

Influenza Surveillance in Ireland – Weekly Report

Influenza Week 49 2018 (3rd – 9th December 2018)



Summary

All indicators of influenza activity in Ireland were at low levels during week 49 2018 (week ending 9th December 2018). Respiratory syncytial virus (RSV) detections remain elevated.

- **Influenza-like illness (ILI):** The sentinel GP influenza-like illness (ILI) consultation rate was 7.7 per 100,000 population in week 49 2018, an increase compared to the updated rate of 4.7 per 100,000 reported during week 48 2018
 - 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 except for the 0-4 year age group which increased
- **GP Out of Hours:** The proportion of influenza-related calls to GP Out-of-Hours services was at low levels during week 49 2018
- **National Virus Reference Laboratory (NVRL):**
 - Nineteen (4.1%) confirmed influenza positive specimens were reported from non-sentinel sources during week 49 2018, all of which were influenza A(H1N1)pdm09
 - No confirmed influenza positive specimens were reported from the sentinel GP network during week 49 2018
 - Respiratory syncytial virus (RSV) detections remain elevated but are within expected levels for this time of year
 - Human metapneumovirus, adenovirus, parainfluenza virus, coronavirus and picornavirus (which includes both rhinovirus and enterovirus) positive detections continue to be detected
 - Coinfections of seasonal respiratory viruses were reported during week 49 2018
- **Hospitalisations:** Eleven confirmed influenza hospitalised cases were notified to HPSC during week 49 2018
- **Critical care admissions:** Two confirmed influenza cases were admitted to critical care units and reported to HPSC during week 49 2018
- **Mortality:** One influenza-associated death was reported to HPSC during the 2018/2019 influenza season to date
- **Outbreaks:** One acute respiratory infection outbreak was reported to HPSC during week 49 2018
- **International:** As is usual for this time of year, influenza activity continued to increase but remained at low levels in the temperate zone of the northern hemisphere

1. GP sentinel surveillance system - Clinical Data

- During week 49 2018, 18 influenza-like illness (ILI) cases were reported from sentinel GPs, corresponding to an ILI consultation rate of 7.7 per 100,000 population, an increase compared to the updated rate of 4.7 per 100,000 reported during week 48 2018. The ILI rate for week 49 2018 is below the Irish baseline ILI threshold (17.5/100,000 population) (figure 1).
- ILI age specific rates were low in all age groups except for the 0-4 year age group which increased during week 49 2018 (figure 2).
- HPSC in consultation with the European Centre for Disease Prevention and Control (ECDC) has revised the Irish baseline ILI threshold for the 2018/2019 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.
- The baseline ILI threshold (17.5/100,000 population), medium (62.3/100,000 population) and high (122.2/100,000 population) intensity ILI thresholds are shown in figure 1.

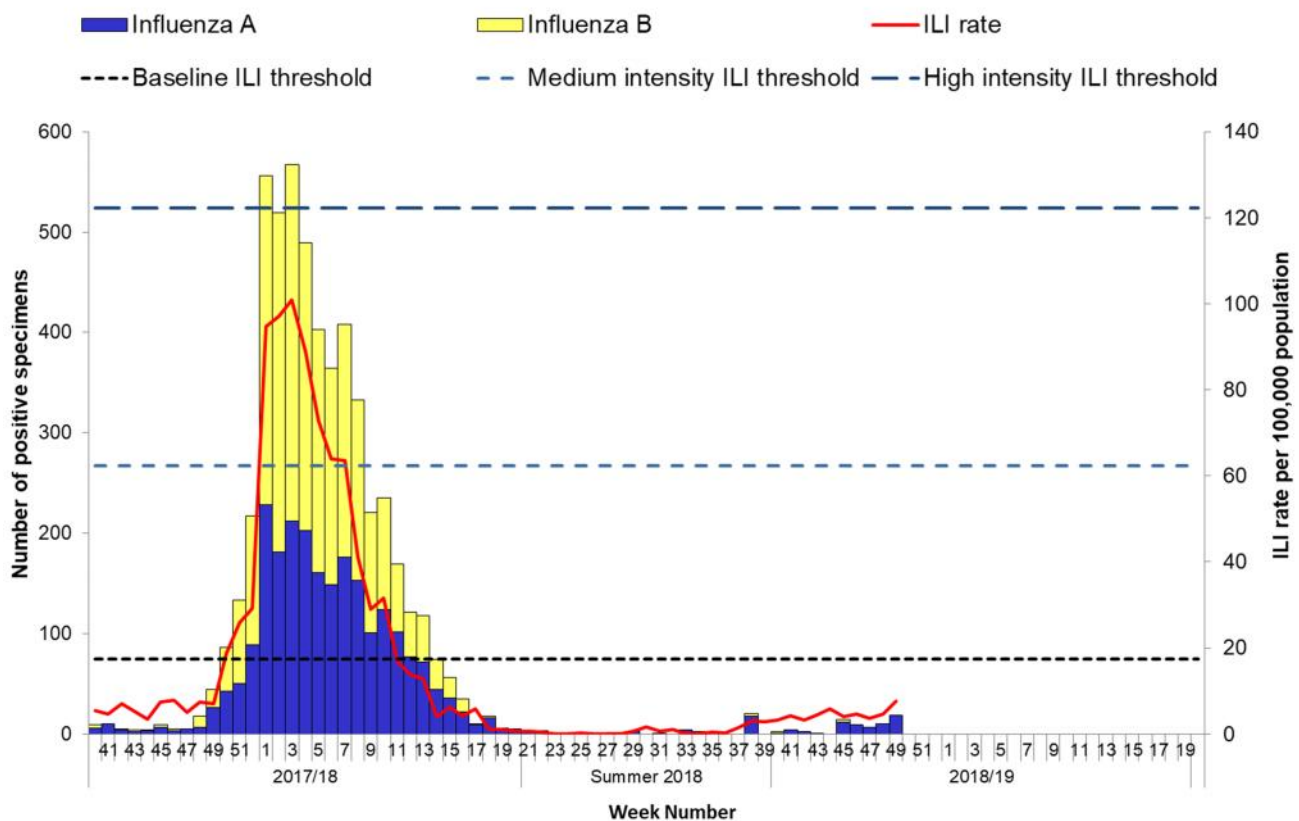


Figure 1: ILI sentinel GP consultation rates per 100,000 population, baseline ILI threshold, medium and high intensity ILI thresholds* and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season.
 Source: ICGP and NVRL

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

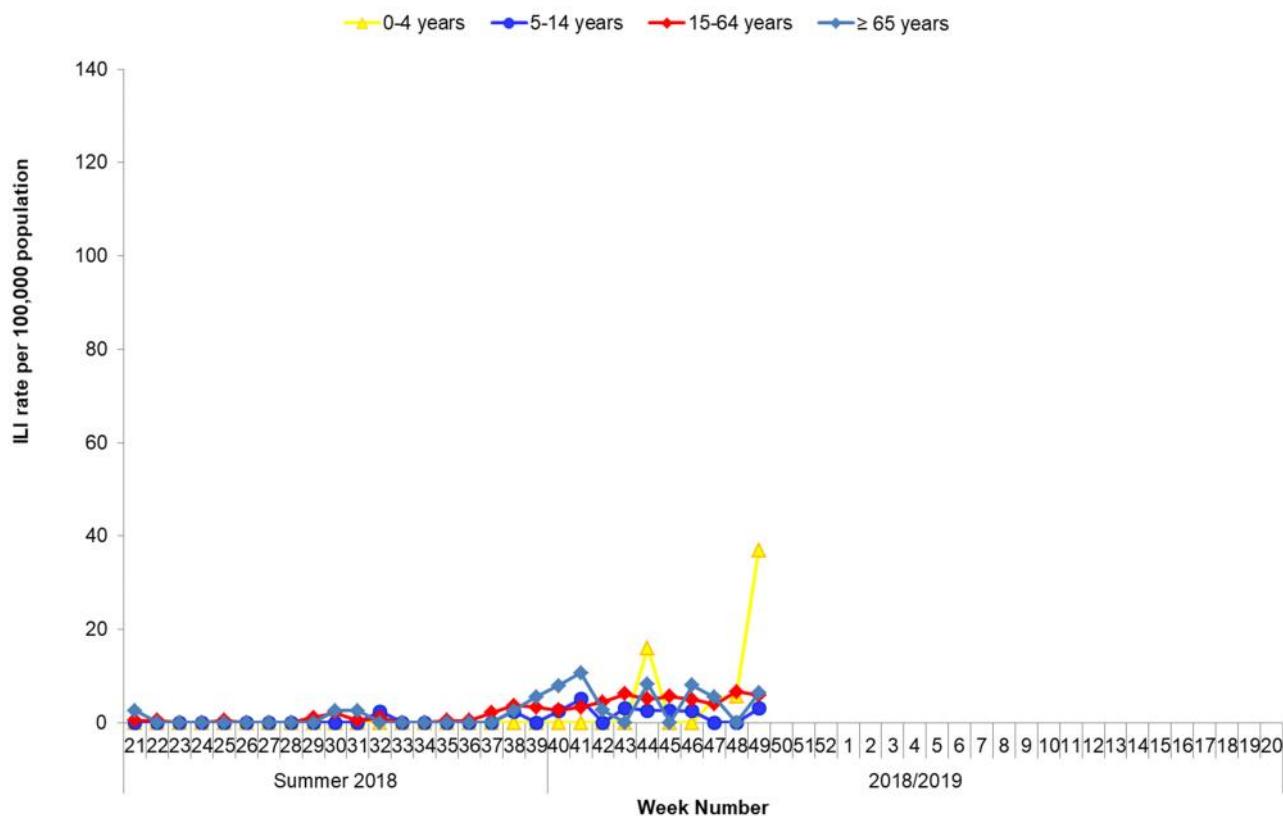


Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2018 and the 2018/2019 influenza season to date. Source: ICGP.

2. Influenza and Other Respiratory Virus Detections - NVRL

The data reported in this section for the 2018/2019 influenza season refer 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).

- Nineteen (4.1%) confirmed influenza positive specimens were reported from non-sentinel sources during week 49 2018, all of which were influenza A(H1N1)pdm09.
- No confirmed influenza positive specimens were reported from the sentinel GP network during week 49 2018. Data from the NVRL for week 49 2018 are detailed in tables 1 and 2.
- Respiratory syncytial virus (RSV) detections remain elevated but are within expected levels for this time of year.
- Human metapneumovirus, adenovirus, parainfluenza virus, coronavirus and picornavirus (which includes both rhinovirus and enterovirus) positive detections continue to be detected
- Coinfections of seasonal respiratory viruses were reported during week 49 2018

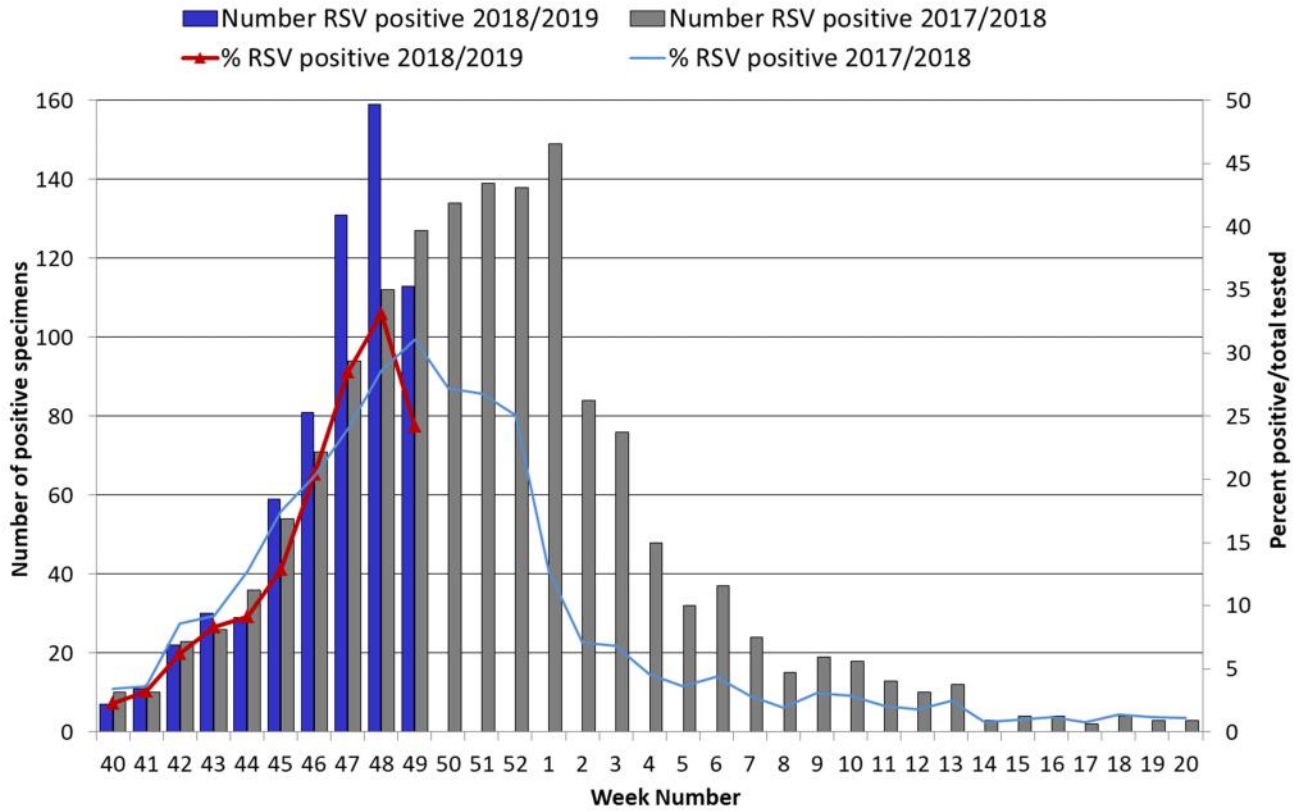


Figure 3: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2018/2019 season, compared to the 2017/2018 season. Source: NVRL.

Table 1: Number of sentinel and non-sentinel[†] respiratory specimens tested by the NVRL and positive influenza results, for week 49 2018. 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	
49 2018	Sentinel	9	0	0.0	0	0	0	0	0
	Non-sentinel	466	19	4.1	19	0	0	19	0
	Total	475	19	4.0	19	0	0	19	0
2018/2019	Sentinel	64	1	1.6	0	0	0	0	1
	Non-sentinel	3956	67	1.7	52	10	3	65	2
	Total	4020	68	1.7	52	10	3	65	3

Table 2: Number of non-sentinel specimens tested by the NVRL for other respiratory viruses and positive results, for week 49 2018. 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
49 2018	Sentinel	9	2	22.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	11.1
	Non-sentinel	466	113	24.2	7	1.5	0	0.0	0	0.0	5	1.1	3	0.6	17	3.6
	Total	475	115	24.2	7	1.5	0	0.0	0	0.0	5	1.1	3	0.6	18	3.8
2018/2019	Sentinel	64	10	15.6	2	3.1	1	1.6	0	0.0	1	1.6	2	3.1	5	7.8
	Non-sentinel	3956	642	16.2	115	2.9	2	0.1	14	0.4	33	0.8	135	3.4	152	3.8
	Total	4020	652	16.2	117	2.9	3	0.1	14	0.3	34	0.8	137	3.4	157	3.9

[†] 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.

During week 49 2018 sporadic influenza activity (based on ILI cases and/or laboratory confirmed influenza cases) was reported by all HSE areas (figure 4).

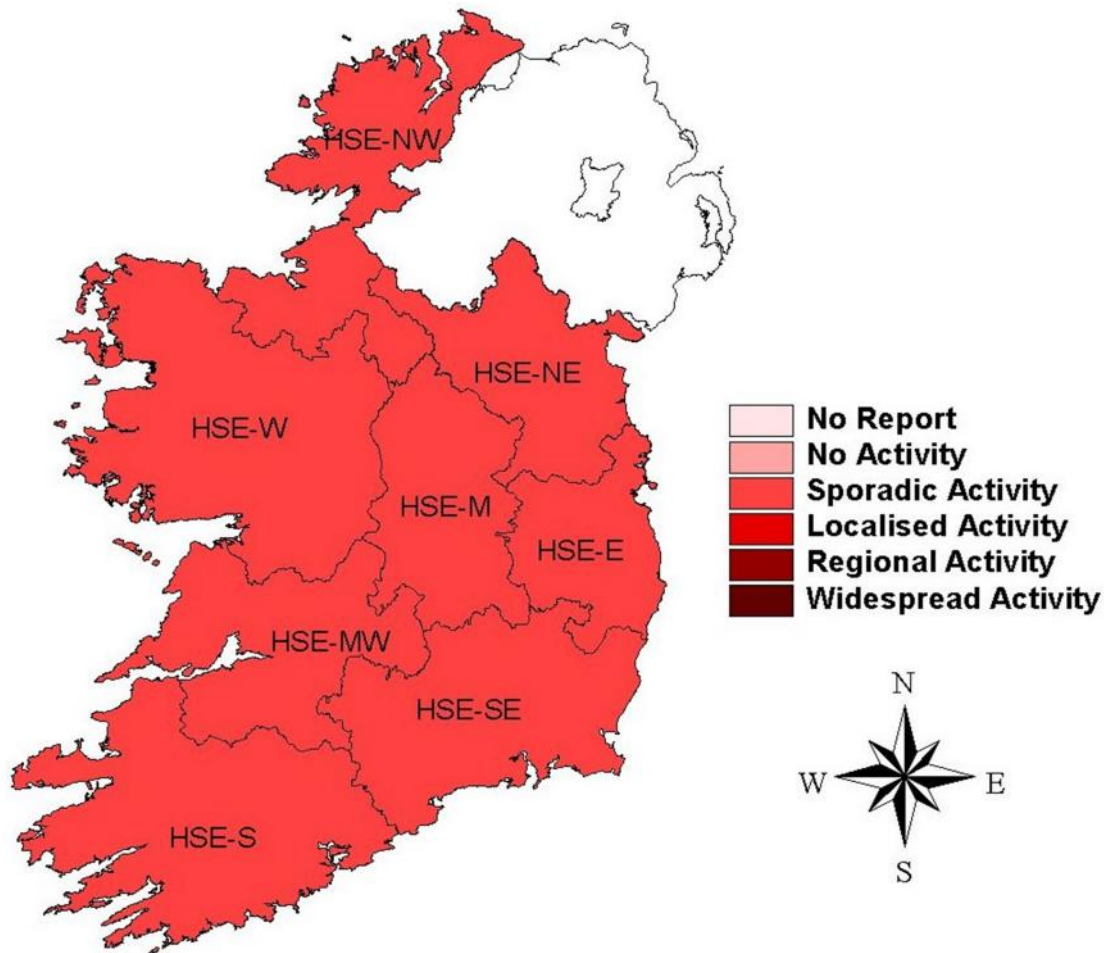


Figure 4: Map of provisional influenza activity by HSE-Area during influenza week 49 2018

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 moderate levels, at 468, during week 49 2018 (figure 5). All eight sentinel hospitals reported data in week 49.

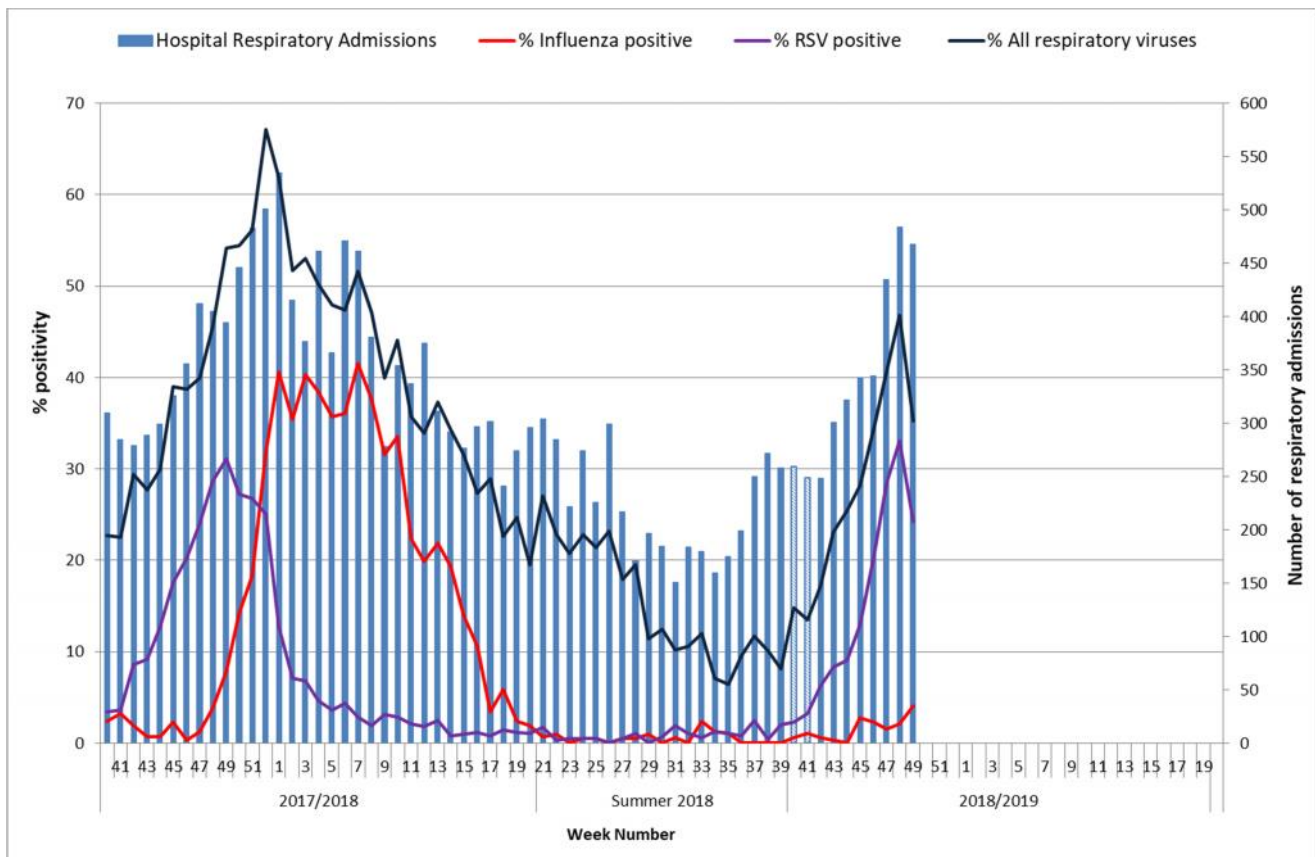


Figure 5: Number of respiratory admissions reported from the sentinel hospital network and % positivity for influenza, RSV and all seasonal respiratory viruses tested[‡] by the NVRL by week and season. Source: Departments of Public Health - Sentinel Hospitals & NVRL.

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 during week 49 2018 at 2.0%, a slight increase compared to 1.8% reported during week 48 2018 (figure 6). Five of the nine GP Out-of -Hours services reported during week 49.

[‡] 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). Weeks where data were missing or unavailable are represented by the hatched bar

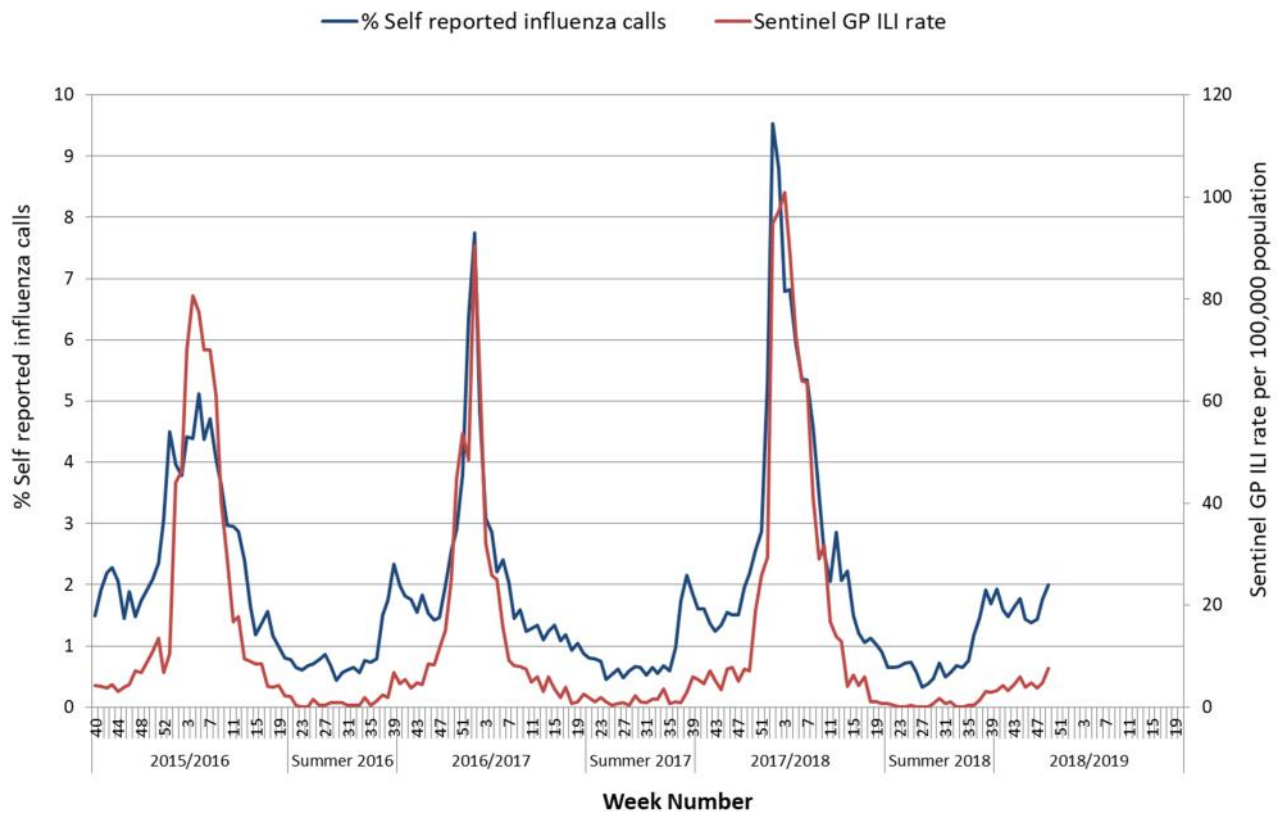


Figure 6: Self-reported influenza-related calls as a proportion of total calls to Out-of-Hours GP Co-ops and sentinel GP ILI consultation rate per 100,000 population by week and season. Source: GP Out-Of-Hours services in Ireland (collated by HSE-NE) & ICGP.

5. Influenza & RSV notifications

Influenza and RSV case 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 remained at low levels during week 49 2018, with 26 confirmed influenza cases notified. Eleven cases were due to influenza A(H1N1)pdm09, two were influenza A(H3N2) and 13 were influenza A (not subtyped). RSV notifications remained elevated and are at high levels, with 293 cases notified during week 49 2018.

6. Influenza Hospitalisations

Eleven confirmed influenza hospitalised cases were notified to HPSC during week 49 2018. During the 2018-2019 influenza season to date, 44 confirmed influenza hospitalised cases have been notified. Eighteen were due to influenza A(H1N1)pdm09, two were due to influenza A(H3N2), 22 were due to influenza A (not subtyped) and two were due to 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.

Two confirmed influenza cases were admitted to critical care units and reported to HPSC during week 49 2018. Four confirmed influenza cases were admitted to critical care units and reported to HPSC during weeks 40-49 2018. All confirmed influenza cases admitted to critical care units to date this season were due to influenza A(H1N1)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.

- One influenza-associated death was reported to HPSC during the 2018/2019 influenza season to date.
- During week 49 2018, 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 was reported to HPSC during week 49 2018. All ARI, RSV and influenza outbreaks during the 2018/2019 season to date have occurred in community hospital/ long stay units, nursing homes or residential institutions. Two ARI outbreaks were due to rhinovirus, one was due to human metapneumovirus, one was due to coronavirus and the pathogen was not reported for the remaining three ARI outbreaks. Table 3 summarises respiratory outbreaks notified on CIDR during the 2018/2019 season to date.

Table 3: Summary of respiratory outbreaks by HSE area and disease during 2018/2019 Source: CIDR

HSE area	Acute respiratory infection	Influenza	Respiratory syncytial virus infection	Total
HSE-E	1			1
HSE-M	2			2
HSE-NW			2	2
HSE-SE	1	1		2
HSE-S	2			2
HSE-W	1			1
Total	7	1	2	10

[§] Excludes family outbreaks

10. International Summary

As is usual for this time of year, influenza activity was low throughout the European Region. Influenza viruses were detected sporadically in specimens from persons with respiratory illness presenting to medical care. The majority of influenza virus detections were influenza A in sentinel, non-sentinel and hospitalised cases. For week 48 2018, data from the 22 Member States and areas reporting to the EuroMOMO project indicated all-cause mortality to be at expected levels for this time of year. As of 10th December 2018, in the temperate zone of the northern hemisphere influenza activity continued to increase although overall influenza activity remained low. Increased influenza detections were reported in some countries of Southern and South-East Asia. In the temperate zones of the southern hemisphere, influenza activity returned to inter-seasonal levels. Worldwide, seasonal influenza A viruses accounted for the majority of 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 February 22nd, 2018, the WHO vaccine strain selection committee recommended that trivalent vaccines for use in the 2018/2019 northern hemisphere influenza season contain the following:

an A/Michigan/49/2015 (H1N1)pdm09-like virus, an A/Singapore/INFIMH-16-0019/2016 (H3N2)-like virus and a B/Colorado/06/2017-like virus (B/Victoria/2/87 lineage). It is recommended that quadrivalent vaccines containing two influenza B viruses contain the above three viruses and a B/Phuket/3073/2013-like virus (B/Yamagata/16/88 lineage). http://www.who.int/influenza/vaccines/virus/recommendations/2018_19_north/en/

On September 27, 2018, the WHO vaccine strain selection committee recommended that trivalent vaccines for use in the 2019 southern hemisphere influenza season contain the following: an A/Michigan/49/2015 (H1N1)pdm09-like virus; an A/Switzerland/8060/2017 (H3N2)-like virus and a B/Colorado/06/2017-like virus (B/Victoria/2/87 lineage). It is recommended that quadrivalent vaccines containing two influenza B viruses contain the above three viruses and a B/Phuket/3073/2013-like virus (B/Yamagata/16/88 lineage).

<http://www.who.int/influenza/vaccines/virus/recommendations/en/>

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

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