

Influenza Surveillance in Ireland – Weekly Report

Influenza Week 48 2019 (25th November – 1st December 2019)



 **Intensive Care Society of Ireland**

Summary

Influenza activity increased during week 48 2019 (week ending 1st December 2019). Influenza A(H3N2) is the dominant circulating virus to date this season.

- **Influenza-like illness (ILI):** The sentinel GP influenza-like illness (ILI) consultation rate was 16.9 per 100,000 population in week 48 2019. This is an increase compared to the updated rate of 10.7 per 100,000 population reported during week 47 2019.
 - ILI rates remained below the Irish baseline threshold (18.1 per 100,000 population).
 - ILI age specific rates increased in all age groups.
- **GP Out of Hours:** The proportion of influenza-related calls to GP Out-of-Hours services was low during week 48 2019.
- **National Virus Reference Laboratory (NVRL):**
 - Influenza positivity reported by the NVRL was at medium levels during week 48 2019, at 15%.
 - Eighty eight confirmed influenza positive specimens were reported from non-sentinel sources during week 48 2019. Seventy two were influenza A (H3N2), 12 were influenza A(H1N1)pdm09 and four were influenza B.
 - Five confirmed influenza positive specimens were reported from the sentinel GP network during week 48 2019; three were influenza A(H3N2), one was influenza A(H1N1)pdm09 and one was influenza B (Victoria lineage).
 - Respiratory syncytial virus (RSV) positivity has been increasing in recent weeks, as expected at this time of year. RSV activity is currently at high levels.
 - Sporadic detections of parainfluenza virus, adenovirus and human metapneumovirus (hMPV) have been reported to date this season.
- **Hospitalisations:** During week 48 2019, 114 confirmed influenza hospitalised cases were notified to HPSC. During the 2019/2020 influenza season to date, 186 confirmed influenza hospitalised cases have been notified to HPSC.
- **Critical care admissions:** Four confirmed influenza cases were admitted to critical care units and reported to HPSC during week 48 2019. Nine confirmed influenza cases have been reported as admitted to ICU in the 2019/2020 season to date.
- **Mortality:** There were no reports of influenza-associated deaths during week 48 2019 or during the 2019/2020 influenza season to date.
- **Outbreaks:** Three influenza outbreaks and one acute respiratory infection outbreak were reported to HPSC during week 48 2019.
- **International:** Influenza activity is at baseline or low levels in the temperate zone of the northern hemisphere.

1. GP sentinel surveillance system - Clinical Data

- During week 48 2019, 41 influenza-like illness (ILI) cases were reported by sentinel GPs, corresponding to an ILI consultation rate of 16.9 per 100,000 population, an increase compared to the updated rate of 10.7 per 100,000 reported for week 47 2019.
- The ILI rate for week 48 2019 was below the Irish baseline ILI threshold (18.1/100,000 population) (figure 1).
- ILI age specific rates increased in all age groups during week 48 2019 (figure 2).
- HPSC in consultation with the European Centre for Disease Prevention and Control (ECDC) has revised the Irish baseline ILI threshold for the 2019/2020 influenza season to 18.1 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 (18.1/100,000 population), medium (57.5/100,000 population) and high (86.5/100,000 population). Intensity ILI thresholds are shown in figure 1.

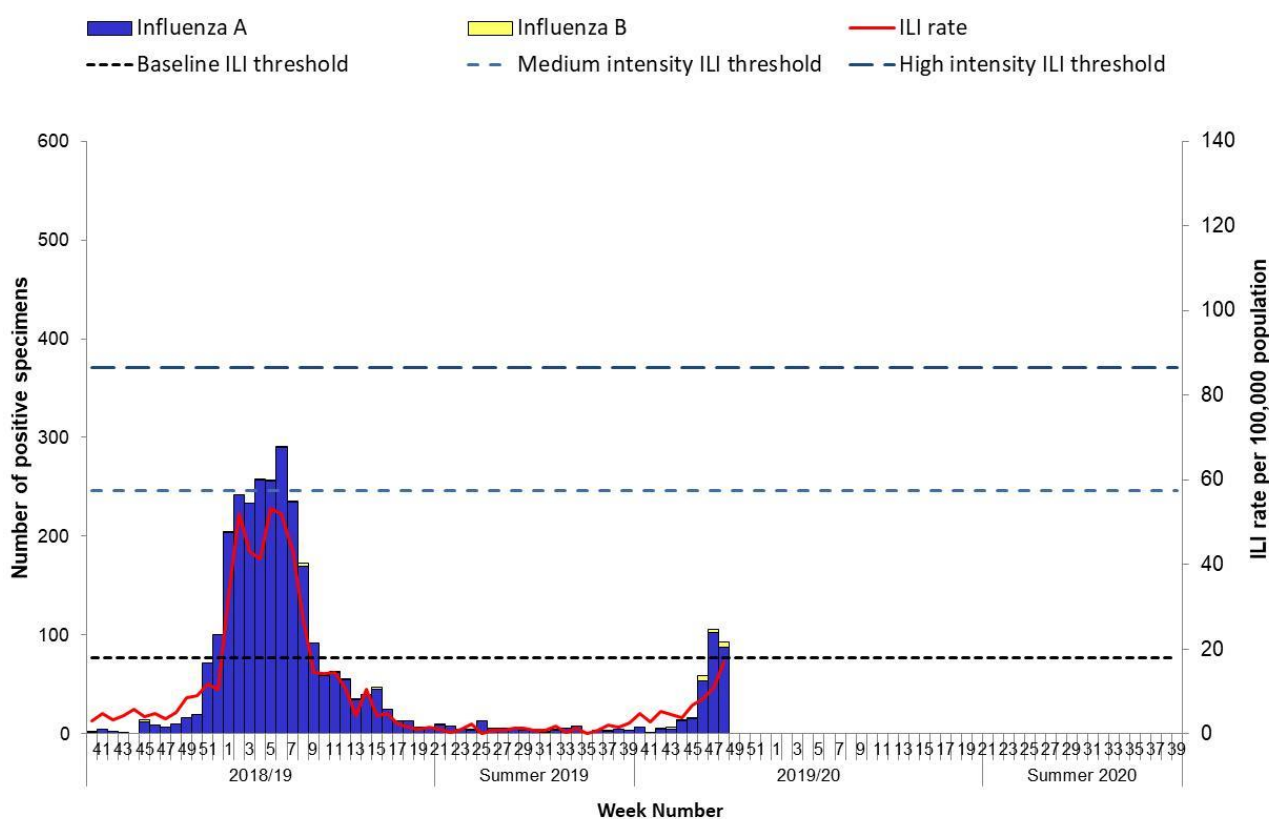


Figure 1: ILI sentinel GP consultation rates per 100,000 population, baseline ILI threshold, medium and high intensity ILI thresholds* and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season. Source: ICGP and NVRL

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

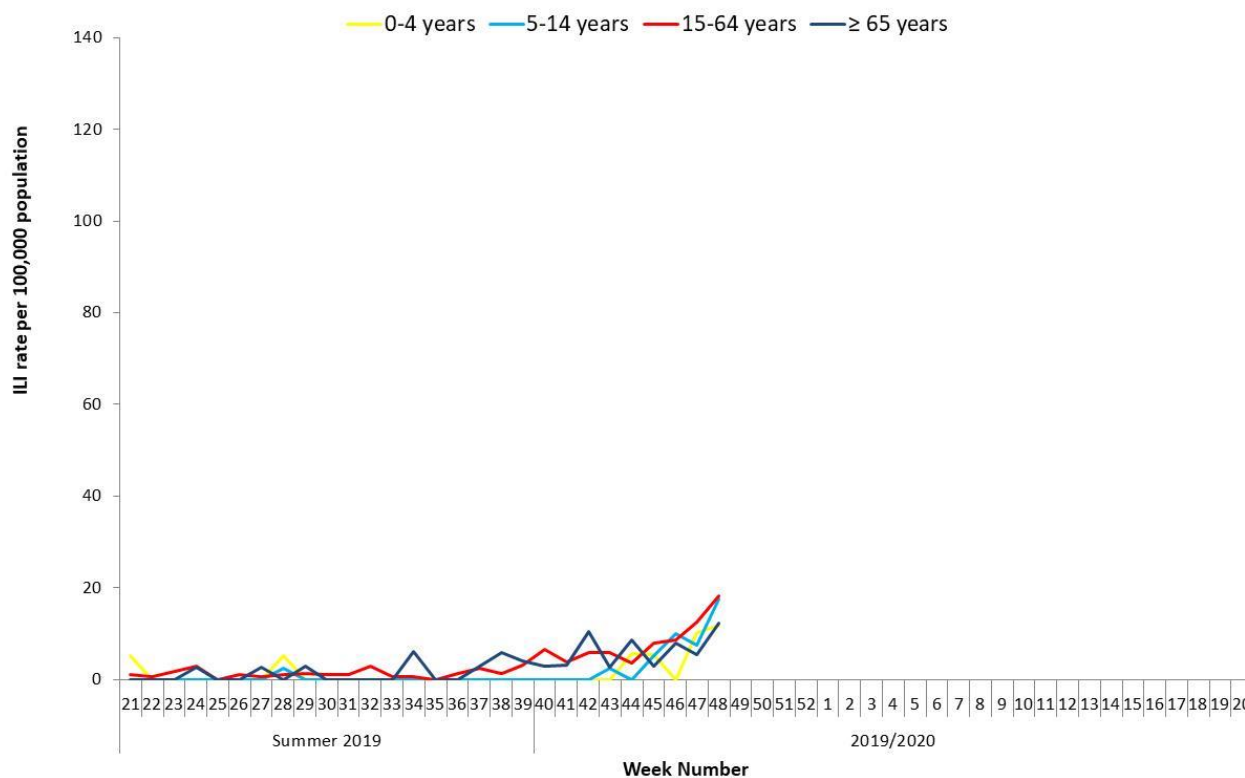


Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2019 and the 2019/2020 influenza season to date. Source: ICGP.

2. Influenza and Other Respiratory Virus Detections - NVRL

The data reported in this section for the 2019/2020 influenza season refers to sentinel specimens routinely tested for influenza and respiratory syncytial virus (RSV) 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, 4, & 5 and tables 1, 2 & 3).

- Influenza detections decreased during week 48, with 93 (15%) influenza positive specimens reported by the NVRL from sentinel and non-sentinel sources, compared to an updated figure of 106 (17%) detections during week 48 2019.
- Eighty eight confirmed influenza positive specimens were reported from non-sentinel sources during week 48 2019. Seventy two were influenza A (H3N2), 12 were influenza A(H1N1)pdm09 and four were influenza B.
- Five confirmed influenza positive specimens were reported from the sentinel GP network during week 48 2019; three were influenza A(H3N2), one was influenza A(H1N1)pdm09 and one was influenza B (Victoria lineage).
- Data from the NVRL for week 48 2019 are detailed in tables 1, 2 and 3.
- Respiratory syncytial virus (RSV) positivity has been increasing since week 40 2019, as expected for this time of year, and RSV activity is now at high levels (figure 5).
- Sporadic detections of parainfluenza virus, adenovirus and human metapneumovirus (hMPV) have been reported to date this season (table 3).
- The overall proportion of non-sentinel specimens positive for respiratory viruses was 44% during week 48 2019.

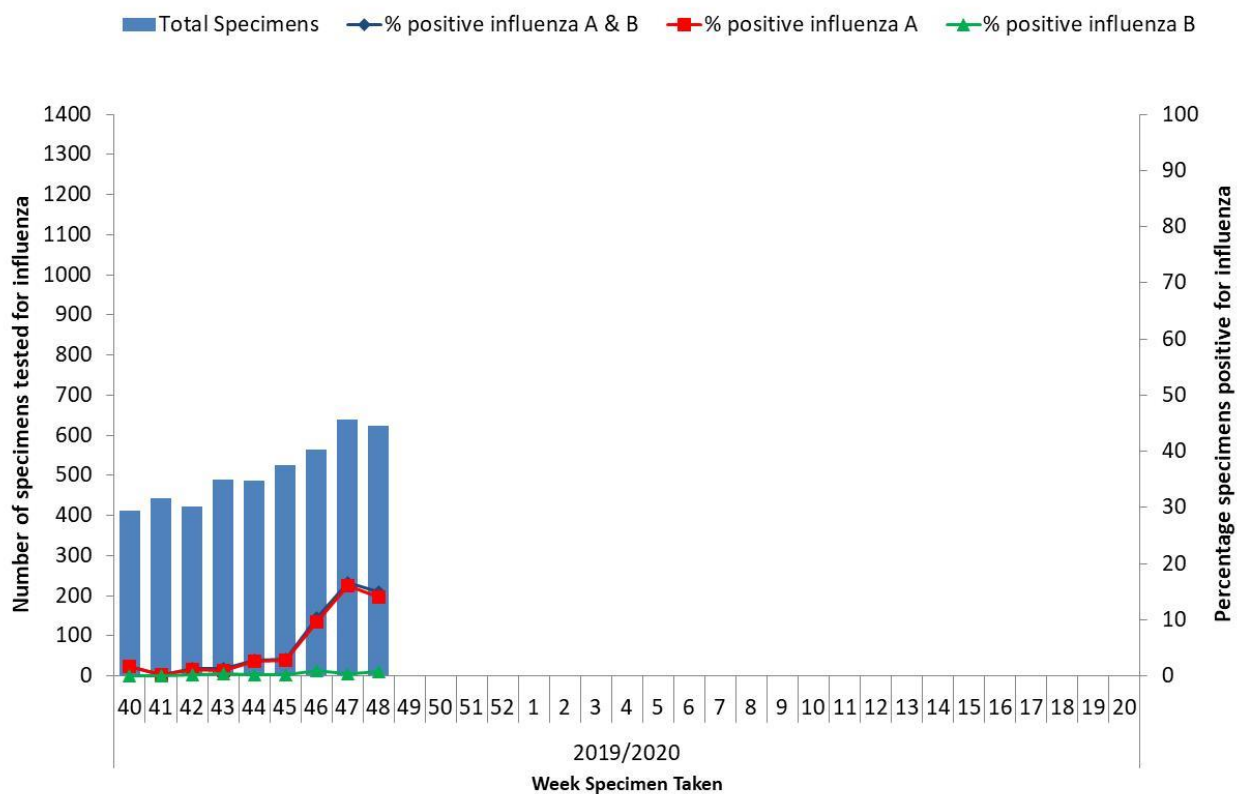


Figure 3: Number of specimens (from sentinel and non-sentinel sources combined) tested by the NVRL for influenza and percentage influenza positive by week for the 2019/2020 influenza season. Source: NVRL.

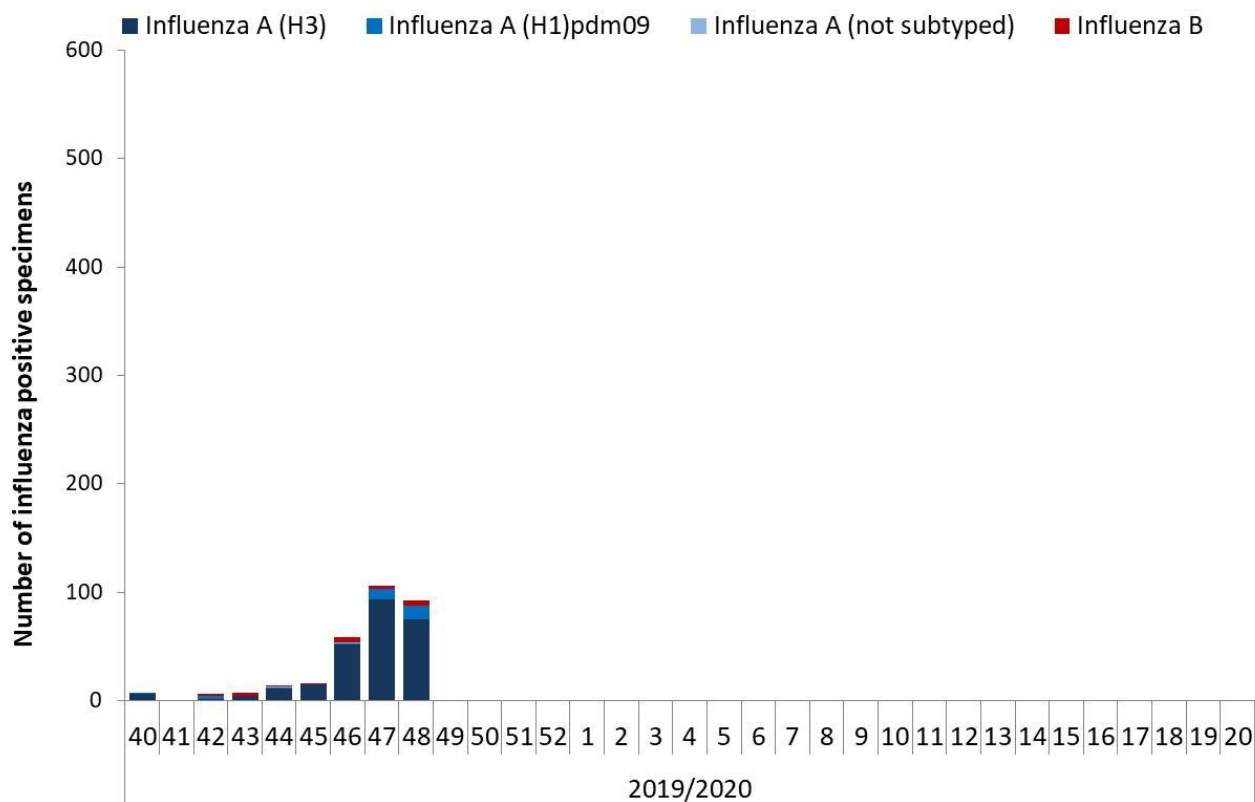


Figure 4: Number of positive influenza specimens (from sentinel and non-sentinel sources combined) by influenza type/subtype tested by the NVRL, by week for the 2019/2020 influenza season. Source: NVRL.

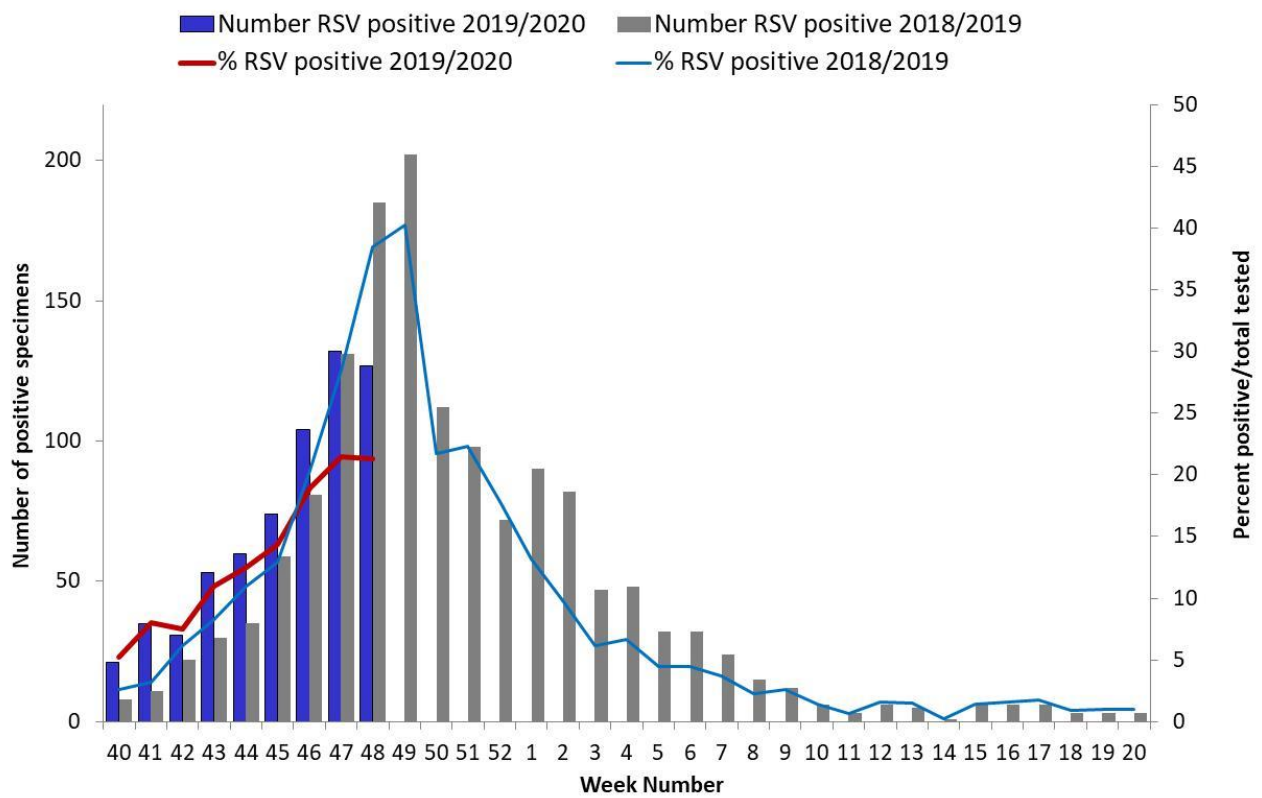


Figure 5: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2019/2020 season, compared to the 2018/2019 season. Source: NVRL.

Table 1: Number of sentinel* and non-sentinel[†] respiratory specimens tested by the NVRL and positive influenza results, for week 48 2019. 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	B (unspecified)	B Victoria lineage	B Yamagata lineage	Total influenza B
48 2019	Sentinel	28	5	17.9	1	3	0	4	0	1	0	1
	Non-sentinel	595	88	14.8	12	72	0	84	4	0	0	4
	Total	623	93	14.9	13	75	0	88	4	1	0	5
2019/2020	Sentinel	120	31	25.8	5	17	0	22	4	4	1	9
	Non-sentinel	4486	278	6.2	23	244	2	269	9	0	0	9
	Total	4606	309	6.7	28	261	2	291	13	4	1	18

Table 2: Number of sentinel* and non-sentinel respiratory specimens tested by the NVRL and positive RSV results, for week 48 2019. Source: NVRL

Week	Specimen type	Total tested	Total RSV	% RSV	RSV A	RSV B	RSV (unspecified)
48 2019	Sentinel	28	1	3.6	1	0	0
	Non-sentinel	595	127	21.3	0	0	127
	Total	623	128	20.5	1	0	127
2019/2020	Sentinel	120	3	2.5	3	0	0
	Non-sentinel	4486	637	14.2	0	0	637
	Total	4606	640	13.9	3	0	637

Table 3: Number of non-sentinel specimens tested by the NVRL for other respiratory viruses and positive results, for week 48 2019. Source: NVRL

Week	Specimen type	Total tested	Adenovirus	% Adenovirus	PIV-1	% PIV-1	PIV-2	% PIV-2	PIV-3	% PIV-3	PIV-4	% PIV-4	hMPV	% hMPV
48 2019	Non-sentinel	595	5	0.8	11	1.8	3	0.5	0	0.0	3	0.5	25	4.2
2019/2020	Non-sentinel	4486	104	2.3	164	3.7	66	1.5	16	0.4	18	0.4	174	3.9

*Sentinel specimens are only tested for influenza and RSV

[†] 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.

The geographical spread of influenza/ILI during week 48 2019 is shown in figure 6. Regional influenza activity (based on ILI cases and/or laboratory confirmed influenza cases) was reported in HSE MW and NW during week 48, localised activity was reported in HSE E and SE and sporadic influenza activity was reported in the remaining areas.

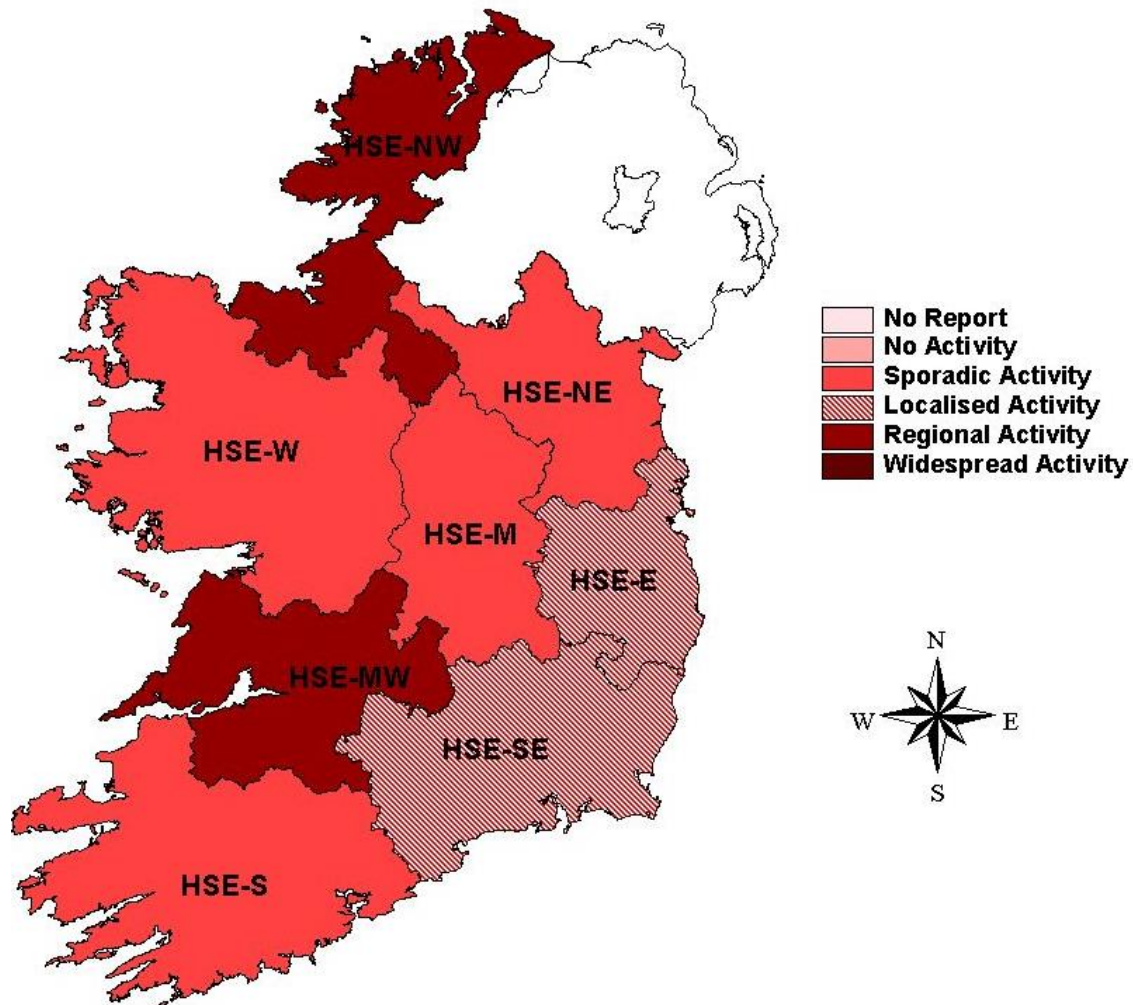


Figure 6: Map of provisional influenza activity by HSE-Area during influenza week 48 2019

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 medium levels, at 436 admissions, during week 48 2019 (figure 7). This was a decrease compared to the 452 respiratory admissions reported during week 47 2019. Six of the eight hospitals reported data for week 48.

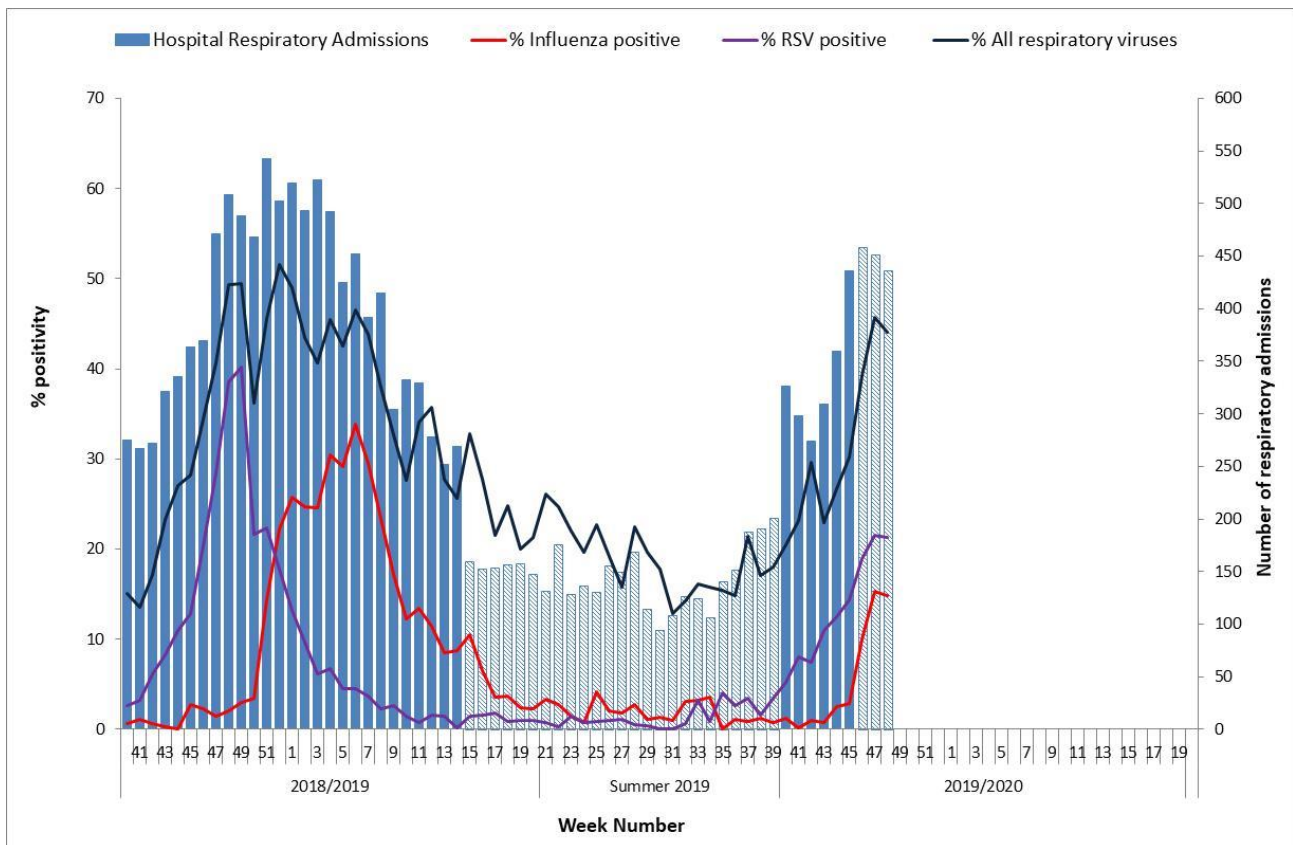


Figure 7: Number of respiratory admissions reported from the sentinel hospital network and % positivity for influenza, RSV and all seasonal respiratory viruses tested* by the NVRL by week and season. Source: Departments of Public Health - Sentinel Hospitals & NVRL. *All seasonal respiratory viruses tested refer to non-sentinel respiratory specimens routinely tested by the NVRL including influenza, RSV, adenovirus, parainfluenza viruses and human metapneumovirus (hMPV). Weeks with missing data 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 was at low levels during week 48 2019 at 2.1%, similar to the 2.0% reported for week 47. Five services reported data for week 48 and there were 334 calls relating to self-reported influenza (figure 8).

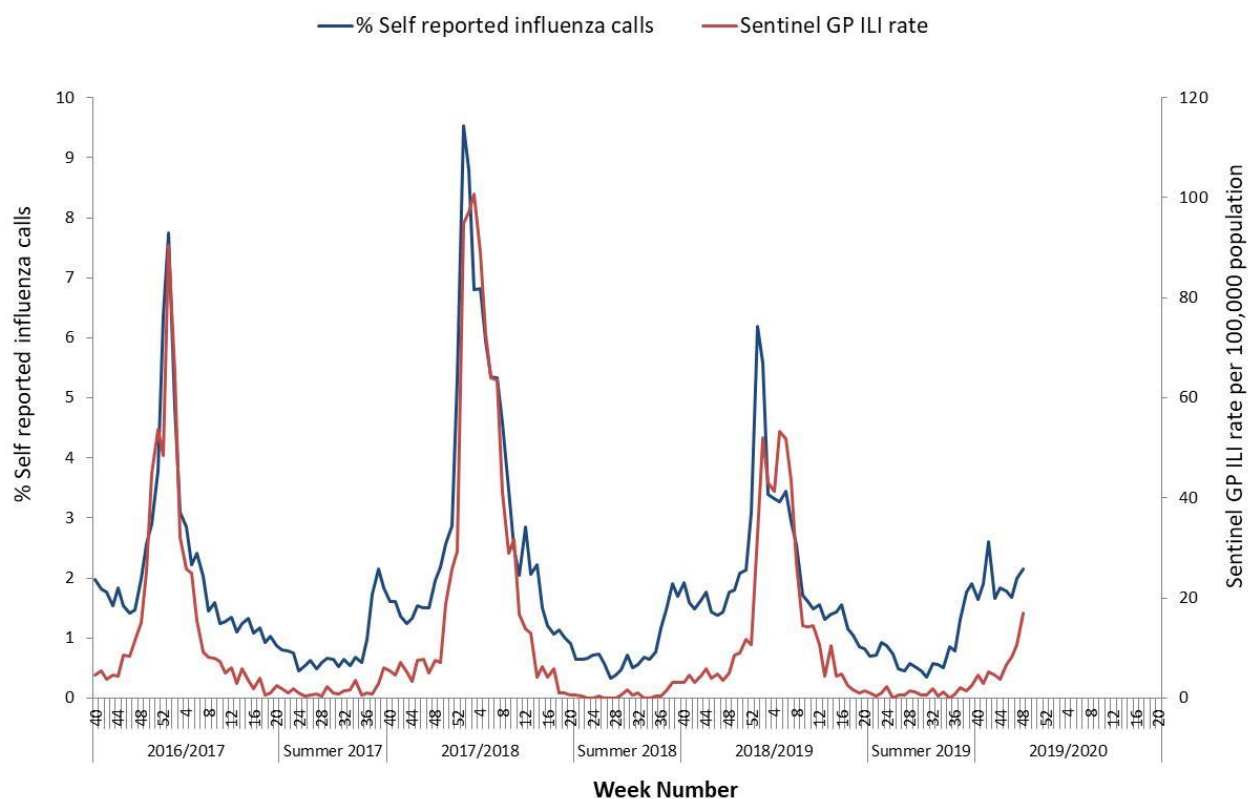


Figure 8: Self-reported influenza-related calls as a proportion of total calls to Out-of-Hours GP Co-ops and sentinel GP ILI consultation rate per 100,000 population by week and season. *Source: GP Out-Of-Hours services in Ireland (collated by HSE-NE) & ICGP.*

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 were at medium levels during week 48 2019, with 235 confirmed influenza cases notified. This was a significant increase compared to the previous week when 67 cases were notified.
- Of the 235 cases, 99 were due to influenza A(H3N2), 9 were due to influenza A(H1N1)pdm09, 105 were due to influenza A (not subtyped) and 22 were due to influenza B.
- To date this season, 400 confirmed cases of influenza have been notified to HPSC; 90% have been due to influenza A (n=360) and 10% due to influenza B (n=40). Of the 178 influenza A viruses subtyped, 91% (n=162) were A(H3N2).
- RSV notifications were at high levels, with 289 cases notified during week 48 2019, an increase compared to the previous week (n=162). The number of cases of RSV notified has been increasing in recent weeks, as is usual at this time of year.

6. Influenza Hospitalisations

- 114 confirmed influenza hospitalised cases were notified to HPSC during week 48 2019, 53 were due to influenza A(H3N2), 3 due to influenza A(H1N1)pdm09, 49 due to influenza A (not subtyped) and 9 were due to influenza B.
- For the 2019/2020 season to date, 186 confirmed influenza hospitalised cases have been notified to HPSC; 89 due to influenza A(H3N2), 3 due to influenza A(H1N1)pdm09, 79 due to influenza A (not subtyped) and 15 due to influenza B.
- Age specific rates for hospitalised influenza cases are reported in table 4, with the highest rates reported in children aged under 5 years and 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.

- Four confirmed influenza cases were admitted to critical care and reported to HPSC during week 48 2019.
- During the 2019/2020 season to date, nine influenza cases have been reported to HPSC as having been admitted to ICU. Two ICU cases were due to influenza A (H3N2), one was due to influenza A(H1N1)pdm09 and the remaining six cases were due to influenza A (not subtyped).
- The age specific rates for admission to critical care are shown in table 4. These rates are based on small numbers.

Table 4: Age specific rates for confirmed influenza cases hospitalised and admitted to critical care during the 2019/2020 influenza season to date. Age specific rates are based on the 2016 CSO census.

Age (years)	Hospitalised		Admitted to ICU	
	Number	Age specific rate per 100,000 population	Number	Age specific rate per 100,000 population
<1	9	14.5	0	0
1-4	30	11.1	0	0
5-14	33	4.9	1	0.1
15-24	16	2.8	1	0.2
25-34	12	1.8	0	0
35-44	8	1.1	1	0.1
45-54	9	1.4	1	0.2
55-64	13	2.6	0	0
≥65	56	8.8	5	0.8
Total	186	3.9	9	0.2

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 influenza-associated deaths this season to date.
- During week 48 2019, no excess all-cause mortality was reported in Ireland after correcting GRO data for reporting delays with the standardised EuroMOMO algorithm.

9. Outbreak Surveillance

- Three influenza outbreaks were reported to HPSC during week 48 2019. One was in a community hospital in HSE MW and the type of influenza was not reported. The remaining two outbreaks were due to influenza A; one was in nursing home in HSE NW and one was in an acute hospital in HSE W.
- One acute respiratory infection outbreak was reported by HSE NW in week 48 2019. The organism was not reported.
- Influenza and acute respiratory outbreaks reported during the influenza 2019/2020 season to date are summarised by HSE area and by pathogen detected in tables 5 and 6.

Table 5: Summary of respiratory outbreaks by HSE area and disease during 2019/2020 season *Source: CIDR*

HSE area	Influenza	Respiratory syncytial virus infection	Acute respiratory infection	Total
HSE-E	2	0	2	4
HSE-M	0	0	1	1
HSE-MW	0	0	0	0
HSE-NE	0	1	0	1
HSE-NW	2	0	1	3
HSE-SE	0	0	0	0
HSE-S	0	0	2	2
HSE-W	1	0	0	1
Total	5	1	6	12

Table 6: Summary of respiratory outbreaks by disease and pathogen during 2019/2020 season *Source: CIDR*

Outbreak disease	Organism/pathogen	Total
Influenza	Influenza A	3
	Influenza (type not reported)	2
Respiratory syncytial virus infection	RSV	1
Acute respiratory infection	Coronavirus	1
	Coronavirus and rhinovirus	1
	Human metapneumovirus and rhinovirus	1
	Rhino/enterovirus	1
	Organism not reported	2
Total		12

10. International Summary

Influenza activity remained at baseline or low levels throughout the European Region. Both influenza A and B viruses were detected in sentinel and non-sentinel specimens, with a higher number of influenza A detections. However, there are early signs of increased influenza B activity in some countries. Data from the 22 countries or regions reporting to the EuroMOMO project indicated that all-cause mortality was at expected levels for this time of the year.

In the temperate zone of the northern hemisphere, influenza activity remained at inter-seasonal levels in most countries. However, influenza activity continued to increase across the countries in Western Asia. Worldwide, seasonal influenza A accounted for the majority of detections, with equal proportions of influenza A(H1N1)pdm09 and A(H3N2) viruses.

National Influenza Centres (NICs) and other national influenza laboratories from 112 countries, areas or territories reported data to FluNet for the time period from 28 October 2019 to 10 November. The WHO GISRS laboratories tested more than 85126 specimens during that time period. A total of 6187 were positive for influenza viruses, of which 4608 (74.5%) were typed as influenza A and 1579 (25.5%) as influenza B. Of the sub-typed influenza A viruses, 1473 (47%) were influenza A(H1N1)pdm09 and 1664 (53%) were influenza A(H3N2). Of the characterised B viruses, 43 (6.2%) belonged to the B-Yamagata lineage and 650 (93.8%) to the B-Victoria lineage. 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

Ireland has changed from using trivalent vaccine to using quadrivalent vaccine for the 2019/2020 influenza season. Quadrivalent vaccines include a 2nd influenza B virus in addition to the 2 influenza A viruses found in trivalent vaccines.

The WHO vaccine strain selection committee recommend that quadrivalent vaccines for use in the 2019/2020 northern hemisphere influenza season contain the following:

- an A/Brisbane/02/2018 (H1N1)pdm09-like virus;
- an A/Kansas/14/2017 (H3N2)-like virus;
- a B/Colorado/06/2017-like virus (B/Victoria/2/87 lineage); and
- a B/Phuket/3073/2013-like virus (B/Yamagata/16/88 lineage).

It is recommended that the influenza B virus component of trivalent vaccines for use in the 2019-2020 northern hemisphere influenza season be a B/Colorado/06/2017-like virus.

https://www.who.int/influenza/vaccines/virus/recommendations/201902_recommendation.pdf
https://www.who.int/influenza/vaccines/virus/recommendations/201902_recommendation_addendum.pdf

On September 27, 2019, the WHO vaccine strain selection committee recommended quadrivalent influenza vaccines for use in the 2020 southern hemisphere influenza season contain the following:

- an A/Brisbane/02/2018 (H1N1)pdm09-like virus;
- an A/South Australia/34/2019 (H3N2)-like virus;
- a B/Washington/02/2019-like (B/Victoria lineage) virus; and
- a B/Phuket/3073/2013-like (B/Yamagata lineage) virus.

It is recommended that the influenza B virus component of trivalent vaccines for use in the 2020 southern hemisphere influenza season be a B/Washington/02/2019-like virus.

https://www.who.int/influenza/vaccines/virus/recommendations/2020_south/en/

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

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