Influenza Surveillance in Ireland – Weekly Report

Influenza Week 42 2017 (16th – 22nd October 2017)

Summary

All indicators of influenza activity in Ireland were at low levels during week 42 2017 (week ending 22nd October 2017). Sporadic confirmed cases of influenza A(H1N1)pdm09, A(H3N2) and B have been reported to date this season. Respiratory syncytial virus (RSV) positivity has started to increase, as expected at this time of year.

- Influenza-like illness (ILI): The sentinel GP influenza-like illness (ILI) consultation rate was 7.5 per 100,000 population in week 42 2017, remaining low, and slightly increased compared to the updated rate of 4.6 per 100,000 reported during week 41 2017.
  - ILI rates were below the Irish baseline threshold (17.5 per 100,000 population).
  - ILI age specific 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 42 2017.
- National Virus Reference Laboratory (NVRL):
  - Influenza positivity reported by the NVRL was at low levels during week 42 2017, at 1.7%.
  - Four confirmed influenza positive specimens were reported from non-sentinel sources during week 42 2017, three influenza A(H3N2) and one influenza B.
  - No confirmed influenza positive specimens were reported from the sentinel GP network during week 42 2017.
  - Sporadic positive specimens of influenza A(H1N1)pdm09, A(H3N2) and B have been reported from sentinel GP and non-sentinel sources to date this season.
  - Respiratory syncytial virus (RSV) positivity remained at low levels, however started to increase during week 42 2017.
  - Sporadic detections of parainfluenza virus, adenovirus and human metapneumovirus (hMPV) were reported during week 42 2017 and for the season to date.
  - An increase in picornavirus positive detections, which includes both rhinoviruses and enteroviruses, has been reported in September and October.
- Hospitalisations: Six confirmed influenza hospitalised cases were notified to HPSC during week 42 2017: three associated with influenza A(H1N1)pdm09, one with influenza A(H3N2) and two influenza A (not subtyped).
- Critical care admissions: No confirmed influenza cases were admitted to critical care units and reported to HPSC for the 2017/2018 season to date.
- Mortality: There were no reports of any influenza-associated deaths during the 2017/18 season to date.
- Outbreaks: No acute respiratory infection (ARI)/influenza outbreaks were notified to HPSC during week 42 2017.
- International: As is usual for this time of year, influenza activity remained at low levels in the European Region.

1. GP sentinel surveillance system - Clinical Data

- During week 42 2017, 19 influenza-like illness (ILI) cases were reported from sentinel GPs, corresponding to an ILI consultation rate of 7.5 per 100,000 population, remaining low, however a slight increase compared to the updated rate of 4.6 per 100,000 reported during week 41 2017. The ILI rate for week 42 2017 is below the Irish baseline ILI threshold (17.5/100,000 population) (figure 1).
- ILI age specific rates were low in all age groups during week 42 2017 (figure 2).
- HPSC in consultation with the European Centre for Disease Prevention and Control (ECDC) has revised the Irish baseline ILI threshold for the 2017/2018 influenza season to 17.5 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 (17.5/100,000 population), medium (59.6/100,000 population) and high (114.5/100,000 population) intensity ILI thresholds are shown in figure 1.

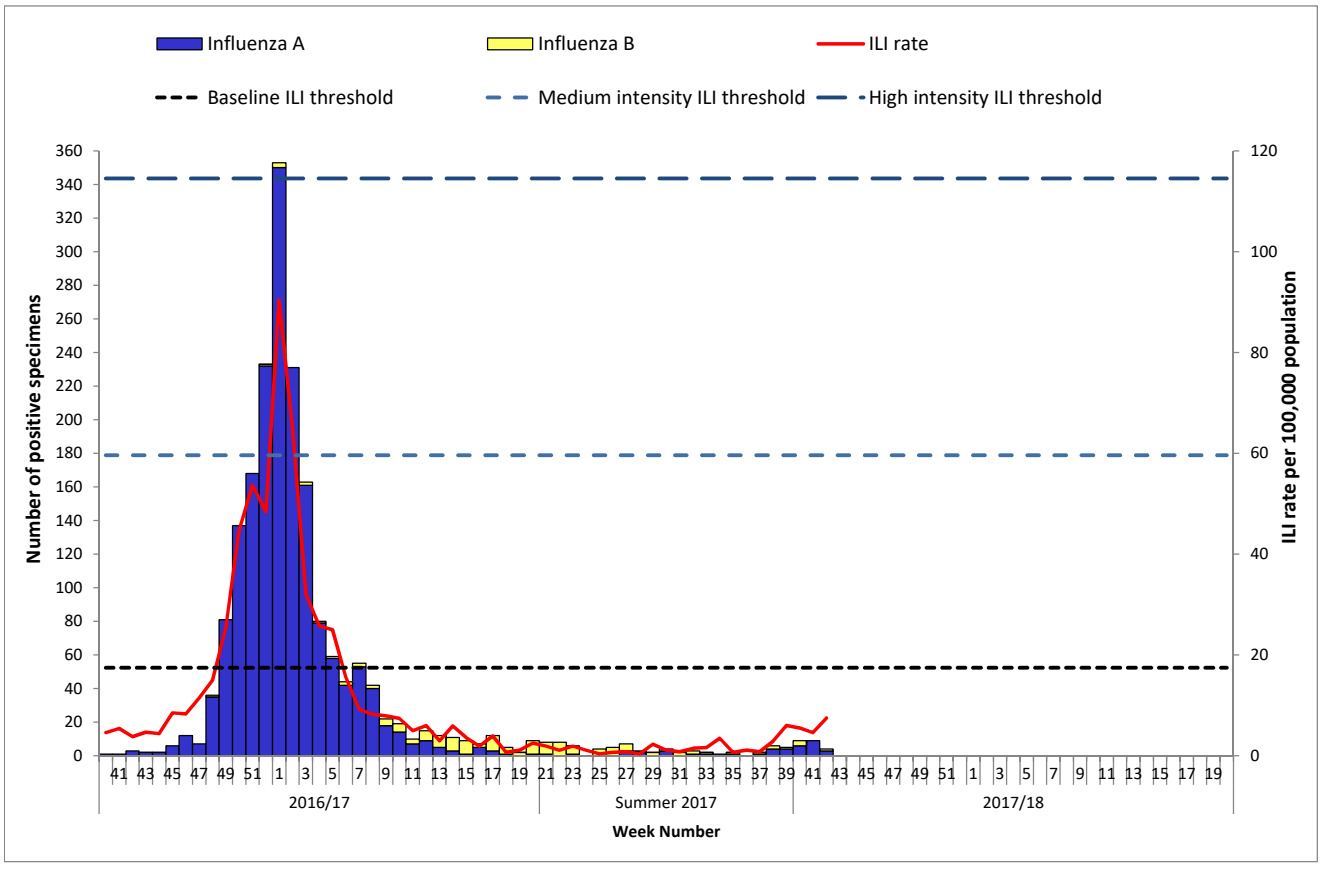

Figure 1: ILI sentinel GP consultation rates per 100,000 population, baseline ILI threshold, medium and high intensity ILI thresholds* and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season.
Source: ICGP and NVRL

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

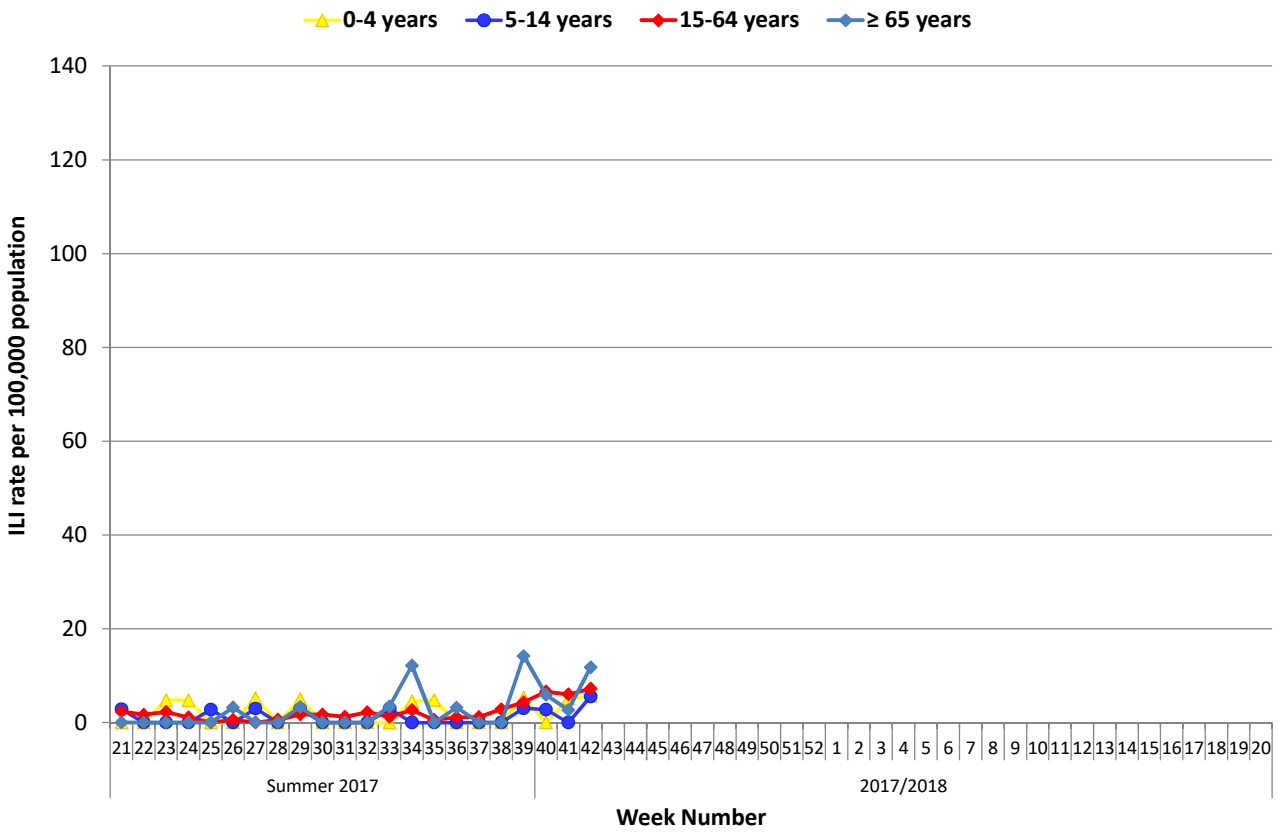

Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2017 and the 2017/2018 influenza season to date. *Source: ICGP.*

2. Influenza and Other Respiratory Virus Detections - NVRL

The data reported in this section for the 2017/2018 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) (figure 3 and tables 1 & 2).

- Influenza positivity reported by the NVRL was at low levels during week 42 2017, at 1.7%.
- Four confirmed influenza positive specimens were reported from non-sentinel sources during week 42 2017, three influenza A(H3N2) and one influenza B viruses. No confirmed influenza positive specimens were reported from the sentinel GP network during week 42 2017. Data from the NVRL for week 42 2017 and the 2017/2018 season to date are detailed in tables 1 and 2.
- Sporadic positive specimens of influenza A(H3N2), A(H1N1)pdm09 and B were reported from sentinel GP and non-sentinel sources for the 2017/2018 influenza season to date.
- Respiratory syncytial virus (RSV) positive detections remained at low levels, however increased slightly during week 42 2017, compared to the previous week (table 2).
- Sporadic detections of parainfluenza virus, adenovirus and human metapneumovirus (hMPV) were reported during week 42 2017 and for the 2017/2018 influenza season to date (table 2).
- An increase in picornavirus positive detections, which includes both rhinoviruses and enteroviruses, has been reported in September and October (data on picornaviruses* are not included in this report).

**Respiratory viruses routinely tested for by the NVRL and reported in the influenza surveillance report are detailed above.*

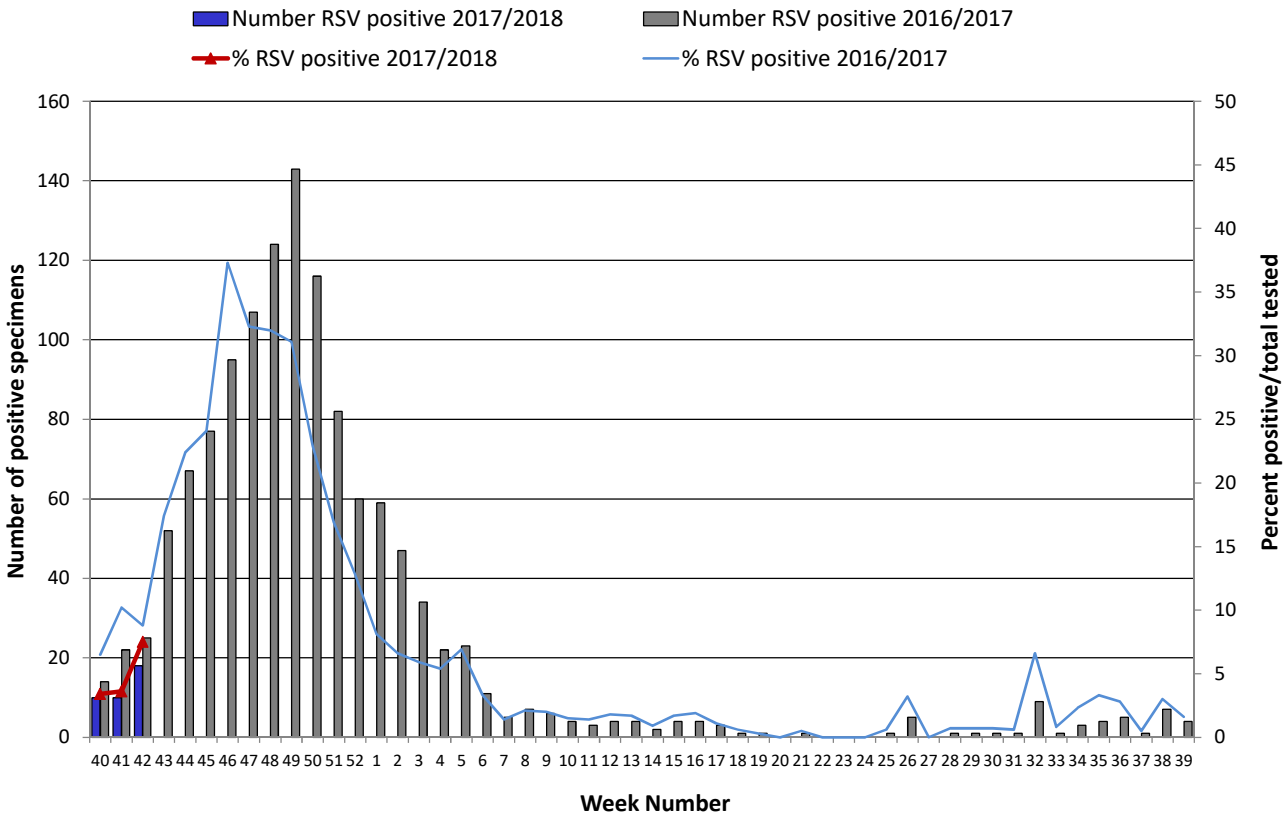

Figure 3: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2017/2018 season, compared to the 2016/2017 season. *Source: NVRL.*

Table 1: Number of sentinel and non-sentinel[†] respiratory specimens tested by the NVRL and positive influenza results, for week 42 2017 and the 2017/2018 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	
42 2017	Sentinel	1	0	0.0	0	0	0	0	0
	Non-sentinel	241	4	1.7	0	3	0	3	1
	Total	**242**	**4**	**1.7**	**0**	**3**	**0**	**3**	**1**
2017/2018	Sentinel	20	3	15.0	1	1	0	2	1
	Non-sentinel	813	19	2.3	4	9	3	16	3
	Total	**833**	**22**	**2.6**	**5**	**10**	**3**	**18**	**4**

Table 2: Number of non-sentinel specimens tested by the NVRL for other respiratory viruses and positive results, for week 42 2017 and the 2017/2018 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
42 2017	Sentinel	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Non-sentinel	241	18	7.5	2	0.8	17	7.1	3	1.2	0	0.0	4	1.7	9	3.7
	Total	**242**	**18**	**7.4**	**2**	**0.8**	**17**	**7.0**	**3**	**1.2**	**0**	**0.0**	**4**	**1.7**	**9**	**3.7**
2017/2018	Sentinel	20	0	0.0	1	5.0	1	5.0	0	0.0	0	0.0	0	0.0	0	0.0
	Non-sentinel	813	38	4.7	16	2.0	43	5.3	5	0.6	2	0.2	7	0.9	55	6.8
	Total	**833**	**38**	**4.6**	**17**	**2.0**	**44**	**5.3**	**5**	**0.6**	**2**	**0.2**	**7**	**0.8**	**55**	**6.6**

[†] 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.

Sporadic influenza activity (based on ILI cases and/or laboratory confirmed influenza cases) was reported in HSE-East, -Midlands, -Midwest, -Northwest, and -Southeast during week 42 2017. No influenza activity was reported in HSE-Northeast, -South and -West during week 42 2017 (figure 4).

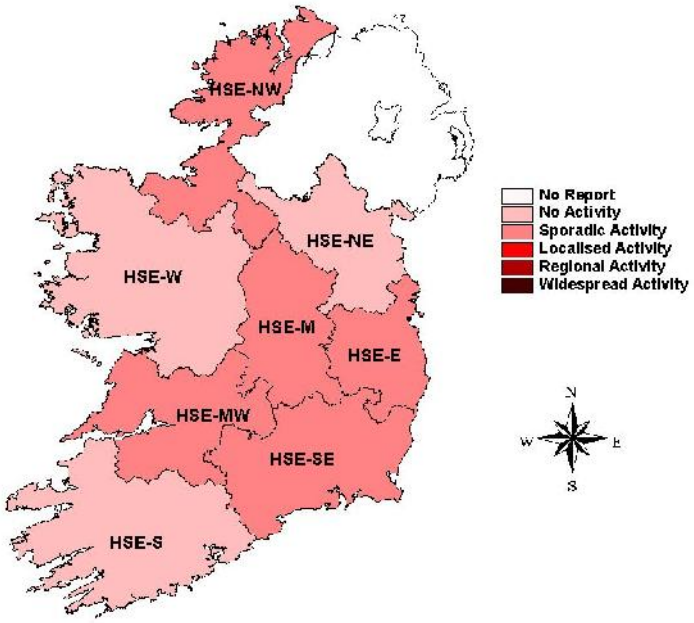

Figure 4: Map of provisional influenza activity by HSE-Area during influenza week 42 2017

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 a network of sentinel hospitals were at low levels; at 285 during week 41 2017 and 212 during week 42 2017 (figure 5). It should be noted that of the eight sentinel hospitals, data were not reported from two hospitals during week 42 2017 and from one hospital during weeks 39 - 41 2017.

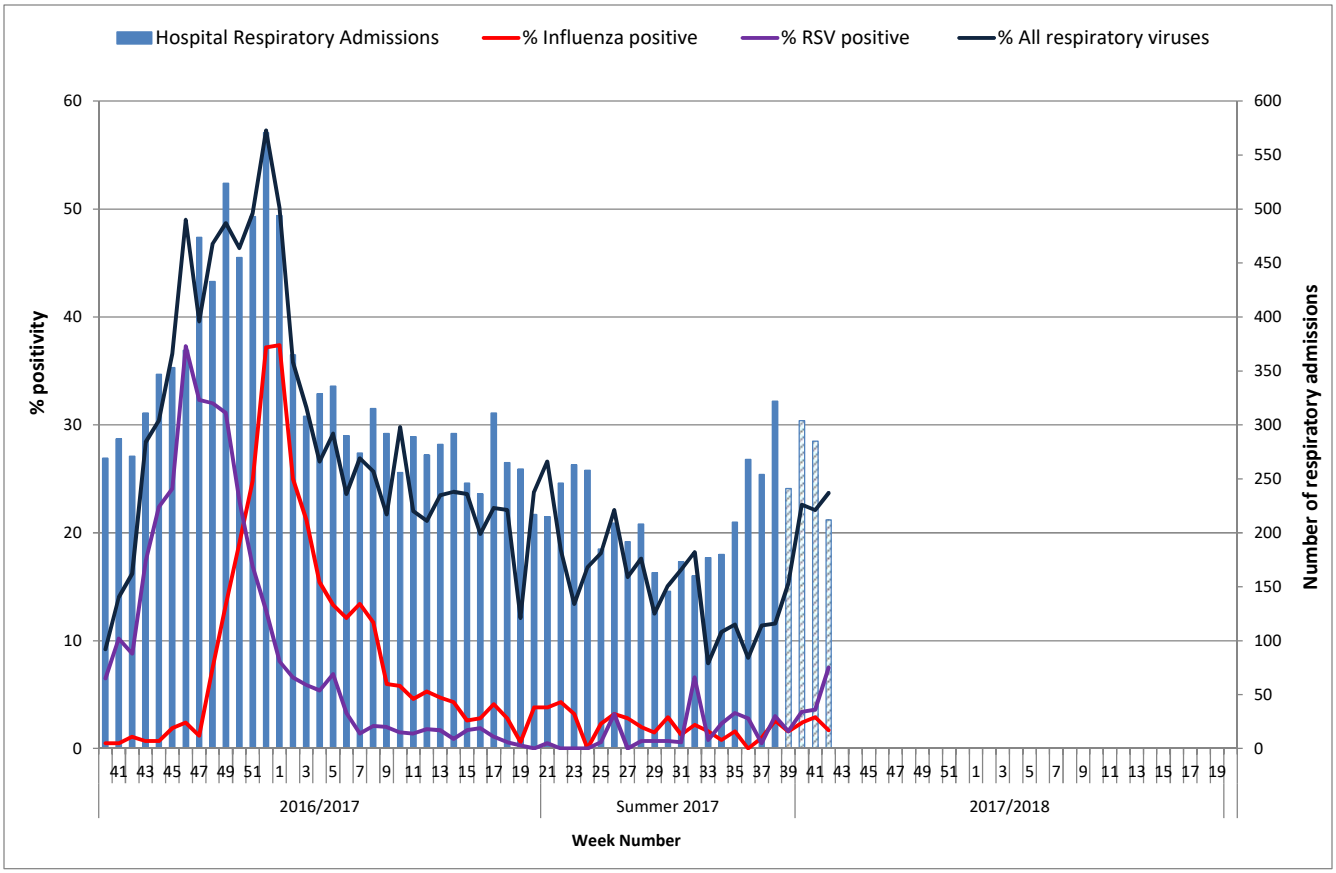

Figure 5: Number of respiratory admissions reported from the sentinel hospital network and % positivity for influenza, RSV and all seasonal respiratory viruses tested* by the NVRL by week and season. *Source: Departments of Public Health - Sentinel Hospitals & NVRL. *All seasonal respiratory viruses 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 weeks 39 – 42 2017; these weeks are 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 at low levels and was stable during week 42 2017 at 1.5%, remaining unchanged compared to 1.6% reported during week 41 2017. A slight increase in the proportion of influenza-related calls to GP Out-of-Hours services occurred between weeks 36-39 2017; this increase is usually observed each September when schools return from the summer break (figure 6).

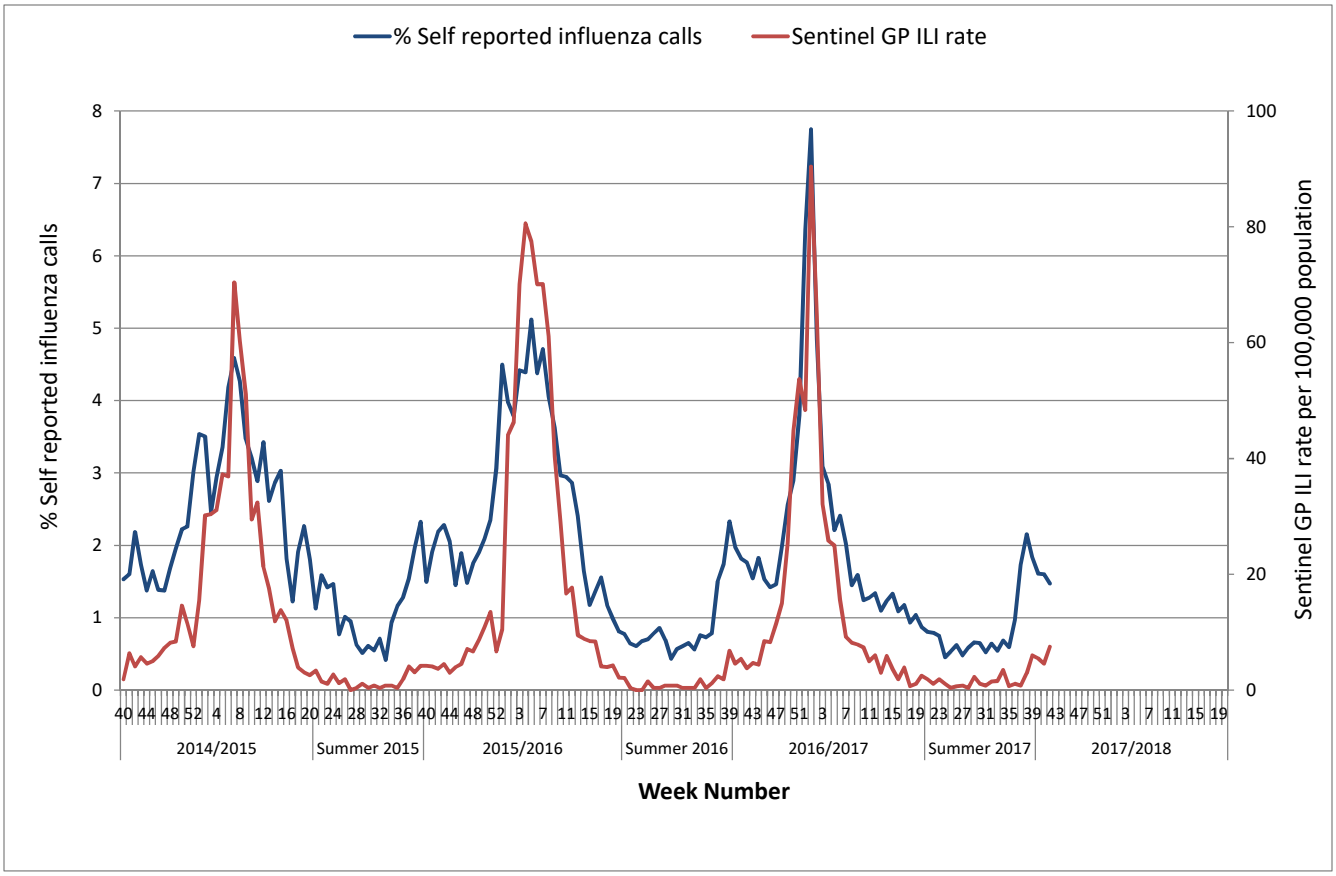

Figure 6: Self-reported influenza-related calls as a proportion of total calls to Out-of-Hours GP Co-ops and sentinel GP ILI consultation rate per 100,000 population by week and season. *Source: GP Out-Of-Hours services in Ireland (collated by HSE-NE) & ICGP.*

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 were at low levels during week 42 2017, with eight confirmed influenza cases notified. RSV notifications were also at low levels, however have started to increase, with 23 cases notified during week 42 2017.

6. Influenza Hospitalisations

Six confirmed influenza hospitalised cases were notified to HPSC during week 42 2017: three associated with influenza A(H1N1)pdm09, one with influenza A(H3N2) and two with influenza A (not subtyped). For the 2017/2018 influenza season to date, eleven confirmed influenza hospitalised cases have been notified to HPSC: three associated with influenza A(H1N1)pdm09, three with influenza A(H3N2), two with influenza A (not subtyped) and three with influenza B.

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.

No confirmed influenza cases were admitted to critical care and reported to HPSC during the 2017/2018 influenza 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 the 2017/2018 influenza season to date.
- No excess all-cause mortality was reported this season in Ireland after correcting GRO data for reporting delays with the standardised EuroMOMO algorithm.

9. Outbreak Surveillance

No acute respiratory infection (ARI)/influenza outbreaks were notified to HPSC during week 42 2017. For the 2017/2018 influenza season to date, two ARI/influenza outbreaks in residential care facilities/long stay units have been notified; one in HSE-South associated with influenza A(H1N1)pdm09 and one in HSE-Northwest associated with RSV and hMPV.

10. International Summary

As is usual for this time of year, influenza activity is low in the European Region. Influenza A and B viruses were detected sporadically during this period. As of October 16th 2017, globally, influenza activity remained at low levels in the temperate zone of the northern hemisphere. Declining levels of influenza activity were reported in the temperate zone of the southern hemisphere and in some countries of South and South East Asia. In Central America and the Caribbean, low influenza activity was reported in a few countries. Worldwide, influenza A(H3N2) and B viruses accounted for the majority of influenza detections. 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.
- Further information on avian influenza is available on the ECDC website. The latest ECDC rapid risk assessment on highly pathogenic avian influenza A of H5 type is also available on the ECDC website.

11. WHO recommendations on the composition of influenza virus vaccines

On March 2, 2017, the WHO vaccine strain selection committee recommended that trivalent vaccines for use in the 2017/2018 northern hemisphere influenza season contain the following: an A/Michigan/45/2015 (H1N1)pdm09-like virus; an A/Hong Kong/4801/2014 (H3N2)-like virus; a B/Brisbane/60/2008-like virus. It is recommended that quadrivalent vaccines containing two influenza B viruses contain the above three viruses and a B/Phuket/3073/2013-like virus.

On September 28, 2017, the WHO vaccine strain selection committee recommended that trivalent vaccines for use in the 2018 southern hemisphere influenza season contain the following: an A/Michigan/45/2015 (H1N1)pdm09-like virus; an A/Singapore/INFIMH-16-0019/2016 (H3N2)-like virus; a B/Phuket/3073/2013-like virus.It is recommended that quadrivalent vaccines containing two influenza B viruses contain the above three viruses and 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

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