

Influenza Surveillance in Ireland – Weekly Report

Influenza Week 1 2013 (31st December 2012 – 6th January 2013)



Summary

- **All indicators of influenza activity in Ireland continued to increase during week 1 2013.**
 - The sentinel GP influenza-like illness (ILI) consultation rate was 62.6 per 100,000 population in week 1 2013, a significant increase compared to the updated rate of 33.1 per 100,000 during week 52 2012.
 - ◆ 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.
- Influenza positivity increased during week 1 2013, compared to the previous week. Five influenza A (H3), one influenza A (H1N1)pdm09, one influenza A (unsubtyped) and 59 influenza B positive specimens were reported from the NVRL for week 1 2013.
- Influenza B remains the dominant circulating influenza virus to date this season, accounting for 90% of all influenza positive specimens detected by the NVRL this season.
- Respiratory syncytial virus (RSV) positivity decreased during week 1 2013 for the second consecutive week, however remained at high levels.
- Sporadic cases of adenovirus, parainfluenza viruses and human metapneumovirus were reported from the NVRL during week 1 2013. Positivity levels for these viruses remained at low levels.
- During week 1 2013, 11 confirmed influenza cases were reported as hospitalised, one associated with influenza A and 10 associated with influenza B. To date this season, 19 confirmed influenza cases were reported as hospitalised, 84% were associated with influenza B.
- Three confirmed influenza B adult cases were admitted to critical care and reported to HPSC this season.
- There were no reports of any confirmed influenza-associated deaths occurring this season.
- Two influenza B and one RSV general outbreaks* were reported to HPSC during week 1 2013.
- Influenza activity continued to rise in a number of EU/EEA countries, especially in Western Europe. Greater numbers of severe laboratory-confirmed cases are now being reported.

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

* Family outbreaks are not included in this report.

1. GP sentinel surveillance system

Clinical Data

During week 1 2013, 156 influenza-like illness (ILI) cases were reported from sentinel GPs, corresponding to an ILI consultation rate of 62.6 per 100,000 population, a significant increase compared to the updated rate of 33.1 per 100,000 in week 52 2012. Fifty-six of 60 (93.3%) sentinel general practices provided data during week 1 2013, with 37 practices (66.1%) reporting ILI cases. The ILI consultation rates for week 1 2013 remained above the Irish baseline threshold (21.0 per 100,000 population). 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. Figure 1 shows the ILI consultation rates, the baseline threshold rate and the number of positive specimens detected by the NVRL.

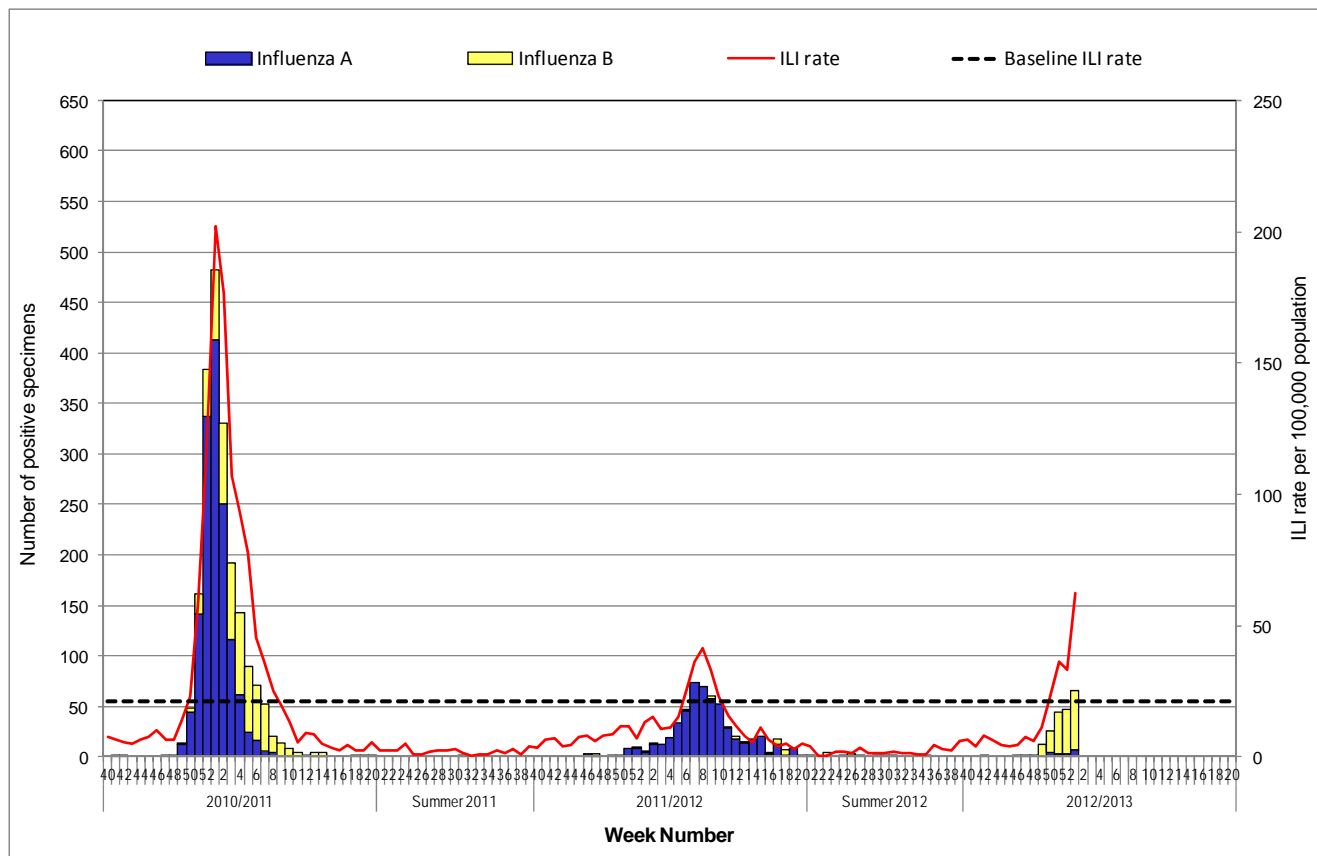


Figure 1. ILI sentinel GP consultation rates per 100,000 population, baseline ILI threshold rate, and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season.

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

ILI age specific rates increased in the 0-4 and 15-64 year age groups and in those aged 65 years or older during week 1 2013, compared to week 52 2012. Age specific rates in the 5-14 year age group have decreased for two consecutive weeks. The highest age specific ILI rates during week 1 2013 were in the 15-64 year age group. During week 1 2013, eight ILI cases were reported in the 0-4 year age group (41.6 per 100,000), 17 ILI cases was reported in the 5-14 year age group (50.5 per 100,000), 125 cases in the 15-64 year age group (75.4 per 100,000) and six ILI cases were reported in those aged 65 years or older (20.8 per 100,000) (figure 2).

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

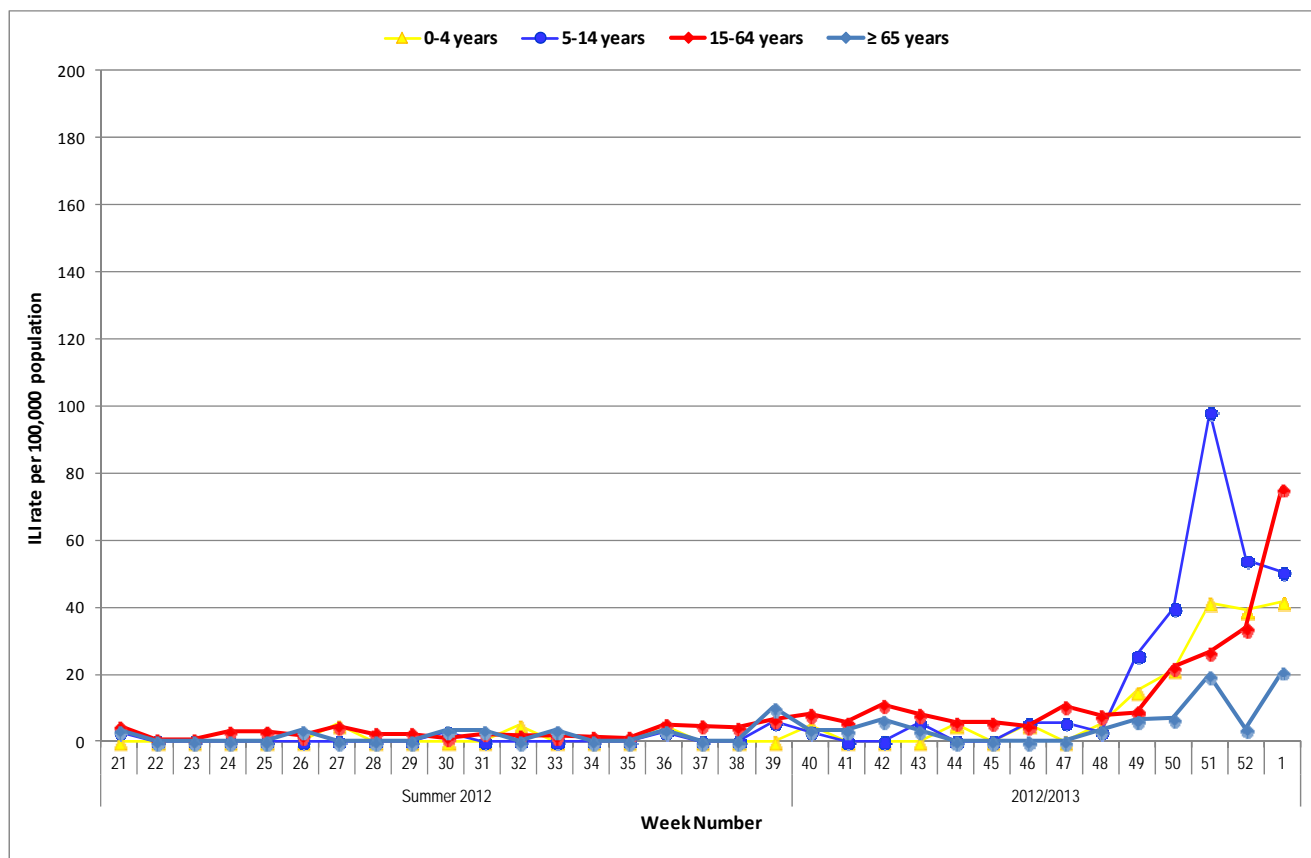


Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2012 and the 2012/2013 influenza season to date *Source: ICGP ILI clinical data*

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 1 2013, a total of 269 specimens (55 sentinel and 214 non-sentinel[‡] specimens) were tested by the NVRL. Sixty-six (66/269; 24.5%) sentinel and non-sentinel specimens tested positive for influenza virus during week 1 2013, five influenza A (H3), one influenza A (H1N1)pdm09, one influenza A (unsubtyped) and 59 influenza B. Forty (40/55; 72.7%) sentinel specimens tested positive for influenza virus during week 1 2013, four influenza A (H3), one influenza A (unsubtyped) and 35 influenza B positive specimens. Twenty-six (26/214; 12.1%) non-sentinel specimens tested positive for influenza virus during week 1 2013, one influenza A (H3), one influenza A (H1N1)pdm09 and 24 influenza B.

Influenza B remains the predominant influenza virus circulating this season. Ninety percent (181/201) of all influenza positive sentinel and non-sentinel specimens detected by the NVRL this season were influenza B (Figure 3, tables 1 & 2).

[‡] Please note that non-sentinel specimens relate to specimens referred to the NVRL (other than sentinel specimens) and may include more than one specimen from each case.

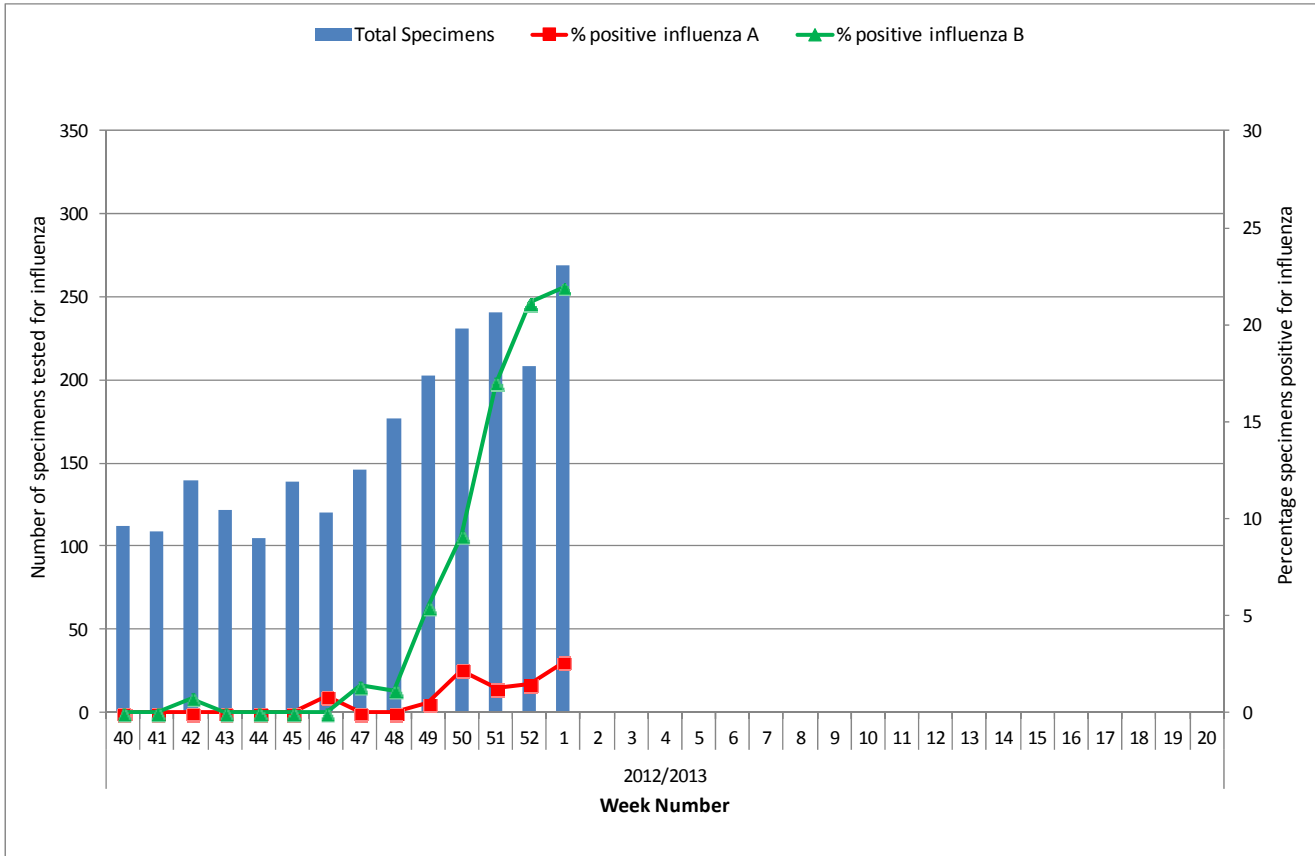


Figure 3: Number of sentinel and non-sentinel specimens tested for influenza and percentage influenza positive by week for the 2012/2013 influenza season. Source: NVRL

Respiratory Syncytial Virus (RSV)

Respiratory syncytial virus (RSV) positivity reported from the NVRL decreased during week 1 2013 for the second consecutive week, however remained at high levels (figure 4). Forty-three (20.1%) RSV positive detections from non-sentinel sources were reported from the NVRL[§] during week 1 2013. Sporadic cases of RSV have been detected this season from sentinel GP sources.

RSV was made notifiable in Ireland on 1st January 2012. During week 1 2013, 253 laboratory notifications of RSV were reported on Ireland’s Computerised Infectious Disease Reporting System (CIDR). It should be noted that 76.3% of these notifications were late notifications. Laboratory notifications of RSV are reported in more detail in the [Weekly Infectious Disease Report for Ireland](#).

[§] It should be noted that these data only include specimens referred to the NVRL for RSV testing. Not all hospitals refer respiratory specimens for RSV testing to the NVRL.

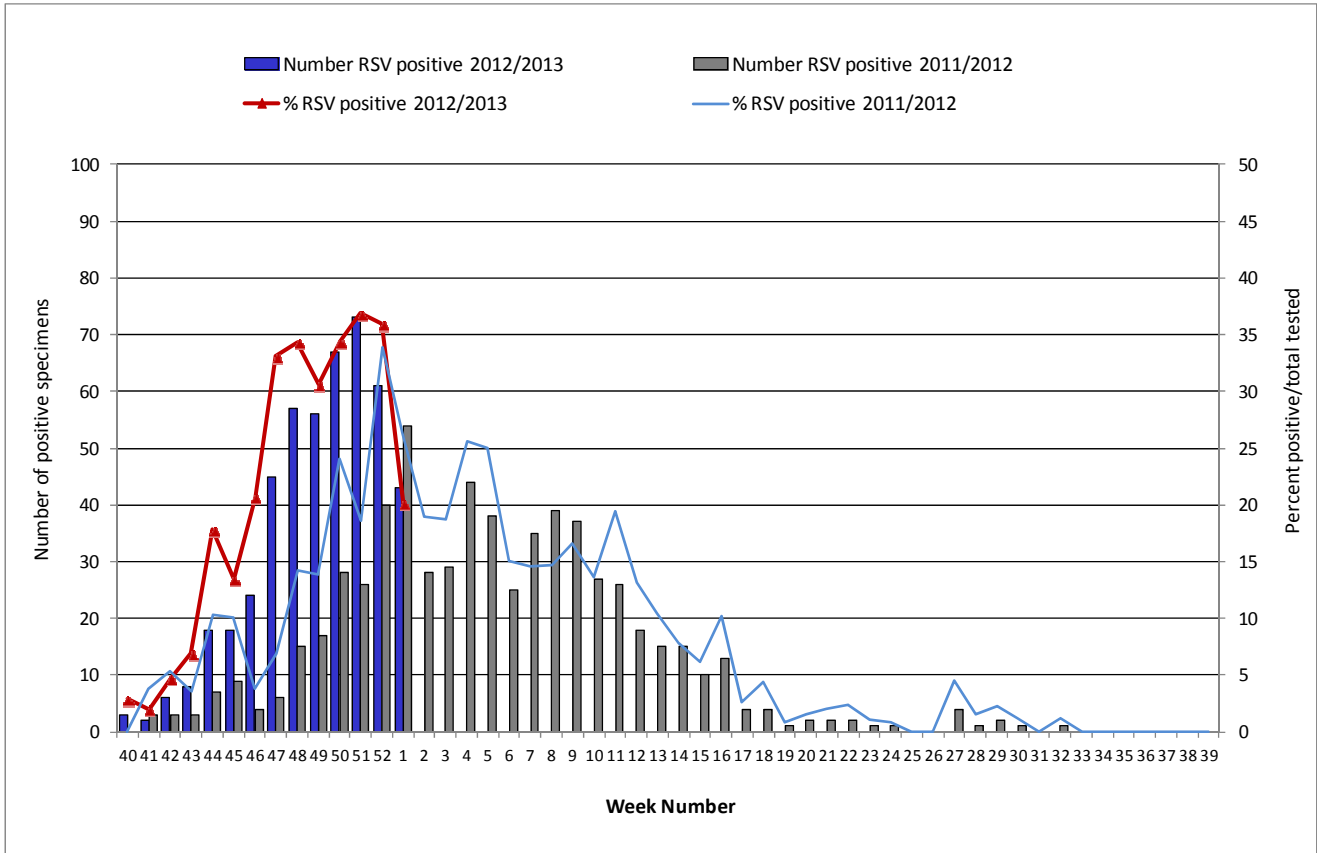


Figure 4: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2012/2013 season, compared to the 2011/2012 season. Source: NVRL

Other Respiratory Viruses

One adenovirus, five parainfluenza virus (PIV) type 3 and four human metapneumovirus (hMPV) positive specimens were reported from the NVRL from non-sentinel sources during week 1 2013. There was one adenovirus and one hMPV positive detections reported from the NVRL from sentinel GP sources during week 1 2013 (table 2).

Table 1: Number of sentinel and non-sentinel respiratory specimens tested by the NVRL and positive influenza results, for week 1 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 (H1)	A (unsubtyped)	Total influenza A	
1 2013	Sentinel	55	40	72.7	0	4	0	1	5	35
	Non-sentinel	214	26	12.1	1	1	0	0	2	24
	Total	269	66	24.5	1	5	0	1	7	59
2012/2013	Sentinel	262	128	48.9	3	9	0	1	13	115
	Non-sentinel	2060	73	3.5	1	6	0	0	7	66
	Total	2322	201	8.7	4	15	0	1	20	181

Table 2: Number of sentinel and non-sentinel specimens tested by the NVRL for other respiratory viruses and positive results, for week 1 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
1 2013	Sentinel	55	2	3.6	1	1.8	0	0.0	0	0.0	0	0.0	1	1.8
	Non-sentinel	214	43	20.1	1	0.5	0	0.0	0	0.0	5	2.3	4	1.9
	Total	269	45	16.7	2	0.7	0	0.0	0	0.0	5	1.9	5	1.9
2012/2013	Sentinel	262	8	3.0	6	2.3	1	0.4	0	0.0	1	0.4	3	1.1
	Non-sentinel	2060	481	23.3	22	1.1	2	0.1	2	0.1	24	1.2	44	2.1
	Total	2322	489	21.1	28	1.2	3	0.1	2	0.1	25	1.1	47	2.0

** 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 during week 1 2013. Localised influenza activity was reported from HSE-M, -NE, -NW, -MW, -S and -SE and sporadic influenza activity was reported from HSE-W during week 1 2013 (figure 5).

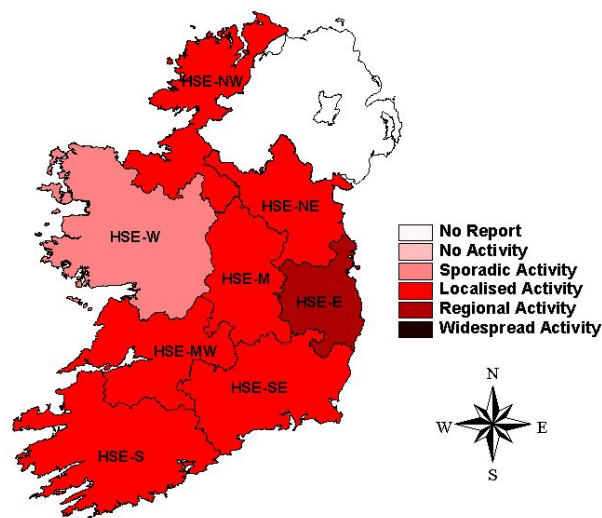


Figure 5: Map of provisional influenza activity by HSE-Area during week 1 2013

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 80 during week 1 2013. Data reported for weeks 51 and 52 2012 and week 1 2013 were incomplete due to the Christmas and New Year holiday period. Only four sentinel hospitals during week 51 2012 and three sentinel hospitals during weeks 52 2012 and 1 2013 reported respiratory admissions data (figure 6).

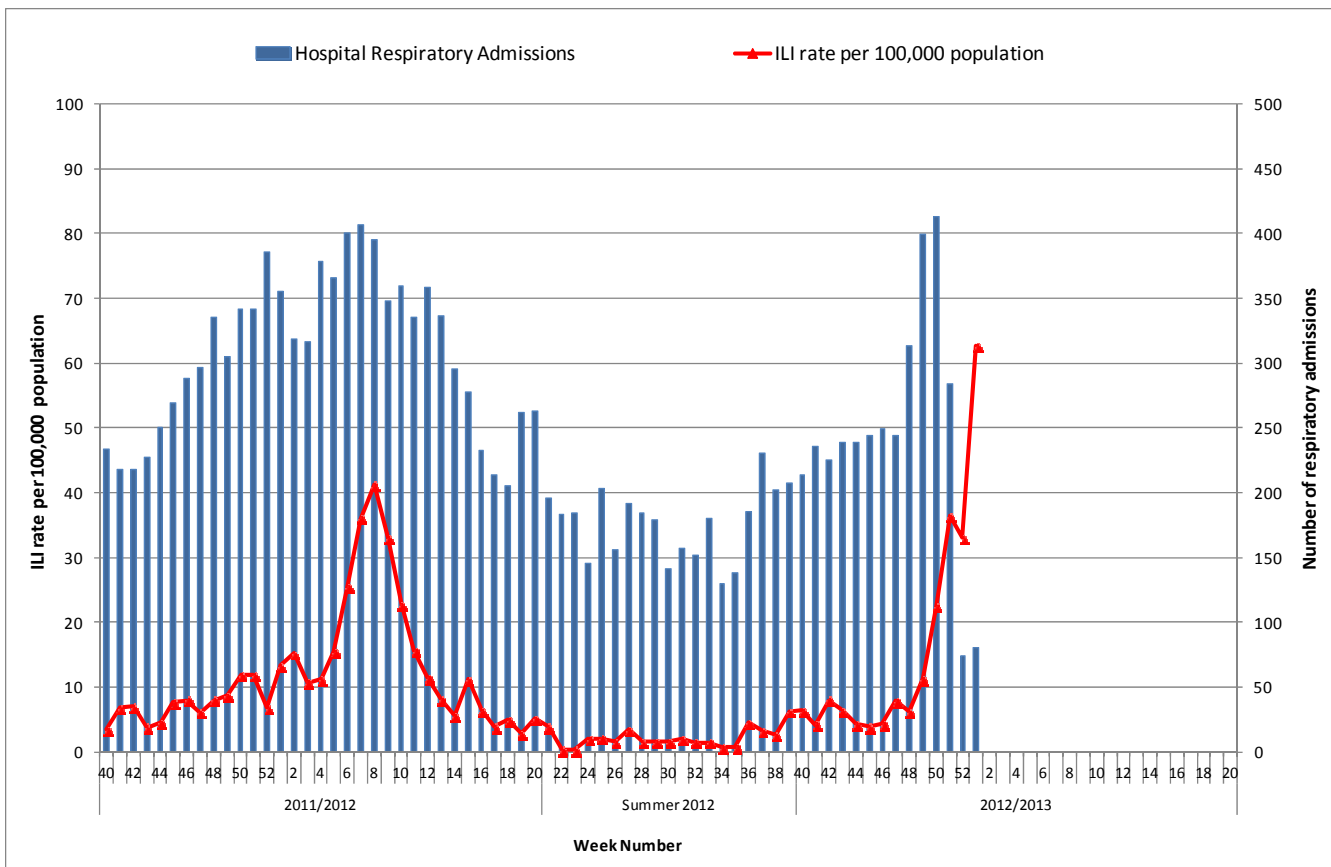


Figure 6: Number of respiratory admissions reported from sentinel hospitals and national sentinel GP ILI consultation rate per 100,000 population by week for the 2011/2012 season, summer 2012 and the 2012/2013 season to date.
 Source: Departments of Public Health - Sentinel Hospitals & ICGP.

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 1 2013 increased to 6.0%, compared to 4.9% in the previous week. Six GP Out-of-Hours services reported during week 1 2013 (figure 7).

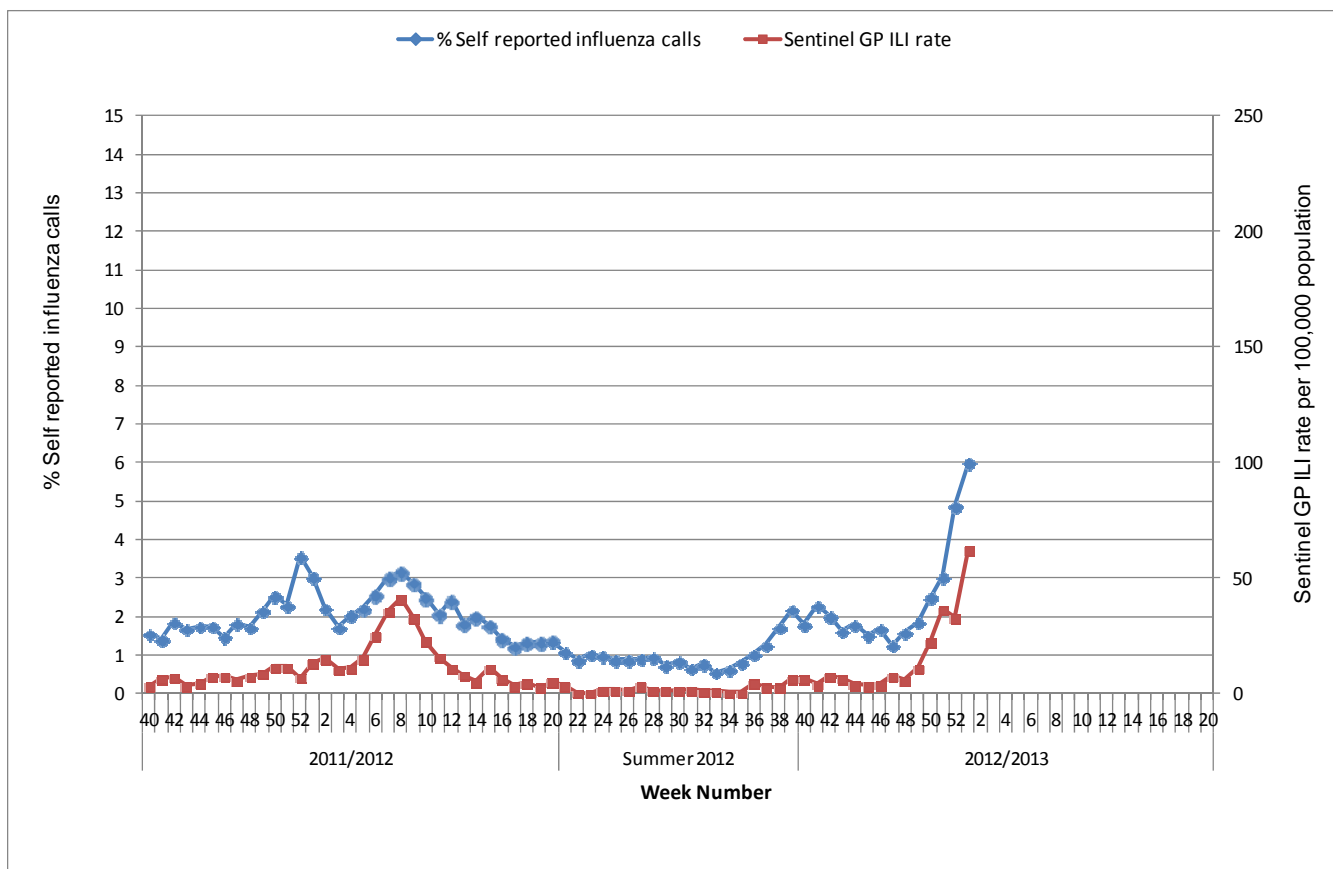


Figure 7: Self reported influenza-related calls as a proportion of total calls to Out-of-Hours GP Co-ops and national sentinel GP ILI consultation rate per 100,000 population by week for the 2011/2012 and 2012/2013 seasons
 Source: GP Out-Of-Hours services in Ireland (collated by HSE-NE) & ICGP.

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.

Thirty laboratory confirmed influenza cases were notified during week 1 2013, one influenza A (unsubtyped) and 29 influenza B. The number of confirmed influenza cases reported as hospitalised during week 1 2013 was 11, compared to one during week 52 2012. Of the 11 cases reported as hospitalised during week 1 2013, 10 were associated with influenza B and one with influenza A (unsubtyped). To date this season, 19 confirmed influenza cases have been reported as hospitalised: 16 influenza B, 1 influenza A (H3) 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.

Two confirmed influenza B adult cases were admitted to critical care and reported to HPSC during week 1 2013. To date this season, three confirmed influenza B adult cases were admitted to critical care and reported to HPSC. No paediatric influenza cases have been admitted to critical care and reported to HPSC this season.

7. Mortality surveillance

There were no reports of any confirmed influenza-associated deaths occurring during week 1 2013 or 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 1 2013 and the 2012/2013 season to date, no excess all-cause mortality was reported in Ireland after correcting GRO data for reporting delays with the standardised EuroMOMO algorithm. These data are provisional due to the time delay in deaths' registration in Ireland. <http://www.euromomo.eu/>

8. Outbreak surveillance

Three outbreaks associated with acute respiratory infections were reported to HPSC during week 1 2013, two influenza B outbreaks, one in a residential institution in HSE-E and one in a community hospital/long-stay unit in HSE-NW and one RSV outbreak in a residential institution in HSE-E. To date this influenza season, nine acute respiratory outbreaks have been reported to HPSC, two associated with RSV, four with influenza B, one with human metapneumovirus and two associated with unidentified pathogens. It should be noted that family outbreaks are not recorded in this report.

9. International summary

United Kingdom

Increases continued to be reported for several indicators of influenza activity during week 52 2012. The weekly primary care ILI consultation rate increased in England (32.7 per 100,000), Scotland (37.1 per 100,000) and Northern Ireland (43.7 per 100,000) and decreased in Wales (3.4 per 100,000) during week 52 2012. The weekly proportion of NHS Direct calls for colds/influenza increased and the proportion for fever (in 5-14 year olds) decreased slightly but both remained above their respective influenza thresholds of 1.6% and 11.7%. Twelve acute respiratory disease outbreaks (seven in care homes, three in schools and two in hospitals) have been reported during week 52 2012. Of the three with known virological data, one was confirmed as influenza B, one was influenza A(unsubtyped) and one was RSV. One hundred and thirty-eight (16.6%) of the 684 respiratory specimens reported to DataMart (England) tested positive for influenza in week 52 (110 B, 14 A subtype not known, 8 A(H1N1)pdm09 and 6 A(H3)). The proportion of samples positive increased slightly for RSV and hMPV, decreased for rhinovirus and remained stable for adenovirus and parainfluenza. Five influenza B positive detections were recorded through the two English GP-based sentinel schemes in week 52. Forty new admissions to ICU/HDU with confirmed influenza (21 B, 11 A(subtype not known), seven A(H3N2), and one A(H1N1)pdm09) were reported across the UK in week 52. Sixty-three new hospitalised confirmed influenza cases have been reported through the USISS sentinel hospital network across England. No excess all-cause mortality was reported by age group or region in week 50 across the UK as calculated with the EuroMOMO algorithm. Since week 40 2012, the HPA Respiratory Virus Unit has isolated and antigenically characterised 31 influenza A(H3N2) viruses similar to the A/Victoria/361/2011 vaccine strain and one influenza A(H1N1)pdm09 virus similar to the A/California/07/2009 vaccine strain. Of 20 influenza B viruses isolated, fourteen belong to the B-Yamagata lineage and six to the B-Victoria lineage.

Europe

Influenza activity continued to rise in a number of EU/EEA countries, especially in Western Europe. In week 52 2012, surveillance data in Europe were subject to particular delays and underreporting because of the holiday season, therefore data should be interpreted with caution. During week 52 2012, four countries (France, Italy, the Netherlands and Norway) reported medium intensity transmission; geographic spread of influenza activity was reported as widespread by five countries (Belgium, Denmark, France, Norway and the UK (England)); and nine countries reported increasing trends. Of 375 specimens from sentinel patients, 25% were positive for influenza virus; a small decrease compared with 27% in the previous week. This may be related to a lower number of physician consultations over the New Year holiday. Since week 40 2012, 46% of sentinel specimens were type A and 54% were type B, though the proportion of B viruses has decreased somewhat in recent weeks. Subtyping of type A viruses has shown proportions of 56% A(H3) and 44% A(H1). Viruses characterised to date and reported to ECDC match well with the vaccine viruses. Countries undertaking surveillance of laboratory-confirmed severe influenza cases requiring hospitalisation are starting to report increasing numbers of such individuals.

United States of America

During week 52 2012, influenza activity increased in the U.S. The proportion of outpatient ILI visits was 5.6%; above the national baseline of 2.2%. Of 9,363 specimens tested and reported, 2,961 (31.6%) were positive for influenza: 1209 A (H3), 25 A (H1N1)pdm09, 1112 A (unsubtyped) and 615 B. The proportion of deaths attributed to pneumonia and influenza was below the epidemic threshold. Two influenza-associated paediatric deaths were reported and were associated with influenza B viruses. Between October 1st 2012 and December 29th 2012, 2,257 (8.1/100,000population) laboratory-confirmed influenza-associated hospitalisations were reported. Among all hospitalisations, 1,924 (85.2%) were associated with influenza A and 312 (13.8%) with influenza B. Among hospitalisations with influenza A subtype information, 475 (98.1%) were attributed to H3 and 9 (1.9%) were attributed to A(H1N1)pdm09. CDC has antigenically characterised 413 influenza viruses to date this season: 17 (100%) influenza A(H1N1)pdm09 viruses were similar to the vaccine strain A/California/7/2009-like, 279 (99.3%) (H3N2) viruses were similar to the vaccine strain A/Victoria/361/2011-like, 79 (68.7%) influenza B viruses were similar to the vaccine strain B/Wisconsin/1/2010-like and 36 (31.3%) influenza B viruses were similar to the B/Victoria lineage of viruses.

Canada

Influenza activity in Canada continued to rise with increases in all indicators in weeks 51 and 52 2012. The ILI consultation rate increased, but remained within the expected range for this time of year. A total of 4632 laboratory detections of influenza were reported, of which 97.7% were for influenza A viruses, predominantly A(H3N2). 127 new influenza outbreaks were reported, 87 of which were in long-term care facilities. During weeks 51 and 52 2012, 114 paediatric influenza-associated hospitalisations and 176 hospitalisations including 15 deaths among adults ≥ 20 years of age were reported. Similar to previous years, older adults (persons aged ≥ 65 years) are the most affected this season; with 41.3% of laboratory detections to date, increased outbreaks in long-term care facilities, higher hospitalisation rates and a high proportion of antiviral prescriptions among those ≥ 75 years. During the 2012/2013 season to date, all 136 influenza A(H3N2) viruses tested were antigenically similar to the vaccine strain A/Victoria/361/2011 and all 17 A(H1N1)pdm09 viruses tested were antigenically similar to the vaccine strain A/California/07/09. Among the influenza B viruses, 20 were antigenically similar to the vaccine strain B/Wisconsin/01/2010 (Yamagata lineage) and four 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 7th January 2013 stated that reporting of influenza activity was irregular during the Christmas and New Year holiday season in many countries. As a result, overall virus detections reported have dropped off although in most countries in the northern temperate regions, influenza activity has continued rising. Many countries of North America, Europe, North Africa, eastern Mediterranean and

temperate Asia have reported increasing influenza activity over the past weeks. North China has started its influenza season. 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, with the exception of the Democratic Republic of Congo and Ghana. 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 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 17th December 2012, reported 32 confirmed human cases of avian influenza A(H5N1) for 2012.

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.

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.