

Influenza Surveillance in Ireland – Weekly Report

Influenza Week 2 2013 (7th – 13th January 2013)



 **Intensive Care Society of Ireland**

Summary

- **Influenza activity in Ireland stabilised during week 2 2013, however remained at elevated levels.**
 - The sentinel GP influenza-like illness (ILI) consultation rate was 51.8 per 100,000 population in week 2 2013, a slight decrease compared to the updated rate of 62.1 per 100,000 during week 1 2013.
 - ◆ ILI rates are above the Irish baseline threshold (21.0 per 100,000 population)
 - ◆ ILI age specific rates were highest in those aged 65 years or older and have increased in this age group for two consecutive weeks.
- Influenza positivity stabilised during week 2 2013, compared to the previous week. Sixty influenza B, three influenza A (H3), two influenza A (H1)pdm09 and one influenza A (unsubtyped) positive specimens were reported from the NVRL for week 2 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 peaked during week 51 2012 and has decreased significantly since then.
- Sporadic cases of human metapneumovirus, adenovirus, parainfluenza viruses and were reported from the NVRL during week 2 2013. Positivity levels of these viruses have remained at low levels this season.
- During week 2 2013, 26 confirmed influenza cases were reported as hospitalised, six associated with influenza A and 20 associated with influenza B. To date this season, 45 confirmed influenza cases were reported as hospitalised, 80% were associated with influenza B.
- Five adult and two paediatric confirmed influenza cases have been admitted to critical care to date this season. Of these seven cases, six 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.
- Two acute respiratory outbreaks[†] in residential institutions, one influenza A (H3) and one ILI, were reported to HPSC during week 2 2013.
- Influenza activity increased substantially in a number of EU/EEA countries in week 1 2012, especially in north-western Europe. The virological pattern being identified in the EU/EEA is different from that being reported to date from North America. ECDC has reported that the virological match with the strains in the current seasonal influenza vaccine is considered good.

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

[†] Family outbreaks are not included in this report.

1. GP sentinel surveillance system

Clinical Data

During week 2 2013, 124 influenza-like illness (ILI) cases were reported from sentinel GPs, corresponding to an ILI consultation rate of 51.8 per 100,000 population, a decrease compared to the updated rate of 62.1 per 100,000 in week 1 2013. Fifty-three of 60 (88.3%) sentinel general practices provided data during week 2 2013, with 40 practices (75.5%) reporting ILI cases. The ILI consultation rates for week 2 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.

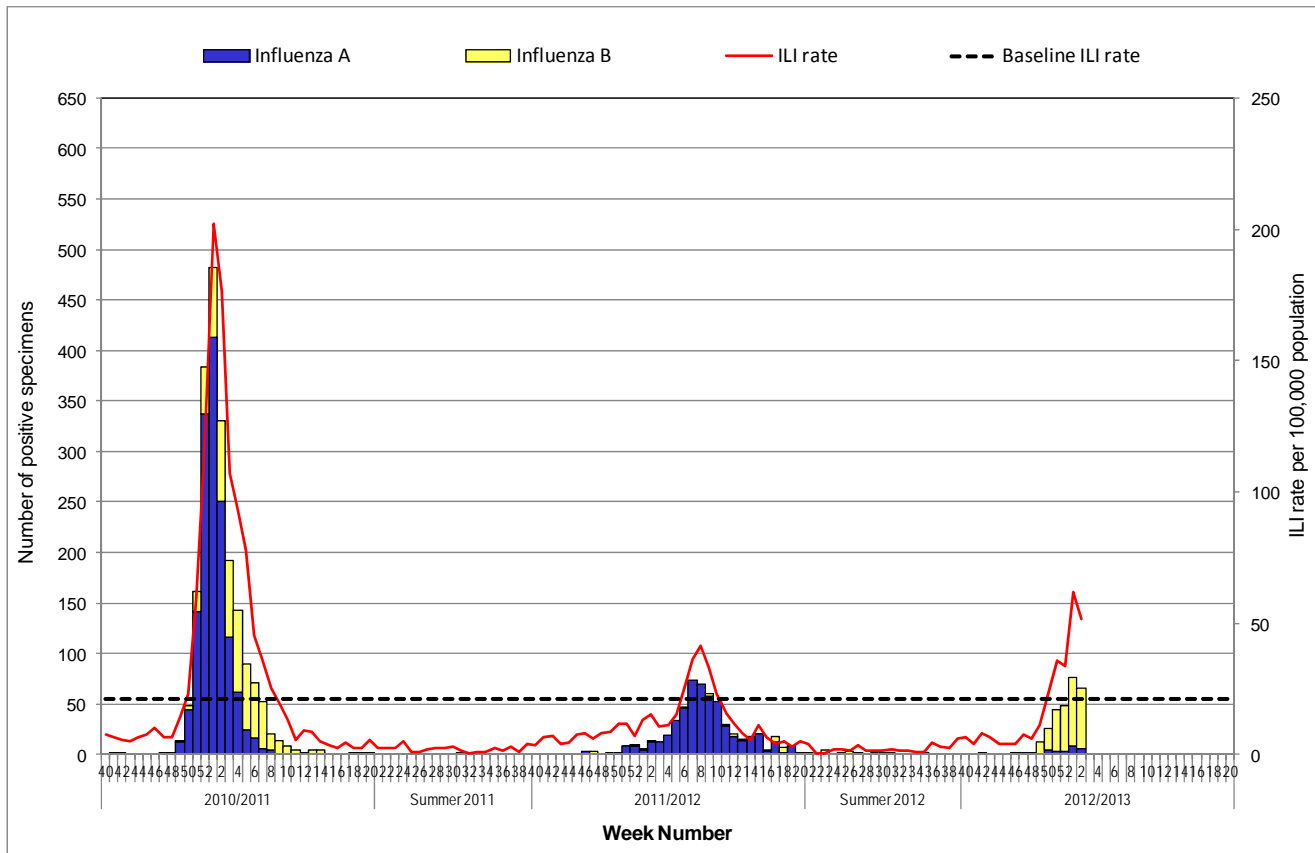


Figure 1. ILI sentinel GP consultation rates per 100,000 population, baseline ILI threshold rate, and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season.

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

ILI age specific rates decreased in the 0-4 and 15-64 year age groups, remained stable in the 5-14 year age group and increased in those aged 65 years or older during week 2 2013, compared to week 1 2013. The highest age specific ILI rates during week 2 2013 were in the 15-64 year age group. During week 2 2013, five ILI cases were reported in the 0-4 year age group (27.0 per 100,000), 17 ILI cases was reported in the 5-14 year age group (52.6 per 100,000), 91 cases in the 15-64 year age group (57.1 per 100,000) and 11 ILI cases were reported in those aged 65 years or older (39.6 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.

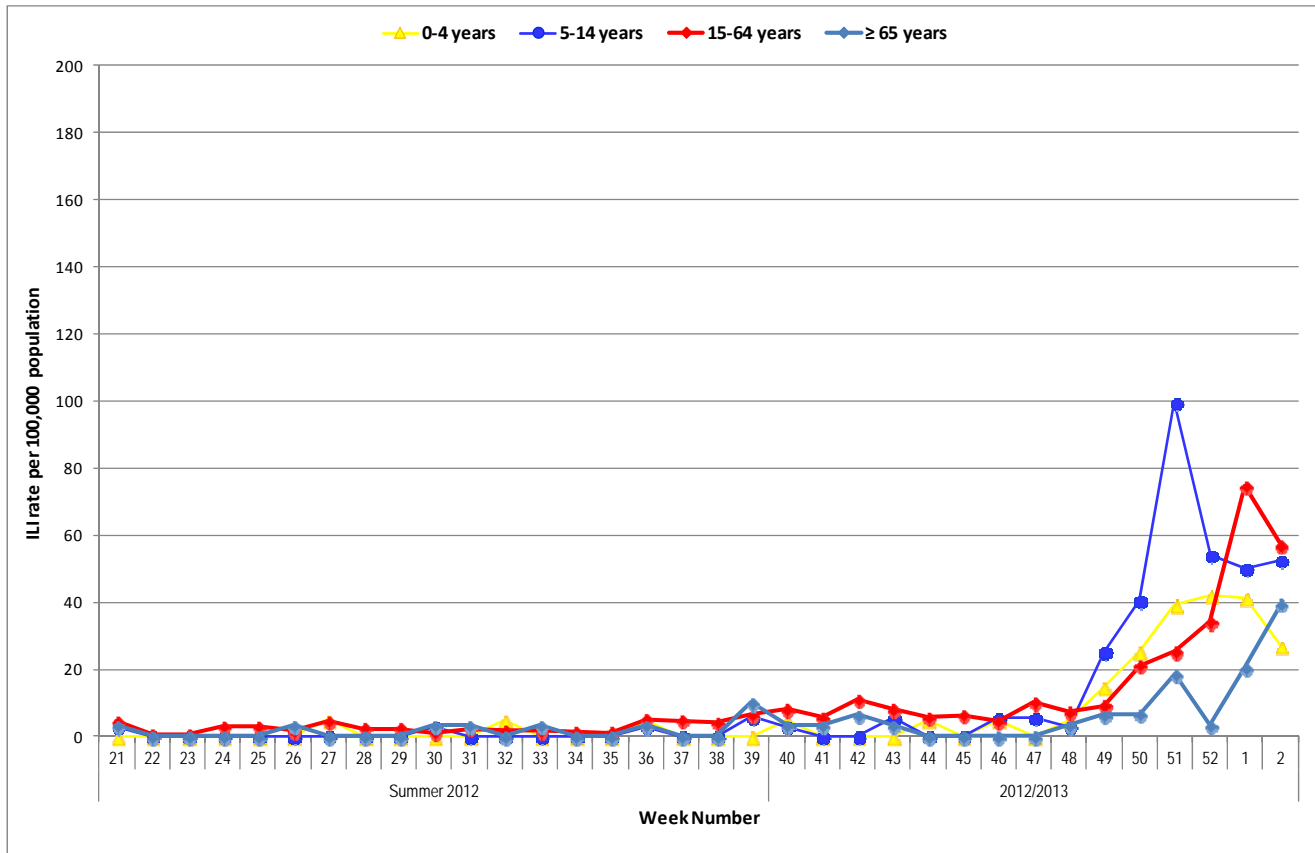


Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2012 and the 2012/2013 influenza season to date Source: ICGP ILI clinical data

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 2 2013, a total of 265 specimens (50 sentinel and 215 non-sentinel** specimens) were tested by the NVRL. Sixty-six (66/265; 24.9%) sentinel and non-sentinel specimens tested positive for influenza virus during week 2 2013: 3 A(H3), 2 A(H1)pdm09, 1 A(untypeded) and 60 B. Twenty-nine (29/50; 58.0%) sentinel specimens tested positive for influenza virus during week 2 2013: 2 A(H3), 2 A(H1)pdm09 and 25 B. Thirty-seven (37/215; 17.2%) non-sentinel specimens tested positive for influenza virus during week 2 2013: 1 A(H3), 1 A(untypeded) and 35 B.

Influenza B remains the predominant influenza virus circulating this season. Ninety percent (251/278) of all influenza positive sentinel and non-sentinel specimens detected by the NVRL this season were influenza B (Figures 3 & 4, 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.

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. 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.

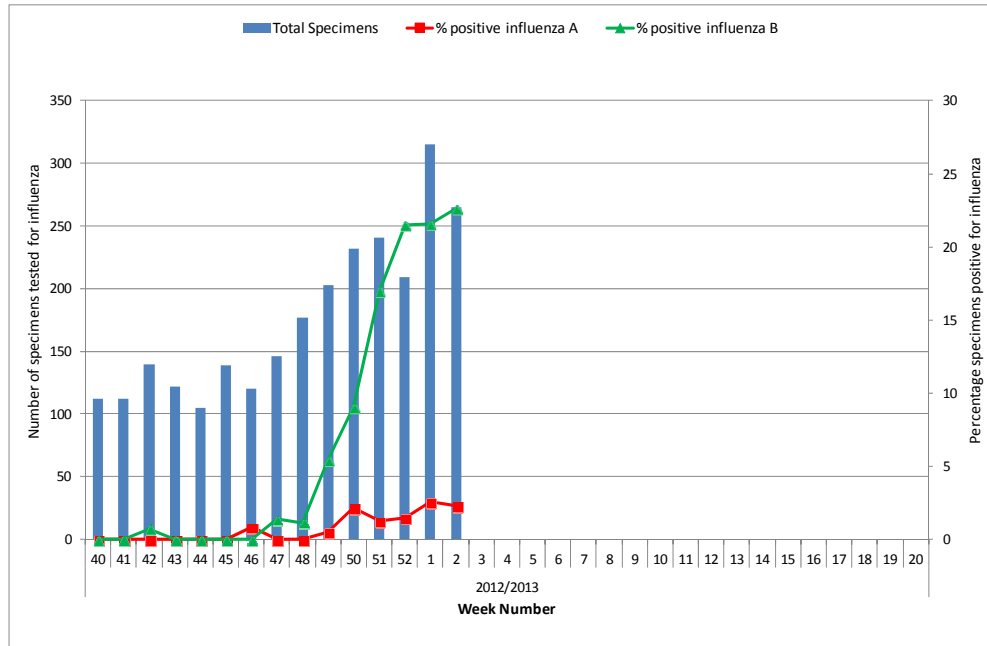


Figure 3: Number of sentinel and non-sentinel specimens tested for influenza and percentage influenza positive by week for the 2012/2013 influenza season. *Source: NVRL*

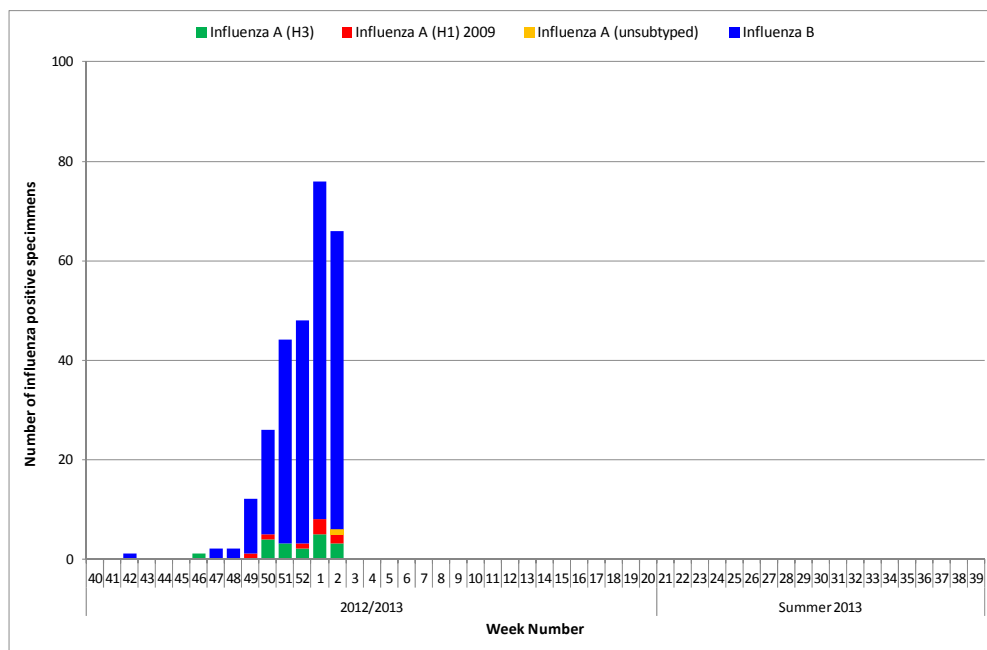


Figure 4: Number of positive influenza specimens by influenza type/subtype from sentinel and non-sentinel sources tested by the NVRL, by week for the 2012/2013 influenza season. *Source: NVRL*

Respiratory Syncytial Virus (RSV)

Respiratory syncytial virus (RSV) positivity reported from the NVRL (non-sentinel sources) decreased to 12.6% (27/215) during week 2 2013, following a peak of 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 1st January 2012. During week 2 2013, 162 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](#).

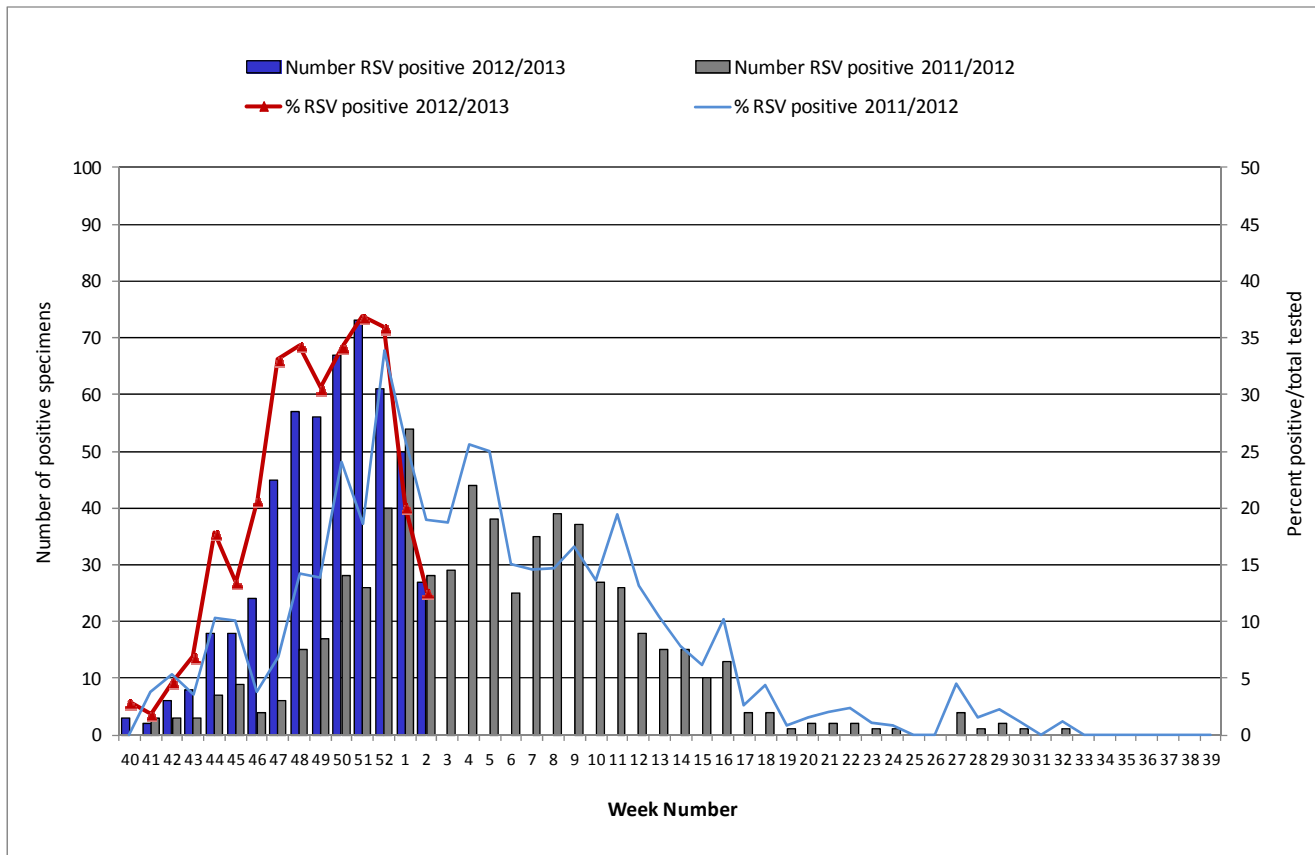


Figure 5: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2012/2013 season, compared to the 2011/2012 season. *Source: NVRL*

Other Respiratory Viruses

Four adenovirus, five parainfluenza virus (PIV) type 3 and one human metapneumovirus (hMPV) positive specimens were reported from the NVRL from non-sentinel sources during week 2 2013. There were two adenovirus and one hMPV positive detections reported from the NVRL from sentinel GP sources during week 2 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 2 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	
2 2013	Sentinel	50	29	58.0	2	2	0	0	4	25
	Non-sentinel	215	37	17.2	0	1	0	1	2	35
	Total	265	66	24.9	2	3	0	1	6	60
2012/2013	Sentinel	324	163	50.3	6	11	0	0	17	146
	Non-sentinel	2314	115	5.0	2	7	0	1	10	105
	Total	2638	278	10.5	8	18	0	1	27	251

Table 2: Number of sentinel and non-sentinel specimens tested by the NVRL for other respiratory viruses and positive results, for week 2 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
2 2013	Sentinel	50	4	8.0	2	4.0	0	0.0	0	0.0	0	0.0	1	2.0
	Non-sentinel	215	27	12.6	4	1.9	0	0.0	0	0.0	5	2.3	1	0.5
	Total	265	31	11.7	6	2.3	0	0.0	0	0.0	5	1.9	2	0.8
2012/2013	Sentinel	324	12	3.7	8	2.5	1	0.3	0	0.0	1	0.3	4	1.2
	Non-sentinel	2314	515	22.3	26	1.1	2	0.1	2	0.1	29	1.3	45	1.9
	Total	2638	527	20.0	34	1.3	3	0.1	2	0.1	30	1.1	49	1.9

^{††} 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 2 2013. Localised influenza activity was reported from HSE-NE, -NW, -MW, -S, -SE and -W and sporadic influenza activity was reported from HSE-M during week 2 2013 (figure 6).

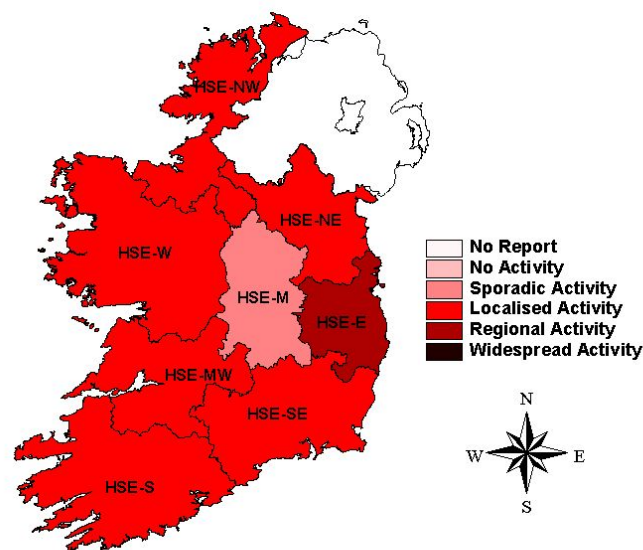


Figure 6: Map of provisional influenza activity by HSE-Area during week 2 2013

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 279 during week 2 2013, a decrease compared to 321 during week 1 2013. To date this season, hospital respiratory admissions peaked at 413 during week 50 2012 (figure 7).

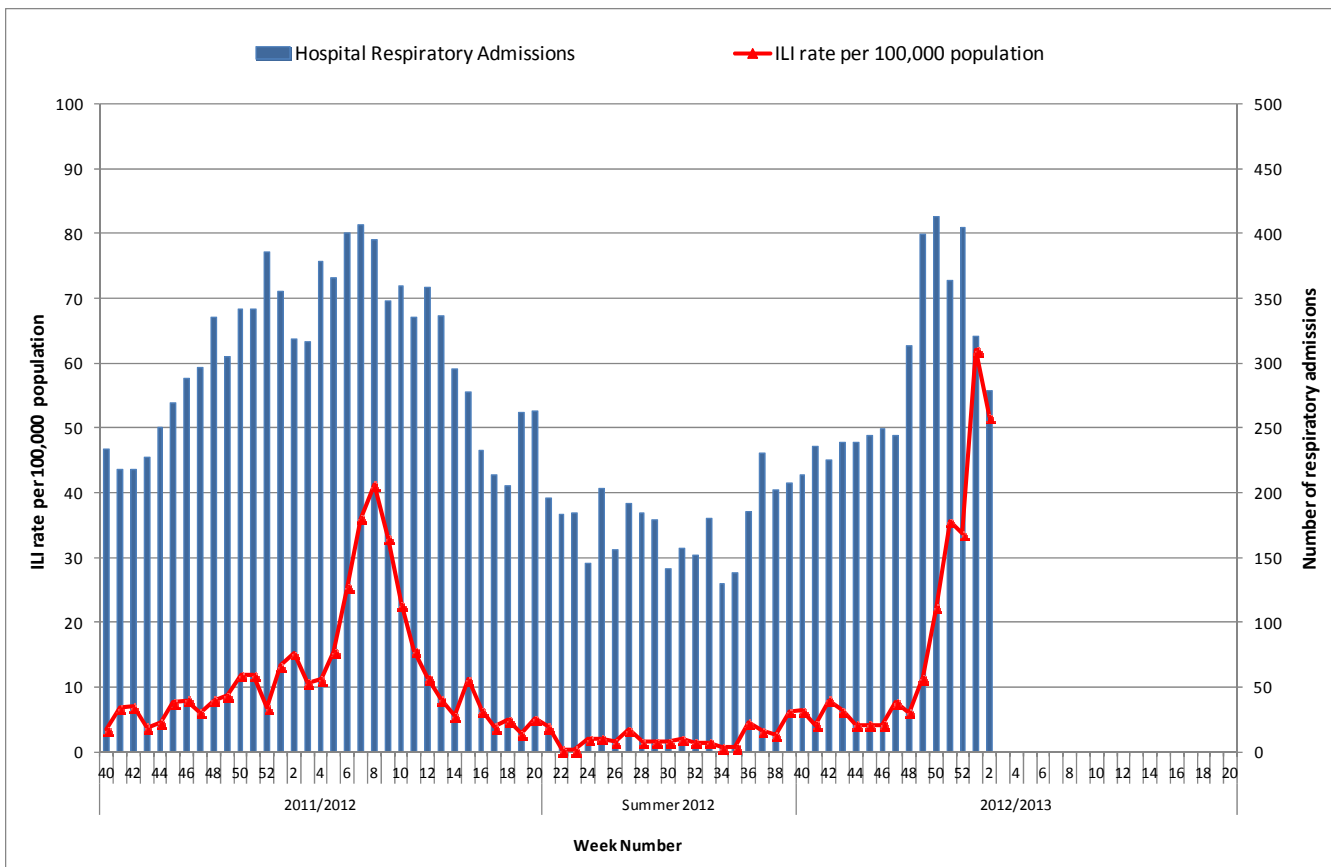


Figure 7: Number of respiratory admissions reported from sentinel hospitals and national sentinel GP ILI consultation rate per 100,000 population by week for the 2011/2012 season, summer 2012 and the 2012/2013 season to date.
 Source: Departments of Public Health - Sentinel Hospitals & ICGP.

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 2 2013 decreased to 4.8%, compared to 6.0% in the previous week. Five GP Out-of-Hours services reported during week 2 2013 (figure 8).

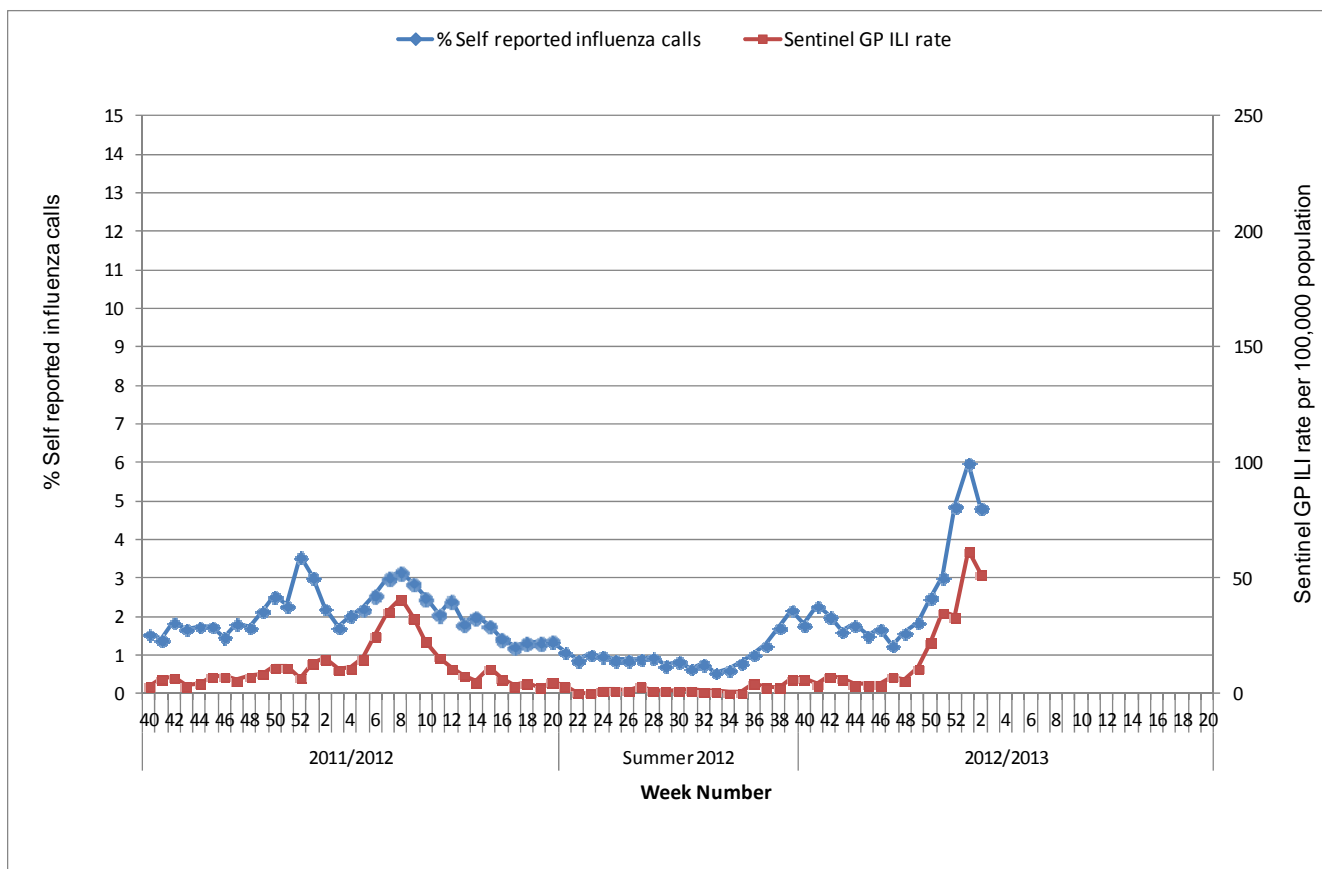


Figure 8: Self reported influenza-related calls as a proportion of total calls to Out-of-Hours GP Co-ops and national sentinel GP ILI consultation rate per 100,000 population by week for the 2011/2012 and 2012/2013 seasons

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-nine laboratory confirmed influenza cases were notified during week 2 2013, 17 influenza A (5 A(H3), 4 A(H1)pdm09 & 8 A(unsubtyped)) and 112 influenza B. The number of confirmed influenza cases reported as hospitalised during week 2 2013 was 26, compared to 11 during week 1 2013. Of the 26 cases reported as hospitalised during week 2 2013, 6 were associated with influenza A (1 A(H3), 2 A(H1N1)pdm09 & 3 A(unsubtyped)) and 20 were associated with influenza B. To date this season, 45 confirmed influenza cases have been reported as hospitalised: 36 influenza B, 2 influenza A (H3), 2 A (H1)pdm09 and 5 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, five adult and two paediatric confirmed influenza cases have been admitted to critical care and reported to HPSC, six 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 2 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 2 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

Two acute respiratory outbreaks in residential institutions, one influenza A (H3) outbreak in HSE-E and one ILI (influenza negative) outbreak in HSE-NW were reported to HPSC during week 2 2013. To date this influenza season, 11 acute respiratory outbreaks have been reported to HPSC, two associated with RSV, four with influenza B, one influenza A (H3), one hMPV and three associated with unidentified pathogens. It should be noted that family outbreaks are not recorded in this report.

9. International summary

United Kingdom

Indicators of influenza activity across the UK during week 1 2013 remained at similar levels to those reported in the previous week. The weekly primary care ILI consultation rate decreased slightly in England (29.2 per 100,000) and increased in Wales (33.0 per 100,000), Scotland (46.3 per 100,000) and Northern Ireland (87.0 per 100,000). The weekly proportion of NHS Direct calls for colds/influenza decreased slightly but remained above the influenza threshold of 1.6%. The weekly proportion of calls for fever (in 5-14 year olds) decreased below the influenza threshold of 11.7%. Fourteen acute respiratory disease outbreaks (12 in care homes and two in schools) were reported during week 1 2013. Out of the three with a virological result available, two were confirmed as influenza B and one was confirmed as influenza A(H3). 242 (23.2%) of the 684 respiratory specimens reported to DataMart (England) tested positive for influenza in week 1 (175 B, 38 A(H3), 24 A unsubtype and 5 A(H1N1)pdm09). The proportion of samples positive in DataMart (England) decreased slightly for RSV and remained stable for hMPV, rhinovirus, adenovirus and parainfluenza. 32 influenza positive detections were recorded through the two English GP-based sentinel schemes in week 1 (26 B, 4 A(H3) and 2 A(H1N1)pdm09). 51 new admissions to ICU/HDU with confirmed influenza (23 B, 16 A(subtype not known), nine A(H1N1)pdm09 and four A(H3N2) were reported across the UK in week 1. 65 new hospitalised confirmed influenza cases have been reported through the sentinel hospital network across England. In week 1 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 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 increased substantially in a number of EU/EEA countries in week 1 2012, especially in north-western Europe. The virological pattern being identified in the EU/EEA is different from that being reported to date from North America. Increasing trends were reported by 16 countries, compared to only nine countries in week 52 2012. Twelve countries reported medium- or high-intensity transmission. The geographic pattern of influenza activity was reported as widespread by ten countries, representing an increase in proportions over week 52. Countries in northern and western Europe were most affected. Of 734 sentinel specimens tested across 20 countries, 320 (44%) were influenza positive – a high percentage but similar to that reported in week 52. Since week 40 2012, 239 hospitalised laboratory-confirmed influenza cases have been reported by seven countries. In total, 129 (54%) cases were influenza A and 110 (46%) influenza B. Of 66 subtyped influenza A viruses, 34 (52%) were A(H3) and 32 (48%) were A(H1)pdm09 viruses. No overall excess of all-cause deaths has appeared as yet this season to date but individual deaths are being reported. To date this season, of the influenza virus detections in sentinel specimens 44% were type A and 56% were type B viruses. Of influenza A viruses subtyped, 51% were A(H3) and 49% were A(H1). Of the B viruses subtyped 84% were Yamagata and 16% Victoria. The virological match with the strains in the current seasonal influenza vaccine is considered good.

United States of America

During week 1 2013, influenza activity remained elevated in the U.S., but may be decreasing in some areas. The proportion of outpatient visits for ILI was 4.3%; above the national baseline of 2.2%. Of 12,876 specimens tested, 4,222 (32.8%) were positive for influenza: 1783 A (H3), 36 A (H1N1)pdm09, 1550 A (unsubtyped) and 853 B. The proportion of deaths attributed to pneumonia and influenza was slightly above the epidemic threshold. Two influenza-associated paediatric deaths were reported, one associated with influenza A (H3) and one with influenza A (unsubtyped). Between October 1, 2012 and January 5, 2013, 3,710 (13.3/100,000 population) laboratory-confirmed influenza-associated hospitalisations were reported. The most affected group were those aged 65 years or older. Among all hospitalisations, 3,198 (86.2%) were associated with influenza A and 484 (13.0%) with influenza B. Among hospitalisations with influenza A subtype information, 767 (98.7%) were attributed to A(H3) and 10 (1.3%) were attributed to A(H1N1)pdm09. CDC has antigenically characterised 521 influenza viruses to date this season: 17 (100%) influenza A(H1N1)pdm09 viruses were similar to the vaccine strain A/California/7/2009-like, 325 (99.4%) (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 slightly in Canada during week 1 2013; however more regions across Canada reported widespread and localised influenza activity and 107 new influenza outbreaks were reported. The ILI consultation rate decreased, but was above the expected range for this time of year. A total of 3864 laboratory detections of influenza were reported, of which 98.1% were for influenza A viruses, predominantly A(H3N2). During week 1 2013, 69 paediatric influenza-associated hospitalisations and 26 hospitalisations among adults ≥20 years of age were reported. During the 2012/2013 season, all 143 influenza A(H3N2) viruses tested were antigenically similar to the vaccine strain A/Victoria/361/2011 and all 25 A(H1N1)pdm09 viruses were antigenically similar to the vaccine strain A/California/07/09. Among the influenza B viruses, 21 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.

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

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