

Influenza Surveillance in Ireland – Weekly Report

Influenza Week 14 2014 (31st March – 6th April 2014)



Summary

- All indicators of influenza activity in Ireland decreased during week 14 2014. Influenza continues to circulate in Ireland, with confirmed influenza outbreaks and hospitalisations still being reported. Influenza A(H3) has remained the predominant virus circulating this season.
- Influenza-like illness (ILI): The sentinel GP ILI consultation rate was 16.2 per 100,000 population during week 14 2014, a decrease compared to the updated rate of 25.8 per 100,000 during week 13 2014.
 - ILI rates are now below the Irish baseline threshold (21.0 per 100,000 population).
 - Age specific ILI rates were low in all age groups during week 14 2014.
- National Virus Reference Laboratory (NVRL): Influenza positivity decreased slightly during week 14 2014, with 57 (16.1%) influenza positive specimens reported from the NVRL: 44 influenza A(H3), 10 influenza A(H1)pdm09, 1 influenza A (not subtyped) and two influenza B.
- Hospitalisation: 47 confirmed influenza hospitalised cases were reported to HPSC during week 14 2014, bringing the total number of hospitalised cases reported this season to 612.
 - The highest age specific rates for confirmed influenza cases admitted to hospital were in those aged less than 1 year and those aged 65 years and older.
- ICU admissions: 75 confirmed influenza cases were admitted to ICU and reported to HPSC to date this season, 38 associated with influenza A(H1)pdm09, 29 with A(H3) and 8 A (not subtyped).
- Mortality: 28 influenza-associated deaths were reported to HPSC to date this season.
- Outbreaks: 3 acute respiratory outbreaks were reported to HPSC during week 14 2014, all in residential care facilities/long stay units/community hospitals.
- Europe: Influenza activity in Europe is declining towards interseasonal levels. The proportion of influenza virus specimens testing positive has substantially decreased this week, with a low level co-circulation of influenza A(H3) and A(H1)pdm09.

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 ICU patients with confirmed influenza and enhanced surveillance of all severe acute respiratory infections (SARI) in one adult and one paediatric ICU site.
7. Outbreak reporting on CIDR
8. Network of sentinel hospitals reporting hospital admission data

1. GP sentinel surveillance system - Clinical Data

During week 14 2014, 35 influenza-like illness (ILI) cases were reported from sentinel GPs, corresponding to an ILI consultation rate of 16.2 per 100,000 population, a decrease compared to the updated rate for week 13 2014 which was 25.8 per 100,000 population. ILI rates were below the Irish baseline threshold (21.0 per 100,000 population) during week 14 2014. Age specific ILI rates remained low in all age groups during week 14 2014 (figures 1 & 2).

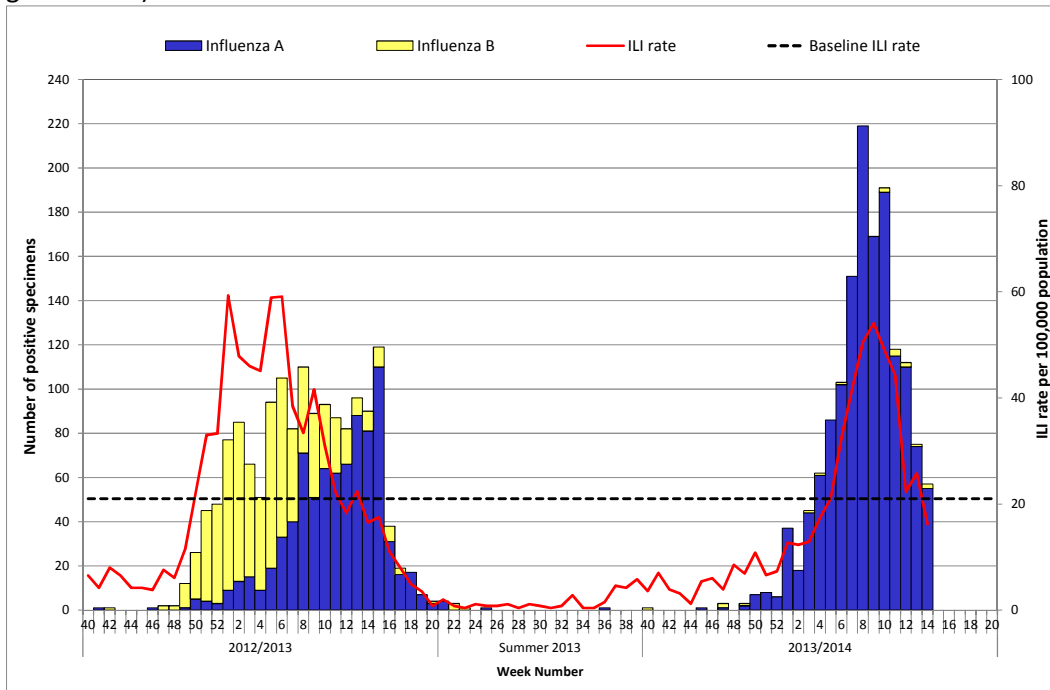


Figure 1. ILI sentinel GP consultation rates per 100,000 population, baseline ILI threshold rate, and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season. *Source: ICGP and NVRL.*

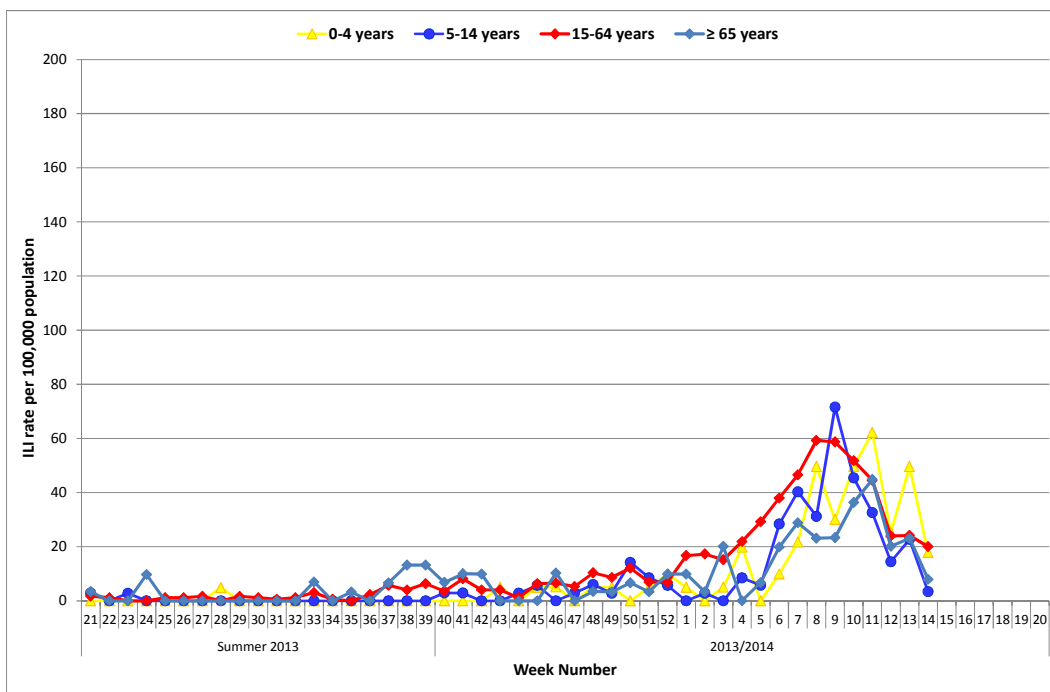


Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2013 and the 2013/2014 influenza season to date. *Source: ICGP*

2. Influenza and Other Respiratory Viruses – National Virus Reference Laboratory

The data reported in this section refer to sentinel and non-sentinel specimens tested for influenza, respiratory syncytial virus (RSV), adenovirus, parainfluenza viruses types 1-4 (PIV-1-4) and human metapneumovirus (hMPV) by the National Virus Reference Laboratory (NVRL) (figures 3, 4 & 5, tables 1 & 2).

- Influenza positivity decreased during week 14 2014, with 57 (16.1%) influenza positive specimens reported from the National Virus Reference Laboratory (NVRL): 44 influenza A(H3), 10 influenza A(H1)pdm09, 1 influenza A (not subtyped) and two influenza B.
 - 11 of 17 (64.7%) sentinel specimens were influenza positive: 9 A(H3), 1 A(H1)pdm09 and 1 B.
 - 46 of 336 (13.7%) non-sentinel specimens were influenza positive: 35 influenza A(H3), 9 A(H1)pdm09, 1 influenza A (not subtyped) and one B.
 - Influenza A(H3) has been the predominant circulating influenza virus this season.
- RSV activity remained at low levels during week 14 2014.
- Sporadic detections of adenovirus, hMPV and parainfluenza viruses have been reported from the NVRL for the 2013/2014 season to date.

- The [European Centre for Disease Control \(ECDC\)](#) have reported that since week 40 2013, none of the 1184 antigenically characterised viruses have differed significantly from the current influenza vaccine viruses recommended by WHO.
- Genetic characterisation of influenza viruses circulating in Ireland this season has been carried out by the NVRL on 12 positive samples to date. All Influenza A(H1)pdm09 viruses characterised (N=4) clustered as A/St. Petersburg/27/2011-like (Group 6). All known viruses in this genetic group remain antigenically similar to the clade representative vaccine strain A/California/7/2009. Influenza A(H3) sequences (n=4) clustered closely with the influenza A(H3) vaccine strain for this season and were A/Victoria/361/2011-like (Group 3C). All influenza B strains characterised (n=4) belong to the Yamagata lineage of viruses. Two influenza B strains characterised at the beginning of the season were B/Massachusetts/02/2012-like (Clade 2), which is the influenza B vaccine component for this season. The other two influenza B strains clustered in clade 3 and were B/Wisconsin/1/2010-like, which was the influenza B vaccine component for the 2012/2013 influenza season.

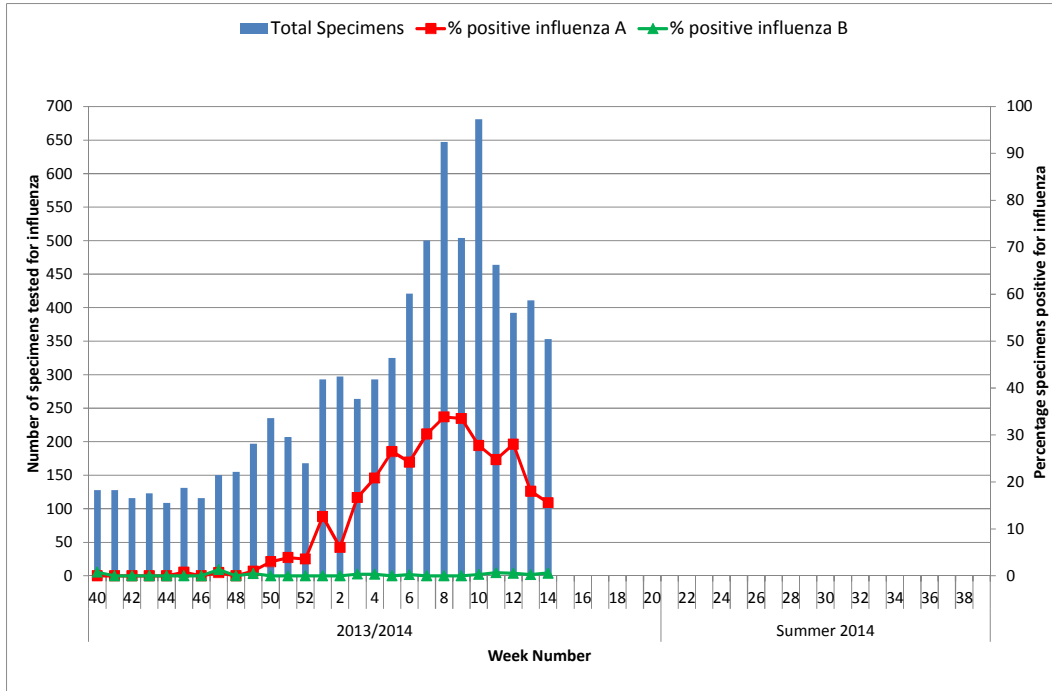


Figure 3: Number of sentinel and non-sentinel specimens tested for influenza and percentage influenza positive by week for the 2013/2014 influenza season. *Source: NVRL*

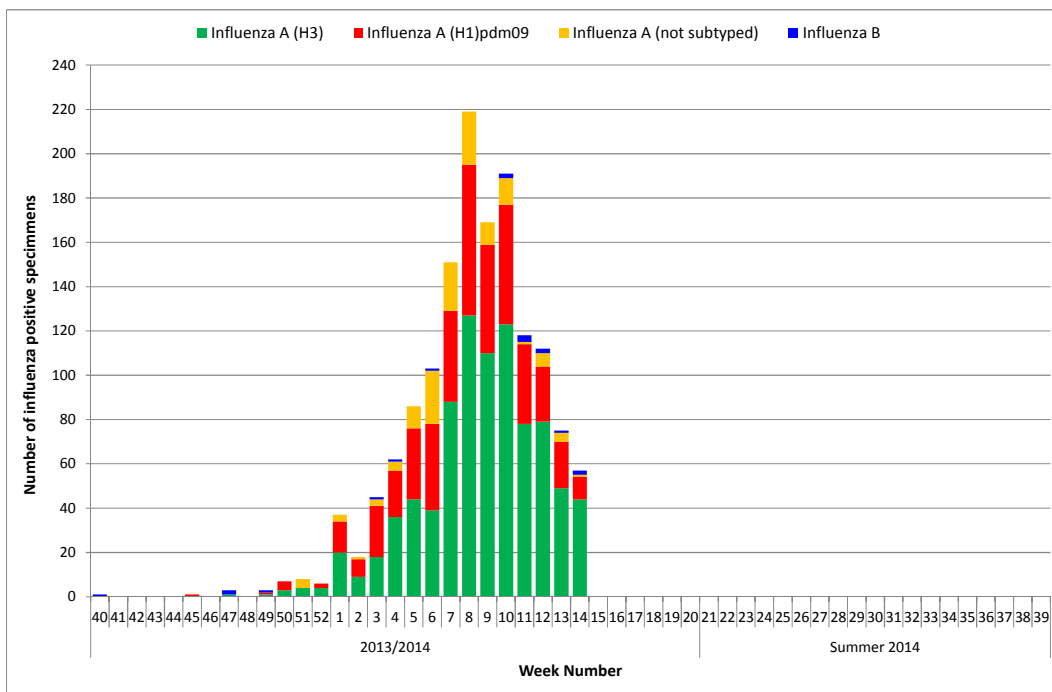


Figure 4: Number of positive influenza specimens by influenza type/subtype from sentinel and non-sentinel sources tested by the NVRL, by week for the 2013/2014 influenza season. *Source: NVRL.*

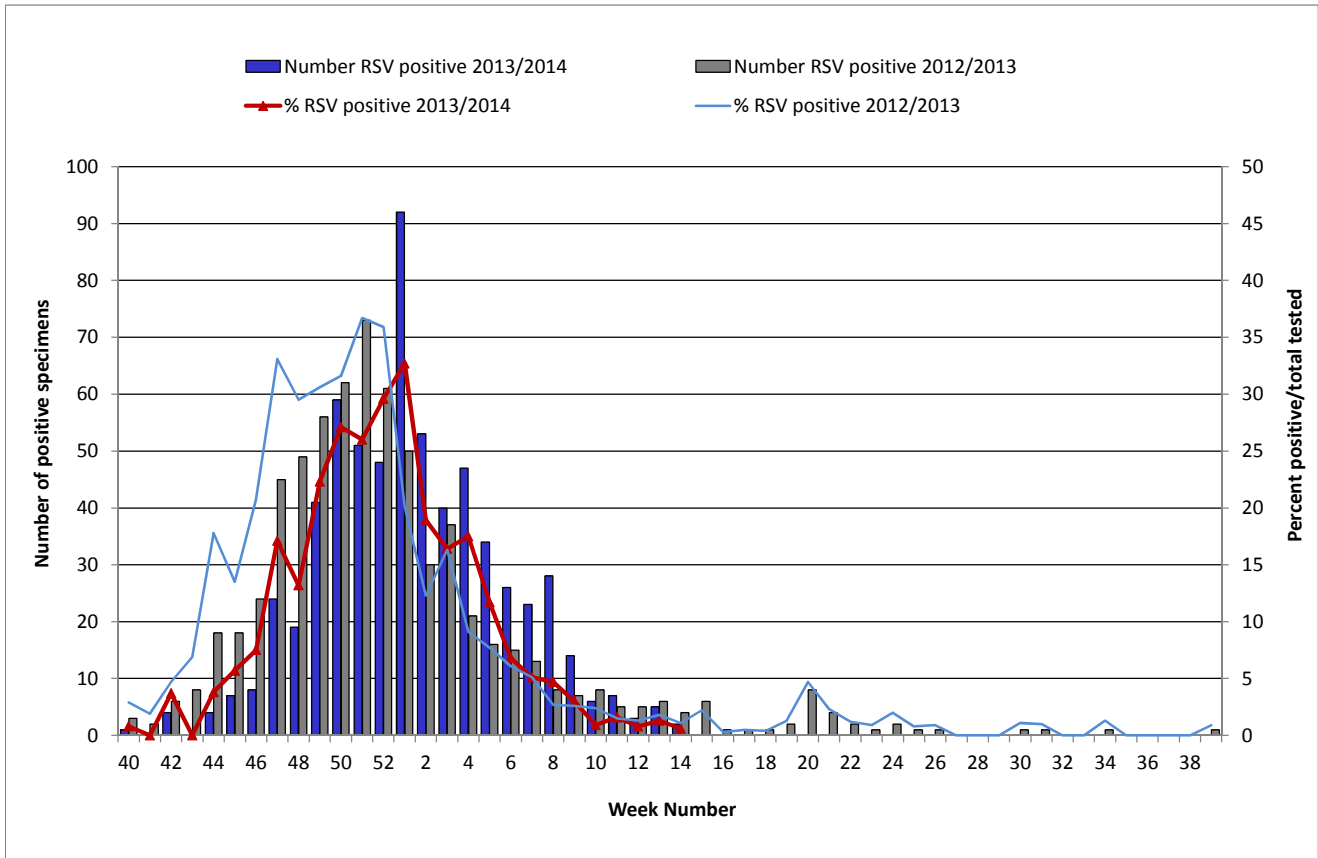


Figure 5: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2013/2014 season, compared to the 2012/2013 season. Source: NVRL.

Table 1: Number of sentinel and non-sentinel* respiratory specimens tested by the NVRL and positive influenza results, for week 14 2014 and the 2013/2014 influenza 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 (not subtyped)	Total influenza A	
14 2014	Sentinel	17	11	64.7	1	9	0	10	1
	Non-sentinel	336	46	13.7	9	35	1	45	1
	Total	353	57	16.1	10	44	1	55	2
2013/2014	Sentinel	546	264	48.4	97	150	8	255	9
	Non-sentinel	7262	1208	16.6	352	727	121	1200	8
	Total	7808	1472	18.9	449	877	129	1455	17

Table 2: Number of non-sentinel specimens tested by the NVRL for other respiratory viruses and positive results, for week 14 2014 and the 2013/2014 influenza 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	PIV-4	% PIV-4	hMPV	% hMPV
14 2014	Sentinel	17	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Non-sentinel	336	2	0.6	4	1.2	0	0.0	0	0.0	1	0.3	0	0.0	3	0.9
	Total	353	2	0.6	4	1.1	0	0.0	0	0.0	1	0.3	0	0.0	3	0.8
2013/2014	Sentinel	546	7	1.3	2	0.4	3	0.5	3	0.5	1	0.2	0	0.0	6	1.1
	Non-sentinel	7262	646	8.9	67	0.9	47	0.6	27	0.4	14	0.2	1	0.01	100	1.4
	Total	7808	653	8.4	69	0.9	50	0.6	30	0.4	15	0.2	1	0.01	106	1.4

* 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.

3. Regional Influenza Activity by HSE-Area

Influenza activity is based on sentinel GP ILI consultation rates, laboratory data and outbreaks. Localised influenza activity was reported from HSE-NW, -SE and -S, and sporadic activity was reported from all other areas during week 14 2014 (figure 6).

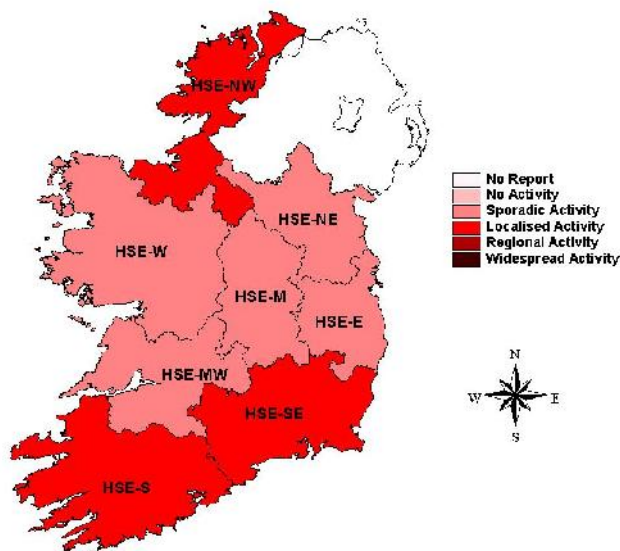


Figure 6: Map of provisional influenza activity by HSE-Area during week 14 2014

Sentinel hospitals

The Departments of Public Health have established at least one sentinel hospital in each HSE-Area, to report data on total, emergency and respiratory admissions on a weekly basis.

During week 14 2014, 288 respiratory admissions were reported from sentinel hospitals, compared to 289 during week 13 2014. Seven of eight sentinel hospitals reported during week 14 2014 (fig.7).

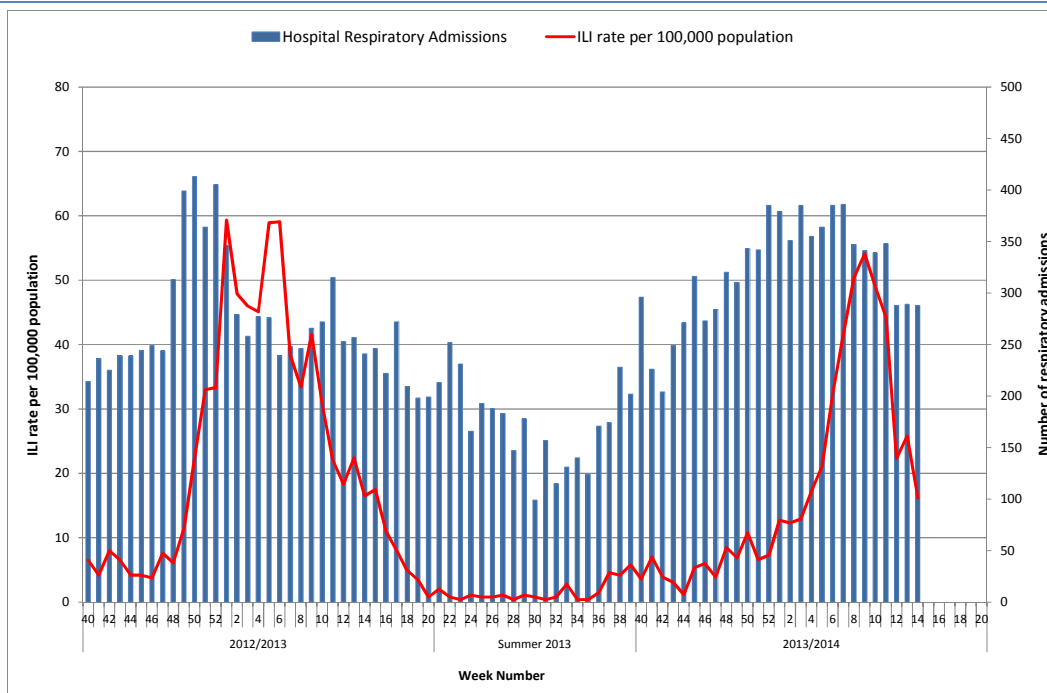


Figure 7: Number of respiratory admissions reported from sentinel hospitals and ILI sentinel GP consultation rate per 100,000 population by week and season. Source: Departments of Public Health - Sentinel Hospitals & ICGP.

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. Records with clinical symptoms reported as flu or influenza are extracted for analysis.

The proportion of influenza-related calls to GP Out-of-Hours services decreased to 1.6% during week 14 2014, compared to 2.1% during week 13 2014. Four GP Out-of-Hours services reported during week 14 2014.

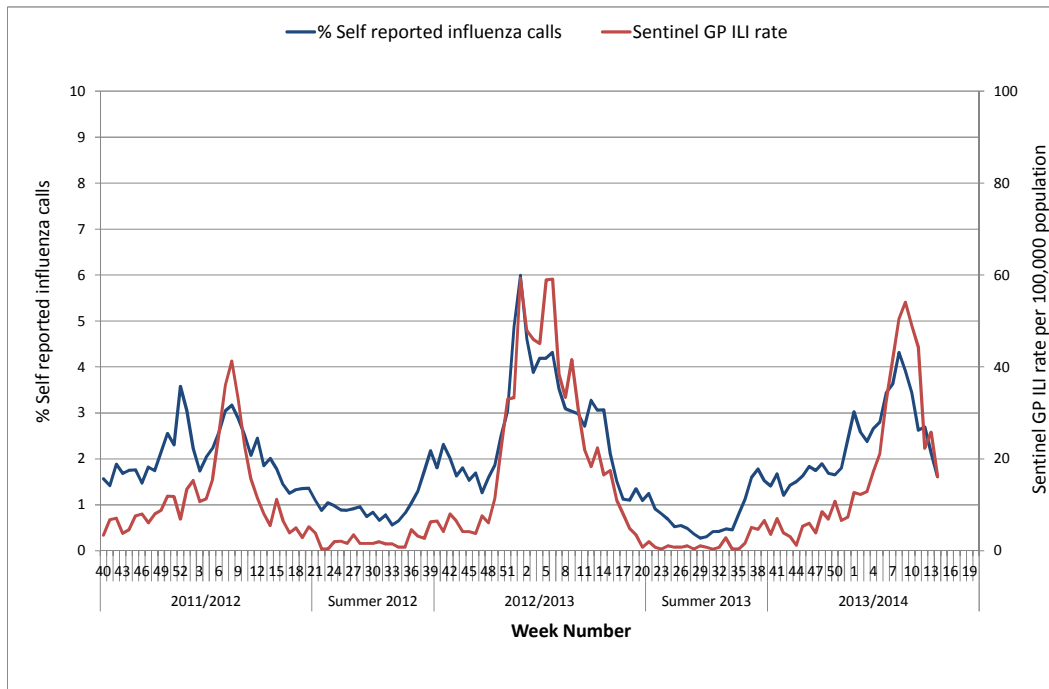


Figure 8: Self-reported influenza-related calls as a proportion of total calls to Out-of-Hours GP Co-ops and sentinel GP ILI consultation rate per 100,000 population by week and season. Source: GP Out-Of-Hours services in Ireland (collated by HSE-NE) & ICGP.

5. Influenza & RSV notifications

Influenza and RSV cases notifications are reported on Ireland's Computerised Infectious Disease Reporting System (CIDR), including all positive influenza/RSV specimens reported from all laboratories testing for influenza/RSV and reporting to CIDR.

Influenza and RSV notifications are reported in the [Weekly Infectious Disease Report for Ireland](#).

6. Influenza Hospitalisations

- Forty-seven confirmed influenza hospitalised cases were reported to HPSC during week 14 2014 (figure 9), 25 cases were associated with influenza A(H3), 9 with A(H1)pdm09, 11 with A (not subtyped) and 2 with influenza B.
- To date this season, 612 confirmed influenza hospitalised cases were reported to HPSC: 603 cases were associated with influenza A (278 A(H3), 178 A(H1)pdm09, 147 A (not subtyped)) and nine with influenza B. The highest age specific rates were in those aged less than 1 year and those aged 65 years and over (table 3).

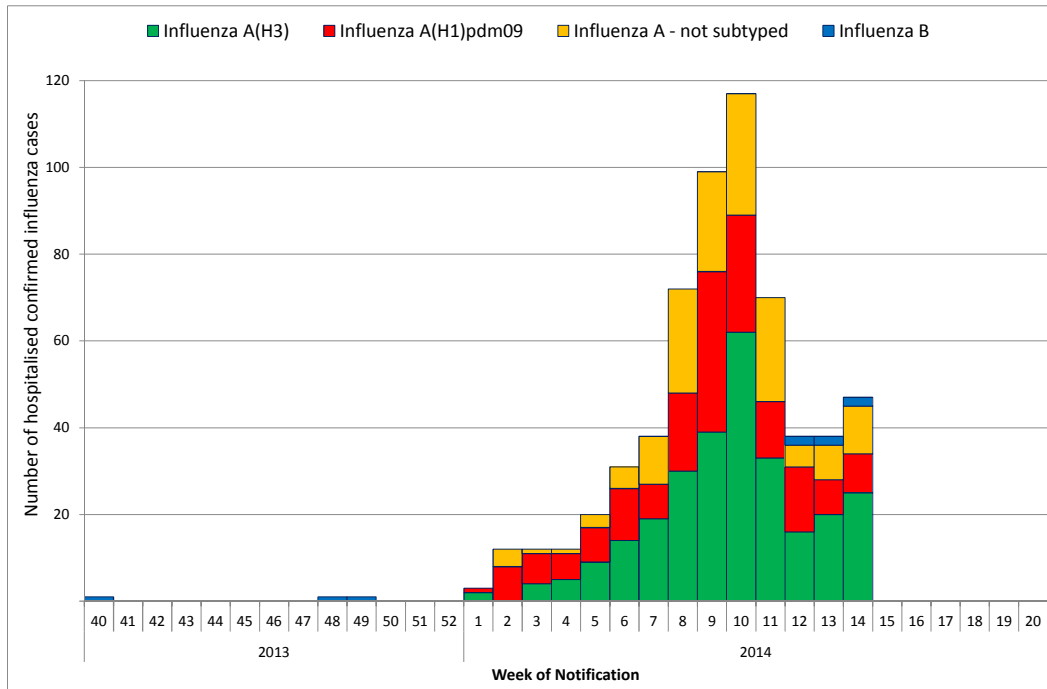


Figure 9: Number of hospitalised confirmed influenza cases reported to HPSC by influenza type/subtype and week of notification for the 2013/2014 influenza season. Source: Computerised Infectious Disease Reporting System (CIDR).

7. 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 ICU sites, one adult and one paediatric, will also continue during the 2013/2014 season. HPSC process and report on this information on behalf of the regional Directors of Public Health/Medical Officers of Health.

- To date this season, 75 confirmed influenza cases were admitted to ICU and reported to HPSC, 38 associated with influenza A(H1)pdm09, 29 with A(H3) and 8 A (not subtyped). The highest age specific rates were in those aged less than 1 year and those aged 65 years and older (table 3).
- Fifty-five paediatric cases (cases aged less than 15 years) with severe acute respiratory infections (SARI) have been admitted to ICU and reported to HPSC this season: 14 associated with influenza A (9 A(H1)pdm09, 3 A(H3), 2 A-not subtyped) (reported above), three with adenovirus, four with parainfluenza 1, two with human metapneumovirus and 32 with RSV.

Table 3: Age specific rates for confirmed influenza cases hospitalised and admitted to critical care during the 2013/2014 influenza season to date. Age specific rates are based on the 2011 CSO census.

Age (years)	Hospitalised		Admitted to ICU	
	Number	Age specific rate per 100,000 pop.	Number	Age specific rate per 100,000 pop.
<1	35	48.3	4	5.5
1-4	58	20.4	5	1.8
5-14	43	6.9	5	0.8
15-24	21	3.6	1	0.2
25-34	65	8.6	4	0.5
35-44	60	7.9	13	1.9
45-54	31	5.3	8	1.4
55-64	68	14.7	12	2.6
≥65	231	43.1	23	4.3
Total	612	13.3	75	1.6

8. Mortality Surveillance

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. These data are provisional due to the time delay in deaths' registration in Ireland. <http://www.euromomo.eu/>

- Twenty-eight influenza-associated deaths were reported to HPSC this season; one in a 0-4 year old, one in a 5-14 year old, four in 15-64 year olds and 22 deaths were in patients aged 65 years and over. The median age of cases who have died during the 2013/2014 season to date is 80 years. Seventeen deaths were associated with influenza A(H3), six with A(H1)pdm09 and three with influenza A (not subtyped). Two deaths were in clinical ILI cases.
- During week 14 2014, no excess all-cause mortality was reported in Ireland after correcting GRO data for reporting delays with the standardised EuroMOMO algorithm. However, during weeks 6 and 7 2014, excess all-cause mortality was reported.

9. Outbreak Surveillance

Three acute respiratory outbreaks were reported to HPSC (via Ireland's Computerised Infectious Disease Reporting System) during week 14 2014, all were associated with influenza A(H3). To date this season, 70 acute respiratory outbreaks were reported to HPSC from all HSE-Areas. Fifty-one outbreaks were associated with influenza A (40 with A(H3), one with A(H1)pdm09, two with both A(H3) and A(H1)pdm09 and 8 A-not subtyped). Eighteen outbreaks were influenza negative (four were associated with RSV, two with hMPV and 12 were associated with unidentified pathogens) and results are pending for one outbreak. The majority of these outbreaks were in residential care facilities/community hospital units mainly for the elderly/those with intellectual disabilities. It should be noted that family outbreaks are not recorded in this report. The number of influenza/ILI outbreaks reported to HPSC is shown in figure 10.

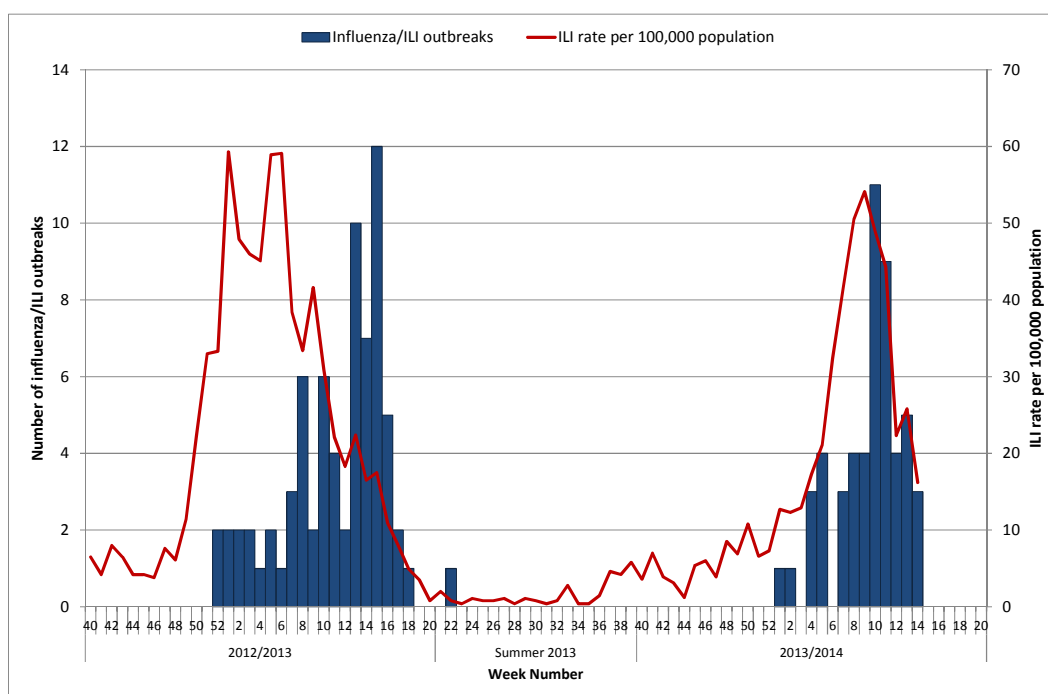


Figure 10: Number of influenza/ILI outbreaks and national sentinel GP ILI consultation rate per 100,000 population by week and influenza season. Source: Computerised Infectious Disease Reporting System (CIDR) & ICGP.

10. International Summary

Influenza activity in Europe is declining towards interseasonal levels. Most of the countries are now reporting low intensity, localised or sporadic geographical spread of influenza and decreasing trends. The proportion of influenza virus specimens testing positive has substantially decreased, with low levels of co-circulation of influenza A(H3) and A(H1)pdm09. See [WHO](#) and [ECDC](#) influenza surveillance reports for further information. ECDC have published a risk assessment for the 2013/2014 influenza season, [see here](#).

- Further information is available on the following websites:
 - Northern Ireland <http://www.fluawareni.info/>
 - Public Health England <http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/SeasonalInfluenza/>
 - Europe – ECDC <http://ecdc.europa.eu/>
 - United States CDC <http://www.cdc.gov/flu/weekly/fluactivitysurv.htm>
 - Public Health Agency of Canada <http://www.phac-aspc.gc.ca/fluwatch/12-13/index-eng.php>

11. Novel viruses

- For up to date information on human infection with avian influenza A(H7N9) virus in China including the current case numbers and WHO risk assessment of the situation please see [here](#).
- Information on Middle Eastern Respiratory Syndrome Coronavirus (MERS-CoV), including the latest ECDC rapid risk assessment is available on the [ECDC website](#). Further information and guidance documents are also available on the [HPSC](#) and [WHO](#) websites.
- For information on other avian influenza viruses, please see [here](#).

12. Flusurvey

- For information on Flusurvey.ie, Ireland's first online influenza surveillance survey, please see the [here](#).

13. Influenza Vaccine Recommendations

The WHO vaccine strain selection committee recommended that vaccines for use in the 2014/2015 influenza season (northern hemisphere winter) contain the following: an A/California/7/2009 (H1N1)pdm09-like virus; an A/Texas/50/2012 (H3N2)-like virus; a B/Massachusetts/2/2012-like virus (Yamagata lineage), [see here](#).

Further information on influenza is available at www.hpsc.ie

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.