

# Influenza Surveillance in Ireland – Weekly Report

Influenza Week 50 2016 (12<sup>th</sup> – 18<sup>th</sup> December 2016)



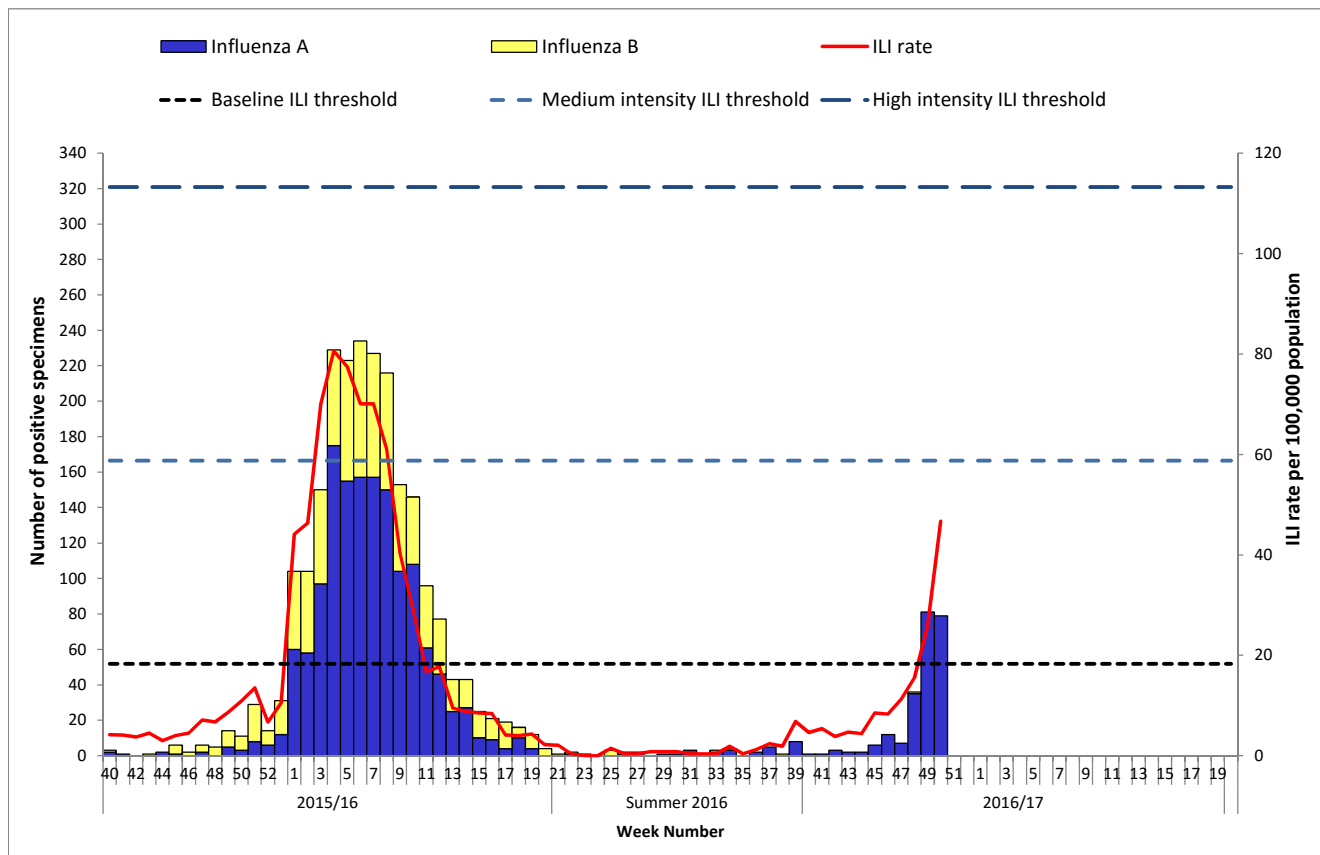
## Summary

Influenza activity in Ireland has continued to increase during week 50 2016 (week ending December 18, 2016). Influenza A(H3) is the predominant influenza virus circulating this season. Confirmed influenza hospitalisations and influenza outbreaks in community hospitals/residential care facilities have also continued to increase. RSV activity remained at high levels. Respiratory admissions reported from a network of sentinel hospitals were at high levels. It is recommended that antivirals be considered for the treatment or prevention of influenza in high risk groups.

- **Influenza-like illness (ILI):** The sentinel GP influenza-like illness (ILI) consultation rate was 46.7 per 100,000 population in week 50 2016, an increase compared to the updated rate of 25.8 per 100,000 reported during week 49 2016.
  - ILI rates are above the Irish baseline threshold (18.3 per 100,000 population).
  - ILI rates increased in all age groups, except for the 0-4 year age group, compared to the previous week.
- **GP Out of Hours:** The proportion of influenza-related calls to GP Out-of-Hours services increased during week 50 2016, compared to the previous week.
- **National Virus Reference Laboratory (NVRL):**
  - Influenza positivity remained elevated during week 50 2016, with 79 (17.4%) influenza positive specimens reported from the NVRL from sentinel GP and non-sentinel sources. All were positive for influenza A.
  - Influenza A(H3) is the predominant circulating influenza virus this season to date.
  - Positive detections of respiratory syncytial virus (RSV) remained at high levels during week 50 2016. RSV circulated earlier and at higher levels this season than are normally observed.
  - Human metapneumovirus (hMPV), adenovirus and parainfluenza virus positive detections continue to be reported. Coinfections of seasonal respiratory viruses are also being reported.
- **Respiratory admissions:** The latest respiratory admissions data reported from a network of sentinel hospitals remained at high levels.
- **Hospitalisations:** 50 confirmed influenza hospitalised cases were notified to HPSC during week 50 2016, bringing the season total to 96. The majority of hospitalised cases have been in those aged 65 years and older.
- **Critical care admissions:** Eight confirmed influenza A cases have been admitted to critical care units and reported to HPSC this season to date.
- **Mortality:** One confirmed influenza case died and was notified to HPSC this season to date.
- **Outbreaks:** Five acute respiratory infection and influenza outbreaks were reported to HPSC during week 50 2016, bringing the season total to 21.
- **International:** Influenza activity is increasing in the European Region; however, overall activity remained at low levels. The majority of influenza viruses detected to date this season in the European Region were influenza A, with most of those subtyped being A(H3N2).

## 1. GP sentinel surveillance system - Clinical Data

- During week 50 2016, 105 influenza-like illness (ILI) cases were reported from sentinel GPs, corresponding to an ILI consultation rate of 46.7 per 100,000 population, an increase compared to the rate of 25.8 per 100,000 reported during week 49 2016. The ILI rate for week 50 2016 was above the Irish baseline ILI threshold (18.3/100,000 population) (figure 1).
- ILI age specific rates increased in all age groups, except the 0-4 year age group during week 50 2016, compared to the previous week (figure 2).
- HPSC in consultation with the European Centre for Disease Prevention and Control (ECDC) has revised the Irish baseline ILI threshold for the 2016/2017 influenza season to 18.3 per 100,000 population; this threshold indicates the likelihood that influenza is circulating in the community. The Moving Epidemic Method (MEM) has been adopted by ECDC to calculate thresholds for GP ILI consultations in a standardised approach across Europe.<sup>1</sup>
- The baseline ILI threshold, medium (58.7/100,000 population) and high (113.3/100,000 population) intensity ILI thresholds are shown in figure 1.



**Figure 1: ILI sentinel GP consultation rates per 100,000 population, baseline ILI threshold, medium and high intensity ILI thresholds<sup>1</sup> and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season.**  
*Source: ICGP and NVRL*

<sup>1</sup> For further information on the Moving Epidemic Method (MEM) to calculate ILI thresholds:

<http://www.ncbi.nlm.nih.gov/pubmed/22897919>

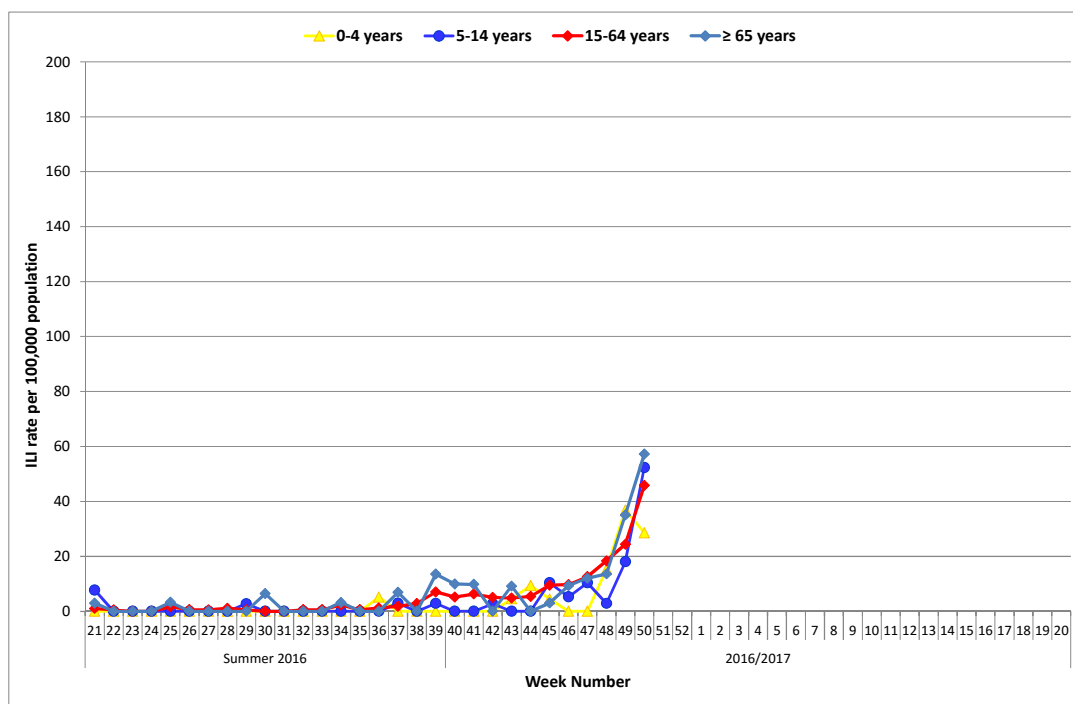


Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2016 and the 2016/2017 influenza season to date. Source: ICGP.

## 2. Influenza and Other Respiratory Virus Detections - NVRL

The data reported in this section for the 2016/2017 influenza season refers to sentinel and non-sentinel respiratory specimens routinely tested for influenza, respiratory syncytial virus (RSV), adenovirus, parainfluenza viruses types 1, 2, 3 & 4 (PIV-1, -2, -3 & -4) and human metapneumovirus (hMPV) by the National Virus Reference Laboratory (NVRL) (figures 3, 4 & 5, tables 1 & 2).

- Influenza positivity reported from the NVRL remained elevated during week 50 2016, with 79 (17.4%) influenza positive specimens reported: 75 influenza A(H3) and 4 A (not subtyped).
  - 16 of 65 (24.6%) sentinel specimens were influenza positive, all were positive for A(H3).
  - 63 of 390 (16.2%) non-sentinel specimens were influenza positive: 59 A(H3) and 4 A not subtyped.
- Influenza A(H3) is the predominant influenza virus circulating this season to date.
- Data from the NVRL for week 50 2016 and the 2016/17 season to date are detailed in tables 1 and 2.
- Respiratory syncytial virus (RSV) positivity remained at high levels, with 92 (23.6%; n=390) positive non-sentinel specimens reported by the NVRL during week 50 2016. In total 817 RSV positive non-sentinel specimens have been detected by the NVRL this season. RSV has circulated earlier this season and at higher levels than are normally observed. Figure 5 shows the number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2016/17 season, compared to the 2015/16 season. For the 2016/17 season to date, 27 RSV positive specimens have been detected from sentinel GP sources.
- Human metapneumovirus (hMPV), adenovirus and parainfluenza virus (PIV) positive specimens were reported by the NVRL during week 50 2016 (table 2). Coinfections of all seasonal respiratory viruses\* were reported over recent weeks.
- The overall proportion of non-sentinel specimens positive for respiratory viruses\*, remained high during week 50 2016, at 44.9%, compared to 48.7% during week 49 2016.
  - \* Respiratory viruses routinely tested for by the NVRL are detailed above.

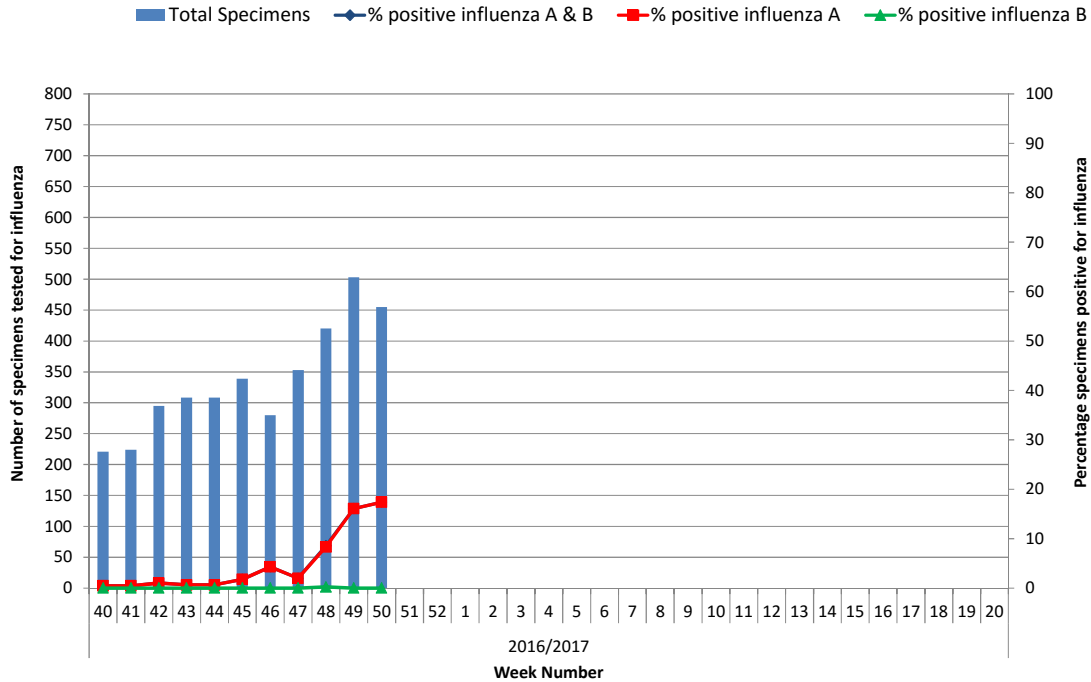


Figure 3: Number of specimens (from sentinel and non-sentinel sources combined) tested by the NVRL for influenza and percentage influenza positive by week for the 2016/2017 influenza season. *Source: NVRL*

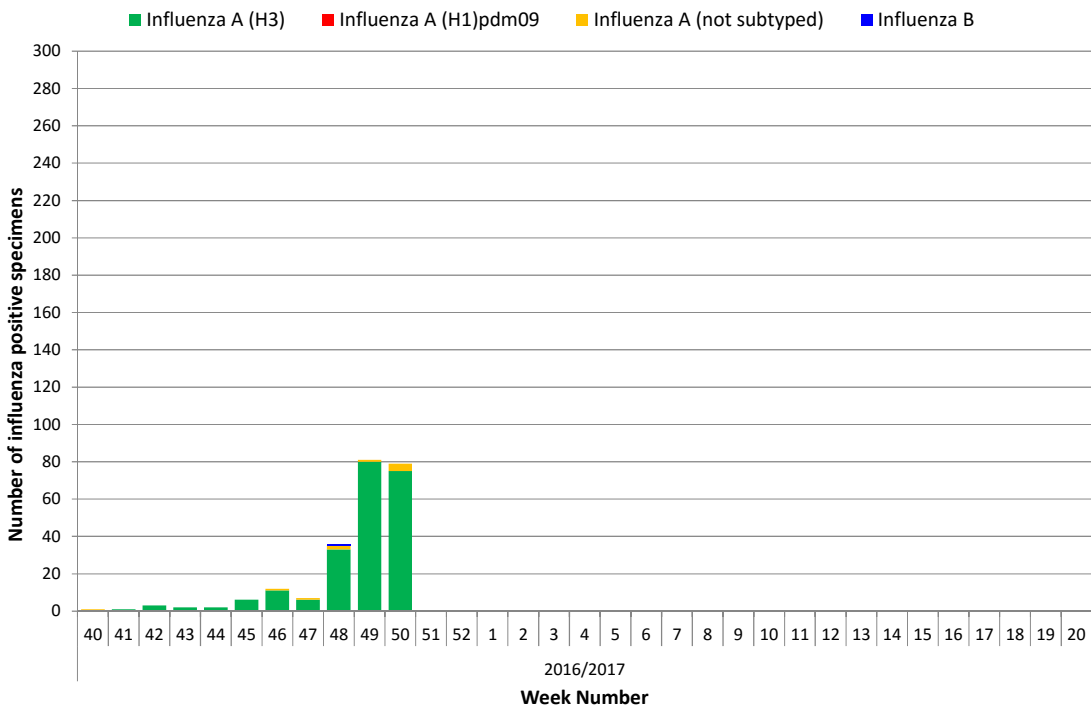
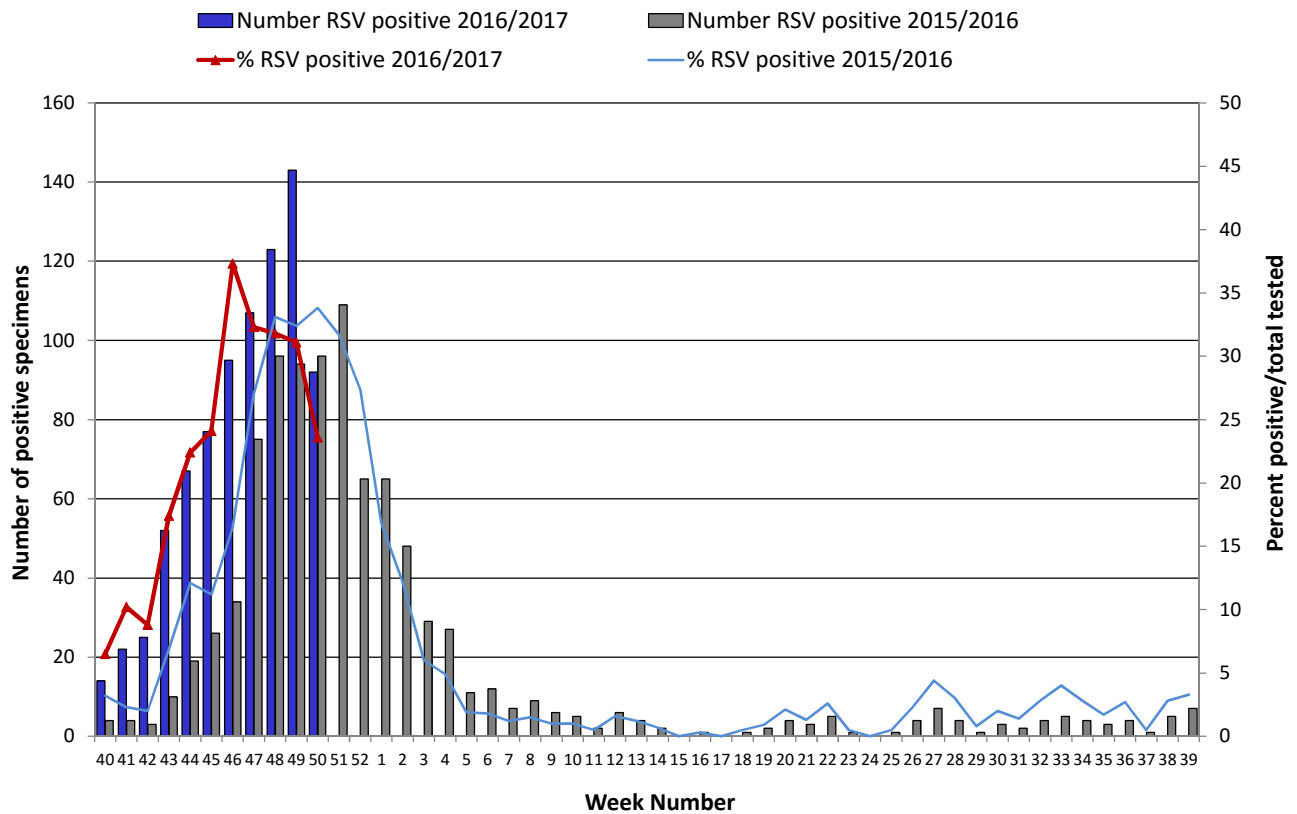


Figure 4: Number of positive influenza specimens (from sentinel and non-sentinel sources combined) by influenza type/subtype tested by the NVRL, by week for the 2016/2017 influenza season. *Source: NVRL.*



**Figure 5: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2016/2017 season, compared to the 2015/2016 season. Source: NVRL.**

**Table 1: Number of sentinel and non-sentinel<sup>†</sup> respiratory specimens tested by the NVRL and positive influenza results, for week 50 2016 and the 2016/2017 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	
50 2016	Sentinel	65	16	24.6	0	16	0	16	0
	Non-sentinel	390	63	16.2	0	59	4	63	0
	<b>Total</b>	<b>455</b>	<b>79</b>	<b>17.4</b>	<b>0</b>	<b>75</b>	<b>4</b>	<b>79</b>	<b>0</b>
2016/2017	Sentinel	249	52	20.9	0	52	0	52	0
	Non-sentinel	3457	178	5.1	0	167	10	177	1
	<b>Total</b>	<b>3706</b>	<b>230</b>	<b>6.2</b>	<b>0</b>	<b>219</b>	<b>10</b>	<b>229</b>	<b>1</b>

**Table 2: Number of sentinel and non-sentinel specimens tested by the NVRL for other respiratory viruses and positive results, for week 50 2016 and the 2016/2017 season to date. Source: NVRL**

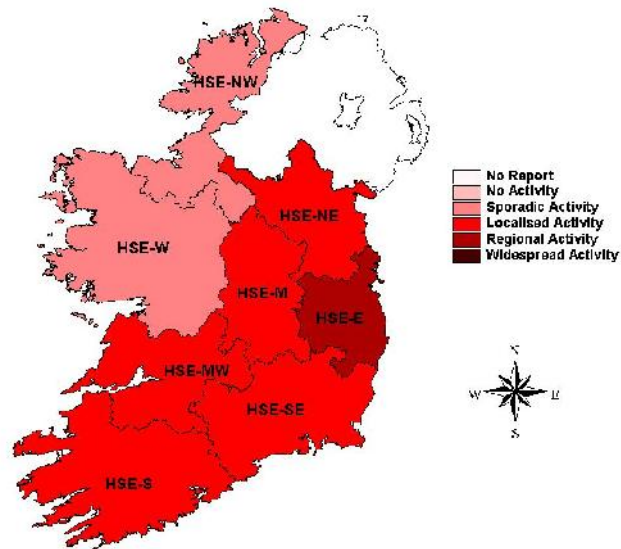
Week	Specimen type	Total tested	RSV	% RSV	Adenovirus	% Adenovirus	PIV-1	% PIV-1	PIV-2	% PIV-2	PIV-3	% PIV-3	PIV-4	% PIV-4	hMPV	% hMPV
50 2016	Sentinel	65	9	13.8	0	0.0	0	0.0	1	1.5	0	0.0	1	1.5	1	1.5
	Non-sentinel	390	92	23.6	6	1.5	0	0.0	0	0.0	5	1.3	1	0.3	8	2.1
	<b>Total</b>	<b>455</b>	<b>101</b>	<b>22.2</b>	<b>6</b>	<b>1.3</b>	<b>0</b>	<b>0.0</b>	<b>1</b>	<b>0.2</b>	<b>5</b>	<b>1.1</b>	<b>2</b>	<b>0.4</b>	<b>9</b>	<b>2.0</b>
2016/2017	Sentinel	249	27	10.8	1	0.4	0	0.0	2	0.8	3	1.2	3	1.2	11	4.4
	Non-sentinel	3457	817	23.6	57	1.6	0	0.0	10	0.3	44	1.3	42	1.2	76	2.2
	<b>Total</b>	<b>3706</b>	<b>844</b>	<b>22.8</b>	<b>58</b>	<b>1.6</b>	<b>0</b>	<b>0.0</b>	<b>12</b>	<b>0.3</b>	<b>47</b>	<b>1.3</b>	<b>45</b>	<b>1.2</b>	<b>87</b>	<b>2.3</b>

<sup>†</sup> 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

The geographical spread of influenza activity is reviewed on a weekly basis using sentinel GP ILI consultation rates, laboratory data and outbreak data.

The geographical spread of influenza/ILI during week 50 2016 is shown in figure 6. Regional influenza activity was reported in HSE-E, localised activity was reported in HSE-M, -MW, -NE, -S and -SE and sporadic activity was reported in HSE-NW and -W during week 50 2016.

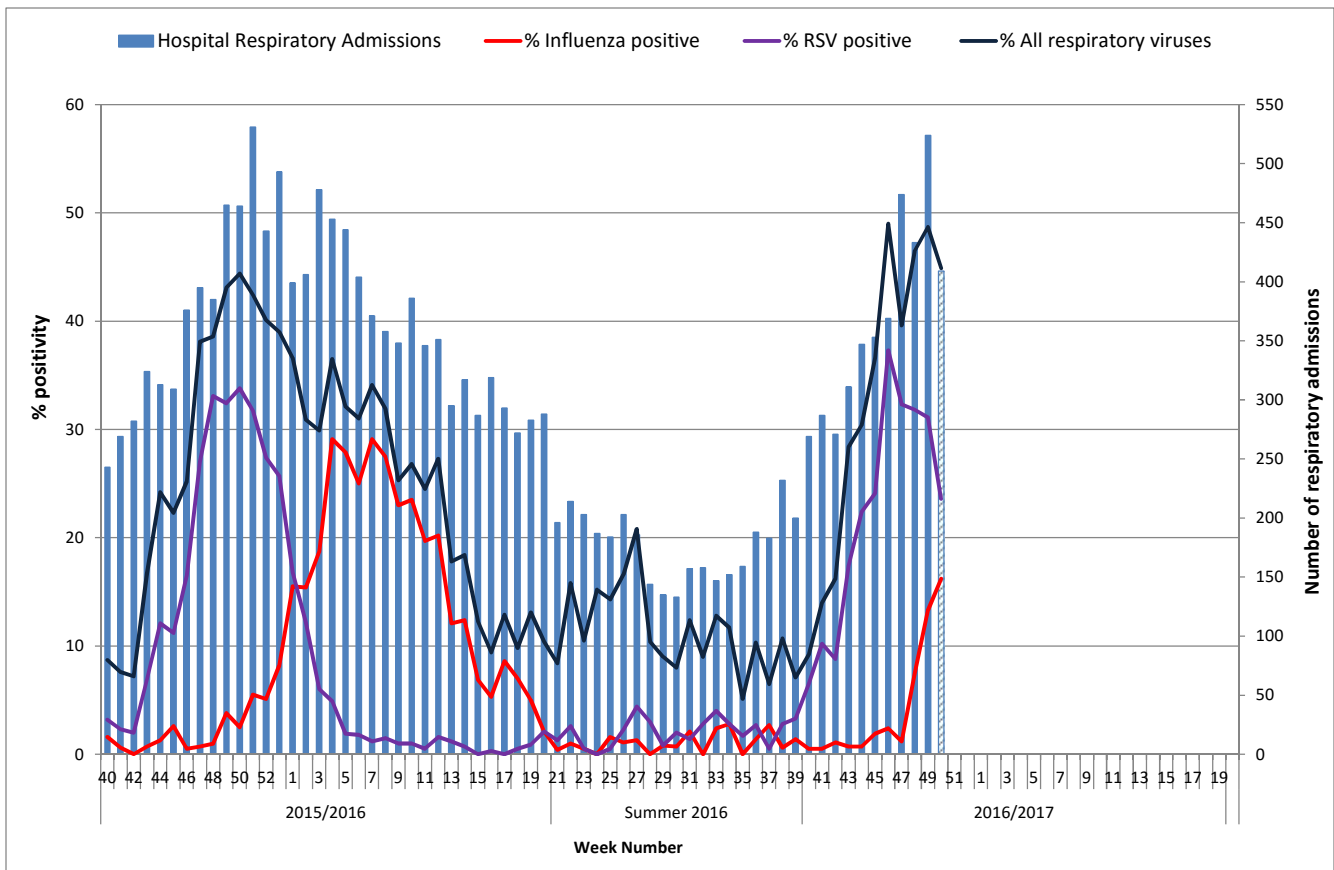


**Figure 6: Map of provisional influenza activity by HSE-Area during influenza week 50 2016**

#### 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. For the 2016/2017 influenza season, eight sentinel hospitals are regularly reporting respiratory admissions data in a timely manner.

Respiratory admissions reported from a network of sentinel hospitals remained high during week 50 2016, at 409 (figure 7). It should be noted that data were incomplete at the time of publication of this report, with data missing from two of eight sentinel hospitals during week 50 2016.



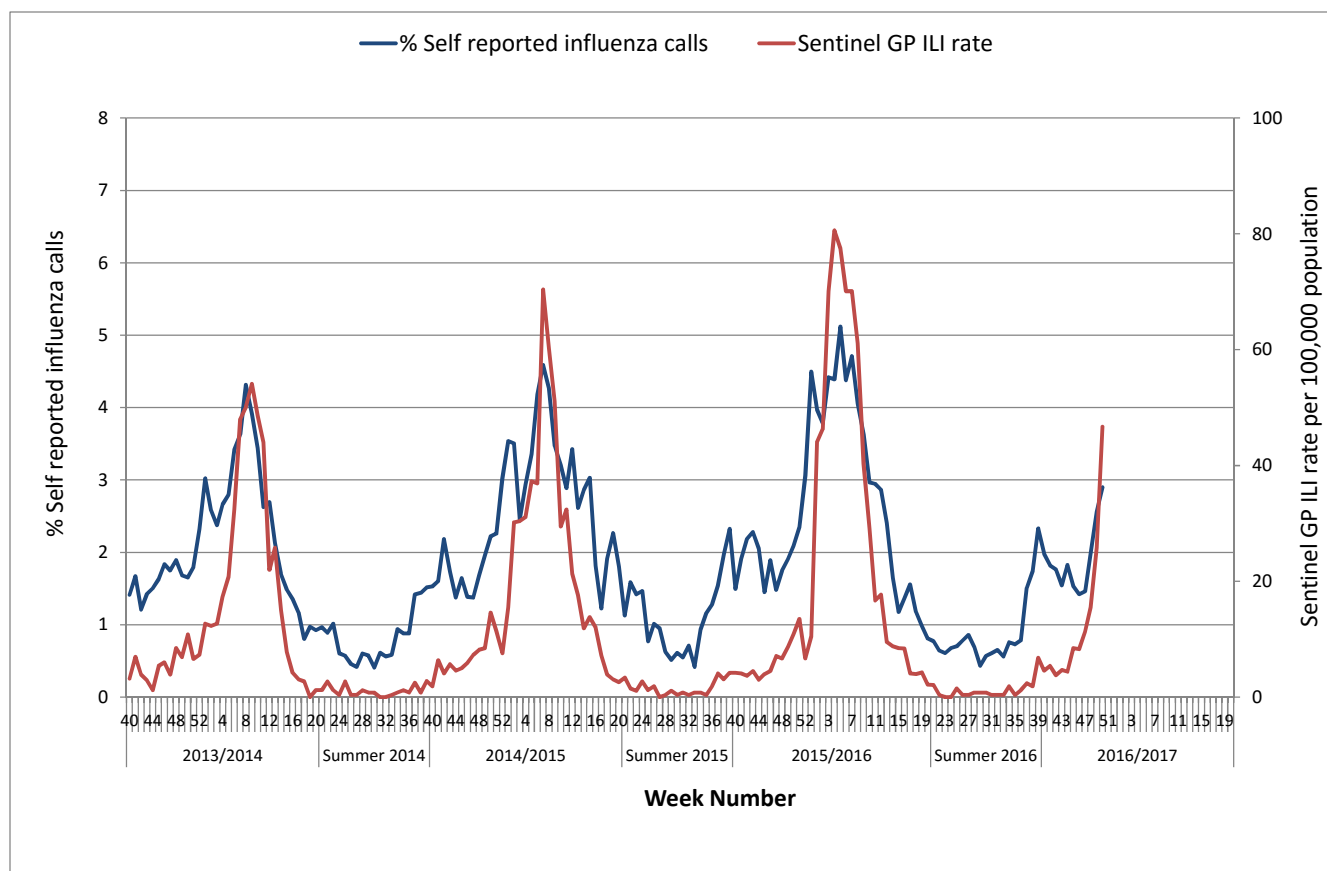
**Figure 7: Number of respiratory admissions reported from sentinel hospitals and % positivity for influenza, RSV and all respiratory viruses tested\* by the NVRL by week and season.** *Source: Departments of Public Health - Sentinel Hospitals & NVRL. \*All respiratory viruses tested refer to non-sentinel respiratory specimens routinely tested by the NVRL including influenza, RSV, adenovirus, parainfluenza viruses and human metapneumovirus (hMPV). Data were incomplete during week 50 2016; this week is represented by the hatched bar.*

#### 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 increased during week 50 2016 to 2.9%, compared to 2.6% during week 49 2016 (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](#). Influenza notifications continued to increase during week 50 2016, with 128 confirmed influenza cases notified: 78 A(H3), 48 A (not subtyped) and two B. RSV notifications remained at very high levels, with 359 cases notified during week 50 2016, compared to 197 during the previous week. It should be noted that over 80% of RSV notifications during week 50 2016, were swabbed prior to week 50 2016.

## 6. Influenza Hospitalisations

Fifty confirmed influenza hospitalised cases were notified to HPSC during week 50 2016: 23 associated with influenza A(H3) and 27 with influenza A (not subtyped). To date this season (up to the week ending December 18, 2016), 96 confirmed influenza hospitalised cases have been notified to HPSC: 45 associated with influenza A(H3), 49 with influenza A (not subtyped) and two with influenza B. The majority of cases were in those aged 65 years and older.

## 7. Critical Care Surveillance

The Intensive Care Society of Ireland (ICSI) and the HSE Critical Care Programme are continuing with the enhanced surveillance system set up during the 2009 pandemic, on all critical care patients with confirmed influenza. HPSC processes and reports on this information on behalf of the regional Directors of Public Health/Medical Officers of Health.

Eight confirmed influenza A cases (three associated with influenza A(H3) and five with influenza A - not subtyped) were admitted to critical care units and reported to HPSC this season to date. Seven of eight cases were in those aged 65 years and older and one paediatric case was reported.

## 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/>

- To date this season, one confirmed influenza A(H3) case died and was notified to HPSC, during week 49 2016.
- During week 50 2016, no excess all-cause mortality was reported in Ireland after correcting GRO data for reporting delays with the standardised EuroMOMO algorithm.

## 9. Outbreak Surveillance

Five acute respiratory infection (ARI) and influenza outbreaks were reported to HPSC during week 50 2016, four were reported as influenza outbreaks and one ARI outbreak with no pathogens identified. To date this season (up to the week ending December 18, 2016), 21 ARI and influenza outbreaks were reported to HPSC, eight of which were associated with influenza A, two were associated with RSV, one with parainfluenza virus, one with human metapneumovirus and nine with no pathogens identified. The majority of ARI and influenza outbreaks reported to date this season were in residential care facilities/community hospitals, mainly affecting those aged 65 years and older. Two confirmed influenza A outbreaks were in acute hospital settings.

## 10. International Summary

Influenza activity remained low but is increasing across the European Region. Influenza A(H3) viruses have predominated this season to date. As of December 12<sup>th</sup> 2016, globally, influenza activity in the temperate zone of the northern hemisphere increased slightly. In North America, influenza activity increased slightly with influenza A(H3N2) virus predominating. ILI levels remained below seasonal thresholds. In the United States, RSV activity continued to be reported. In East Asia, influenza activity increased slightly with influenza A(H3N2) remaining the dominant virus circulating. In Western Asia influenza detections remained low. In Northern Africa, influenza detections increased in Morocco with influenza A(H3N2) viruses dominating. See [ECDC](#) and [WHO](#) influenza surveillance reports for further information.

- Further information is available on the following websites:
  - 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>
- Information on Middle Eastern Respiratory Syndrome Coronavirus (MERS), 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.
- The latest ECDC and WHO risk assessments on influenza A(H5N8) have been published on the [ECDC](#) and [WHO websites](#). Further information on the public health measures for protecting and managing people exposed to highly pathogenic avian influenza A(H5N8) in Europe has been published on the [Eurosurveillance website](#).
- Further information on avian influenza is available on the [ECDC](#) website.

## 11. WHO recommendations on the composition of influenza virus vaccines

On February 25, 2016, the WHO vaccine strain selection committee recommended that trivalent vaccines for use in the 2016/2017 influenza season (northern hemisphere winter) contain the following: an A/California/7/2009 (H1N1)pdm09-like virus; an A/Hong Kong/4801/2014 (H3N2)-like virus; a B/Brisbane/60/2008-like virus. <http://www.who.int/influenza/vaccines/virus/recommendations/en/>

Further information on influenza in Ireland is available at [www.hpsc.ie](http://www.hpsc.ie)

### Acknowledgements

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