

Influenza Surveillance in Ireland – Weekly Report

Influenza Week 3 2015 (12th - 18th January 2015)



 **Intensive Care Society of Ireland**

Summary

Influenza activity stabilised in Ireland during week 3 2015, remaining at relatively low levels.

- **Influenza-like illness (ILI):** The sentinel GP influenza-like illness (ILI) consultation rate was 30.4 per 100,000 population in week 3 2015, remaining low, and stable compared to the updated rate of 30.1 per 100,000 population during week 2 2015.
 - ILI rates remained above the Irish baseline threshold (21.0 per 100,000 population)
 - ILI rates increased in the 0-4 and 5-14 year age groups during week 3 2015.
- **GP Out of Hours:** The proportion of influenza-related calls to GP Out-of-Hours services decreased slightly during week 3 2015.
- **National Virus Reference Laboratory (NVRL):**
 - Influenza positivity decreased slightly during week 3 2015, with 36 (13.2%) influenza positive specimens reported from the NVRL: 28 A(H3), 1 A(H1)pdm09, 4 A (not subtyped) and 3 B.
 - Influenza A(H3) has been the predominant circulating influenza virus this season.
 - Respiratory syncytial virus (RSV) positivity decreased significantly during week 3 2015.
- **Respiratory admissions:** The latest complete data on respiratory admissions reported from a network of sentinel hospitals were elevated, as expected at this time of year.
- **Hospitalisations:** 17 confirmed influenza hospitalised cases were notified to HPSC during the week ending January 18th 2015: 10 associated with influenza A(H3), one associated with influenza A(H1)pdm09 and six associated with influenza A (not subtyped).
- **Critical care admissions:** To date this season, two confirmed influenza cases were admitted to critical care and reported to HPSC, one associated with influenza A(H3) and one associated with influenza A(H1)pdm09.
- **Mortality:** Four influenza A(H3)-associated deaths have been reported to HPSC this season.
- **Outbreaks:** Two acute respiratory outbreaks were reported to HPSC during the week ending January 18th 2015: one associated with influenza A(H3) and one with no pathogen identified.
- **International:** Globally, influenza activity continued to increase in the northern hemisphere with influenza A(H3N2) viruses predominating this season. Antigenic characterisation of most recent A(H3N2) viruses this season indicated differences from the A(H3N2) virus used in the influenza vaccines for the northern hemisphere 2014/2015. Vaccination remains the most effective means of preventing infection by seasonal influenza viruses.

1. GP sentinel surveillance system - Clinical Data

During week 3 2015 (the week ending 18th January 2015), 79 influenza-like illness (ILI) cases were reported from sentinel GPs, corresponding to an ILI consultation rate of 30.4 per 100,000 population, remaining low, and stable compared to the updated rate of 30.1 per 100,000 population during week 2 2015. ILI rates remained above the Irish baseline threshold (21/100,000 population). ILI age specific rates increased in the 0-4 and 5-14 year age groups during week 3 2015, however were highest in those aged 15-64 and those aged 65 years or older (figures 1 & 2).

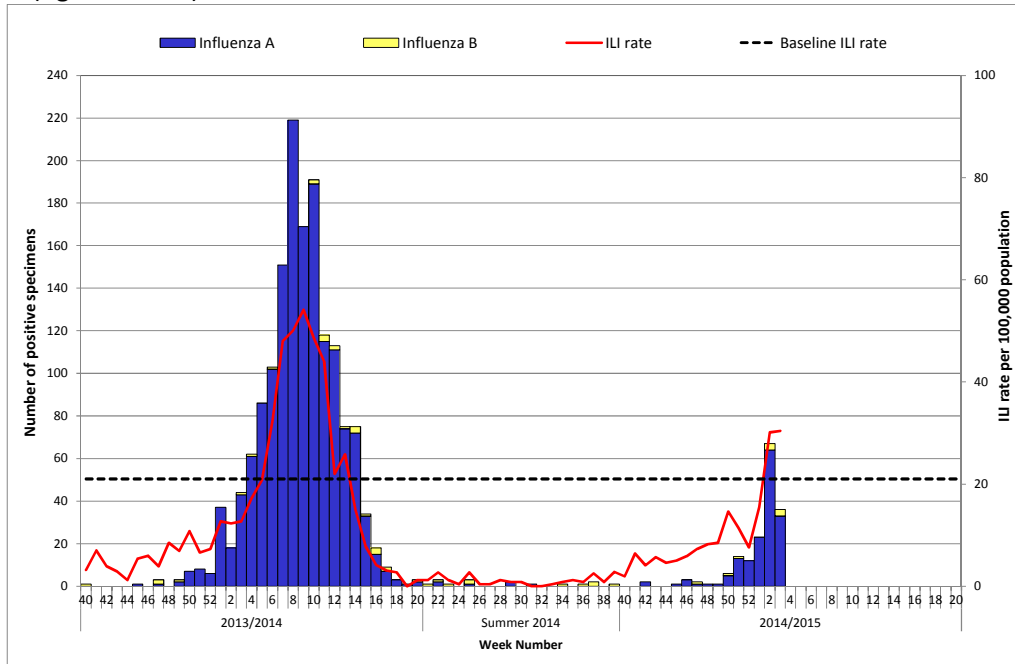


Figure 1. ILI sentinel GP consultation rates per 100,000 population, baseline ILI threshold rate, and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season. *Source: ICGP and NVRL*

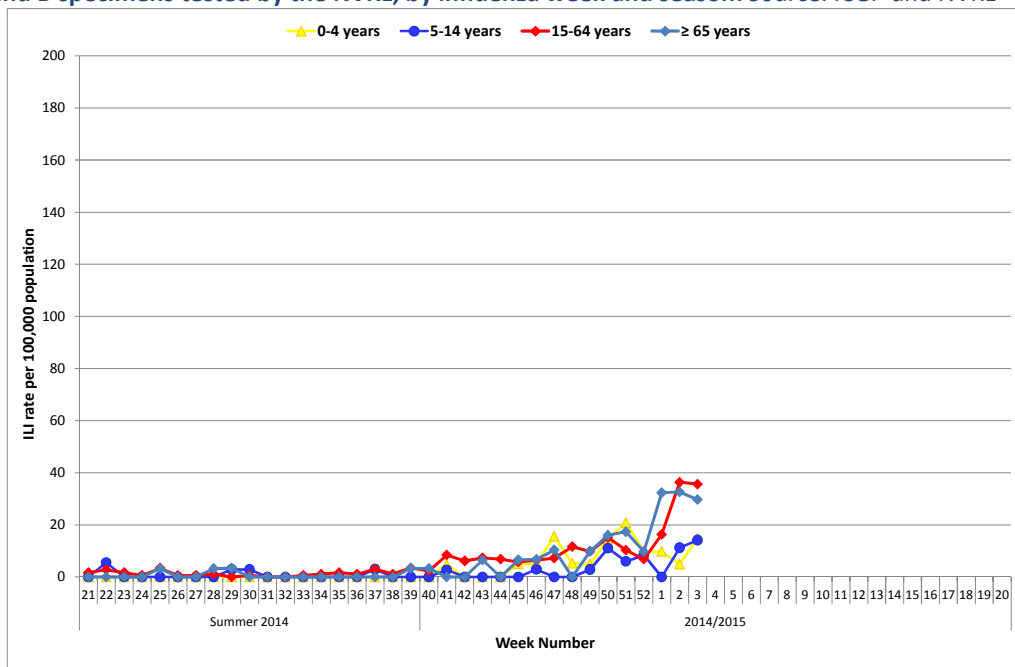


Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2014 and the 2014/2015 influenza season to date. *Source: ICGP.*

2. Influenza and Other Respiratory Virus Detections - NVRL

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

- Influenza positivity decreased slightly during week 3 2015, with 36 (13.2%) influenza positive specimens reported from the NVRL: 28 A(H3), 1 A(H1)pdm09, 4 A (not subtyped) and 3 B. To date this season, influenza A (H3) is the predominant circulating virus, with 86.9% (146/168) of confirmed influenza specimens reported by the NVRL positive for influenza A(H3).
- Week 3 2015:
 - 11 of 31 (35.5%) sentinel specimens were influenza positive: 8 A(H3), 2 A (not subtyped) and 1 B.
 - 25 of 242 (10.3%) non-sentinel specimens were influenza positive: 20 A(H3), 1 A(H1)pdm09, 2 A (not subtyped) and 2 B.
- Sixteen (16/273; 5.9%) respiratory syncytial virus (RSV) positive sentinel GP and non-sentinel specimens were reported during week 3 2015, a significant decrease compared to recent weeks. Figure 5 shows the number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2014/2015 season, compared to the 2013/2014 season.
- Sporadic detections of human metapneumovirus (hMPV), adenovirus and parainfluenza virus types -1, -3 & -4 have been reported for the season to date.

Genetic characterisation of influenza viruses circulating this season has been carried out by the NVRL, on 13 positive samples to date. A total of 11 influenza A(H3) viruses have been genetically characterised. Eight of 11 (72.7%) viruses were A/Hong Kong/5738/2014-like (3C.2a), which is a genetic group of viruses that have shown antigenic drift from the vaccine strain. The remaining viruses belong to the genetic group 3C.3, which is reportedly antigenically similar to the 2014/2015 influenza A(H3) vaccine strain. Two influenza B viruses were characterised and are B/Yamagata-like viruses, which are included in the 2014/2015 influenza vaccine. Further testing is ongoing, and the NVRL and HPSC are carefully monitoring the situation. The latest ECDC rapid risk assessment on the circulation of drifted influenza A(H3N2) viruses in Europe is available [here](#).

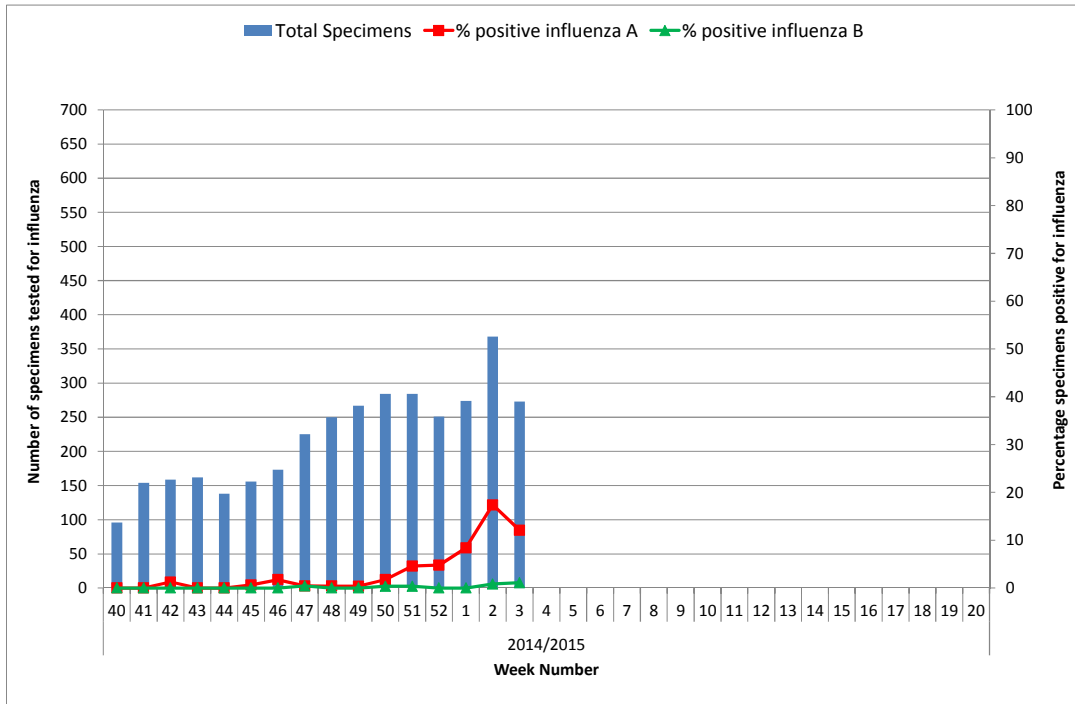


Figure 3: Number of sentinel and non-sentinel specimens tested by the NVRL for influenza and percentage influenza positive by week for the 2014/2015 influenza season. *Source: NVRL*

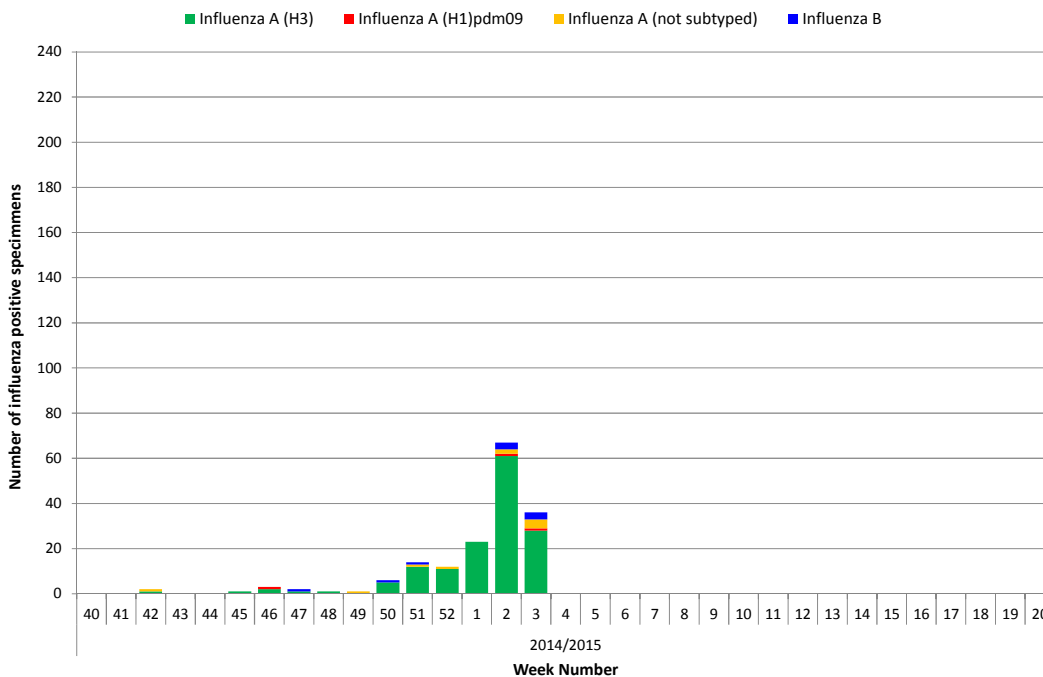


Figure 4: Number of positive influenza specimens by influenza type/subtype from sentinel and non-sentinel sources tested by the NVRL, by week for the 2014/2015 influenza season. *Source: NVRL.*

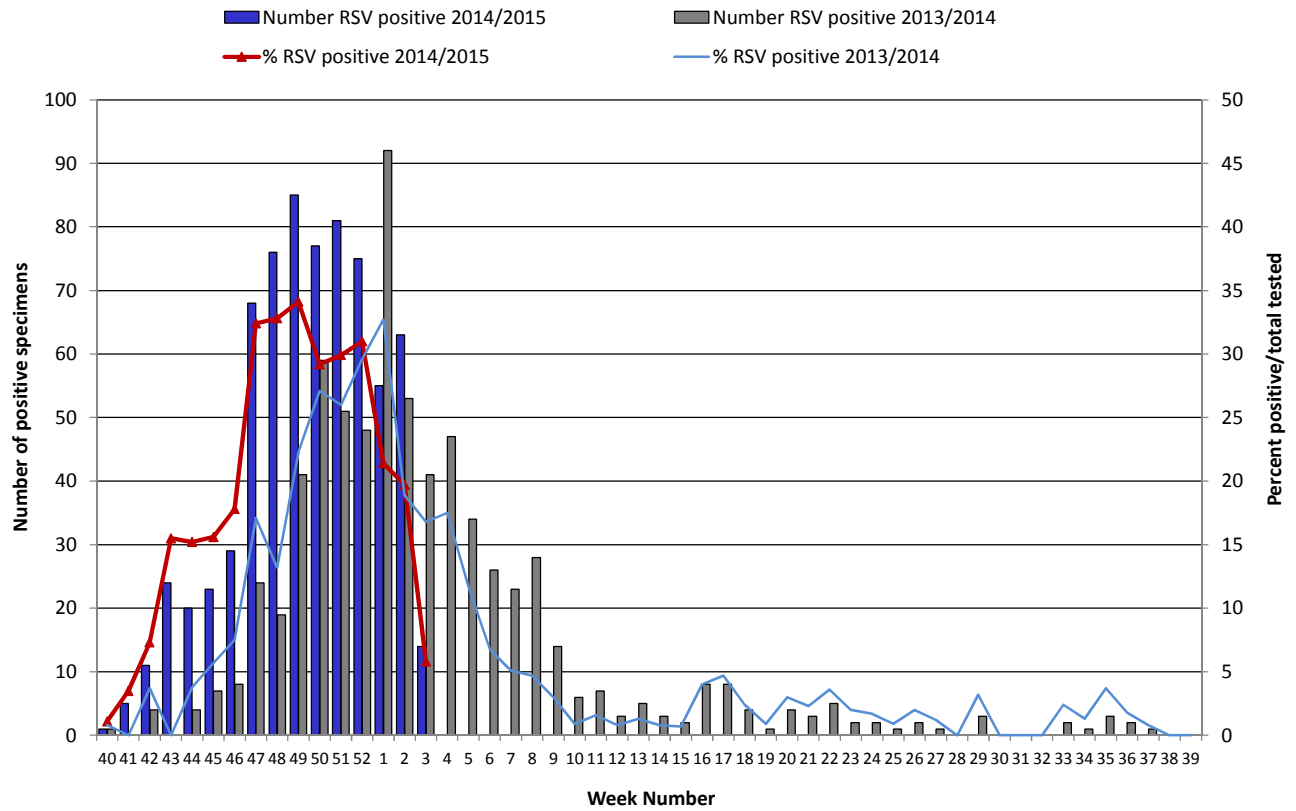


Figure 5: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2014/2015 season, compared to the 2013/2014 season. Source: NVRL.

Table 1: Number of sentinel and non-sentinel* respiratory specimens tested by the NVRL and positive influenza results, for week 3 2015 and the 2014/2015 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	
3 2015	Sentinel	31	11	35.5	0	8	2	10	1
	Non-sentinel	242	25	10.3	1	20	2	23	2
	Total	273	36	13.2	1	28	4	33	3
2014/2015	Sentinel	246	52	21.1	0	45	2	47	5
	Non-sentinel	3268	116	3.5	3	101	8	112	4
	Total	3514	168	4.8	3	146	10	159	9

Table 2: Number of sentinel and non-sentinel specimens tested by the NVRL for other respiratory viruses and positive results, for week 3 2015 and the 2014/2015 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
3 2015	Sentinel	31	2	6.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	9.7
	Non-sentinel	242	14	5.8	0	0.0	0	0.0	0	0.0	1	0.4	0	0.0	6	2.5
	Total	273	16	5.9	0	0.0	0	0.0	0	0.0	1	0.4	0	0.0	9	3.3
2014/2015	Sentinel	246	19	7.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	16	6.5
	Non-sentinel	3268	707	21.6	10	0.3	1	0.0	0	0.0	50	1.5	4	0.1	69	2.1
	Total	3514	726	20.7	10	0.3	1	0.0	0	0.0	50	1.4	4	0.1	85	2.4

* 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 in HSE-E and -MW during week 3 2015. Sporadic influenza activity (based on ILI cases and/or confirmed influenza cases) was reported from all other areas during week 3 2015 (figure 6).

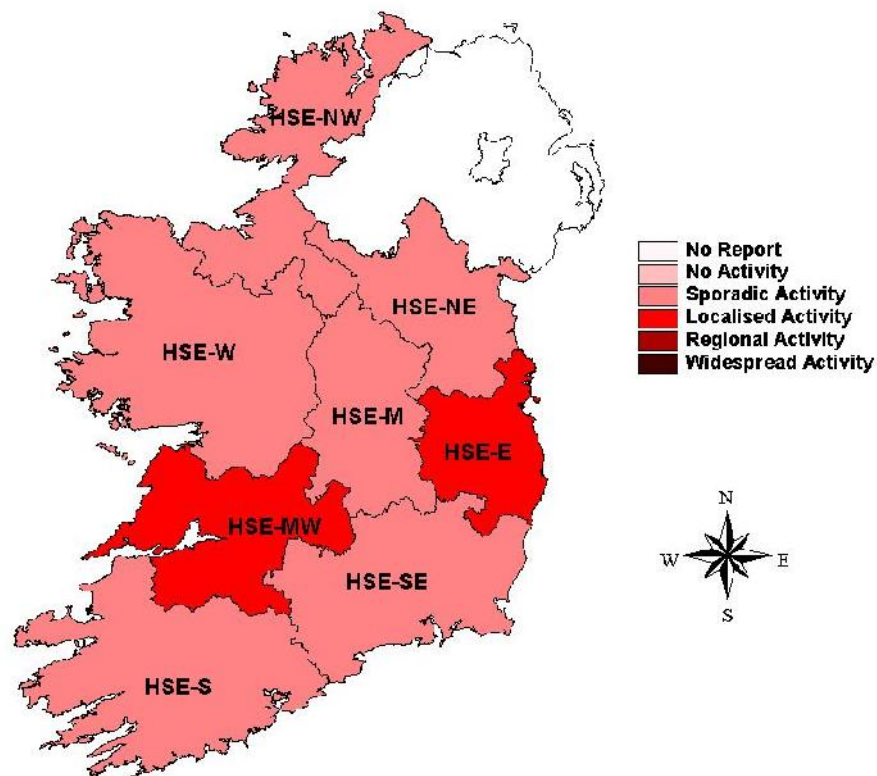


Figure 6: Map of provisional influenza activity by HSE-Area during influenza week 3 2015.

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.

Respiratory admissions reported from sentinel hospitals remained high during week 2 2015 at 364; however decreased compared to 416 respiratory admissions reported during week 1 2015 (figure 7). Data reported for week 3 2015 (shown in figure 7) should be interpreted with caution as data were incomplete; with reports from 4/8 sentinel hospitals.

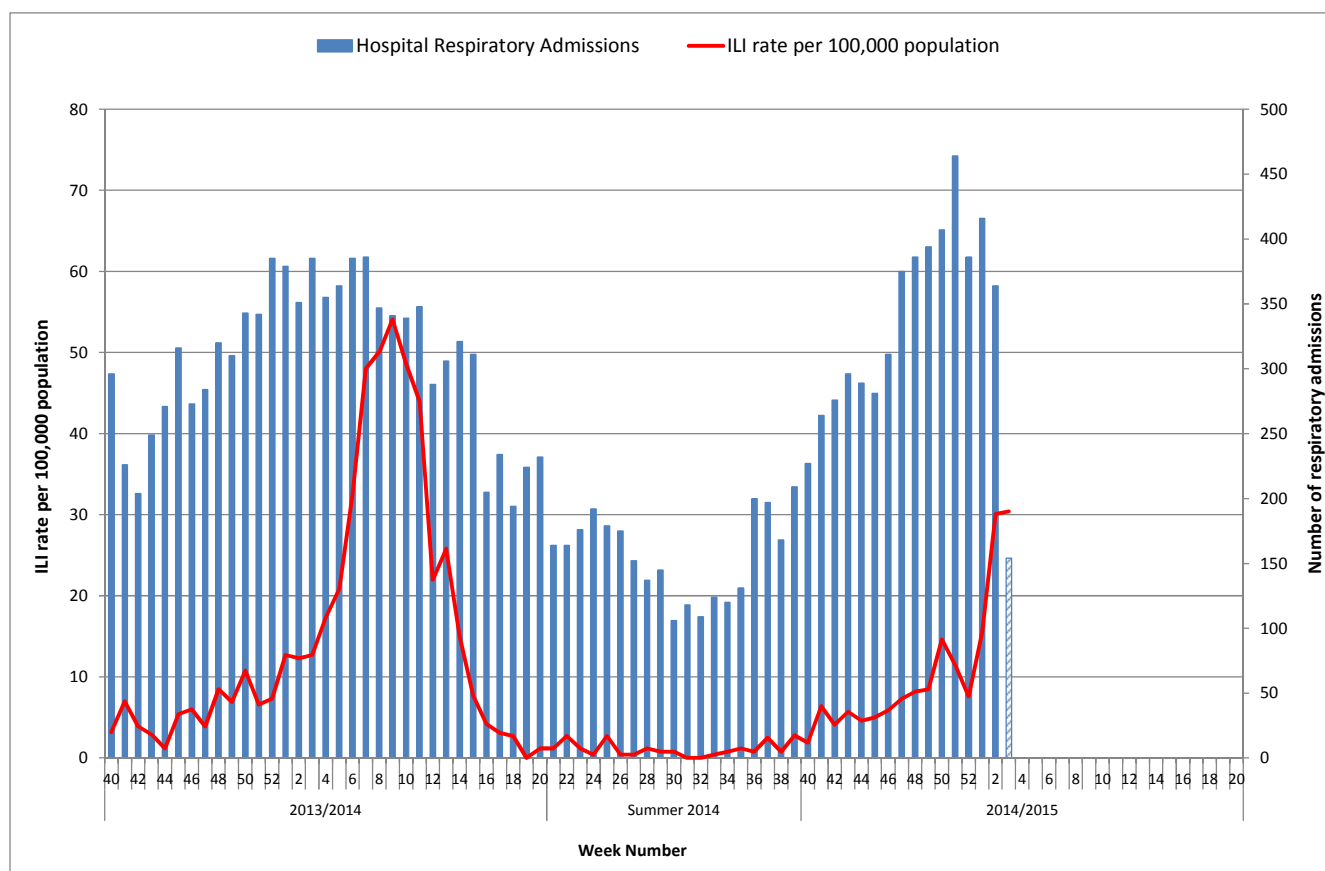


Figure 7: Number of respiratory admissions reported from sentinel hospitals and ILI sentinel GP consultation rate per 100,000 population by week and season. *Source: Departments of Public Health - Sentinel Hospitals & ICGP. It should be noted that data for week 3 2015 were incomplete.*

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. 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 decreased slightly during week 3 2015, to 2.5%, compared to 3.5% during week 2 2015 (figure 8).

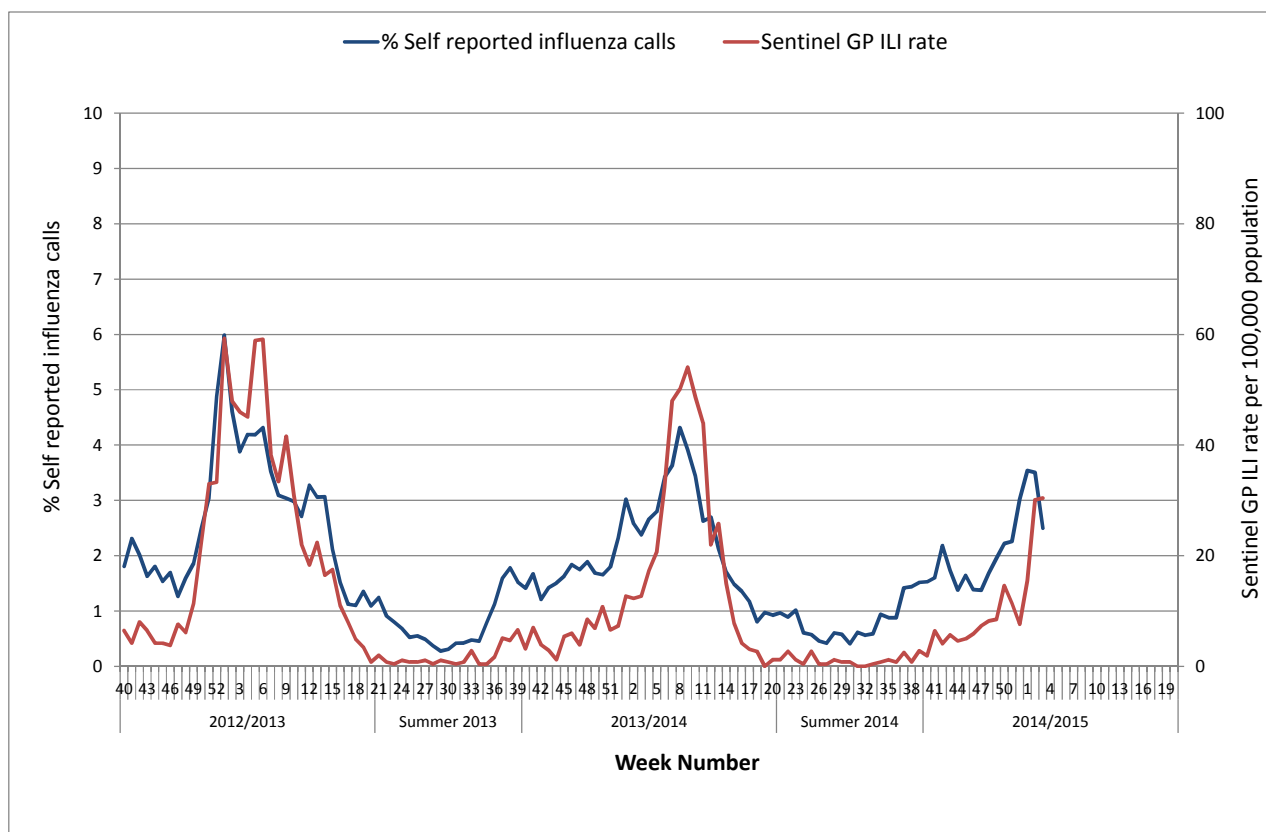


Figure 8: Self-reported influenza-related calls as a proportion of total calls to Out-of-Hours GP Co-ops and sentinel GP ILI consultation rate per 100,000 population by week and season. Source: GP Out-Of-Hours services in Ireland (collated by HSE-NE) & ICGP.

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

Seventeen confirmed influenza hospitalised cases were notified to HPSC during the week ending January 18th 2015: 10 associated with influenza A(H3), one associated with influenza A(H1)pdm09 and six associated with influenza A (not subtyped). For the 2014/2015 season to date (up to week ending 17th January 2015), 39 confirmed influenza cases were reported as hospitalised to HPSC, 25 associated with influenza A(H3), one associated with influenza A(H1)pdm09, 11 associated with influenza A (not subtyped) and two associated with influenza B.

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. HPSC process and report on this information on behalf of the regional Directors of Public Health/Medical Officers of Health.

To date this season, two confirmed influenza cases were admitted to critical care and reported to HPSC, one associated with influenza A(H3) and one associated with influenza A(H1)pdm09.

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/>

- Four influenza A(H3)-associated deaths were reported to HPSC this season to date, one case was in the 15-64 year age group and three cases were in those aged 65 years or older.
- During week 3 2015 and for the 2014/2015 influenza season to date, no excess all-cause mortality was reported in Ireland after correcting GRO data for reporting delays with the standardised EuroMOMO algorithm.
- Excess all-cause mortality has been observed among the elderly (65+) during recent weeks in Portugal, England, Scotland, the Netherlands and to some extent France. Excess all-cause mortality cannot with certainty be attributed to specific causes, but may be associated with extreme cold, increase in acute respiratory illness and influenza activity. <http://www.euromomo.eu/>

9. Outbreak Surveillance

- Two acute respiratory general outbreaks were reported to HPSC during the week ending January 18th 2015: one associated with influenza A(H3) and the other with no pathogen identified. Both outbreaks were in community hospitals/long stay units/residential care facilities.
- For the 2014/2015 influenza season to date (up to the week ending January 17th 2015), 14 acute respiratory outbreaks were reported to HPSC. Six of these outbreaks were associated with influenza A: five associated with A(H3) and one associated with both A(H3) and A(H1)pdm09. Two outbreaks were associated with RSV and six acute respiratory outbreaks had no pathogens identified. The majority of these outbreaks occurred in residential care facilities/community hospital settings, mainly affecting the elderly. One outbreak occurred in an acute hospital.

10. International Summary

- Globally, influenza activity continued to increase in the northern hemisphere with influenza A(H3N2) viruses predominating this season to date. In Europe, the influenza season is clearly underway, mainly in western and northern European countries; the proportion of sentinel specimens positive for influenza increased to 28%, from 16% and 17% in the previous two weeks. Overall, influenza A(H3N2) viruses have been the predominant viruses detected in Europe.
- Globally, antigenic characterisation of most influenza A(H3N2) viruses tested this season indicated differences from the A(H3N2) virus used in the influenza vaccines for the northern hemisphere 2014/2015 season. This situation is being monitored closely as the season progresses. Although this may compromise the effectiveness of the A(H3N2) component of the vaccine, it is still important that people are vaccinated, particularly those at risk of developing severe influenza symptoms. Vaccination remains the most effective means of preventing infection by seasonal influenza viruses. The latest ECDC rapid risk assessment on the circulation of drifted influenza A(H3N2) viruses in Europe is available [here](#).
- The majority of influenza A(H1)pdm09 and influenza B viruses characterised this season are similar to those included in the 2014/2015 northern hemisphere trivalent vaccine.
- See [ECDC](#) and [WHO](#) influenza surveillance reports for further information.

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

- For up to date information on human infection with avian influenza A(H7N9) virus in China including the current case numbers and the WHO assessment of the situation please see [here](#).
- For information on highly pathogenic avian influenza A(H5N8) in Germany, please see [here](#).
- For information on human infection with avian influenza A(H5N1) in Egypt, 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 website](#).
- Information on Enterovirus 68 (EV-D68), including the ECDC rapid risk assessment is available on the [ECDC website](#).

11. WHO recommendations on the composition of influenza virus vaccines

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.

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

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.