calls as a proportion of total calls to Out-of-Hours GP Co-ops and national sentinel GP ILI consultation rate per 100,000 population by week for the 2011/2012 and 2012/2013 seasons

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 twenty one laboratory confirmed influenza cases were notified during week 10 2013, 82 influenza A (21 A(H3), 19 A(H1)pdm09 & 42 A(unsubtyped)) and 39 influenza B. The number of confirmed influenza cases reported as hospitalised during week 10 2013 was 20, compared to 34 during week 9 2013. Of the 20 cases reported as hospitalised during week 10 2013, 15 were associated with influenza A (5 A(H3), 4 A(H1)pdm09 & 6 A(unsubtyped)) and 5 were associated with influenza B. To date this season, 259 confirmed influenza cases (171 influenza B, 32 A (H1)pdm09, 40 influenza A (H3) and 16 influenza A (unsubtyped)) have been reported as hospitalised, 66.0% 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, fourteen adult and four paediatric confirmed influenza cases have been admitted to critical care and reported to HPSC, ten were associated with influenza B, five with influenza A (H1)pdm09, one influenza A (H3) 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, two confirmed influenza B-associated deaths were reported to HPSC. 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 10 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 and weeks 1, 4 and 6 2013, excess all-cause mortality was reported. These data are provisional due to the time delay in deaths' registration in Ireland. <http://www.euromomo.eu/>

8. Outbreak surveillance

Seven acute respiratory outbreaks in residential care facilities/community hospitals were reported to HPSC during week 10 2013, one in HSE-E associated with influenza A(H3), one in HSE-NW associated with influenza B, two in HSE-S (one associated with A(H3) and one associated with an unknown pathogen) and three in HSE-W (two associated with influenza A (H3) and one with an unknown pathogen). To date this influenza season, 36 acute respiratory outbreaks have been reported to HPSC, ten associated with influenza A(H3), nine influenza B, one influenza A(H1)pdm09, two influenza A (unsubtyped), one RSV, one hMPV and 12 associated with unidentified pathogens. 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 was circulating, although the proportion of samples positive for influenza was decreasing. In week 9 2013, overall weekly influenza GP consultations remained stable in England (15.1 per 100,000), Northern Ireland (44.8 per 100,000), Scotland (25.4 per 100,000) and Wales (9.6 per 100,000). In week 9 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%. Thirty acute respiratory disease outbreaks were reported during week 9 2013: 17 had a virological result available (14 influenza A (unsubtyped), one influenza A(H1N1)pdm09, one RSV and one seasonal coronavirus). 183 influenza positive detections (76 A(H3), 49 A subtype not known, 41 B and 17 A(H1N1)pdm09) were recorded through the DataMart scheme (overall positivity of 18.2% compared to 24.0% the previous week). The proportion of samples positive in DataMart (England) increased slightly for adenovirus and remained stable for parainfluenza, RSV, hMPV and rhinovirus. Nineteen influenza positive detections were recorded through the two English GP-based sentinel schemes in week 9 (12 A(H3), 6 A(H1N1)pdm09 and 1 B), giving a positivity of 28.8% compared to 49.4% in week 8 2013. Forty-eight new admissions to ICU/HDU with confirmed influenza (16 A(subtype not known), 13 B, 11 A(H1N1)pdm09, and 8 A(H3N2)) were reported across the UK in week 9 2013. Fifty-six new hospitalised confirmed influenza cases have been reported through the USISS sentinel hospital network across England. In week 9 2013, no overall excess all-cause mortality was reported across the UK through the EuroMOMO algorithm. These data are provisional due to the time delay in death registration.

Europe

In week 9 2013, influenza activity remained substantial across Europe, however an increasing number of countries reported declining influenza transmission. Nineteen countries reported concomitantly high/medium-intensity of influenza transmission and widespread activity. Only two countries reported increasing ILI trends during week 9, compared to six in week 8 and 11 in week 7. The proportion of influenza-positive cases among sentinel specimens remained high (54%), but has continued to decrease since the peak observed in week 5 2013 (61%). Since week 40 2012, a broadly even distribution of influenza virus types has been observed among sentinel samples, with approximately 50% influenza A and 50% influenza B. A total of 154 hospitalised laboratory-confirmed influenza cases were reported by eight countries (Belgium, France, Ireland, Romania, Slovakia, and Spain), with three fatalities. Of the 1560 antigenic characterisations of influenza A viruses reported for sentinel and non-sentinel specimens since week 40 2012, 1079 (69%) have been characterised as A/Victoria/361/2011(H3N2)-like. Of the 1136 antigenic characterisations of influenza B viruses reported, 566 (50%) have been characterised as B/Estonia/55669/2011-like (B/Yamagata/16/88-lineage) and 272 (24%) as B/Wisconsin/1/2010-like (B/Yamagata/16/88-lineage). 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 9 2013, influenza activity remained elevated in the United States, but decreased in most areas. The proportion of outpatient ILI visits was 2.3%, which is above the national baseline of 2.2%. Of 6259 specimens tested and reported, 1074 (17.2%) were positive for influenza: 149 A(H3), 22 A(H1N1)pdm09, 214 A(untypeded) and 689 B. The proportion of deaths attributed to pneumonia and influenza was above the epidemic threshold. A cumulative rate for the season of 38.5 laboratory-confirmed influenza-associated hospitalisations per 100,000 population was reported, over 51% were among adults 65 years and older. CDC has antigenically characterised 1472 influenza viruses to date this season: 104 (99.0%) influenza A(H1N1)pdm09 viruses were similar to the vaccine strain A/California/7/2009-like, 933 (99.6%) (H3N2) viruses were similar to the vaccine strain A/Victoria/361/2011-like, 308 (71.6%) influenza B viruses were similar to the vaccine strain B/Wisconsin/1/2010-like and 122 (28.4%) influenza B viruses were similar to the B/Victoria lineage of viruses.

Canada

In Canada, the number of regions reporting widespread or localised activity, as well as the ILI consultation rate continued to decline during week 9 2013. Detections of influenza A and B increased slightly, primarily in Eastern Canada. The proportion of positive tests for influenza B has increased in recent weeks. The number of paediatric hospitalisations was similar to the previous 2 weeks. In week 9, 50% of cases were associated with influenza B. The percentage of laboratory detections positive for RSV and rhinovirus both decreased. During the 2012/2013 season, the National Microbiology Laboratory has antigenically characterised 703 influenza viruses. The 463 influenza A(H3N2) viruses were antigenically similar to the vaccine strain A/Victoria/361/2011 and the 93 A(H1N1)pdm09 viruses were antigenically similar to the vaccine strain A/California/07/09. Among the influenza B viruses, 115 were antigenically similar to the vaccine strain B/Wisconsin/01/2010 (Yamagata lineage) and 32 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 March 2013 stated that influenza activity in North America continued to decrease overall, although activity remained high in some areas. The proportion of influenza B increased slightly, however influenza A(H3N2) was still the most commonly detected virus subtype. The season has been more severe than average in the US, with a notably high number of pneumonia and influenza-related hospitalisations among adults aged 65 years and older. Influenza activity in Europe decreased in some northern and western countries but continued to increase in the eastern part of the region. While influenza A(H1N1)pdm09 was the most commonly detected virus overall, notable exceptions included Denmark, Ireland

and the United Kingdom, which were reporting much more influenza A(H3N2) and influenza B than the rest of Europe, and Bulgaria, Italy, and Spain which reported more influenza B than A. Excess mortality for the 14 countries reporting to the European Mortality Monitoring project has been higher than average for individuals over the age of 65 years but not as high as the previous two seasons. Influenza activity throughout the temperate region of Asia decreased except in Mongolia where it appears to have reached a peak. Only low levels of influenza activity were reported across the tropical regions of the world and activity in countries of 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 12th March 2013, stated that 622 laboratory-confirmed human cases with avian influenza A(H5N1) virus infection have been officially reported to WHO since 2003 from 15 countries, of which 371 died.

Novel Coronavirus

The latest update from WHO on novel coronavirus (NCoV) on 12th March 2013, stated that the Ministry of Health in Saudi Arabia has informed WHO of a new confirmed case of infection with NCoV. ECDC have issued an updated [risk assessment](#). Further information is available on the [WHO website](#) and [ECDC website](#).

2013/2014 seasonal influenza vaccine recommendations – WHO

The WHO Consultation on the Composition of Influenza Virus Vaccines for the Northern Hemisphere 2013/2014 took place on the 21st February 2013. It is recommended that vaccines for use in the 2013/2014 influenza season (northern hemisphere winter) contain the following:

- an A/California/7/2009 (H1N1)pdm09-like virus;
- an A(H3N2) virus antigenically like the cell-propagated prototype virus A/Victoria/361/2011;
- a B/Massachusetts/2/2012-like virus (Yamagata lineage).

Further details on these recommendations can be found [here](#).

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

Acknowledgements

This report was prepared by Lisa Domegan and Joan O'Donnell, HPSC. HPSC wishes to thank the sentinel GPs, the ICGP, NVRL, Departments of Public Health, ICSI and HSE-NE for providing data for this report.