Influenza Surveillance in Ireland – Weekly Report

Influenza Week 47 2016 (21st – 27th November 2016)

Summary

Some indicators of influenza activity in Ireland have started to increase, however overall activity remained below baseline levels during week 47 2016 (week ending November 27, 2016). Respiratory syncytial virus (RSV) activity remained elevated. Respiratory admissions reported from a network of sentinel hospitals were at high levels.

- Influenza-like illness (ILI): The sentinel GP influenza-like illness (ILI) consultation rate was 12.2 per 100,000 population in week 47 2016, an increase compared to the updated rate of 9.3 per 100,000 reported during week 46 2016.
  - ILI rates were below the Irish baseline threshold (18.3 per 100,000 population).
  - ILI rates were at low levels in all age groups.
- GP Out of Hours: The proportion of influenza–related calls to GP Out-of-Hours services was at low levels during week 47 2016.
- National Virus Reference Laboratory (NVRL):
  - Influenza positivity remained low during week 47 2016, with three (0.9%) influenza positive specimens reported from the NVRL from sentinel GP and non-sentinel sources: 2 A(H3) and 1 A (not subtyped).
  - The majority of confirmed influenza specimens detected this season to date were influenza A(H3).
  - Positive detections of respiratory syncytial virus (RSV) remain at high levels.
  - Adenovirus, human metapneumovirus (hMPV) and parainfluenza virus positive detections continue to be reported.
- Respiratory admissions: Respiratory admissions reported from a network of sentinel hospitals increased significantly during week 47 2016, compared to the previous week.
- Hospitalisations: One confirmed influenza A hospitalised case was notified to HPSC during week 47 2016.
- Critical care admissions: No confirmed influenza cases were admitted to critical care units and reported to HPSC during week 47 2016 or for the 2016/17 season to date.
- Mortality: There were no reports of any influenza-associated deaths during week 47 2016 or for the 2016/17 season to date.
- Outbreaks: One acute respiratory outbreak in a residential care facility in HSE-NW was reported to HPSC during week 47 2016.
- International: Influenza activity is beginning to increase in some countries of the European Region; however, overall activity remained at baseline 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 47 2016, 30 influenza-like illness (ILI) cases were reported from sentinel GPs, corresponding to an ILI consultation rate of 12.2 per 100,000 population, an increase compared to the updated rate of 9.3 per 100,000 reported during week 46 2016. The ILI rate for week 47 2016 is below the Irish baseline ILI threshold (18.3/100,000 population) (figure 1).
- ILI age specific rates were low in all age groups during week 47 2016 (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.[1]
- 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.

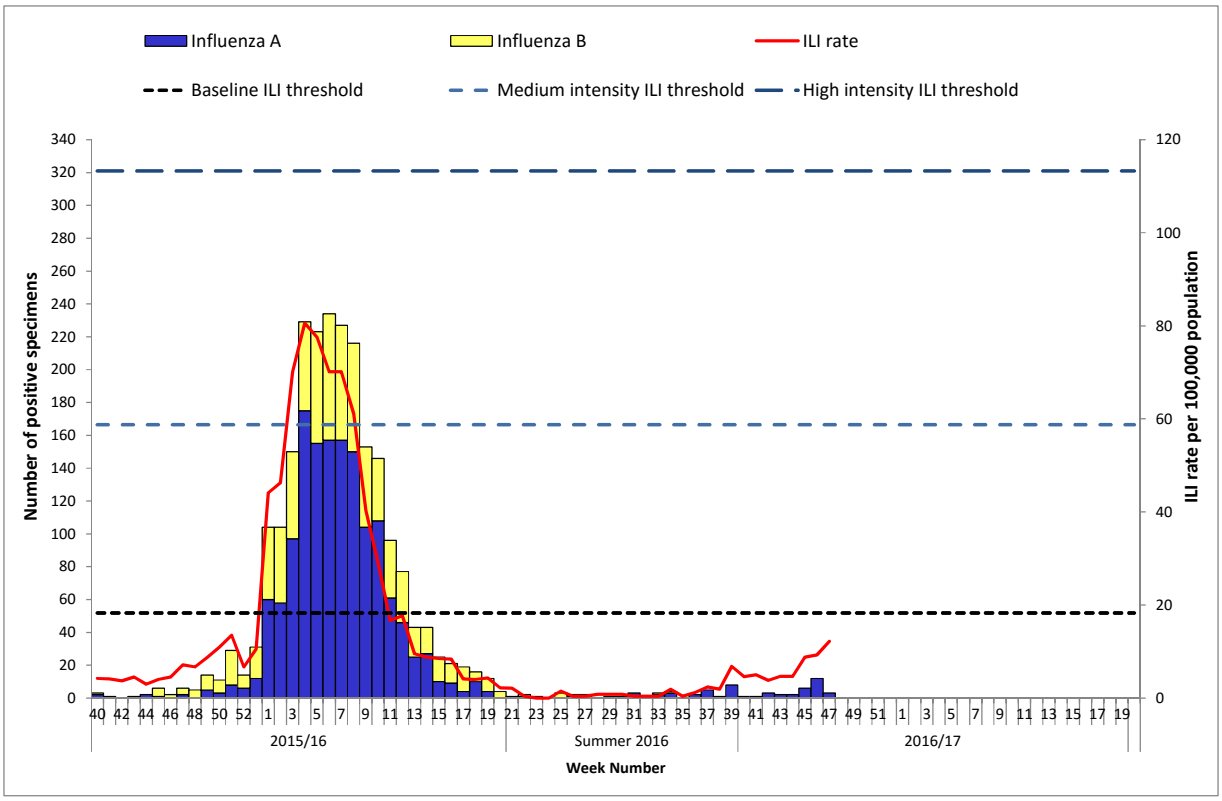

Figure 1: ILI sentinel GP consultation rates per 100,000 population, baseline ILI threshold, medium and high intensity ILI thresholds[1] and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season.
Source: ICGP and NVRL

[1] For further information on the Moving Epidemic Method (MEM) to calculate ILI thresholds: http://www.ncbi.nlm.nih.gov/pubmed/22897919

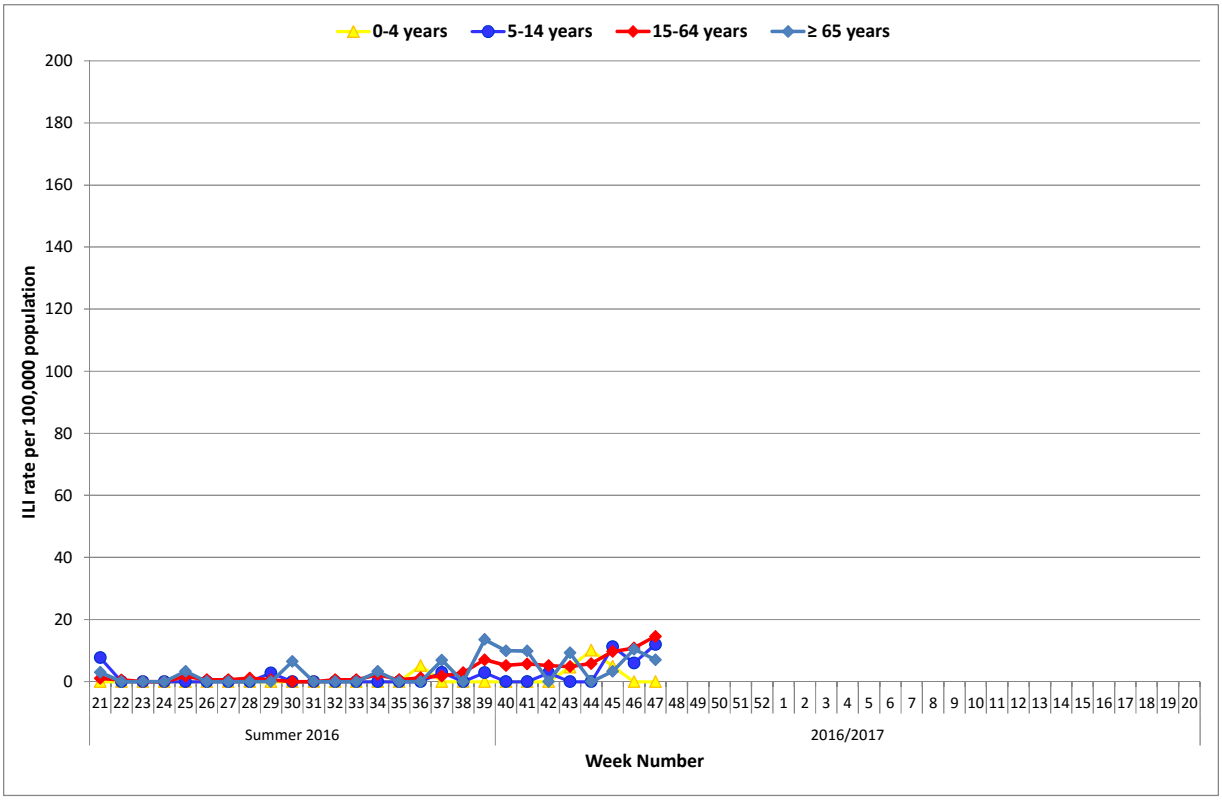

Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2016 and the 2016/2017 influenza season to date. *Source: ICGP.*

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 low during week 47 2016, with three (0.9%) influenza positive specimens reported: 2 A(H3) and 1 A (not subtyped).
    - 2 of 20 (10.0%) sentinel specimens were influenza positive, both influenza A(H3).
    - 1 of 317 (0.3%) non-sentinel specimen was influenza positive (1 A - not subtyped).
- To date this season, sporadic cases of influenza A(H3) have been reported from the NVRL. No confirmed influenza A(H1)pdm09 or influenza B positives specimens have been detected by the NVRL this season.
- Data from the NVRL for week 47 2016 and the 2016/2017 season to date are detailed in tables 1 and 2.
- Seventy-nine (79/317; 24.9%) respiratory syncytial virus (RSV) positive non-sentinel specimens were reported during week 47 2016. RSV positivity remains at high levels. Figure 5 shows the number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2016/2017 season, compared to the 2015/2016 season. For the 2016/2017 season to date, eight RSV positive specimens have been detected from sentinel GP sources.
- Adenovirus, parainfluenza virus (PIV) and human metapneumovirus (hMPV) positive specimens were reported by the NVRL during week 47 2016 (table 2).
- The overall proportion of non-sentinel specimens positive for respiratory viruses*, decreased during week 47 2016, to 30.3%, compared to 49.0% during week 46 2016.

  ** Respiratory viruses routinely tested for by the NVRL are detailed above.*

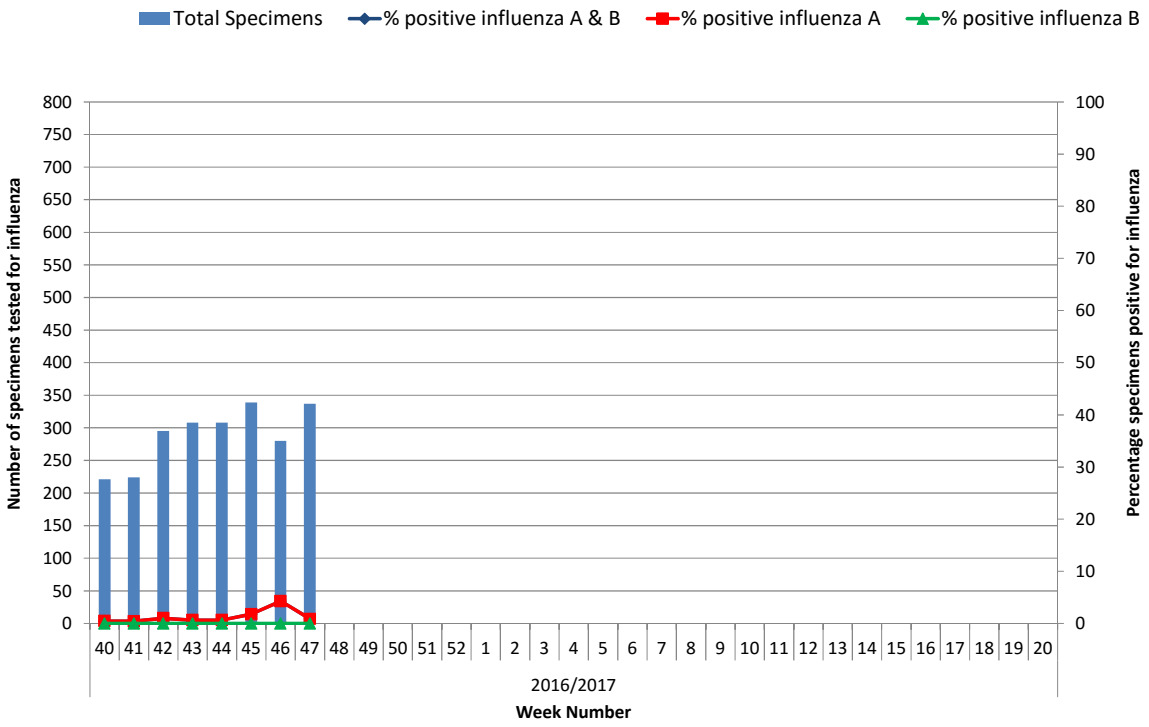

Figure 3: Number of sentinel and non-sentinel specimens tested by the NVRL for influenza and percentage influenza positive by week for the 2016/2017 influenza season. *Source: NVRL*

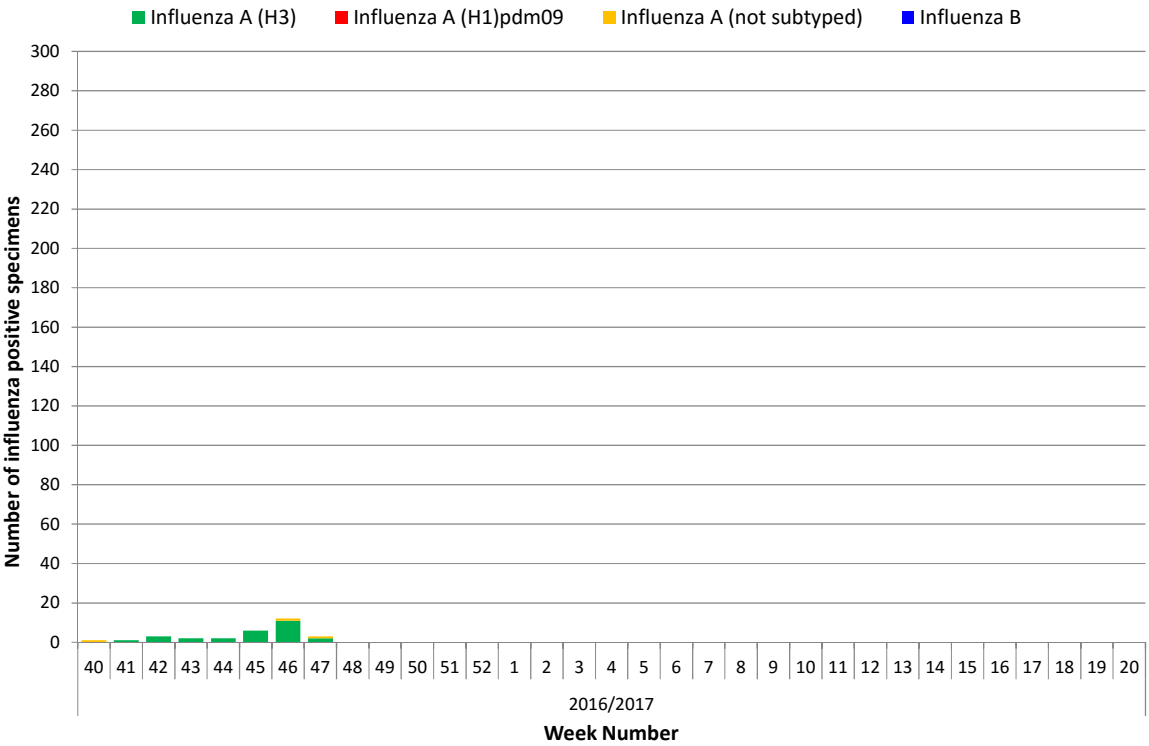

Figure 4: Number of positive influenza specimens by influenza type/subtype from sentinel and non-sentinel sources tested by the NVRL, by week for the 2016/2017 influenza season. *Source: NVRL.*

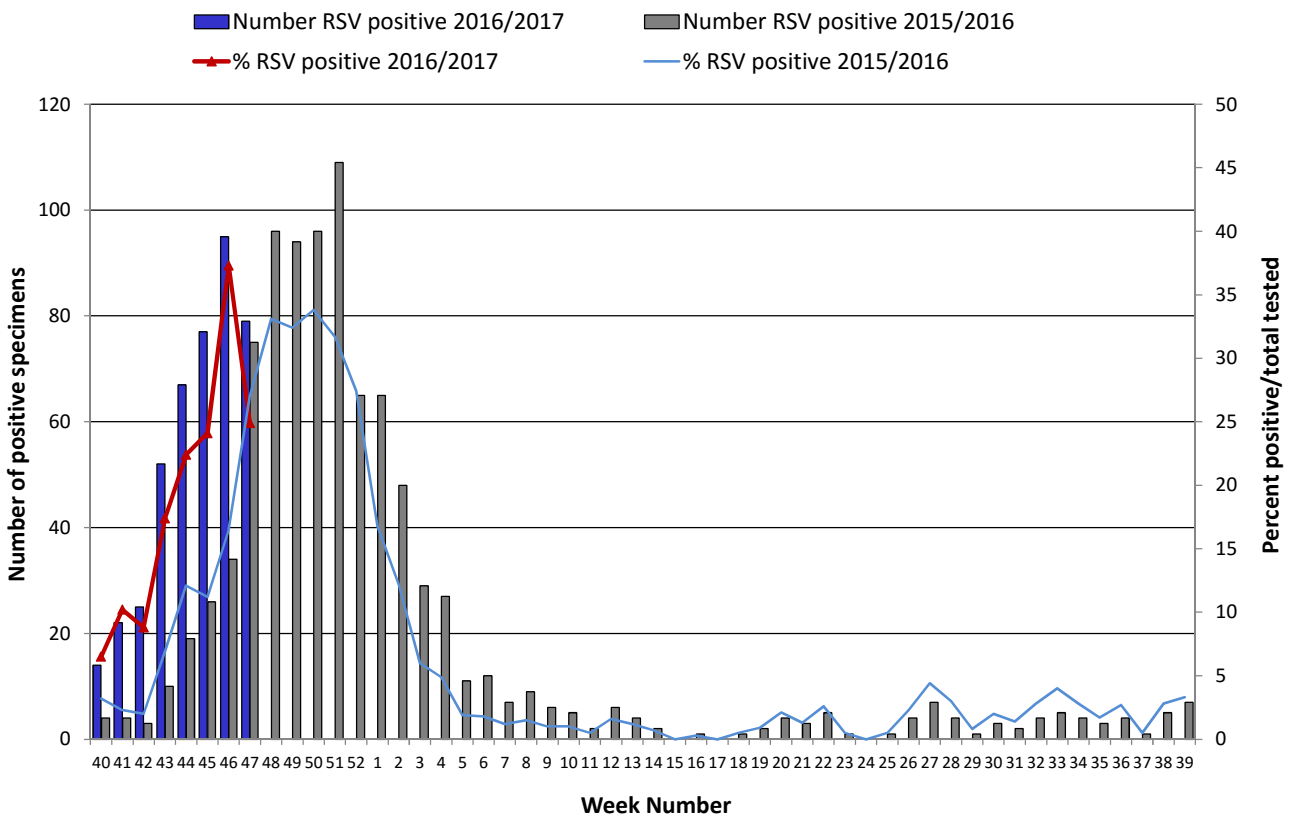

Figure 5: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2016/2017 season, compared to the 2015/2016 season. *Source: NVRL.*

Table 1: Number of sentinel and non-sentinel[†] respiratory specimens tested by the NVRL and positive influenza results, for week 47 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	
47 2016	Sentinel	20	2	10.0	0	2	0	2	0
	Non-sentinel	317	1	0.3	0	0	1	1	0
	Total	**337**	**3**	**0.9**	**0**	**2**	**1**	**3**	**0**
2016/2017	Sentinel	106	8	7.5	0	8	0	8	0
	Non-sentinel	2206	22	1.0	0	19	3	22	0
	Total	**2312**	**30**	**1.3**	**0**	**27**	**3**	**30**	**0**

Table 2: Number of sentinel and non-sentinel specimens tested by the NVRL for other respiratory viruses and positive results, for week 47 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
47 2016	Sentinel	20	3	15.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	5.0
	Non-sentinel	317	79	24.9	1	0.3	0	0.0	3	0.9	3	0.9	5	1.6	4	1.3
	Total	**337**	**82**	**24.3**	**1**	**0.3**	**0**	**0.0**	**3**	**0.9**	**3**	**0.9**	**5**	**1.5**	**5**	**1.5**
2016/2017	Sentinel	106	8	7.5	0	0.0	0	0.0	0	0.0	2	1.9	2	1.9	4	3.8
	Non-sentinel	2206	431	19.5	40	1.8	0	0.0	9	0.4	31	1.4	35	1.6	42	1.9
	Total	**2312**	**439**	**19.0**	**40**	**1.7**	**0**	**0.0**	**9**	**0.4**	**33**	**1.4**	**37**	**1.6**	**46**	**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

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 47 2016 is shown in figure 6. Sporadic influenza activity (based on ILI cases and/or confirmed influenza cases) was reported in HSE-E, -M, -MW, -S and -SE during week 47 2016. No influenza activity was reported in HSE-NE, -NW and -W during week 47 2016.

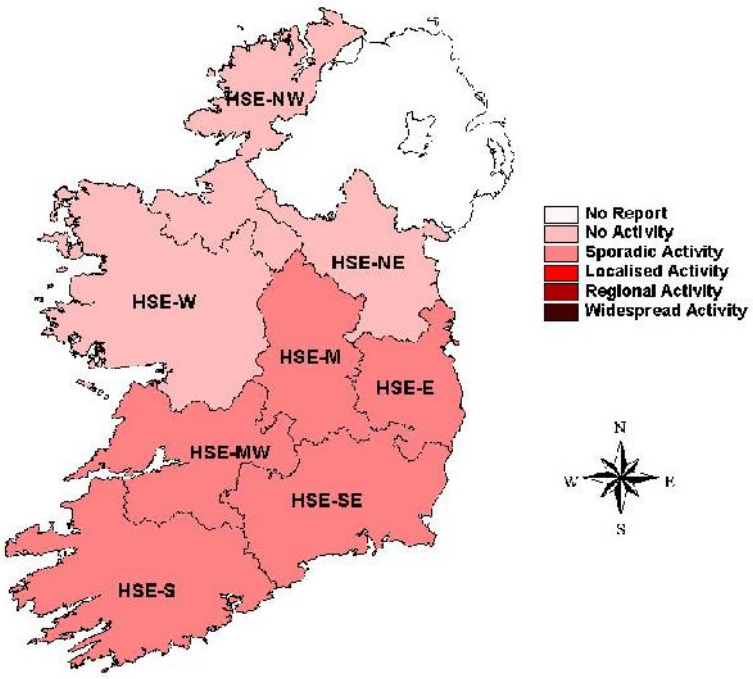

Figure 6: Map of provisional influenza activity by HSE-Area during influenza week 47 2016

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 increased significantly during week 47 2016, to 467 compared to 369 during the previous week (figure 7). It should be noted that only seven of eight sentinel hospitals reported during week 47 2016.

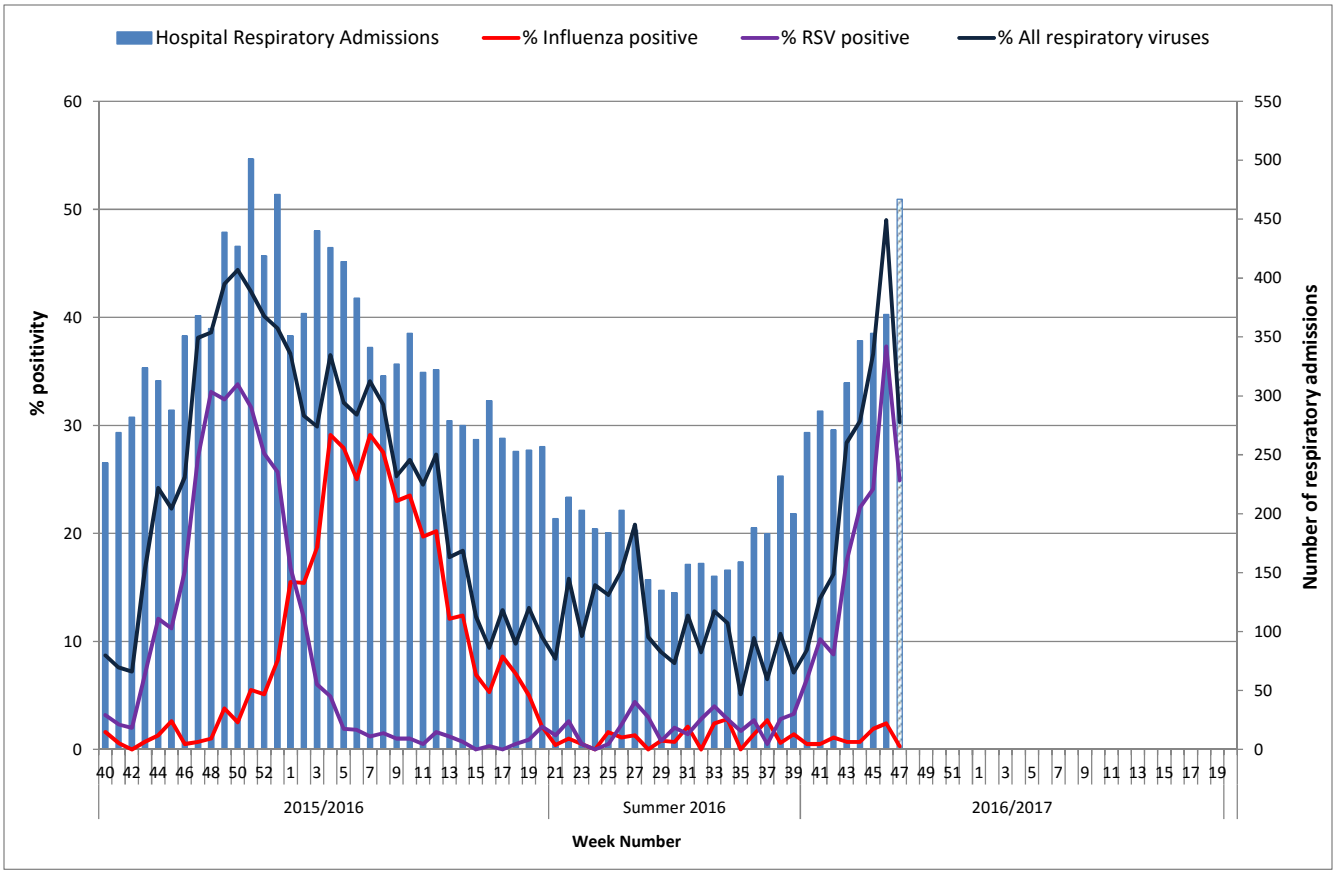

Figure 7: Number of respiratory admissions reported from sentinel hospitals and % positivity for influenza, RSV and all respiratory viruses tested* by the NVRL by week and season. *Source: Departments of Public Health - Sentinel Hospitals & NVRL. *All respiratory viruses tested refer to non-sentinel respiratory specimens routinely tested by the NVRL including influenza, RSV, adenovirus, parainfluenza viruses and human metapneumovirus (hMPV). Data were missing from one sentinel hospital during week 47 2016, 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 remained stable and at low levels during week 47 2016 at 1.5%, compared to 1.4% during week 46 2016 (figure 8).

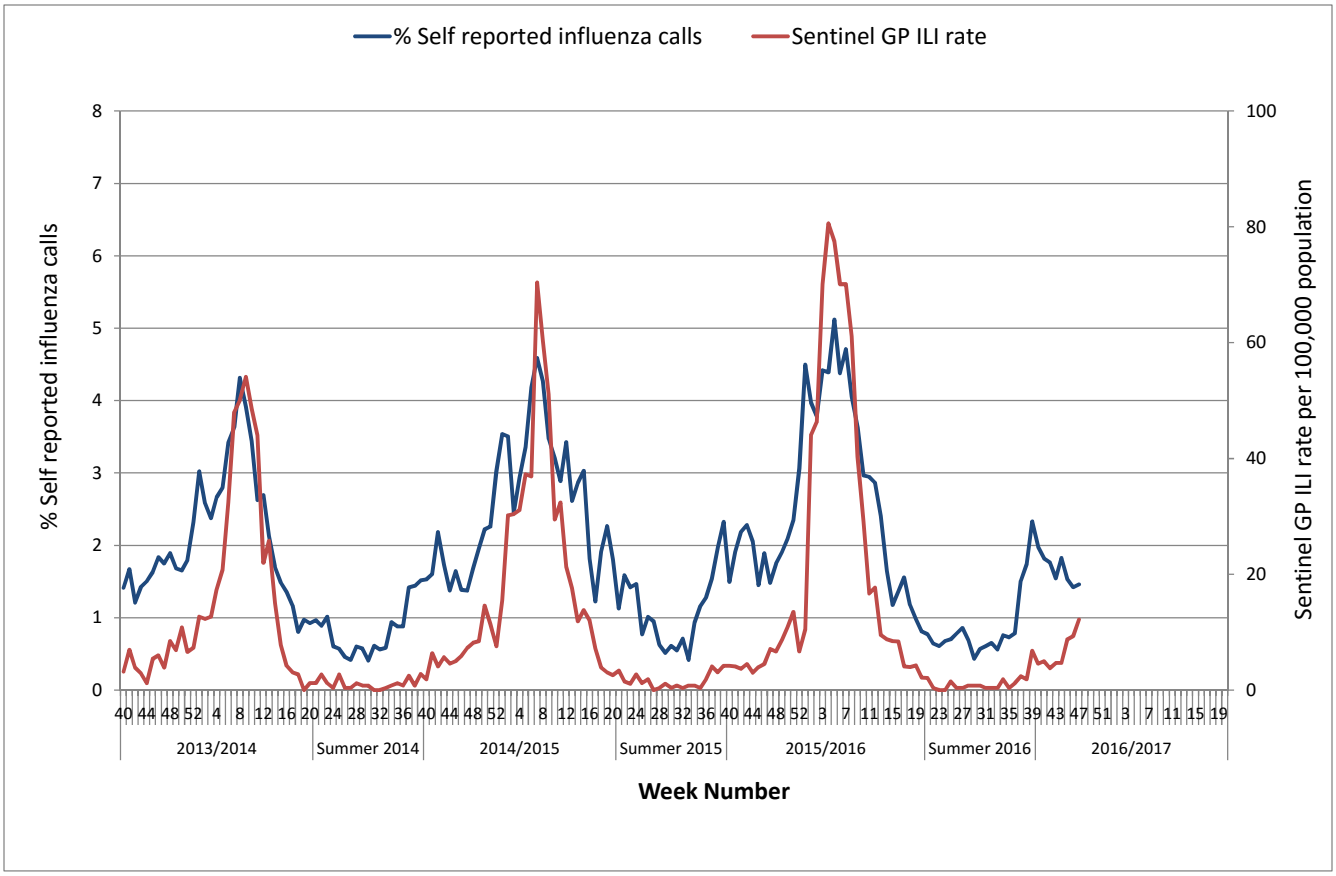

Figure 8: Self-reported influenza-related calls as a proportion of total calls to Out-of-Hours GP Co-ops and sentinel GP ILI consultation rate per 100,000 population by week and season. *Source: GP Out-Of-Hours services in Ireland (collated by HSE-NE) & ICGP.*

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 increased during week 47 2016, with 12 confirmed influenza A (7 A(H3) and 5 A not subtyped) cases notified, compared to five during week 46 2016. RSV notifications increased, with 148 cases notified during week 47 2016, compared to 120 during the previous week.

6. Influenza Hospitalisations

One confirmed influenza A hospitalised case was notified to HPSC during week 47 2016.

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

No confirmed influenza cases were admitted to critical care and reported to HPSC during week 47 2016 or during the 2016/2017 season to date.

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/

- There were no reports of any influenza-associated deaths occurring during week 47 2016 or for the 2016/2017 season to date.
- During week 47 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

One acute respiratory infection (ARI) outbreak in a residential care facility in HSE-NW was reported to HPSC during week 47 2016. To date this season, six ARI/influenza outbreaks were reported to HPSC, three of which were confirmed influenza outbreaks associated with influenza A(H3). All ARI/influenza outbreaks reported to date this season were in residential care facilities/community hospitals.

10. International Summary

Influenza activity is beginning to increase in some countries of the European Region; however, overall activity remained at baseline levels. Since week 40 2016, influenza A viruses have predominated, with most of those subtyped being A(H3N2). As of November 28th 2016, globally, influenza activity in the temperate zone of the southern and northern hemispheres is at inter-seasonal levels. In North America, influenza activity was low with few influenza virus detections and ILI levels below seasonal thresholds. In the United States, RSV activity continued to be reported. 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 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

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.