

Influenza Surveillance in Ireland – Weekly Report

Influenza Week 49 2019 (2nd – 8th December 2019)



Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive



 **Intensive Care Society of Ireland**



Summary

During week 49 2019 (week ending 8th December 2019) influenza activity increased in Ireland and is now above baseline levels. Influenza A(H3N2) is the dominant circulating virus to date this season. Confirmed influenza hospitalisations are increasing. It is recommended that antivirals be considered for the treatment and prophylaxis of influenza in at-risk groups.

- **Influenza-like illness (ILI):** The sentinel GP influenza-like illness (ILI) consultation rate was 37.5 per 100,000 population in week 49 2019. This is an increase compared to the updated rate of 21.6 per 100,000 population reported during week 48 2019.
 - ILI rates are now above 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 49 2019.
- **National Virus Reference Laboratory (NVRL):**
 - Influenza positivity reported by the NVRL was at medium levels during week 49 2019, at 20%.
 - 107 confirmed influenza positive specimens were reported from non-sentinel sources during week 49 2019. Ninety were influenza A (H3N2), 11 were influenza A(H1N1)pdm09 and 6 were influenza B.
 - 10 confirmed influenza positive specimens were reported from the sentinel GP network during week 49 2019; 8 were influenza A(H3N2), 1 was influenza A(H1N1)pdm09 and 1 was influenza A (not subtyped).
 - 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 nationally.
 - Sporadic detections of parainfluenza virus, adenovirus and human metapneumovirus (hMPV) have been reported to date this season.
- **Hospitalisations:** During week 49 2019, 143 confirmed influenza hospitalised cases were notified to HPSC. During the 2019/2020 influenza season to date, 324 confirmed influenza hospitalised cases have been notified to HPSC.
- **Critical care admissions:** One confirmed influenza case was admitted to critical care units and reported to HPSC during week 49 2019. Twelve confirmed influenza cases have been reported as admitted to ICU in the 2019/2020 season to date.
- **Mortality:** Two influenza-associated deaths were reported during week 49 2019. During the 2019/2020 influenza season to date, three influenza-associated deaths have been reported to HPSC.
- **Outbreaks:** Six influenza outbreaks and one suspected RSV outbreak were reported to HPSC during week 49 2019.
- **International:** Influenza activity continues to increase in the temperate zone of the northern hemisphere.

1. GP sentinel surveillance system - Clinical Data

- During week 49 2019, 79 influenza-like illness (ILI) cases were reported by sentinel GPs, corresponding to an ILI consultation rate of 37.5 per 100,000 population, an increase compared to the updated rate of 21.6 per 100,000 reported for week 48 2019.
- The ILI rate for week 49 2019 is now above the Irish baseline ILI threshold (18.1/100,000 population) (figure 1).
- ILI age specific rates increased in all age groups during week 49 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.

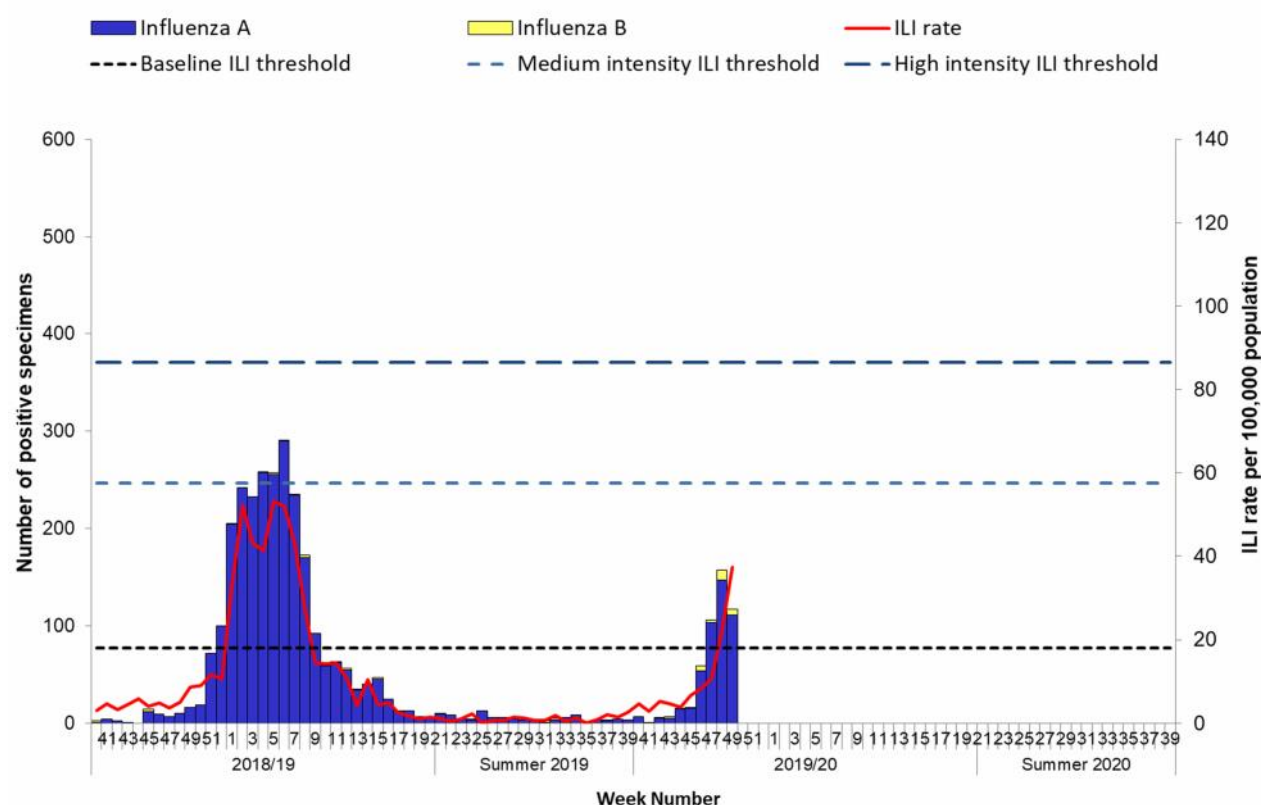


Figure 1: ILI sentinel GP consultation rates per 100,000 population, baseline ILI threshold, medium and high intensity ILI thresholds* and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season. Source: ICGP and NVRL

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

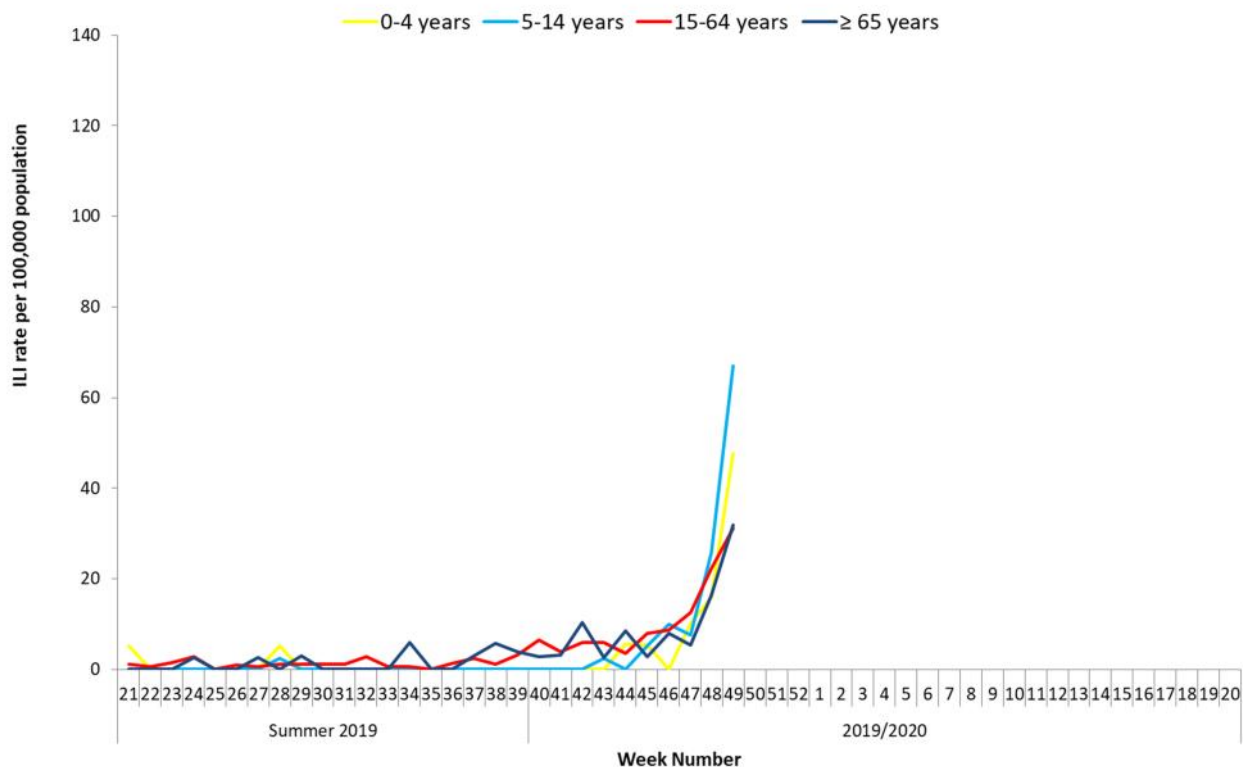


Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2019 and the 2019/2020 influenza season to date. Source: ICGP.

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).

- During week 49, influenza detections remained stable with 117 (20%) influenza positive specimens reported by the NVRL from sentinel and non-sentinel sources, compared to an updated figure of 157 (21%) detections during week 48 2019.
- During week 49, 107 confirmed influenza positive specimens were reported from non-sentinel sources, 90 were influenza A (H3N2), 11 were influenza A(H1N1)pdm09 and six were influenza B.
- During week 49, 10 confirmed influenza positive specimens were reported from the sentinel GP network 2019; eight were influenza A(H3N2), one was influenza A(H1N1)pdm09 and one was influenza A (unsubtyped).
- Data from the NVRL for week 49 2019 are detailed in tables 1, 2 and 3.
- Respiratory syncytial virus (RSV) positivity has been increasing since week 40 2019 and RSV activity is now at high levels nationally (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 40% during week 49 2019.

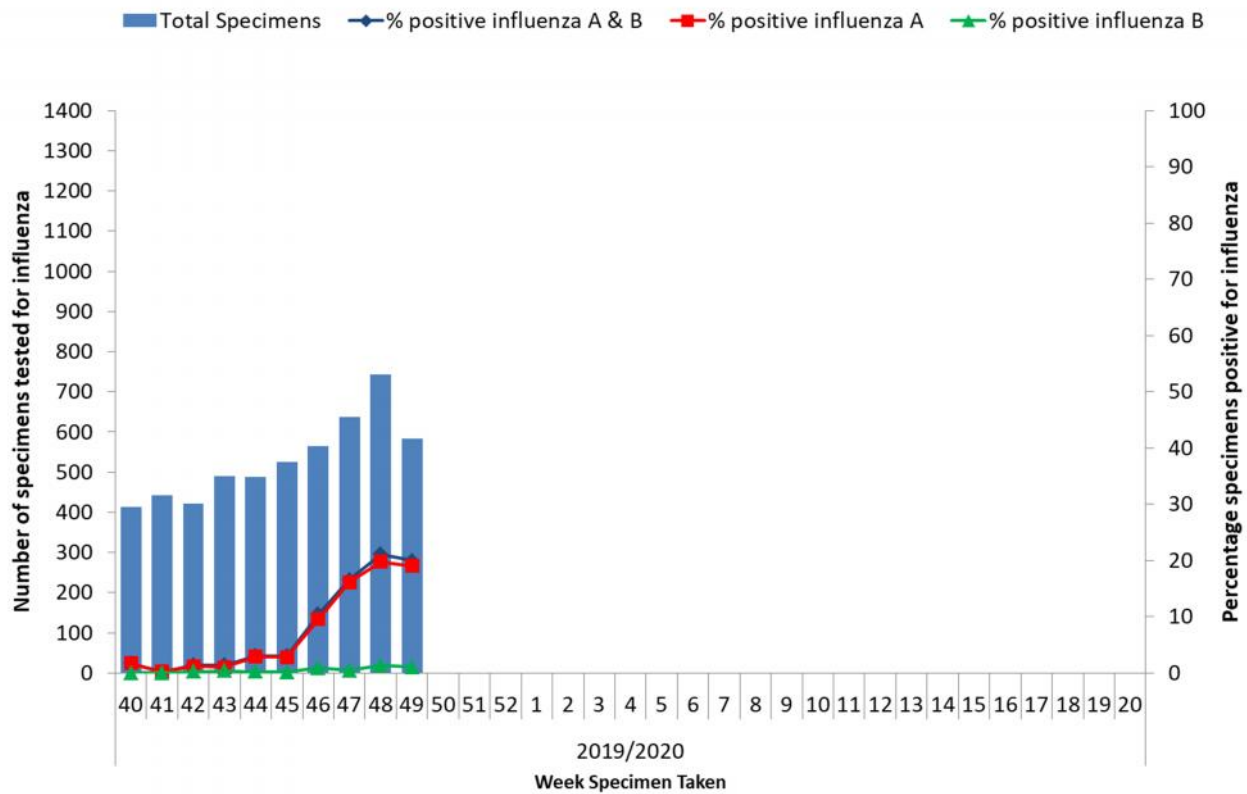


Figure 3: Number of specimens (from sentinel and non-sentinel sources combined) tested by the NVRL for influenza and percentage influenza positive by week for the 2019/2020 influenza season. Source: NVRL.

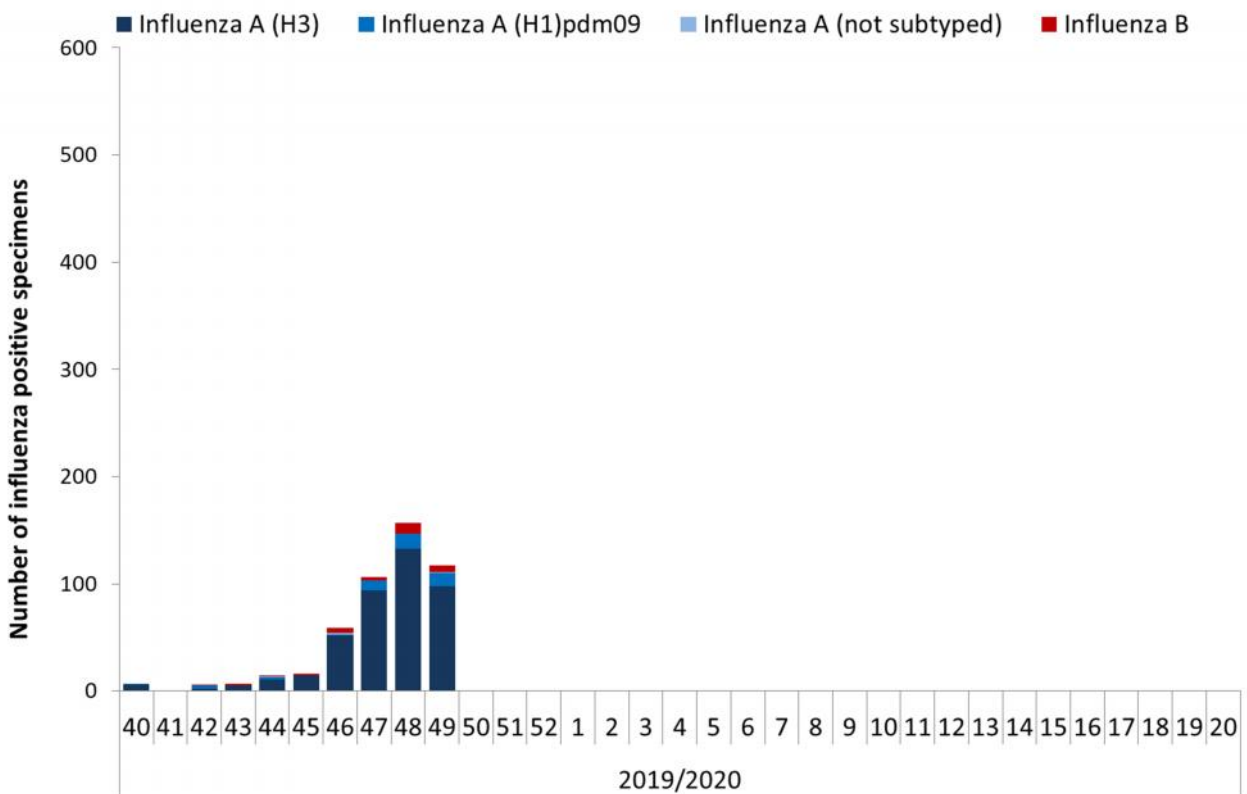


Figure 4: Number of positive influenza specimens (from sentinel and non-sentinel sources combined) by influenza type/subtype tested by the NVRL, by week for the 2019/2020 influenza season. Source: NVRL.

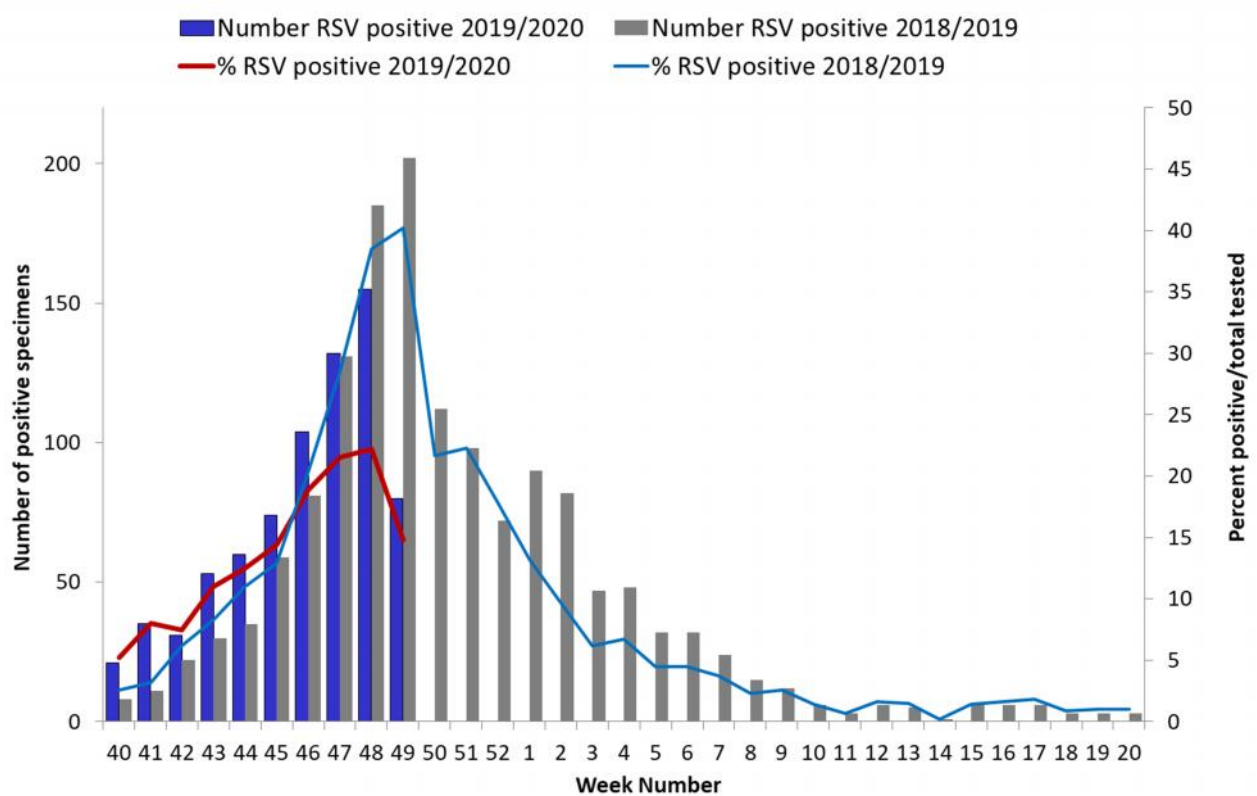


Figure 5: Number and percentage of non-sentinel RSV positive specimens detected by the NVRL during the 2019/2020 season, compared to the 2018/2019 season. *Source: NVRL.*

Table 1: Number of sentinel* and non-sentinel[†] respiratory specimens tested by the NVRL and positive influenza results, for week 49 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
49 2019	Sentinel	45	10	22.2	1	8	1	10	0	0	0	0
	Non-sentinel	539	107	19.9	11	90	0	101	6	0	0	6
	Total	584	117	20.0	12	98	1	111	6	0	0	6
2019/2020	Sentinel	182	57	31.3	6	37	1	44	3	9	1	13
	Non-sentinel	5128	434	8.5	36	380	2	418	16	0	0	16
	Total	5310	491	9.2	42	417	3	462	19	9	1	29

Table 2: Number of sentinel* and non-sentinel respiratory specimens tested by the NVRL and positive RSV results, for week 49 2019. Source: NVRL

Week	Specimen type	Total tested	Total RSV	% RSV	RSV A	RSV B	RSV (unspecified)
49 2019	Sentinel	45	1	2.2	1	0	0
	Non-sentinel	539	80	14.8	0	0	80
	Total	584	81	13.9	1	0	80
2019/2020	Sentinel	182	7	3.8	7	0	0
	Non-sentinel	5128	745	14.5	0	0	745
	Total	5310	752	14.2	7	0	745

Table 3: Number of non-sentinel specimens tested by the NVRL for other respiratory viruses and positive results, for week 49 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
49 2019	Non-sentinel	539	8	1.5	12	2.2	2	0.4	0	0.0	0	0.0	9	1.7
2019/2020	Non-sentinel	5128	112	2.2	181	3.5	73	1.4	16	0.3	18	0.4	193	3.8

*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 49 2019 is shown in figure 6. During week 49, regional influenza activity was reported in HSE-E and sporadic influenza activity was reported in HSE-M. The remaining HSE areas reported localised activity.

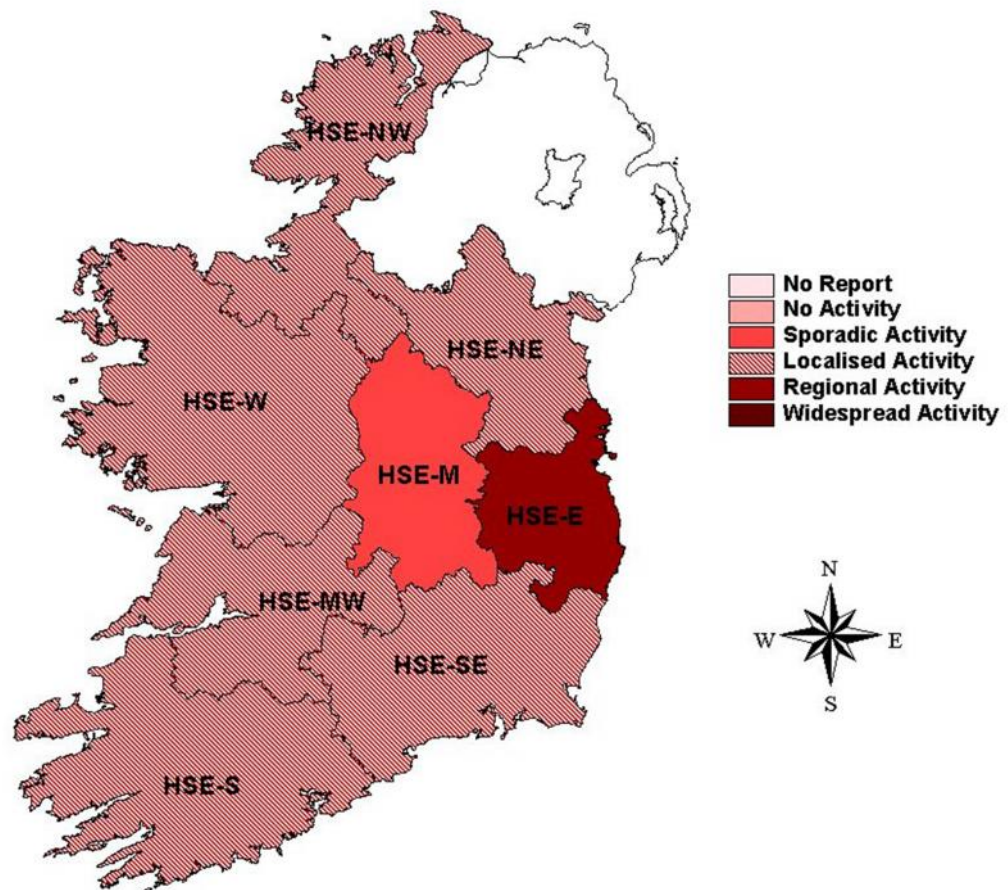


Figure 6: Map of provisional influenza activity by HSE-Area during influenza week 49 2019

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 high levels, at 529 admissions, during week 49 2019 (figure 7). This was an increase compared to the 488 respiratory admissions reported during week 48 2019. Six of the eight hospitals reported data for week 49.

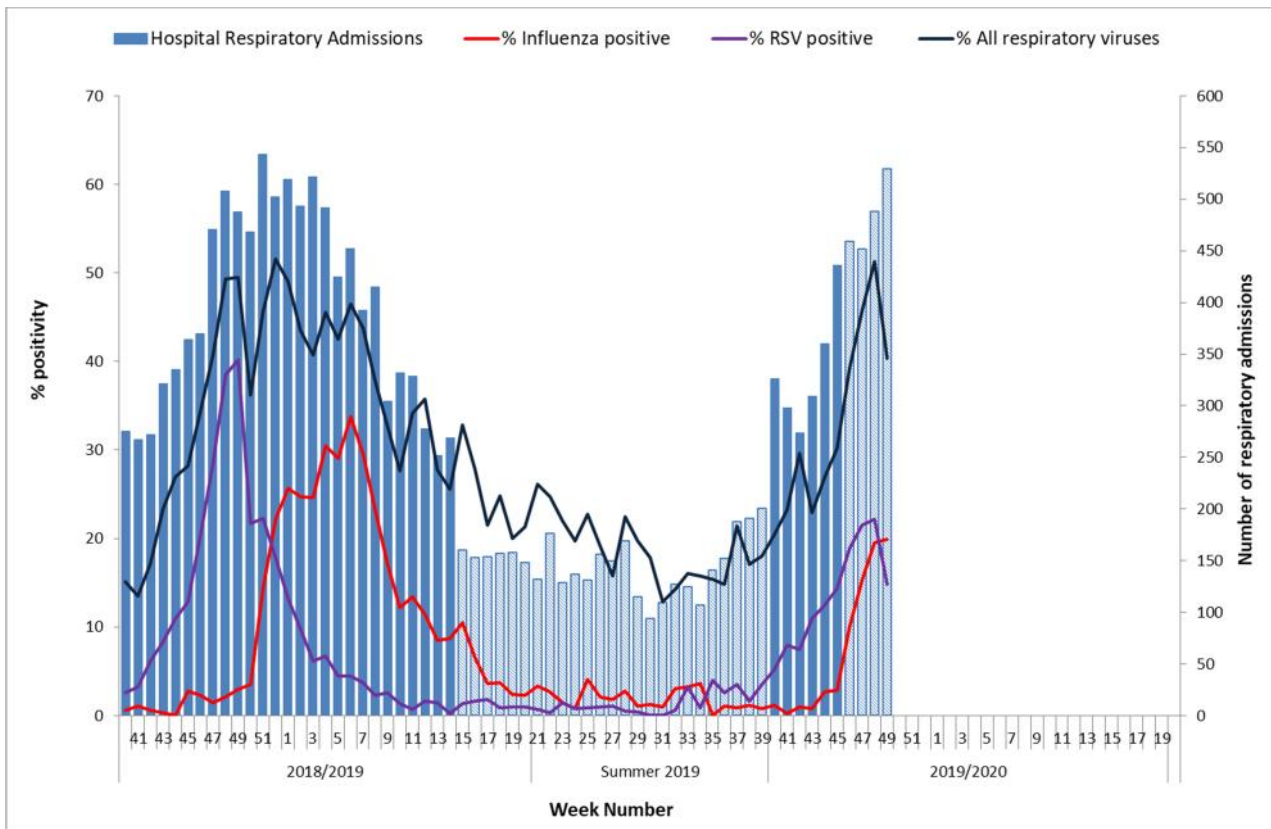


Figure 7: Number of respiratory admissions reported from the sentinel hospital network and % positivity for influenza, RSV and all seasonal respiratory viruses tested* by the NVRL by week and season. Source: Departments of Public Health - Sentinel Hospitals & NVRL. *All seasonal respiratory viruses tested 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 49 2019 at 3.0%, an increase compared to the 2.1% reported for week 48. Four services reported data for week 49 and there were 311 calls relating to self-reported influenza (figure 8).

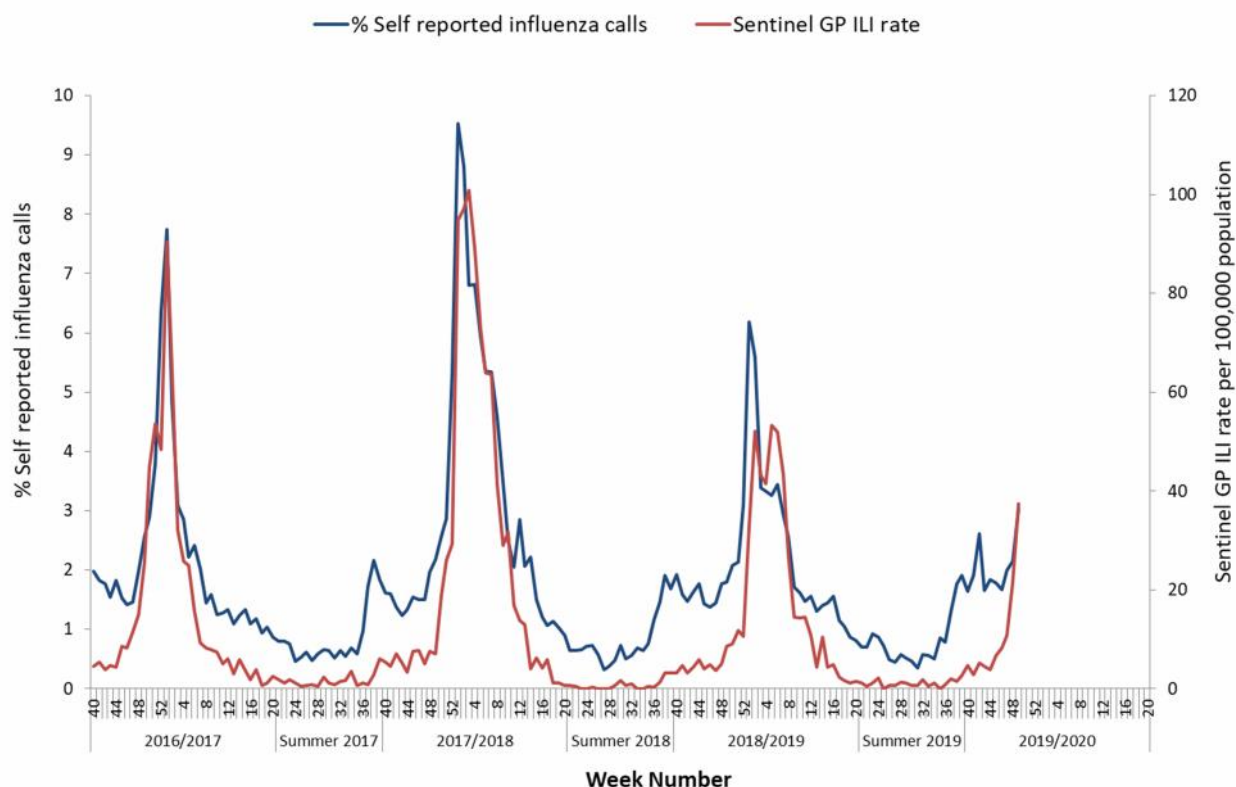


Figure 8: Self-reported influenza-related calls as a proportion of total calls to Out-of-Hours GP Co-ops and sentinel GP ILI consultation rate per 100,000 population by week and season. Source: GP Out-Of-Hours services in Ireland (collated by HSE-NE) & ICGP.

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 49 2019, with 369 confirmed influenza cases notified. This was a notable increase compared to the previous week, when 235 cases were notified.
- Of the 369 cases, 106 were due to influenza A(H3N2), 10 were due to influenza A(H1N1)pdm09, 214 were due to influenza A (not subtyped) and 37 were due to influenza B. Two cases did not report influenza type.
- To date this season, 769 confirmed cases of influenza have been notified to HPSC; 90% have been due to influenza A (n=690) and 10% due to influenza B (n=77). Of the 279 influenza A viruses subtyped, 91% (n=270) were A(H3N2).
- During week 49, 475 RSV cases were notified, an increase compared to the previous week (n=289). The number of cases of RSV notified has been increasing in recent weeks and is now at high levels nationally.

6. Influenza Hospitalisations

- 143 confirmed influenza hospitalised cases were notified to HPSC during week 49 2019, 42 were due to influenza A(H3N2), 3 due to influenza A(H1N1)pdm09, 90 due to influenza A (not subtyped) and 7 were due to influenza B. The remaining case did not have organism reported.
- For the 2019/2020 season to date, 324 confirmed influenza hospitalised cases have been notified to HPSC; 130 due to influenza A(H3N2), 7 due to influenza A(H1N1)pdm09, 165 due to influenza A (not subtyped) and 21 due to influenza B. The remaining case did not have organism reported.
- 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.

- One confirmed influenza case was admitted to critical care and reported to HPSC during week 49 2019.
- During the 2019/2020 season to date, 12 influenza cases have been reported to HPSC as having been admitted to ICU. Five ICU cases were due to influenza A (H3N2) and the remaining seven cases were due to influenza A (not subtyped).
- Over half of the cases admitted to ICU were aged 65 years and older. 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	16	25.7	0	0
1-4	52	19.3	1	0.4
5-14	47	7	1	0.1
15-24	24	4.2	1	0.2
25-34	18	2.7	0	0
35-44	12	1.6	1	0.1
45-54	16	2.6	1	0.2
55-64	24	4.7	0	0
≥65	115	18	7	1.1
Total	324	6.8	12	0.3

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 three reports of influenza-associated deaths this season to date. All deaths occurred in those aged 65 years and older.
- During week 49 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

- Six influenza outbreaks and one suspected RSV outbreak were reported to HPSC during week 49 2019.
- 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	3		3	6
HSE-M			1	1
HSE-MW	1		1	2
HSE-NE		1		1
HSE-NW	1		1	2
HSE-SE	1			1
HSE-S	2		2	4
HSE-W	3			3
Total	11	1	8	20

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

Outbreak location	Organism/Pathogen	Total
Community hospital/ Long-stay unit	Coronavirus	1
	Influenza	1
	Influenza A(H3)	1
	Rhinovirus	1
Community hospital/ Long-stay unit total		4
Acute hospital	Influenza	3
	Influenza A	1
	Influenza A(H3)	1
Acute hospital total		5
Nursing home	Coronavirus and rhinovirus	1
	Human metapneumovirus and rhinovirus	1
	Influenza A	2
	Influenza A(H3)	2
	Rhino/enterovirus	1
	(blank)	1
Nursing home total		8
Residential institution	Rhino/enterovirus	1
	RSV	1
Residential institution total		2
Childcare facility	possible RSV	1
Childcare facility total		1
Total		20

10. International Summary

Influenza activity continued to increase in parts of Europe, as indicated by more countries reporting regional or widespread influenza activity. Influenza virus detections in sentinel specimens exceeded 10% for the second consecutive week, which indicates the start of the influenza season at European level. A majority of reported influenza virus detections across the region were type A, although four countries reported type B virus dominance. Data from the 21 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, respiratory illness indicators and influenza activity started to increase in most countries. Influenza activity was elevated across the countries in Western Asia. Worldwide, seasonal influenza A(H3N2) viruses accounted for the majority of detections.

National Influenza Centres (NICs) and other national influenza laboratories from 119 countries, areas or territories reported data to FluNet for the time period from 11 November 2019 to 24 November 2019 (data as of 2019-12-06 09:04:10 UTC). The WHO GISRS laboratories tested more than 92883 specimens during that time period. 7914 were positive for influenza viruses, of which 5629 (71.1%) were typed as influenza A and 2285 (28.9%) as influenza B. Of the sub-typed influenza A viruses, 2682 (71.5%) were influenza A(H3N2) and 1069 (28.5%) were influenza A(H1N1)pdm09. Of the characterized B viruses, 1014 (96.8%) belonged to the B-Victoria lineage and 34 (3.2%) to the B-Yamagata 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

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

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