

Influenza Surveillance in Ireland – Weekly Report

Influenza Week 48 2021 (29th November – 5th December 2021)



 *Intensive Care Society of Ireland*



Summary

Five confirmed influenza cases were notified to HPSC during week 48 2021. In Europe, influenza activity remains at low levels, however is increasing with sporadic influenza detections reported, predominately influenza A(H3). Respiratory syncytial virus (RSV) continues to circulate in Ireland, however levels have declined in recent weeks. COVID-19 epidemiology reports are published on www.hpsc.ie.

- **Influenza-like illness (ILI):** The sentinel GP influenza-like illness (ILI) consultation rate was 32.9/100,000 population during week 48 2021, an increase compared to an updated rate of 25.5/100,000 during week 47 2021. Recent increases in sentinel GP ILI consultation rates are reflecting community COVID-19 incidence and changes to health seeking behaviour resulting from high demands on online COVID-19 booking systems for community testing centres.
- Sentinel GP ILI consultation rates have been above the Irish baseline threshold (18.1/100,000 population) for three consecutive weeks.
- Sentinel GP ILI rates were above age specific baseline levels in all age groups; those aged 0-14 years (41.0/100,000), 15-64 years (32.0/100,000) and those aged ≥65 years (24.3/100,000) during week 48 2021.
- **National Virus Reference Laboratory (NVRL):** Of 120 sentinel GP ILI and 178 non-sentinel respiratory specimens tested and reported by the NVRL during week 48 2021, one (0.3%; 1/298) was positive for influenza B.
- For the 2021/2022 season (weeks 40-48 2021), five (0.2%) non-sentinel respiratory and one (0.2%) sentinel GP ILI specimens were positive for influenza; four influenza A(H3) and two influenza B.
- RSV positivity (non-sentinel sources) decreased during week 48 2021, to 7.9% (14/178) and a decrease compared to a median positivity of 32.4% for the same week in the 2014-2019 time period.
- Rhinovirus/enterovirus positive detections (non-sentinel sources) continue to be reported, with positivity levels at 14% (25/178) during week 48 2021. Other respiratory viruses (ORVs) are being detected at lower levels, compared to RSV and rhinovirus/enterovirus. Coinfections continue to be detected.
- **Influenza notifications:** Four laboratory confirmed influenza cases - two influenza A (not subtyped), one influenza A(H3) and one influenza B were notified to HPSC during week 48 2021; bringing the season total to ten laboratory confirmed influenza cases notified during weeks 40-48 2021.
- **RSV notifications:** 326 RSV cases were notified during week 48 2021, a decrease compared to 428 cases during week 47 2021. Seventy one percent of RSV cases notified during week 48 2021 were in the 0-4-year age group (compared to 95% in early October), with notifications in all age groups reported in recent weeks. During week 48 2021, 134 notified RSV cases were reported as hospital inpatients, compared to 189 during week 47 2021.
- **Hospitalisations and Critical care admissions:** One confirmed influenza hospitalised case, an influenza B case, was notified to HPSC during week 48 2021. Two influenza hospitalised cases have been notified to HPSC during week 40-48 2021: one influenza B in HSE North-East and one influenza A(H3) in HSE Mid-West
- **Mortality:** No deaths in notified influenza cases occurred during week 48, one death occurred in a notified influenza case during week 45 2021. No excess all-cause mortality was reported during week 47 2021.
- **Outbreaks:** One acute respiratory infection (ARI-non-COVID-19) outbreak (rhinovirus) was notified to HPSC during week 48 2021. No RSV or influenza outbreaks were notified to HPSC during week 48 2021.
- **International:** During week 47 2021, influenza activity was increasing at a low level throughout the European Region, with sporadic influenza detections reported, mostly influenza A(H3). <https://flunewseurope.org/>

1. GP sentinel surveillance system - Clinical Data

- During week 48 2021, 91 influenza-like illness (ILI) cases were reported from the Irish sentinel GP network, corresponding to an ILI consultation rate of 32.9 per 100,000 population, an increase compared to the updated rate of 25.5 per 100,000 reported during week 47 2021 (Figure 1). Sentinel GP respiratory consultations are currently via phone consultations. Recent increases in sentinel GP ILI consultation rates are reflecting community COVID-19 incidence and changes to health seeking behaviour resulting from high demands on online COVID-19 booking systems for community testing centres.
- The sentinel GP ILI consultation rate during week 48 2021 was above the Irish sentinel GP ILI baseline threshold (18.1/100,000 population) and has been above baseline for three consecutive weeks (weeks 46-48 2021).
- Sentinel GP ILI age specific rates were above age specific baseline levels in all age groups, those aged 0-14 years (41/100,000), 15-64 (32.0/100,000) and in those aged ≥ 65 years (24.3/100,000) (Figure 2, Table 1).
- With only a small number of sporadic laboratory confirmed influenza cases detected/notified in Ireland during the 2021/2022 season, sentinel GP ILI consultations are likely to be currently reflecting circulation of SARS-CoV-2, RSV and other respiratory viruses (ORVs) in the community, rather than influenza viruses.
- HPSC has reviewed the Irish sentinel baseline ILI threshold for the 2021/2022 influenza season, which will remain at 18.1 per 100,000 population. ILI rates above this baseline threshold combined with sentinel GP influenza positivity $>10\%$ indicate the likelihood that influenza is circulating in the community. The Moving Epidemic Method (MEM) is used to calculate thresholds for GP ILI consultations in a standardised approach across Europe. 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. Age specific MEM threshold levels are shown in Table 1.

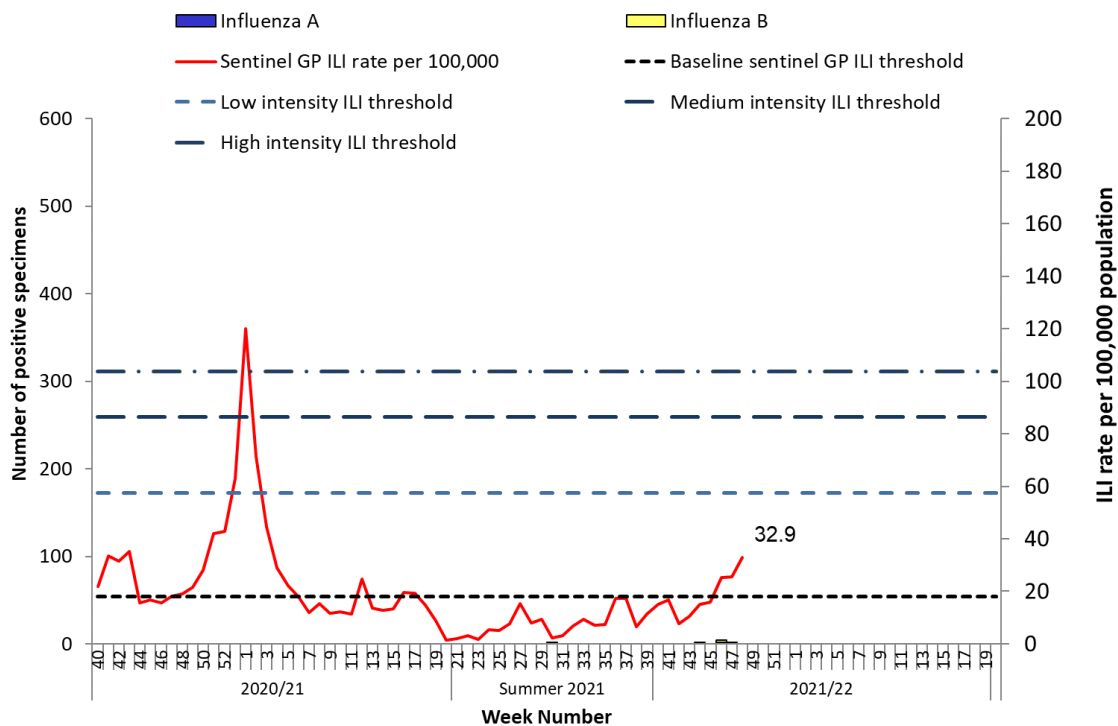


Figure 1: Sentinel GP Influenza-like illness (ILI) consultation rates per 100,000 population, baseline ILI threshold, medium and high intensity ILI thresholds and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season. The current week sentinel GP ILI consultation rate (per 100,000 population) is highlighted in red text. *Source: ICGP and NVRL*

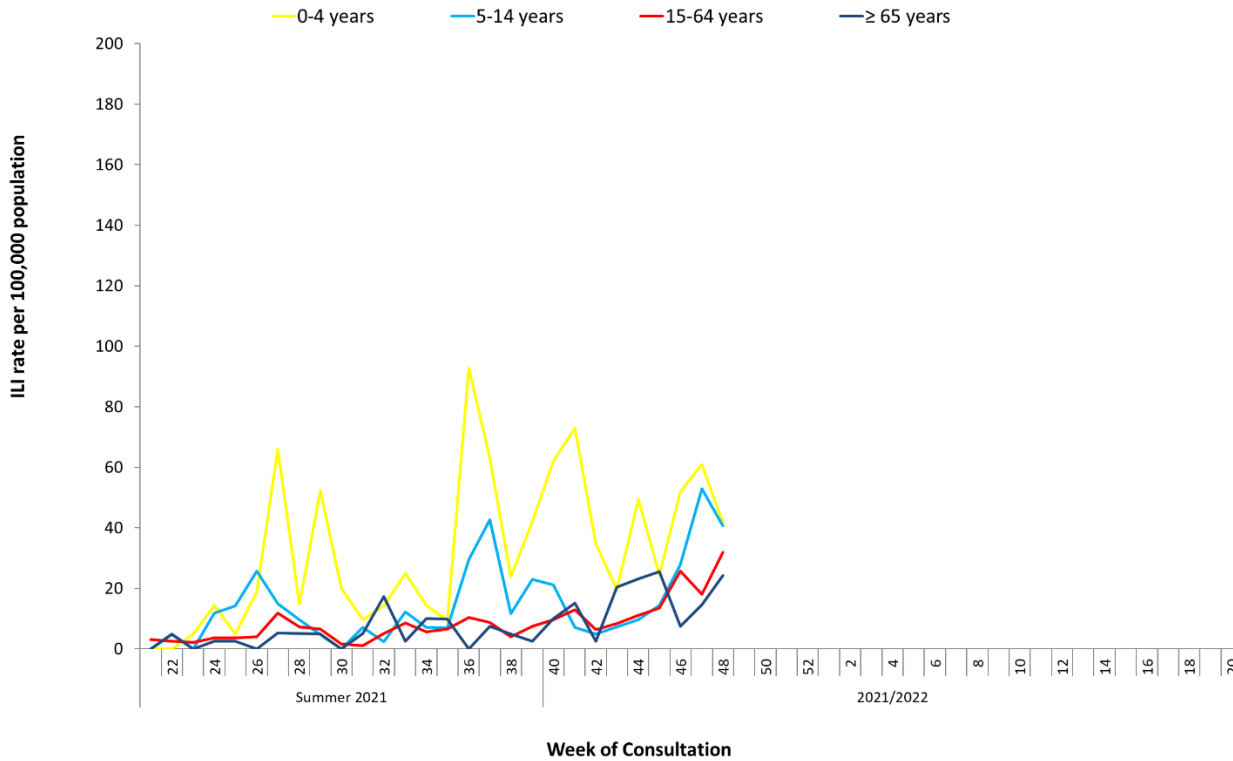


Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2021 and the 2021/2022 influenza season to date. *Source: ICGP.*

Table 1: Age specific sentinel GP ILI consultation rate per 100,000 population by week (weeks 23-48 2021), colour coded by sentinel GP ILI age specific Moving Epidemic Method (MEM) threshold levels. *Source: ICGP.*

Sentinel GP ILI Threshold Levels	Below Baseline	Low	Moderate	High	Extraordinary
----------------------------------	----------------	-----	----------	------	---------------

Age group (years)	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
All Ages	1.7	5.4	5.0	7.6	15.2	7.9	9.3	2.4	3.0	6.9	9.4	7.0	7.3	17.4	17.2	6.6	11.4	14.9	16.6	7.6	10.6	15.1	16.0	25.3	25.5	32.9
<15 yrs	1.6	12.7	11.1	23.5	31.8	11.3	20.3	6.6	7.9	6.3	16.4	9.5	7.8	50.4	49.3	15.7	29.3	34.6	28.8	14.6	11.3	22.8	17.7	35.8	55.6	41.0
15-64 yrs	2.1	3.6	3.6	4.0	11.9	7.3	6.6	1.6	1.0	5.1	8.5	5.6	6.6	10.4	8.7	4.1	7.5	9.6	12.9	6.3	8.4	11.0	13.5	25.6	18.0	32.0
≥65 yrs	0.0	2.5	2.5	0.0	5.3	5.1	4.9	0.0	5.0	17.3	2.6	10.0	9.9	0.0	7.5	5.0	2.4	9.9	15.2	2.6	20.4	23.1	25.4	7.4	14.6	24.3
Reporting practices (N=61)	55	55	55	56	55	55	56	51	55	56	52	56	55	58	56	56	57	57	56	54	55	54	55	56	57	48

2. Influenza and Other Respiratory Virus Detections - NVRL

The data reported in this section for the 2021/2022 influenza season refer to sentinel GP ILI and non-sentinel respiratory specimens routinely tested for influenza, respiratory syncytial virus (RSV), adenovirus, parainfluenza virus types 1-4 (PIV-1-4), human metapneumovirus (hMPV) and rhino/enteroviruses by the National Virus Reference Laboratory (NVRL) (Tables 2 & 3, Figure 3). In Ireland, virological surveillance for influenza, RSV and other respiratory viruses (ORVs) undertaken by the Irish sentinel GP network is integrated into current testing structures for COVID-19 primary care referrals. Non-sentinel respiratory specimens relate to specimens referred to the NVRL (other than sentinel GP specimens) and may include more than one specimen from each case.

- Of 120 sentinel GP ILI and 178 non-sentinel respiratory specimens tested and reported by the NVRL during week 48 2021, one (0.3%; 1/298) was positive for influenza B (Table 2).
- During the 2021/2022 season (weeks 40-48 2021), 599 sentinel GP ILI and 2,203 non-sentinel respiratory specimens were tested and reported by the NVRL and six (0.2%) were positive for influenza: four influenza A(H3) and two influenza B (one B/Victoria and one with no B lineage reported).
- RSV positivity (non-sentinel sources) was 7.9% (14/178) during week 48 2021, compared to a median positivity of 32.4% for the same week in the 2014-2019 time period. RSV activity appears to be declining during weeks 44-48 2021, data will be closely observed over the coming weeks (Table 3; Figure 3).
- Rhinovirus/enterovirus positive detections (non-sentinel sources) continue to be reported, with positivity levels at 14% (25/178) during week 48 2021 (Figure 4). Other respiratory viruses (ORVs) are being detected at lower levels, compared to RSV and rhinovirus/enterovirus positivity levels (Table 4).
- Coinfections of respiratory viruses continue to be detected during weeks 40-48 2021.
- During the COVID-19 pandemic, there may be a lag time receiving data from NVRL and laboratories under the clinical governance of the NVRL. The data reported on sentinel GP ILI and non-sentinel respiratory specimens tested by the NVRL for the current week, may be under reported and are updated in subsequent weeks.

Table 2: Number of sentinel GP ILI and non-sentinel respiratory specimens tested by the NVRL and positive influenza results, for the current week and 2021/2022 season (weeks 40-48 2021). *Source: NVRL*

Surveillance period	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 2021	Sentinel GP ILI referral	120	0	0.0	0	0	0	0	0	0	0	0
	Non-sentinel	178	1	0.6	0	0	0	0	0	1	0	1
	Total	298	1	0.3	0	0	0	0	0	1	0	1
2021/2022	Sentinel GP ILI referral	599	1	0.2	0	1	0	1	0	0	0	0
	Non-sentinel	2203	5	0.2	0	3	0	3	1	1	0	2
	Total	2802	6	0.2	0	4	0	4	1	1	0	2

Table 3: Number of sentinel GP ILI and non-sentinel respiratory specimens tested by the NVRL and positive RSV results, for the current week and 2021/2022 season (weeks 40-48 2021). *Source: NVRL*

Surveillance period	Specimen type	Total tested	Number RSV positive	% RSV positive	RSV A	RSV B	RSV (unspecified)
Week 48 2021	Sentinel GP ILI	120	5	4.2	3	2	0
	Non-sentinel	178	14	7.9	10	4	0
	Total	298	19	6.4	13	6	0
2021/2022	Sentinel GP ILI	599	43	7.2	26	17	0
	Non-sentinel	2203	591	26.8	345	246	0
	Total	2802	634	22.6	371	263	0

Table 4: Number of non-sentinel respiratory specimens tested by the NVRL for other respiratory viruses (ORVs) and positive results, for the current week and the 2021/2022 season (weeks 40-48 2021). *Source: NVRL*

Virus	Week 48 2021 (N=178)		2021/2022 (N=2203)	
	Total positive	% positive	Total positive	% positive
Influenza virus	1	0.6	5	0.2
Respiratory Syncytial Virus (RSV)	14	7.9	591	26.8
Rhino/enterovirus	25	14.0	425	19.3
Adenovirus	2	1.1	20	0.9
Bocavirus	0	0.0	69	3.1
Human metapneumovirus (hMPV)	4	2.2	33	1.5
Parainfluenza virus type 1 (PIV-1)	0	0.0	0	0.0
Parainfluenza virus type 2 (PIV-2)	0	0.0	1	0.0
Parainfluenza virus type 3 (PIV-3)	8	4.5	74	3.4
Parainfluenza virus type 4 (PIV-4)	0	0.0	41	1.9

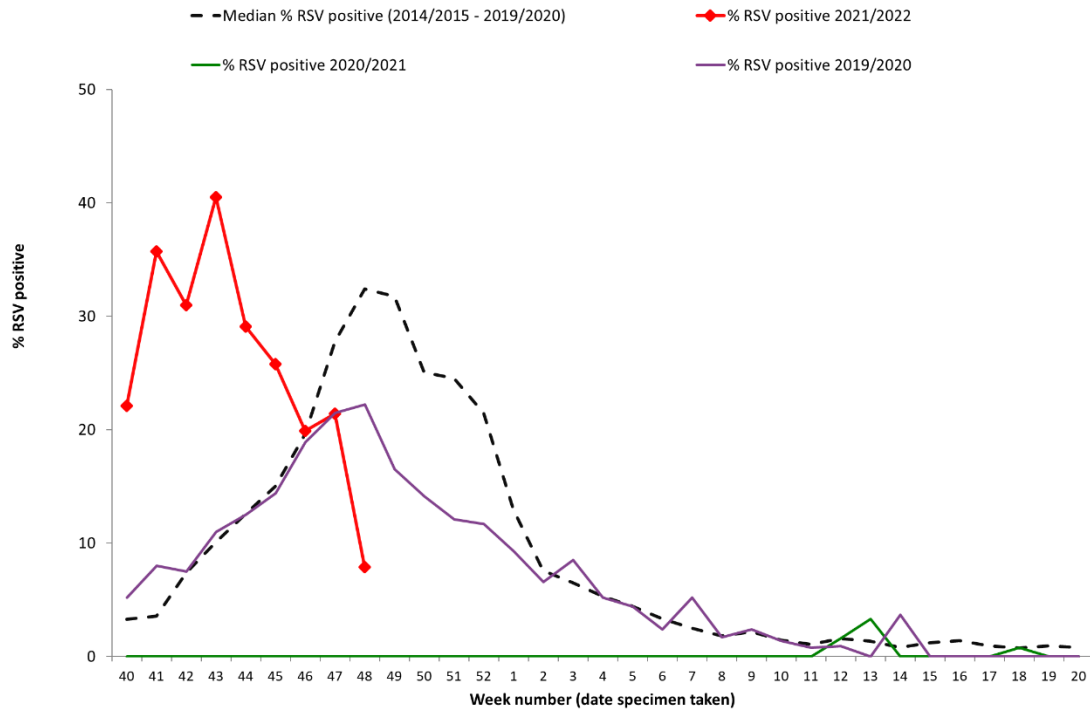


Figure 3: NVRL non-sentinel RSV positivity by week specimen was taken for 2021/2022, 2020/2021 and 2019/2020 seasons compared to median % RSV positivity (2014/2015-2019/2020). *Source: NVRL.*

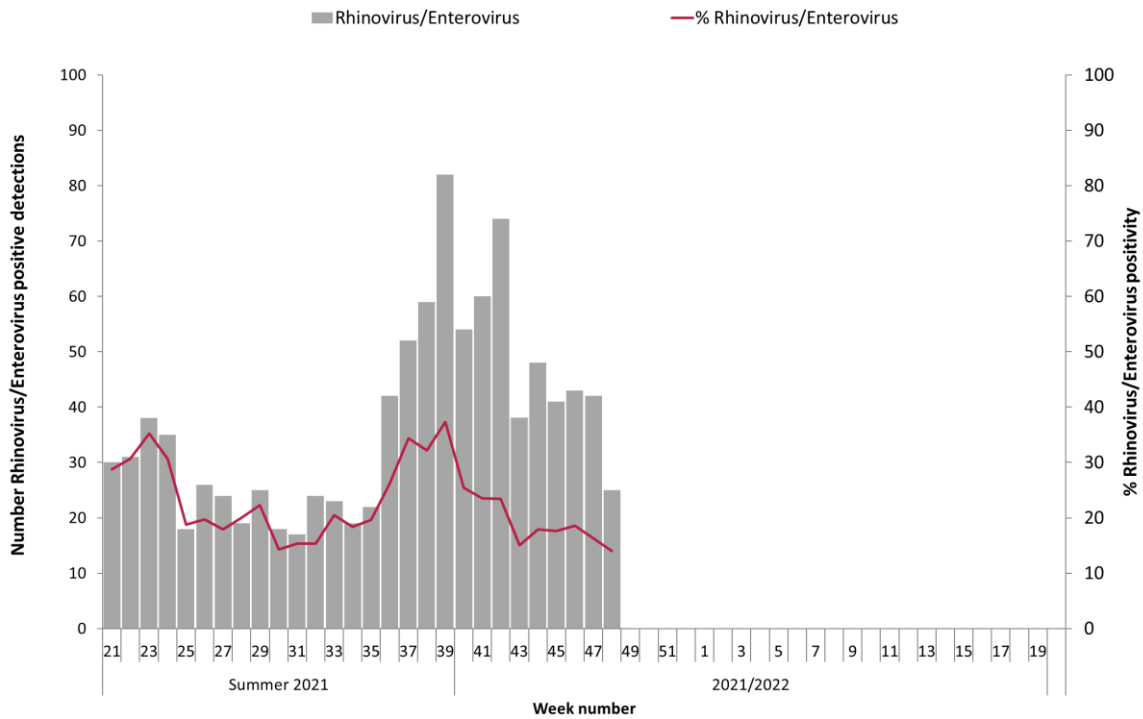


Figure 4: Number (and percentage) of non-sentinel rhinovirus/enterovirus positive detections by week specimen was taken for summer 2021 and 2021/2022 season. *Source: NVRL.*

3. Regional Influenza Activity by HSE-Area

Regional influenza activity levels will be based on laboratory confirmed influenza cases and/or outbreaks.

Only a very low number of sporadic confirmed influenza cases and no confirmed influenza outbreaks have been reported during weeks 40-48 2021 in Ireland, therefore regional influenza activity has not been reported (i.e. >1 influenza case in one HSE-region in a week) or confirmed influenza outbreak(s) in a region during that week.

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 (GP OOHs) services in Ireland. Records with clinical symptoms reported as flu/influenza or cough are extracted for analysis. This information may act as an early indicator of circulation of influenza, SARS-CoV-2 or other respiratory viruses. Data are self-reported by callers and are not based on coded diagnoses.

- 2476 (18.9% of total calls; N=13091) self-reported cough calls were reported by a network of GP OOHs services during week 48 2021, remaining above baseline levels for 13 consecutive weeks (Figures 5 & 6). The baseline threshold level for self-reported cough calls is 10.7%.
- Inclusion of data on self-reported 'flu' calls in this report will resume, once influenza viruses are circulating in the community.

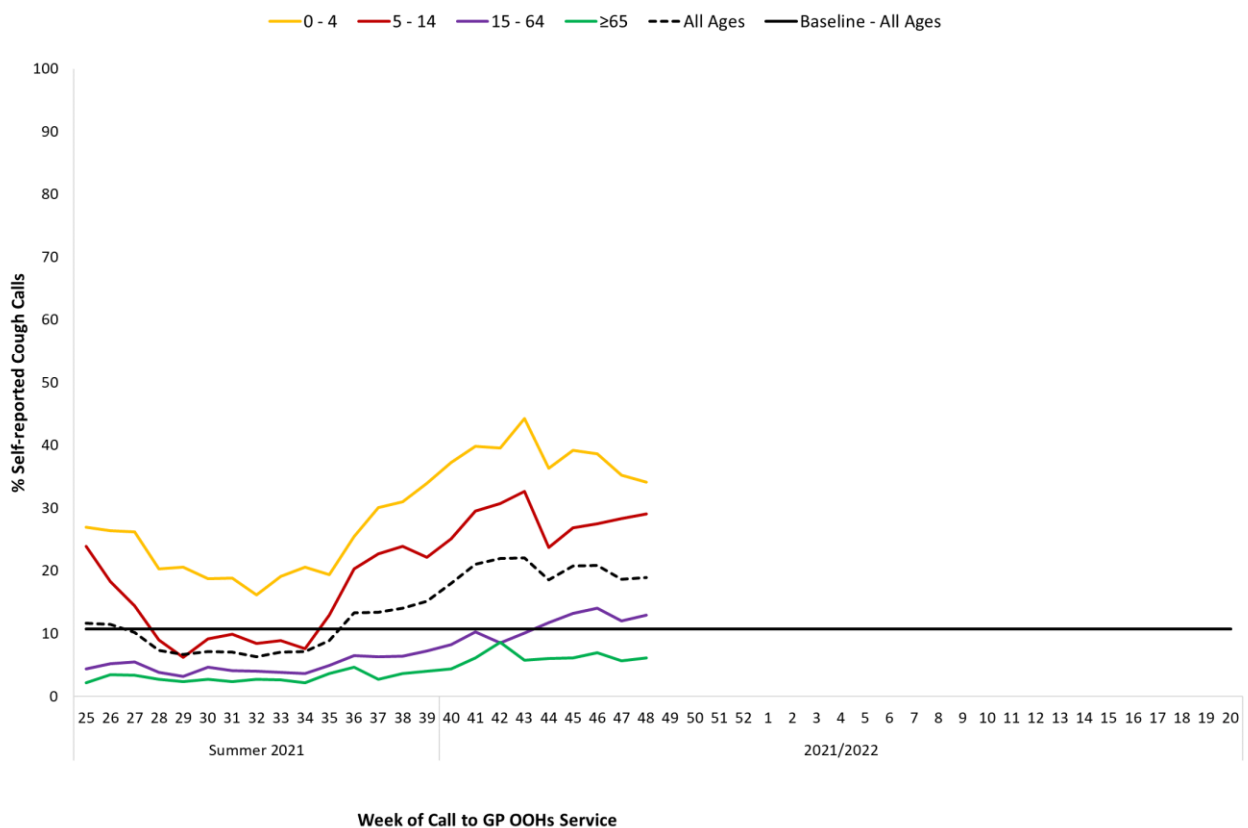


Figure 5: Percentage of self-reported COUGH calls for all ages and by age group as a proportion of total calls to GP Out-of-Hours services by week of call, 2021-2022. The % cough calls baseline for all ages calculated using the MEM method on historic data is shown. *Source: GP Out-Of-Hours services in Ireland (collated by HSE-NE) & ICGP.*

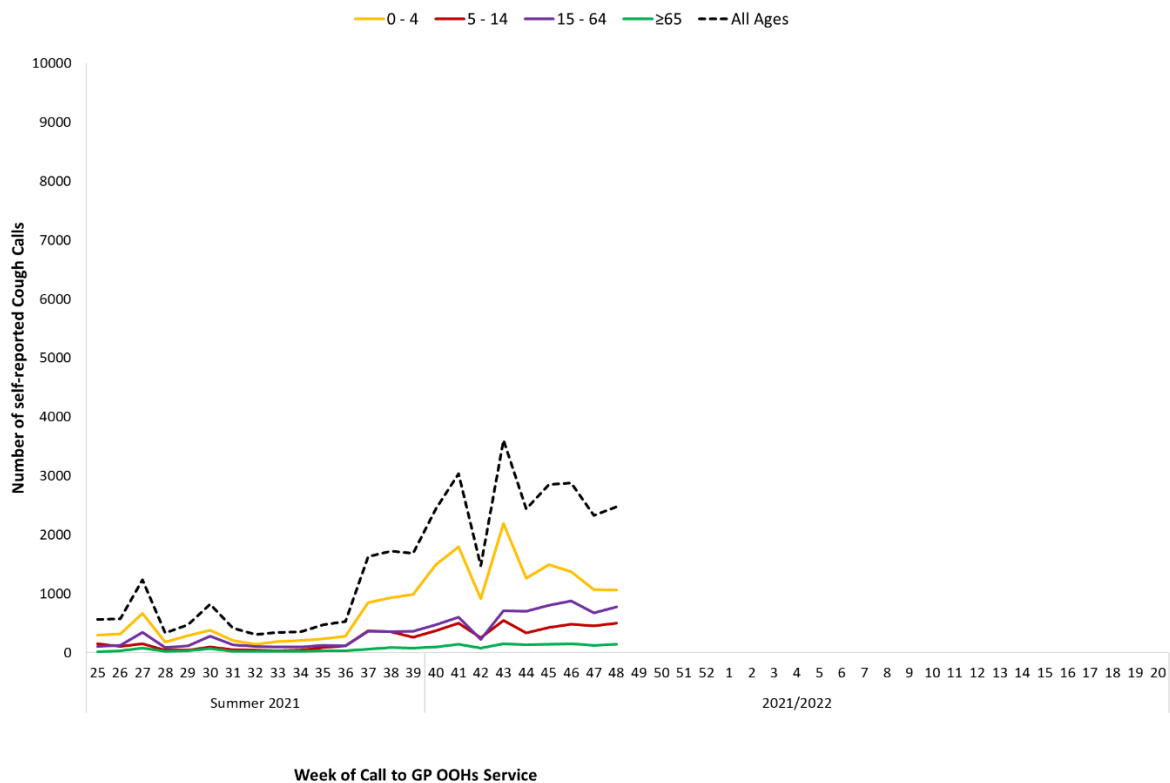


Figure 6: Number of self-reported COUGH calls for all ages and by age group to GP Out-of-Hours services by week of call, 2021-2022. *Source: GP Out-Of-Hours services in Ireland (collated by HSE-NE) & ICGP.*

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](#).

- Four laboratory confirmed influenza cases, two influenza A (not subtyped), one influenza A(H3) and one influenza B, were notified during week 48 2021.
- Ten confirmed influenza were notified during the 2021/2022 season (weeks 40-48 2021): four influenza A(H3), four influenza A not subtyped and two influenza B cases.
- A number of possible influenza cases in children recently vaccinated with LAIV were notified and are undergoing further investigation. Influenza RNA can be detected in PCR tests in children within 14 days of receipt of Live Attenuated Influenza Vaccine (LAIV). These LAIV vaccine virus detections are not notified as confirmed influenza cases.
- RSV notifications are at high levels and decreased during week 48 2021.
 - During week 48 2021, 326 RSV cases were notified, a decrease compared to 428 cases during week 47 2021 (Figure 7).
 - Seventy one percent of RSV cases notified during week 48 2021 were in the 0-4-year age group, compared to 95% during week 40 2021, with notifications in all other age groups reported in recent weeks.
 - During week 48 2021, 134 notified RSV cases were reported as hospital inpatients, a decrease compared to 189 during week 47 2021 (Figure 8). It should be noted that patient type is not always reported/updated for RSV notified cases; an RSV patient may be admitted to hospital and patient type not updated on CIDR.

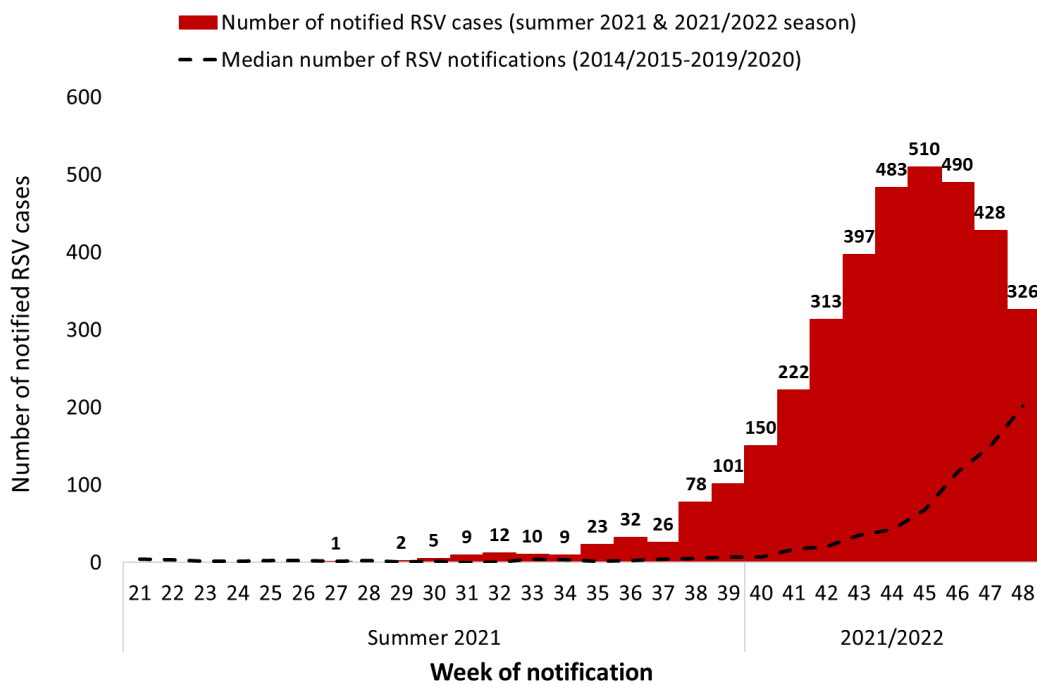


Figure 7: Number of RSV cases notified by week of notification, summer 2021 and 2021/2022, and median number of RSV notifications (2014/2015-2019/2020). *Source: Ireland's Computerised Infectious Disease Reporting System.*

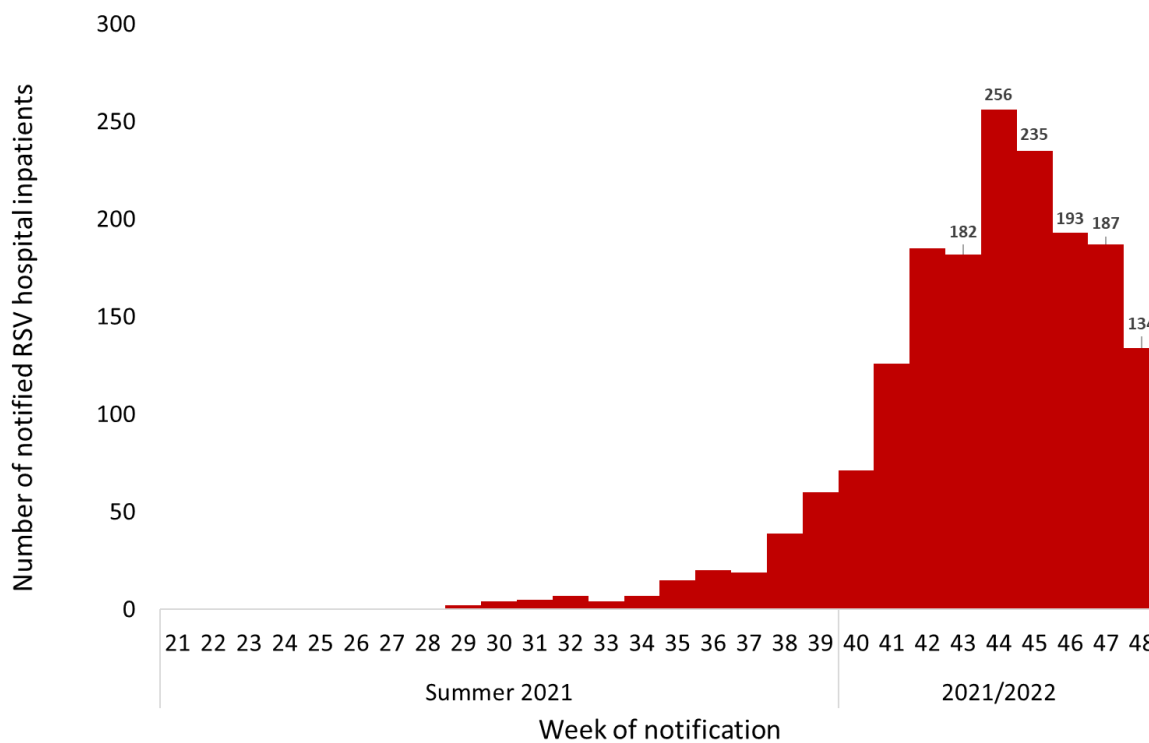


Figure 8: Number of notified RSV cases reported as hospital inpatients, by week of notification, summer 2021 and 2021/2022. *Source: Ireland's Computerised Infectious Disease Reporting System.*

6. Influenza Hospitalisations

One confirmed influenza hospitalised case, an influenza B case in HSE North-East was notified to HPSC during week 48 2021. For the 2021/2022 season to date two influenza hospitalised cases have been notified to HPSC: one influenza B in HSE North-East and one influenza A(H3) in HSE Mid-West.

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 weeks 40-48 2021.

8. Severe Acute Respiratory Infection (SARI) surveillance

Severe Acute Respiratory Infection (SARI) surveillance was implemented in one tertiary care adult hospital; St. Vincent's University Hospital, Dublin (SVUH) on the 5th of July 2021. The current SARI ECDC case definition used is defined as a hospitalised person (hospitalised for at least 24 hours) with acute respiratory infection, with at least one of the following symptoms: cough, fever, shortness of breath OR sudden onset of anosmia, ageusia or dysgeusia with onset of symptoms within 14 days prior to hospital admission. SARI cases are identified from new admissions (aged ≥ 15 years) through the SVUH Emergency Department. SARI patients are tested for SARS-CoV-2, influenza and RSV.

- During week 48 2021, 16 SARI cases were admitted to the SARI hospital site, corresponding to an incidence rate of 52.6 per 1,000 emergency admissions; an increase compared to 44.3/1,000 in week 47 2021.
- The SARI incidence rate per hospital catchment population was 5.3/100,000 population during week 48 2021, a decrease from 4.6/100,000 in week 47 2021.
- SARI SARS-CoV-2 positivity was 56% (9/16) during week 48 2021, compared to 54% (7/13) during week 47 2021. One SARI patient tested positive for RSV in week 48 2021, corresponding to RSV positivity of 11% (1/9). No SARI patients tested positive for influenza during weeks 47-48 2021.

9. Mortality Surveillance

Influenza 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/>

- No deaths in notified influenza cases occurred during week 48 2021, one death in a notified influenza case was reported to HPSC during week 45 2021.
- No excess all-cause deaths were observed during week 47 2021, after correcting data for reporting delays with the standardised EuroMOMO algorithm. Due to delays in death registrations in Ireland, excess mortality data included in this report will be reported with one-week lag time.

10. Outbreak Surveillance

COVID-19 outbreaks are not included in this report; surveillance data on COVID-19 outbreaks are detailed on the HPSC website. <https://www.hpsc.ie/a-z/respiratory/coronavirus/novelcoronavirus/surveillance/>

- One acute respiratory infection (ARI-SARS-CoV-2 negative) outbreak in a nursing home in HSE North-East was notified to HPSC during week 48 2021, associated with rhinovirus.
- No laboratory confirmed influenza or RSV outbreaks were notified to HPSC during week 48 2021.
- For the 2021/2022 (weeks 40-48), three RSV and three ARI (SARS-CoV-2 negative) outbreaks were notified to HPSC. No laboratory confirmed influenza outbreaks have been notified during weeks 40-48 2021.

11. International Summary

As of 6th December 2021, globally, influenza activity continued to increase but remained low and below levels observed in previous seasons. RSV continues to circulate in the Northern Hemisphere and was at higher than expected levels in Canada. WHO are advising countries to remain vigilant for the possibility of influenza circulating and to be prepared for co-circulation of SARS-CoV-2 and influenza.

Influenza activity was increasing throughout the European Region during week 47 2021. Of the 1471 specimens tested for influenza during week 47 2021, from patients presenting with ILI or ARI symptoms to sentinel primary healthcare sites, 26 (2%) were positive for influenza virus; 24 influenza A (14 subtyped were A(H3)) and 2 influenza B (neither ascribed to a lineage). Influenza activity with influenza-confirmed patients in primary care or hospital settings with a rate of influenza virus detections above 10% has been reported by Kosovo.

See [ECDC](#) and [WHO](#) influenza surveillance reports for further information.

- Further information on influenza is available on the following websites:
 - Europe – ECDC <http://ecdc.europa.eu/>
 - Public Health England <https://www.gov.uk/government/collections/weekly-national-flu-reports>
 - 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>
- Influenza case definition in Ireland <https://www.hpsc.ie/a-z/respiratory/influenza/casedefinitions/>
- COVID-19 case definition in Ireland <https://www.hpsc.ie/a-z/respiratory/coronavirus/novelcoronavirus/casedefinitions/>
- Avian influenza overview May – August 2020 <https://www.ecdc.europa.eu/en/publications-data/avian-influenza-overview-may-august-2020>
- Avian influenza: EU on alert for new outbreaks <https://www.ecdc.europa.eu/en/news-events/avian-influenza-eu-alert-new-outbreaks>
- Information on COVID-19 in Ireland is available on the HPSC website <https://www.hpsc.ie/a-z/respiratory/coronavirus/novelcoronavirus/>
- The WHO categorised COVID-19 as a pandemic on 11 March 2020. For more information about the situation in the WHO European Region visit:
 - WHO website: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>
 - ECDC website: <https://www.ecdc.europa.eu/en/novel-coronavirus-china>

11. WHO recommendations on the composition of influenza virus vaccines

The WHO vaccine strain selection committee recommend that quadrivalent egg-based vaccines for use in the 2021/2022 northern hemisphere influenza season contain the following: an A/Victoria/2570/2019 (H1N1)pdm09-like virus; an A/Cambodia/e0826360/2020 (H3N2)-like virus; a B/Washington/02/2019 (B/Victoria lineage)-like virus; and a B/Phuket/3073/2013 (B/Yamagata lineage)-like virus
<https://www.who.int/teams/global-influenza-programme/vaccines/who-recommendations>

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

Acknowledgements

This report was prepared by the HPSC influenza epidemiology team: Maeve McEnery, Lisa Domegan, Eva Kelly, Adele McKenna, Martha Neary and Joan O'Donnell. HPSC wishes to thank the sentinel GPs, the ICGP, NVRL, Departments of Public Health, ICSI, HSE-Healthlink and HSE-NE for providing data for this report.