

Influenza Surveillance in Ireland – Weekly Report

Influenza Week 50 2021 (13th – 19th December 2021)



 *Intensive Care Society of Ireland*



Summary

Influenza activity remained low in Ireland during week 50, but increased slightly with eight cases notified during week 50 compared to five cases notified during week 49 2021. Notified influenza cases in Ireland during the 2021/2022 season to date, have predominately been associated with influenza A and mainly occurring in those aged ≤65 years. In the European region, influenza activity continues to increase, and is predominately associated with influenza A(H3). Respiratory syncytial virus (RSV) continues to circulate in Ireland but at lower levels than previous 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 11.3/100,000 population during week 50 2021, a decrease compared to an updated rate of 14.4/100,000 during week 49 2021. Sentinel GP ILI consultation rates are reflecting community COVID-19 incidence and changes to health seeking behaviour in relation to the use of online COVID-19 test booking systems.
- Sentinel GP ILI consultation rates during week 50 2021 were below the Irish baseline threshold (18.1/100,000 population).
- Sentinel GP ILI rates were below age specific baseline levels in all age groups during week 50; 0-14 years (15.1/100,000), those aged 15-64 years (10.8/100,000) and those aged ≥65 years (7.9/100,000).
- **National Virus Reference Laboratory (NVRL):** Of 37 sentinel GP ILI and 187 non-sentinel respiratory specimens tested and reported by the NVRL during week 50 2021, none were positive for influenza.
- For the 2021/2022 season (weeks 40-50 2021), only 0.3% (8/2710) of non-sentinel respiratory and 0.1% (1/708) of sentinel GP ILI specimens were positive for influenza; seven influenza A(H3) and two influenza B.
- RSV positivity (non-sentinel sources) during week 50 2021 was at 11.8% (22/187), which is lower than the median positivity of 25.1% for the same week in the 2014-2019 time period. Rhinovirus/enterovirus and other respiratory viruses continue to circulate, with coinfections of respiratory viruses reported.
- **Influenza notifications:** Eight laboratory confirmed influenza cases - seven influenza A (not subtyped) and one influenza B cases were notified to HPSC during week 50 2021; bringing the season total to 23 laboratory confirmed influenza cases notified during weeks 40-50 2021.
- **RSV notifications:** 180 RSV cases (60.6% aged 0-4 years; 20.6% aged ≥65 years) were notified during week 50 2021, a decrease compared to 305 cases during week 49 2021. During week 50 2021, 79 notified RSV cases were reported as hospital inpatients (73.4% aged 0-4 years; 15.2% aged ≥65 years), compared to 110 during week 49 2021.
- **Hospitalisations and Critical care admissions:** Two confirmed influenza hospitalised cases were notified during week 50 2021, one paediatric and one adult case, both were associated with influenza A (not subtyped). No confirmed influenza cases were admitted to critical care during weeks 40-50 2021.
- **Mortality:** No deaths in notified influenza cases occurred during week 50 2021. No excess all-cause mortality was reported during week 49 2021.
- **Outbreaks:** One influenza and one acute respiratory infection (SARS-CoV-2 negative) outbreaks were notified to HPSC during week 50 2021. The Influenza outbreak occurred in the HSE-MW and is the first influenza outbreak notified to HPSC for the 2020/2021 season.
- **International:** Influenza activity increased in the European Region during week 49 2021. Influenza positivity was above 10% in Armenia, France, Israel, Kazakhstan, Kosovo, Kyrgyzstan, Russian Federation and Slovakia.

1. GP sentinel surveillance system - Clinical Data

- During week 50 2021, 37 influenza-like illness (ILI) cases were reported from the Irish sentinel GP network, corresponding to an ILI consultation rate of 11.3 per 100,000 population, a decrease compared to the updated rate of 14.4 per 100,000 reported during week 49 2021 (Figure 1).
- Sentinel GP respiratory consultations are currently via phone consultations. Recent trends in sentinel GP ILI consultation rates are likely reflecting community COVID-19 incidence and changes to health seeking behaviour in relation to use of online COVID-19 booking systems.
- With a low number of laboratory confirmed influenza cases detected/notified in Ireland during the 2021/2022 season to date, 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.
- The sentinel GP ILI consultation rate was below the Irish sentinel GP ILI baseline threshold (18.1/100,000 population) during week 50 2021.
- Sentinel GP ILI rates were below age specific baseline levels in all age groups; 0-14 years (15.1/100,000), those aged 15-64 years (10.8/100,000) and those aged ≥ 65 years (7.9/100,000) during week 50 (Figure 2, Table 1).
- HPSG 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.

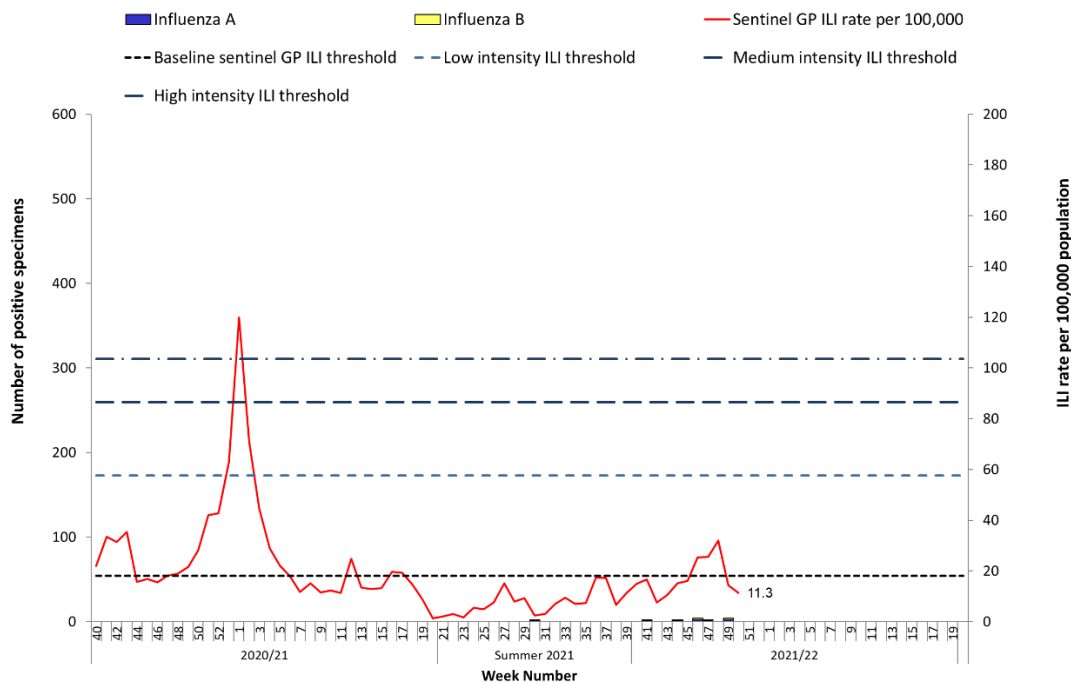


Figure 1: Sentinel GP Influenza-like illness (ILI) consultation rates per 100,000 population, baseline ILI threshold, medium and high intensity ILI thresholds and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season. The current week sentinel GP ILI consultation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

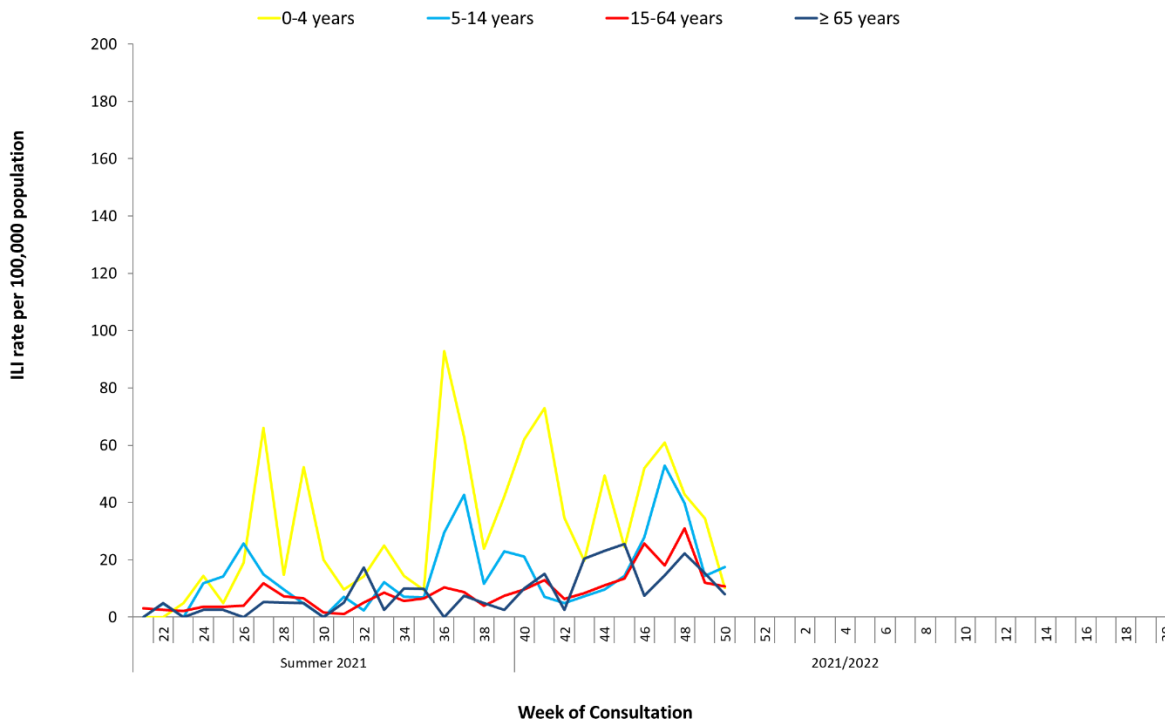


Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2021 and the 2021/2022 influenza season to date. *Source: ICGP.*

Table 1: Age specific sentinel GP ILI consultation rate per 100,000 population by week for the 2021/2022 season, 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)	40	41	42	43	44	45	46	47	48	49	50
All Ages	14.9	16.6	7.6	10.6	15.1	16.0	25.3	25.5	31.9	14.4	11.3
<15 yrs	34.6	28.8	14.6	11.3	22.8	17.7	35.8	55.6	40.8	21.0	15.1
15-64 yrs	9.6	12.9	6.3	8.4	11.0	13.5	25.6	18.0	30.9	12.0	10.8
≥65 yrs	9.9	15.2	2.6	20.4	23.1	25.4	7.4	14.6	22.3	15.3	7.9
Reporting practices (N=61)	57	56	54	55	54	55	56	57	55	53	52

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 37 sentinel GP ILI and 187 non-sentinel respiratory specimens tested and reported by the NVRL during week 50 2021, none (N=224) were positive for influenza (Table 2).
- For the 2021/2022 season (weeks 40-50 2021), only 0.3% (8/2710) of non-sentinel respiratory and 0.1% (1/708) of sentinel GP ILI specimens were positive for influenza; seven influenza A(H3) and two influenza B (one B/Victoria and one with no B lineage reported).
- RSV positivity (non-sentinel sources) was 11.8% (22/187) during week 50 2021, which is lower than the median positivity of 25.1% for the same week in the 2014-2019 time period. RSV activity slightly increased during week 50 compared to 10.3% (27/261) during week 49, however overall the RSV positivity appears to be declining since week 44 2021 compared to weeks 40-43 2021, (Table 3; Figure 3).
- Rhinovirus/enterovirus positive detections (non-sentinel sources) continue to be reported, with positivity levels at 14.4% (27/187) during week 50 2021 (Figure 4). Other respiratory viruses (ORVs) continue to be detected at lower levels, compared to RSV and rhinovirus/enterovirus positivity levels (Table 4).
- 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 40-50 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
50 2021	Sentinel GP ILI referral	37	0	0.0	0	0	0	0	0	0	0	0
	Non-sentinel	187	0	0.0	0	0	0	0	0	0	0	0
	Total	224	0	0.0	0	0	0	0	0	0	0	0
2021/2022	Sentinel GP ILI referral	708	1	0.1	0	1	0	1	0	0	0	0
	Non-sentinel	2710	8	0.3	0	6	0	6	1	1	0	2
	Total	3418	9	0.3	0	7	0	7	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 40-50 2021). *Source: NVRL*

Surveillance period	Specimen type	Total tested	Number RSV positive	% RSV positive	RSV A	RSV B	RSV (unspecified)
Week 50 2021	Sentinel GP ILI	37	2	5.4	0	2	0
	Non-sentinel	187	22	11.8	10	12	0
	Total	224	24	10.7	10	14	0
2021/2022	Sentinel GP ILI	708	52	7.3	27	25	0
	Non-sentinel	2710	654	24.1	376	277	1
	Total	3418	706	20.7	403	302	1

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 40-50 2021). *Source: NVRL*

Virus	Week 50 2021 (N=187)		2021/2022 (N=2710)	
	Total positive	% positive	Total positive	% positive
Influenza virus	0	0.0	8	0.3
Respiratory Syncytial Virus (RSV)	22	11.8	654	24.1
Rhino/enterovirus	27	14.4	522	19.3
Adenovirus	1	0.5	26	1.0
Bocavirus	1	0.5	79	2.9
Human metapneumovirus (hMPV)	9	4.8	50	1.8
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)	4	2.1	90	3.3
Parainfluenza virus type 4 (PIV-4)	3	1.6	52	1.9

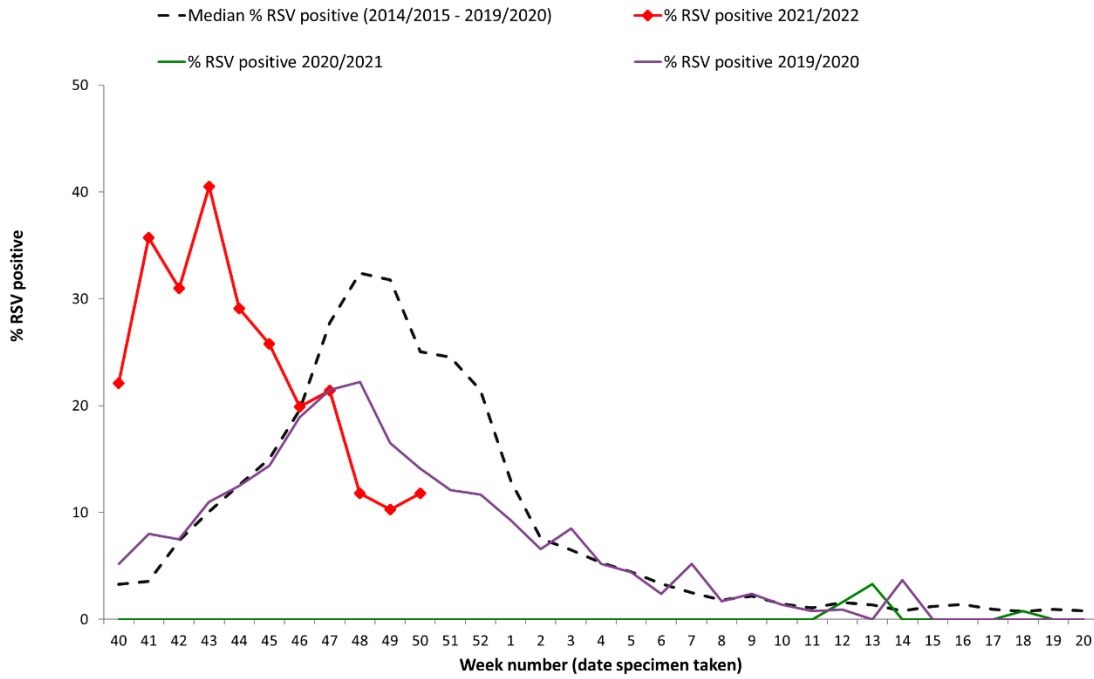


Figure 3: NVRL non-sentinel RSV positivity by week specimen was taken for 2021/2022, 2020/2021 and 2019/2020 seasons compared to median % RSV positivity (2014/2015-2019/2020). *Source: NVRL.*

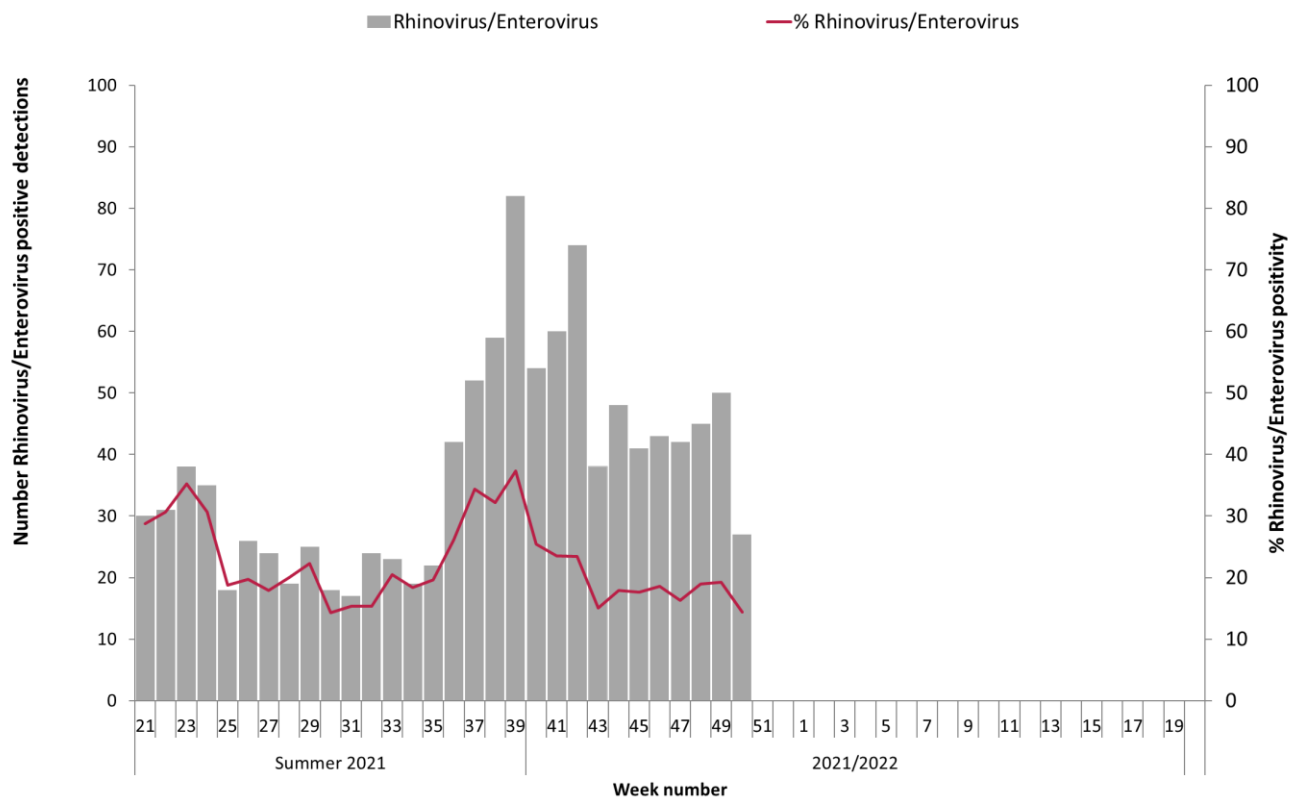


Figure 4: Number (and percentage) of non-sentinel rhinovirus/enterovirus positive detections by week specimen was taken for summer 2021 and 2021/2022 season. *Source: NVRL.*

3. Regional Influenza Activity by HSE-Area

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

Sporadic influenza activity (i.e. >1 influenza case in a HSE region during the same week) was reported in HSE-East (n=4) and HSE-South (n=2) during week 50 2021.

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.

- 1,903 (15.1% of total calls; N=12,635) self-reported cough calls were reported by a network of GP OOHs services during week 50 2021, remaining above baseline levels for 15 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.

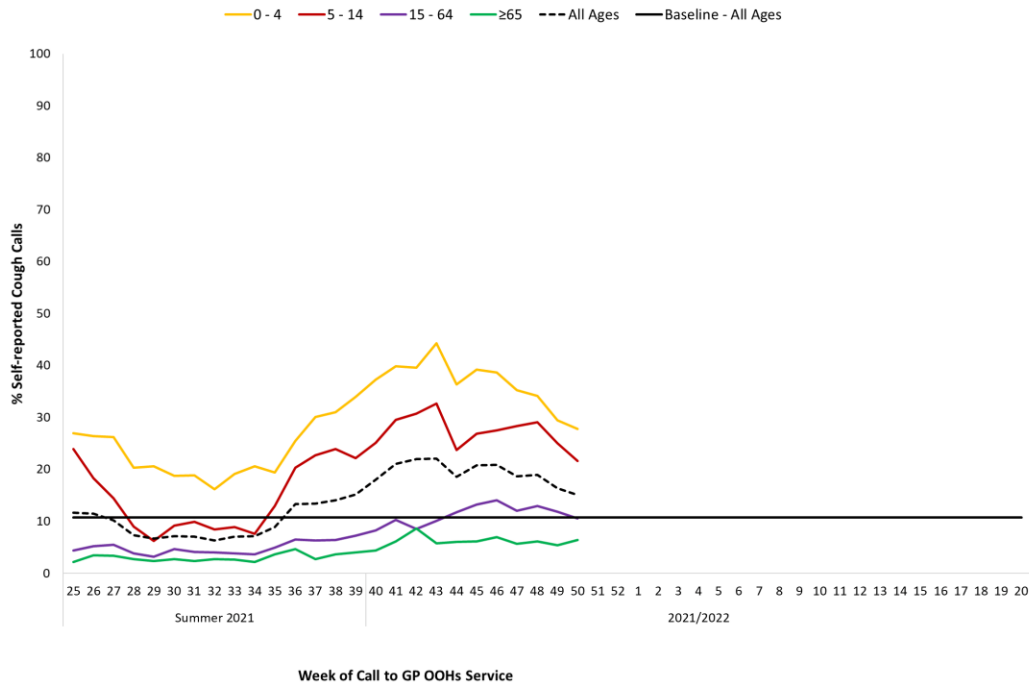


Figure 5: Percentage of self-reported COUGH calls for all ages and by age group as a proportion of total calls to GP Out-of-Hours services by week of call, 2021-2022. The % cough calls baseline for all ages calculated using the MEM method on historic data is shown. *Source: GP Out-Of-Hours services in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

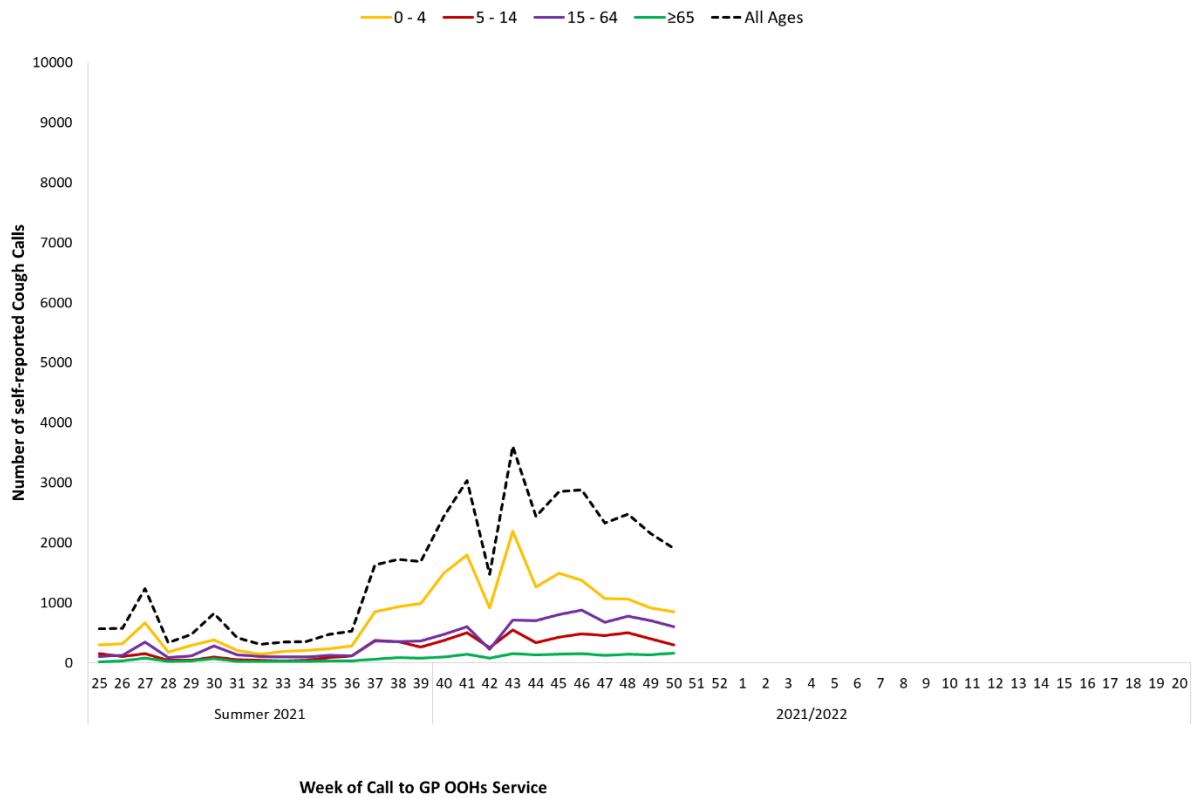


Figure 6: Number of self-reported COUGH calls for all ages and by age group to GP Out-of-Hours services by week of call, 2021-2022. *Source: GP Out-Of-Hours services in Ireland (collated by HSE-NE) & ICGP.*

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](#).

- Eight laboratory confirmed influenza cases were notified during week 50 2021: 7 influenza A (not subtyped) and one influenza B. All eight notified cases were aged less than 65 years, with a median age of 22 years.
- Twenty-three confirmed influenza cases were notified during the 2021/2022 season (weeks 40-50 2021): 19 influenza A (15 influenza A-not subtyped and 4 influenza A(H3)) and four influenza B. The median age of notified cases for the 2021/2022 season to date (weeks 40-50 2021) is 22 years.
- 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.
- During week 50 2021, 180 RSV cases (60.6% aged 0-4 years; 20.5% aged ≥65 years) were notified, a decrease compared to 305 notifications during week 49 2021 (Figure 7).
- During week 50 2021, 79 notified RSV cases were reported as hospital inpatients (73.4% aged 0-4 years; 15.2% aged ≥65 years), compared to 110 during week 49 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.

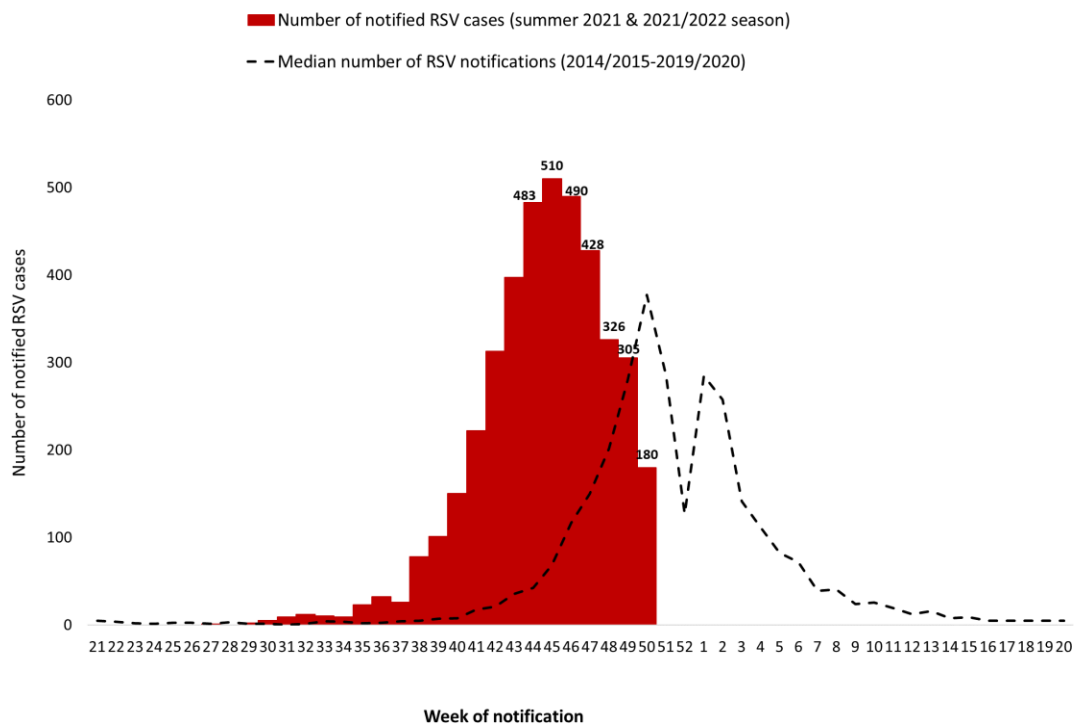


Figure 7: Number of RSV cases notified by week of notification, summer 2021 and 2021/2022, and median number of RSV notifications by week (2014/2015-2019/2020). *Source: Ireland’s Computerised Infectious Disease Reporting System.*

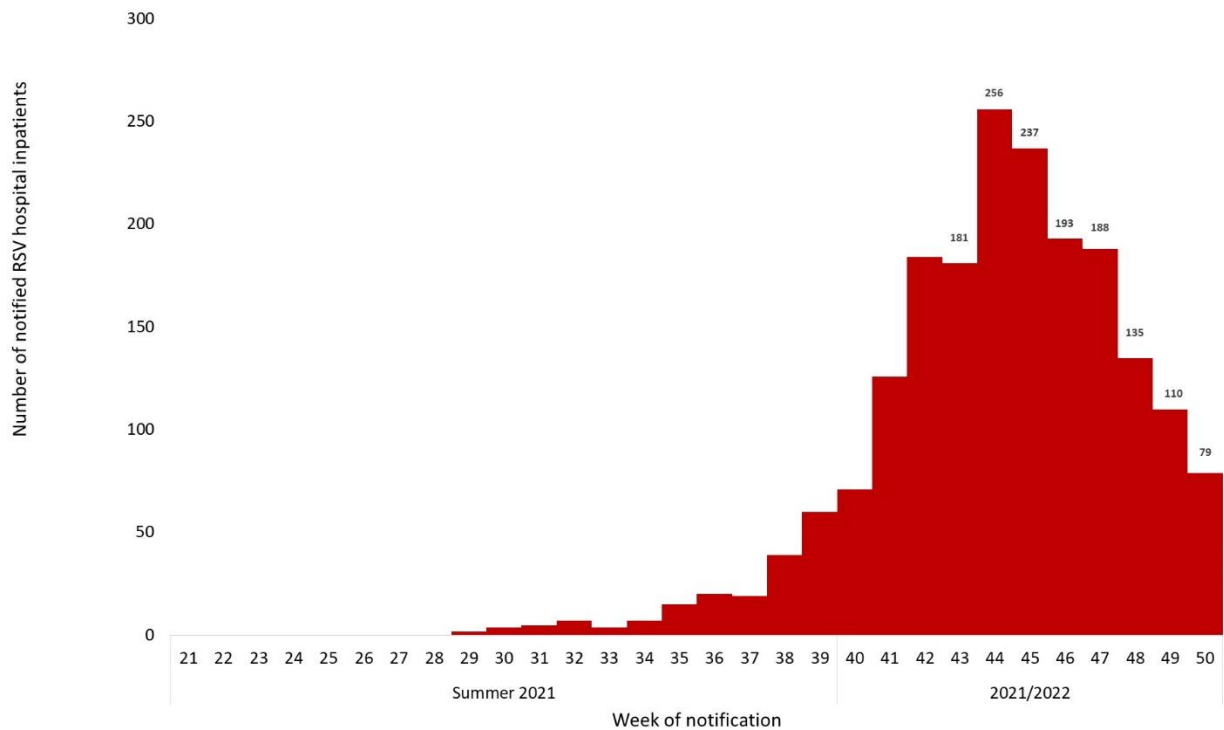


Figure 8: Number of notified RSV cases reported as hospital inpatients, by week of notification, summer 2021 and 2021/2022. *Source: Ireland’s Computerised Infectious Disease Reporting System.*

6. Influenza Hospitalisations

- Two confirmed influenza hospitalised cases were notified during week 50 2021, one paediatric and one adult case, both were associated with influenza A (not subtyped) from HSE-Midwest and HSE-South
- For the 2021/2022 season to date (weeks 40-50 2021), six confirmed influenza hospitalised cases have been notified to HPSC from HSE-Midwest (N=3), HSE-East (n=1), HSE-North East (n=1), and HSE-South (n=1); two influenza B and four influenza A (three A not subtyped and one influenza A(H3)).

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 40-50 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. SARI cases are identified from new admissions (aged ≥15 years) through the SVUH Emergency Department. 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 patients are tested for SARS-CoV-2, influenza and RSV.

- During week 50 2021, 10 SARI cases were admitted to the SARI hospital site, corresponding to an incidence rate of 32.6 per 1,000 emergency admissions; a decrease on 53.1/1,000 in week 49 2021.
- The SARI incidence rate per hospital catchment population was 3.3/100,000 population during week 50 2021, a decrease compared to 5.6 during week 49 2021.
- SARI SARS-CoV-2 positivity was 90% (9/10 tested) during week 50 2021, compared to 58.8% (10/17) during week 49 2021.
- No SARI patients tested positive for influenza during weeks 49 and 50 2021.
- One SARI patient tested positive for RSV in week 50 2021, corresponding to RSV positivity of 11.1% (1/9). No SARI patients tested positive for RSV in week 49.

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 50 2021. During the 2021/2022 season (weeks 40-50 2021) one death in a notified influenza A(H3) case was reported to HPSC during week 45 2021.
- No excess all-cause deaths were observed during week 49 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/>

- During week 50 2021, one influenza outbreak in HSE-MidWest was notified, this is the first influenza outbreak notified for the 2021/2022 season to date. Influenza A (not subtyped) was detected and the cases linked to the outbreak occurred during weeks 49 and 50 2021.
- One acute respiratory infection (ARI-SARS-CoV-2 negative) outbreak was notified during week 50 2021, in HSE-NorthWest, the pathogen is currently not identified for this outbreak.
- For the 2021/2022 season to date (weeks 40-50 2021), one influenza outbreak, four RSV and seven ARI (SARS-CoV-2 negative) outbreaks were notified to HPSC. Of the seven ARI outbreaks, two were associated with rhinovirus/enterovirus, one with seasonal coronavirus (OC43) and four with no pathogen identified.

11. International Summary

As of 20th December 2021, globally, influenza activity remains low but continues to increase especially in the temperate zones of the northern hemisphere. Elevated levels of RSV activity were reported in the Caribbean, Central American and South America and decreased levels of RSV were reported in the USA and Canada. With the increasing detections of influenza during the COVID-19 pandemic, WHO are encouraging countries to monitor influenza and SARA-CoV-2 at the same time.

Influenza activity increased in the European Region during week 49 2021 (week ending 12/12/2021). Several countries reported seasonal influenza activity above the 10% influenza positivity threshold in sentinel primary care or hospital settings (Armenia, France, Israel, Kazakhstan, Kosovo, Kyrgyzstan, Russian Federation and Slovakia). Both influenza A and B viruses were detected with a predominance of A(H3) viruses across all monitoring systems and in nearly all SARI cases. Of the 1,650 specimens tested for influenza during week 49 2021, from patients presenting with ILI or ARI symptoms to sentinel primary healthcare sites, 185 (11%) were positive for influenza; 98% influenza A and 2% influenza B. Of 67 subtyped A viruses, 3% were A(H1)pdm09 and 97% A(H3). During week 49 2021, from non-sentinel sources (hospitals, schools, primary care facilities not involved in sentinel surveillance, or nursing homes and other institutions) 3,399 of 82,929 specimens tested positive for influenza; 98% influenza A and 2% influenza B. Of 1,131 subtyped A viruses, 1% were A(H1)pdm09 and 99% A(H3).

- 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

This report was prepared by the HPSC influenza epidemiology team: Maeve McEnery, Eva Kelly, Adele McKenna, Lisa Domegan, Martha Neary and Joan O'Donnell.

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