

Influenza Surveillance in Ireland – Weekly Report

Influenza Weeks 51 & 52 2021 (20th December 2021 – 2nd January 2022)



Summary

Influenza activity remained low in Ireland during weeks 51 and 52 2022, however continued to slowly increase with 14 confirmed cases notified. Notified confirmed influenza cases (N=37) in Ireland during the 2021/2022 season to date, have predominately been associated with influenza A - all subtyped viruses have been influenza A(H3). In the European region, influenza activity continued to increase, and is predominately associated with influenza A(H3). ECDC has declared that the influenza epidemic in Europe has started for the 2021/2022 season.

- **Influenza-like illness (ILI):** The sentinel GP influenza-like illness (ILI) consultation rate increased to 67.1/100,000 population during week 52 2021, compared to 23.8/100,000 in week 51 2021 and 11.2/100,000 during week 50 2021. Sentinel GP ILI consultation rates during weeks 51 and 52 2021 were above the Irish baseline threshold (18.1/100,000 population). Recent trends in sentinel GP ILI consultation rates are likely reflecting community COVID-19 incidence and changes to health seeking behaviour relating to GP consultation, the use of online COVID-19 test booking systems and antigen tests.
- Sentinel GP ILI rates increased in all age groups during week 52 2021, compared to week 51 2021. Rates were above age specific baseline levels in all age groups during week 52 2021.
- **GP Out of Hours:** The proportion of self-reported 'flu' calls to GP Out-of-Hours services was 1.7% (217/12659) during week 52 2021, remaining below baseline (2.3%), however increased compared to 0.9% (73/8162) during week 51 2021.
- **National Virus Reference Laboratory (NVRL):** Of 158 sentinel GP ILI and 327 non-sentinel respiratory specimens tested and reported by the NVRL during weeks 51 and 52 2021, three (0.6%; N=485) were positive for influenza, all influenza A(H3). For the 2021/2022 season (weeks 40-52 2021), only 0.1% (1/866) of sentinel GP ILI specimens and 0.4% (11/3104) of non-sentinel respiratory specimens were positive for influenza; 10 influenza A(H3) and two influenza B.
- RSV positivity (non-sentinel sources) stabilised at a low-level during week 52 2021 at 4.3%, which is lower than the median positivity of 21.5% 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:** Fourteen laboratory confirmed influenza cases (12 influenza A (1 AH3 and 11 A not subtyped) and 2 influenza B) - were notified to HPSC during weeks 51 and 52 2021; bringing the season (weeks 40-52 2021) total to 37 laboratory confirmed influenza cases notified.
- **RSV notifications:** 261 RSV cases (61.7% aged 0-4 years; 12.6% aged ≥65 years) were notified; 100 cases were reported as hospital inpatients (72% aged 0-4 years; 10% aged ≥65 years) during weeks 51 and 52 2021.
- **Hospitalisations and Critical care admissions:** One confirmed influenza A hospitalised case was notified during week 51 2021, an adult case aged <65 years. During weeks 40-52 2021, seven confirmed influenza hospitalised cases were notified: five influenza A (two subtyped as AH3) and two influenza B cases. No confirmed influenza cases were admitted to critical care during weeks 40-52 2021.
- **Mortality:** No reports of deaths in notified influenza cases during weeks 51 and 52 2021. No excess all-cause mortality was reported during week 51 2021; data reported with one-week time lag.
- **Outbreaks:** Two acute respiratory infection (SARS-CoV-2 negative) outbreaks were notified to HPSC during week 51 2021, one associated with seasonal coronavirus OC43 and the other with an unidentified pathogen.
- **International:** Influenza activity continues to increase throughout the European Region, particularly in Northern and Eastern areas of the Region.

1. GP sentinel surveillance system - Clinical Data

- During week 52 2021, 187 influenza-like illness (ILI) cases were reported from the Irish sentinel GP network, corresponding to an ILI consultation rate of 67.1 per 100,000 population, an increase compared to the rate of 23.8/100,00 during week 51 2021 and 11.2/100,000 during week 50 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 relating to GP consultations, the use of online COVID-19 booking systems and antigen tests.
- 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 predominately 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 above the Irish sentinel GP ILI baseline threshold (18.1/100,000 population) during weeks 51 and 52 2021.
- During week 52 2021, sentinel GP ILI rates were above age specific baseline levels in all age groups; 0-14 years (54.3/100,000), those aged 15-64 years (75.6/100,000) and those aged ≥65 years (45.6/100,000). Data for weeks 40-52 2021 are included in Figure 2 & Table 1.
- The Irish sentinel baseline ILI threshold for the 2021/2022 influenza season is 18.1/100,000 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), medium (57.5/100,000) and high (86.5/100,000) intensity ILI thresholds are shown in figure 1. Age specific MEM threshold levels are shown in Table 1.

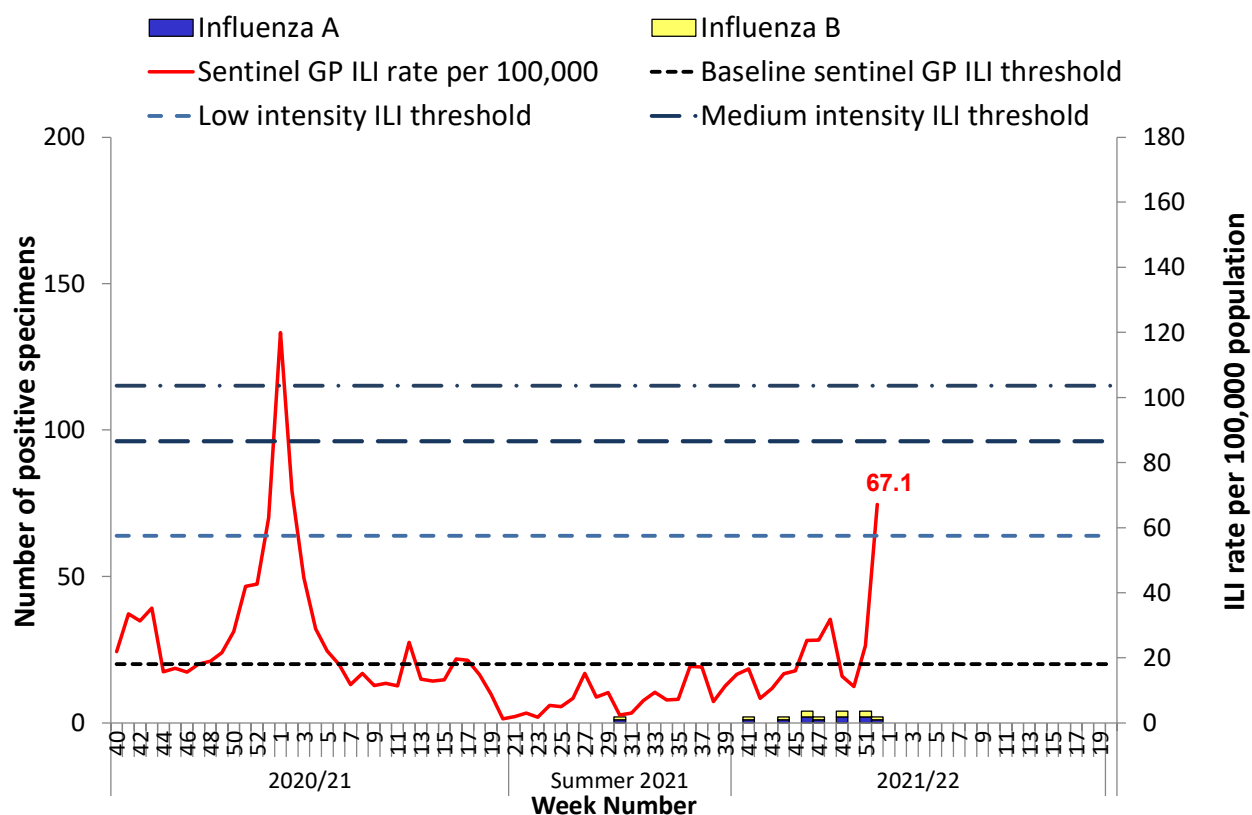


Figure 1: Sentinel GP Influenza-like illness (ILI) consultation rates per 100,000 population, baseline ILI threshold, medium and high intensity ILI thresholds and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season. The current week sentinel GP ILI consultation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

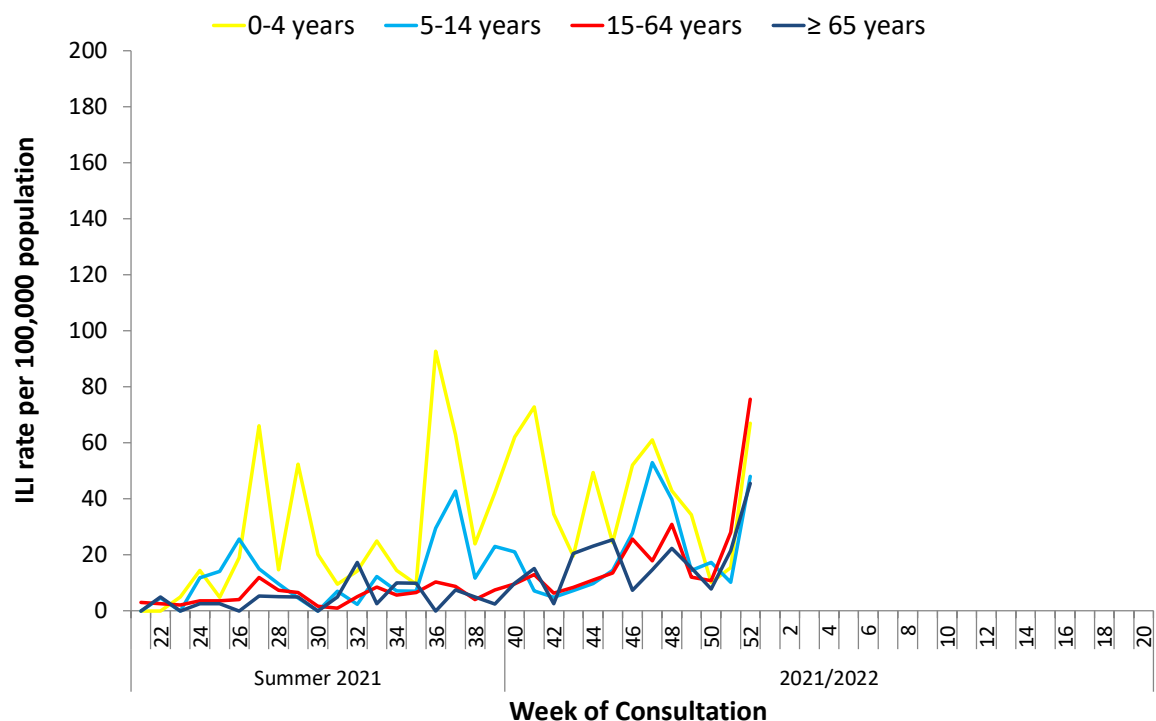


Figure 2: Age specific sentinel GP ILI consultation rate per 100,000 population by week during the summer of 2021 and the 2021/2022 influenza season to date. *Source: ICGP.*

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	51	52
All Ages	14.9	16.6	7.6	10.6	15.1	16.0	25.3	25.5	31.9	14.4	11.2	23.8	67.1
<15 yrs	34.6	28.8	14.6	11.3	22.8	17.7	35.8	55.6	40.8	21.0	15.0	11.9	54.3
15-64 yrs	9.6	12.9	6.3	8.4	11.0	13.5	25.6	18.0	30.9	12.0	10.7	28.1	75.6
≥65 yrs	9.9	15.2	2.6	20.4	23.1	25.4	7.4	14.6	22.3	15.3	7.9	21.5	45.6
Reporting practices (N=61)	57	56	54	55	54	55	56	57	55	53	53	51	51

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 158 sentinel GP ILI and 327 non-sentinel respiratory specimens tested and reported by the NVRL during weeks 51 and 52 2021, three (0.6%; N=485) were positive for influenza, all influenza A(H3). No influenza positive specimens were detected from sentinel GP sources during weeks 51 and 52 2021 (Table 2).
- For the 2021/2022 season (weeks 40-52 2021), only 0.4% (11/3104) of non-sentinel respiratory and 0.1% (1/866) of sentinel GP ILI specimens were positive for influenza; 10 influenza A(H3) and two influenza B (one B/Victoria and one B/lineage not specified) (Figures 3 & 4).
- RSV positivity (non-sentinel sources) remained low and stable during weeks 51 and 52 2021; at 4.3% (9/211) during week 51 2021 and unchanged at 4.3% (5/116) during week 52 2021, which is lower than the median positivity for the same weeks (24.6% week 51; 21.5% week 52) during the 2014-2019 time period (Table 3; Figure 5).
- Rhinovirus/enterovirus positive detections (non-sentinel sources) continue to be reported, with positivity levels at 20.9% (44/211) during week 51 2021 and 4.3% (5/116) during week 52 2021 (Figure 6). 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.

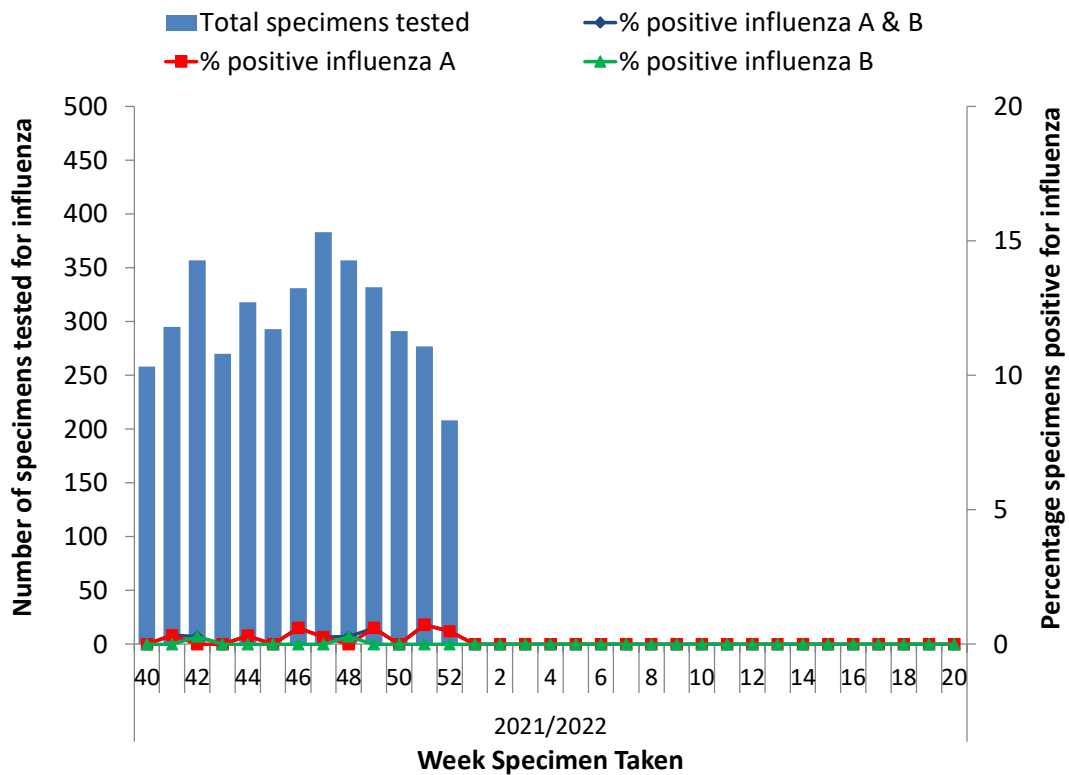


Figure 3: Number of specimens (from sentinel GP ILI and non-sentinel respiratory sources) tested by the NVRL for influenza and percentage influenza positive by week for the 2021/2022 influenza season. *Source: NVRL.*

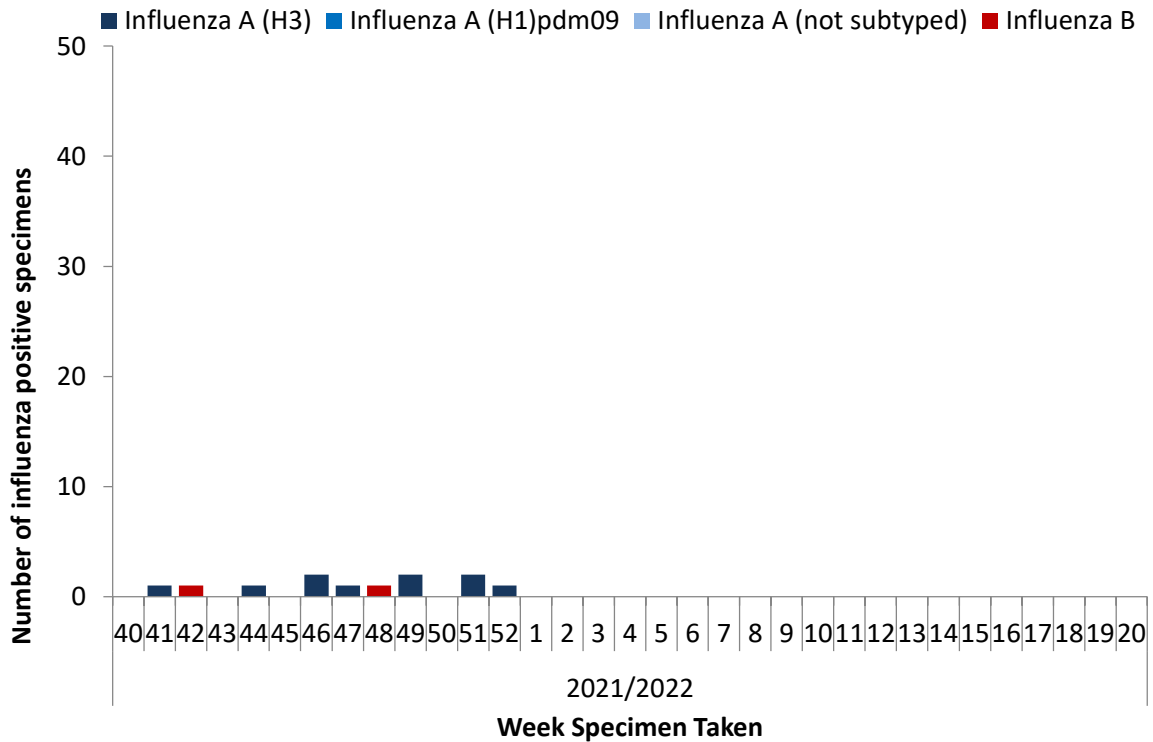


Figure 4: Number of positive influenza specimens (from sentinel GP ILI and non-sentinel respiratory sources) tested by the NVRL by influenza type/subtype and by week for the 2021/2022 influenza season. *Source: NVRL.*

Table 2: Number of sentinel GP ILI and non-sentinel respiratory specimens tested by the NVRL and positive influenza results, for weeks 51 and 52 2021 and the 2021/2022 season (weeks 40-52 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
51 2021	Sentinel GP ILI referral	66	0	0.0	0	0	0	0	0	0	0	0
	Non-sentinel	211	2	0.9	0	2	0	2	0	0	0	0
	Total	277	2	0.7	0	2	0	2	0	0	0	0
52 2021	Sentinel GP ILI referral	92	0	0.0	0	0	0	0	0	0	0	0
	Non-sentinel	116	1	0.9	0	1	0	1	0	0	0	0
	Total	208	1	0.5	0	1	0	1	0	0	0	0
2021/2022	Sentinel GP ILI referral	866	1	0.1	0	1	0	1	0	0	0	0
	Non-sentinel	3104	11	0.4	0	9	0	9	1	1	0	2
	Total	3970	12	0.3	0	10	0	10	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 weeks 51 and 52 2021 and the 2021/2022 season (weeks 40-52 2021). *Source: NVRL*

Surveillance period	Specimen type	Total tested	Number RSV positive	% RSV positive	RSV A	RSV B	RSV (unspecified)
Week 51 2021	Sentinel GP ILI	66	0	0.0	0	0	0
	Non-sentinel	211	9	4.3	2	7	0
	Total	277	9	3.2	2	7	0
Week 52 2021	Sentinel GP ILI	92	0	0.0	0	0	0
	Non-sentinel	116	5	4.3	1	4	0
	Total	208	5	2.4	1	4	0
2021/2022	Sentinel GP ILI	866	52	6.0	27	25	0
	Non-sentinel	3104	680	21.9	383	296	1
	Total	3970	732	18.4	410	321	1

Table 4: Number of non-sentinel respiratory specimens tested by the NVRL for other respiratory viruses (ORVs) and positive results, for weeks 51 and 52 2021 and the 2021/2022 season (weeks 40-52 2021). *Source: NVRL*

Virus	Week 51 2021 (N=211)		Week 52 2021 (N=116)		2021/2022 (N=3104)	
	Total positive	% positive	Total positive	% positive	Total positive	% positive
Influenza virus	2	0.9	1	0.9	11	0.4
Respiratory Syncytial Virus (RSV)	9	4.3	5	4.3	680	21.9
Rhino/enterovirus	44	20.9	5	4.3	588	18.9
Adenovirus	1	0.5	0	0.0	31	1.0
Bocavirus	7	3.3	1	0.9	91	2.9
Human metapneumovirus (hMPV)	4	1.9	3	2.6	61	2.0
Parainfluenza virus type 1 (PIV-1)	0	0.0	0	0.0	0	0.0
Parainfluenza virus type 2 (PIV-2)	0	0.0	0	0.0	1	0.0
Parainfluenza virus type 3 (PIV-3)	2	0.9	0	0.0	95	3.1
Parainfluenza virus type 4 (PIV-4)	1	0.5	0	0.0	53	1.7

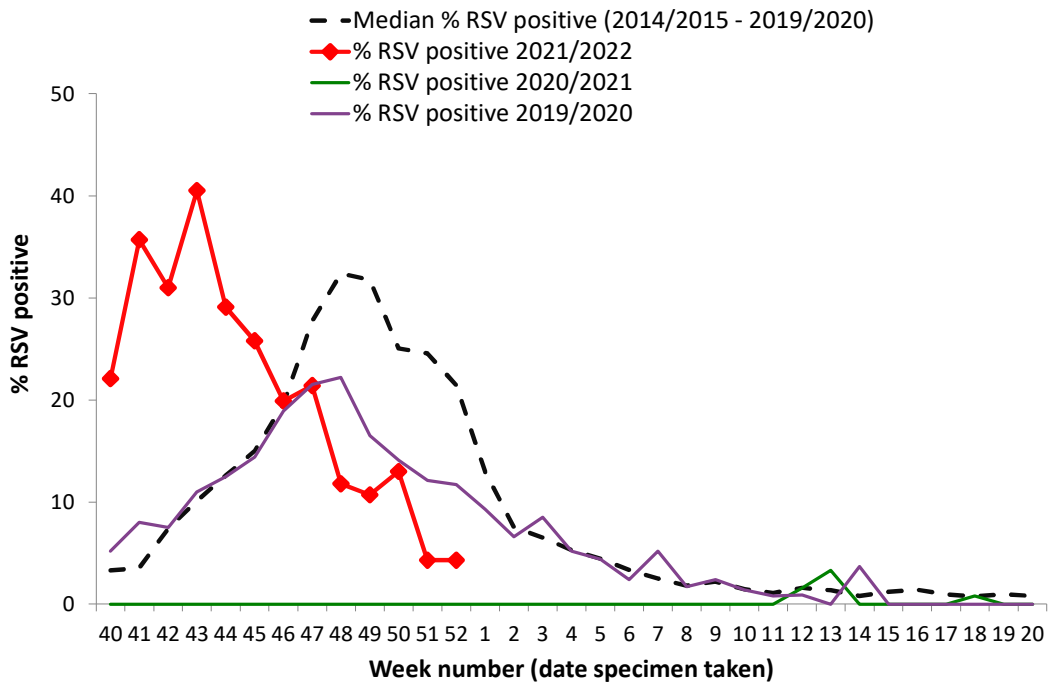


Figure 5: NVRL non-sentinel RSV positivity by week specimen was taken for 2021/2022, 2020/2021 and 2019/2020 seasons compared to median % RSV positivity (2014/2015-2019/2020). *Source: NVRL.*

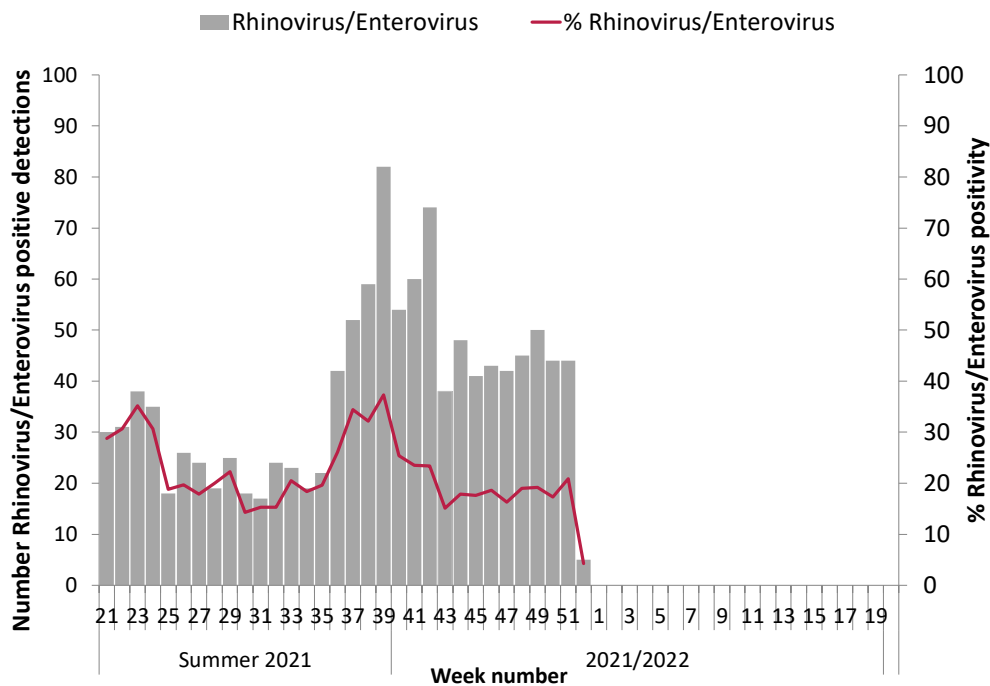


Figure 6: Number (and percentage) of non-sentinel rhinovirus/enterovirus positive detections by week specimen was taken for summer 2021 and 2021/2022 season. *Source: NVRL.*

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 laboratory confirmed influenza case in a HSE region during the same week) was reported in HSE-East (n=7), -NorthEast (n=2) and HSE-South (n=3) during week 51 2021. No laboratory confirmed influenza cases were notified during week 52 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.

- 2598 (14.4% of total calls; N=18,103) self-reported cough calls were reported by a network of GP OOHs services during week 52 2021, remaining above baseline levels for 17 consecutive weeks (Figures 7 & 8). The baseline threshold level for self-reported cough calls is 10.7%.
- 217 (1.7% of total calls; N=12,659) self-reported 'flu' calls were reported by a network of GP OOHs services during week 52 2021, remaining below baseline levels, however increased compared to 73 (0.9% of total calls; N=8162) self-reported 'flu' calls during week 51 2021. The baseline threshold level for self-reported 'flu' calls is 2.3%. (Figure 9).

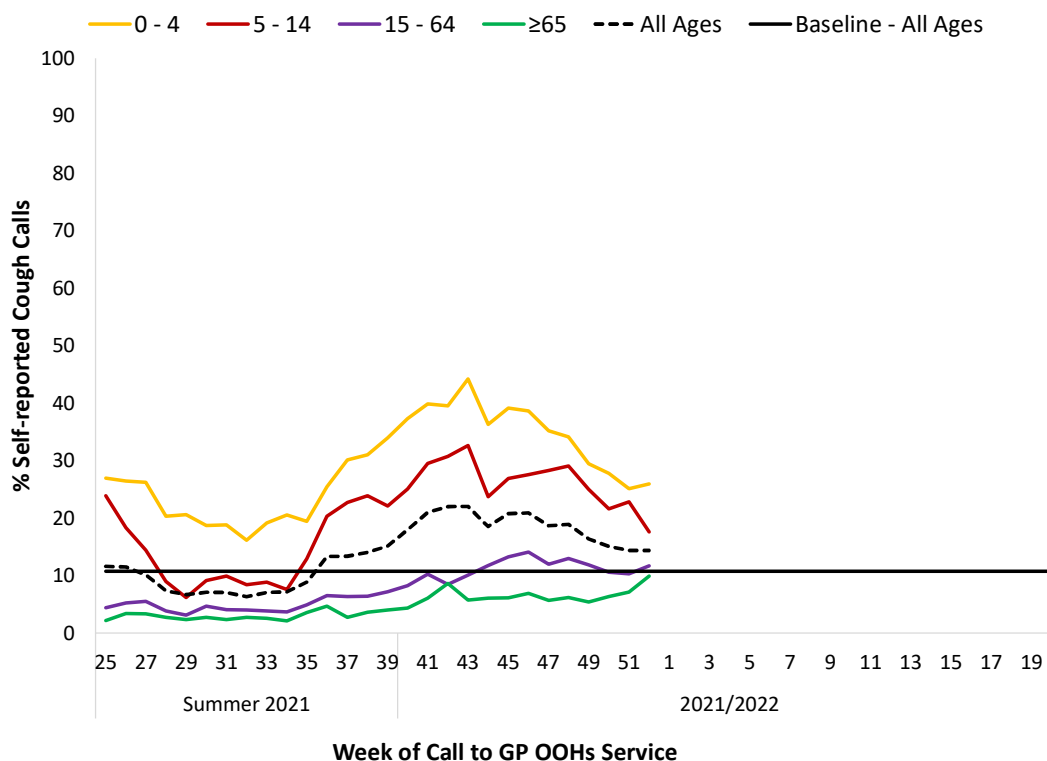


Figure 7: Percentage of self-reported COUGH calls for all ages and by age group as a proportion of total calls to GP Out-of-Hours services by week of call, 2021-2022. The % cough calls baseline for all ages calculated using the MEM method on historic data is shown. *Source: GP Out-Of-Hours services in Ireland (collated by HSE-NE) & ICGP.*

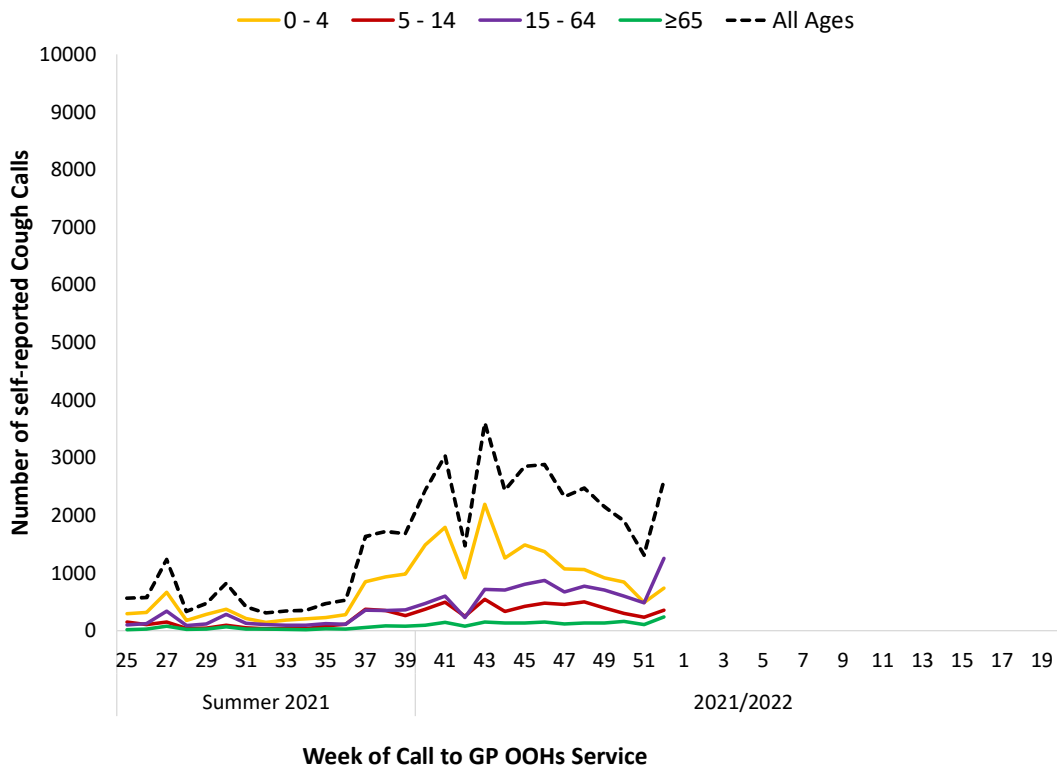


Figure 8: Number of self-reported COUGH calls for all ages and by age group to GP Out-of-Hours services by week of call, 2021-2022. *Source: GP Out-Of-Hours services in Ireland (collated by HSE-NE) & ICGP.*

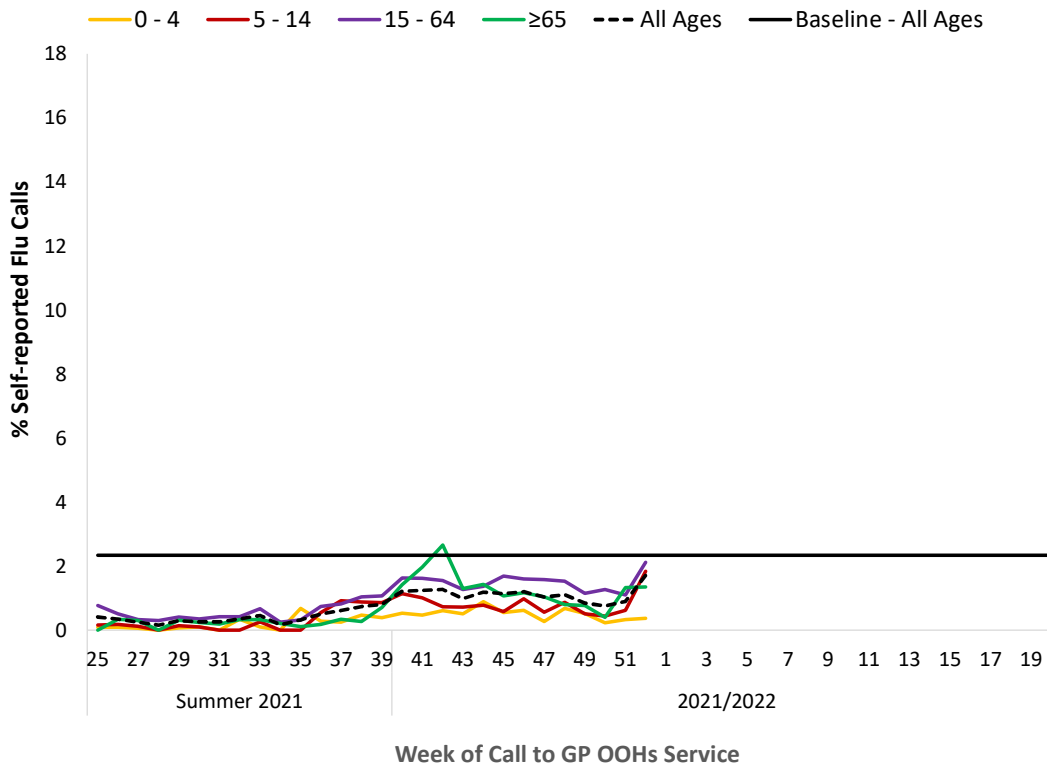


Figure 9: Percentage of self-reported FLU calls for all ages and by age group as a proportion of total calls to GP Out-of-Hours services by week of call, 2021-2022. The % flu calls baseline for all ages calculated using the MEM method on historic data is shown. *Source: GP Out-Of-Hours services in Ireland (collated by HSE-NE) & ICGP.*

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](#).

- Fourteen laboratory confirmed influenza cases, 12 influenza A (1 AH3 and 11 A not subtyped) and 2 influenza B, were notified to HPSC during week 51 2021. The median age of cases notified during week 51 2021 was 28 years (interquartile range 24-45 years); 12 cases were aged <65 years and two were aged ≥65 years. Laboratory confirmed influenza cases were notified from HSE-East (n=7), -NorthEast (n=2), -NorthWest (n=1), -South (n=3) and HSE-West (n=1) during week 51 2021. No laboratory confirmed influenza cases were notified during week 52 2021. Notifications data were impacted over the Christmas and New Year period and caution is advised interpreting these data.
- Thirty-seven laboratory confirmed influenza cases were notified during the 2021/2022 season (weeks 40-52 2021): 31 influenza A (25 influenza A-not subtyped and 6 influenza A(H3)) and 6 influenza B. The median age of notified cases for the 2021/2022 season to date (weeks 40-52 2021) is 26 years (interquartile range 26-43 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 weeks 51 and 52 2021, 261 RSV cases (61.7% aged 0-4 years; 12.6% aged ≥65 years) were notified; 100 of these cases were reported as hospital inpatients (72% aged 0-4 years; 10% aged ≥65 years) (Figures 10 & 11). 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.

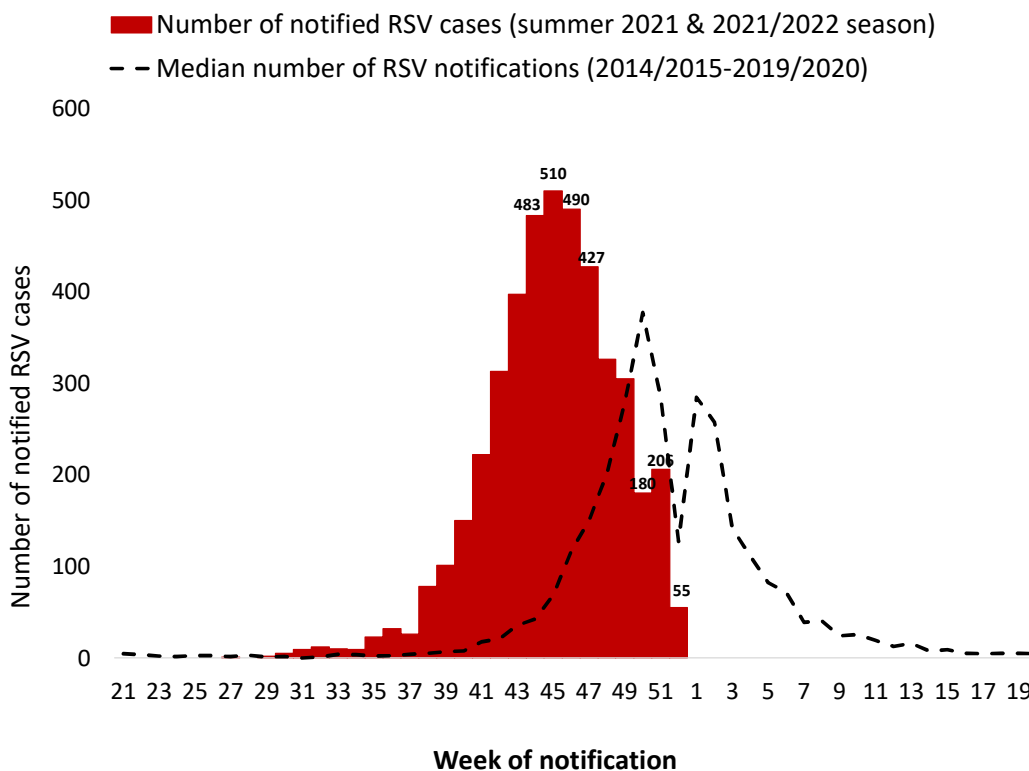


Figure 10: Number of RSV cases notified by week of notification, summer 2021 and 2021/2022, and median number of RSV notifications by week (2014/2015-2019/2020). *Source: Ireland’s Computerised Infectious Disease Reporting System.*

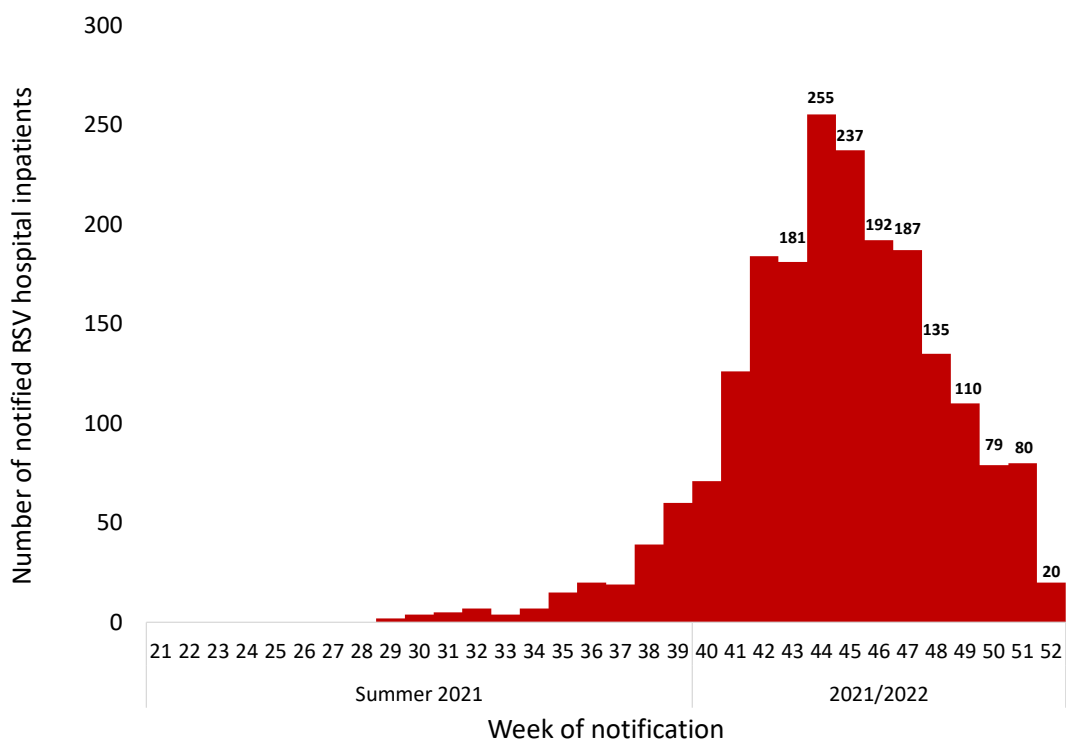


Figure 11: Number of notified RSV cases reported as hospital inpatients, by week of notification, summer 2021 and 2021/2022. *Source: Ireland’s Computerised Infectious Disease Reporting System.*

6. Influenza Hospitalisations

- One laboratory confirmed influenza A hospitalised case was notified during week 51 2021, an adult case aged <65 years.
- During weeks 40-52 2021, seven laboratory confirmed influenza hospitalised cases have been notified: five influenza A (two subtyped as AH3) and two influenza B cases. Confirmed influenza hospitalised cases have been notified from HSE-MidWest (N=3), -East (n=1), -NorthEast (n=1), -NorthWest (n=1) and HSE-South (n=1).

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 laboratory confirmed influenza cases were admitted to critical care and reported to HPSC during weeks 40-52 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.

- Data from the SARI surveillance project are not currently available for weeks 51 and 52 2021.
- 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 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 weeks 51 and 52 2021. During the 2021/2022 season (weeks 40-52 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 51 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 are reported with a 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/>

- No influenza, RSV or acute respiratory infection (ARI-SARS-CoV-2) negative outbreaks were notified to HPSC during week 52 2021.
- Two ARI (SARS-CoV-2 negative) outbreaks in residential care facilities were notified to HPSC during week 51 2021, one in HSE-South associated with seasonal coronavirus (OC43) and one in HSE-NorthEast with no pathogen identified. No influenza or RSV outbreaks were notified during week 51 2021.
- For the 2021/2022 season to date (weeks 40-52 2021), one influenza A (H3) family outbreak, four RSV and nine ARI (SARS-CoV-2 negative) outbreaks were notified to HPSC. Of the nine ARI outbreaks, two were associated with rhinovirus/enterovirus, two with seasonal coronavirus (OC43) and five with no pathogen identified.

11. International Summary

As of 20th December 2021, globally, influenza activity remained low but continued to increase especially in the temperature zones of the northern hemisphere. **With increasing detections of influenza during the COVID-19 pandemic, WHO are encouraging countries to enhance integrated surveillance to monitor influenza and SARS-CoV-2 at the same time, and step-up influenza vaccination campaigns to prevent severe disease and hospitalisations in high-risk groups for influenza.** <https://www.who.int/teams/global-influenza-programme/surveillance-and-monitoring/influenza-updates/current-influenza-update>

Influenza activity continued to increase in the European Region during week 50 2021 (week ending 19/12/2021), particularly in countries of the Northern and Eastern areas of the Region. Albania, Kazakhstan, Kosovo, Norway, Russian Federation and Sweden reported widespread influenza activity and/or medium to high influenza intensity. Five countries reported seasonal influenza activity above the 10% positivity threshold in sentinel primary care or hospital settings during week 50 2021: Israel (66%), Armenia (47%), Sweden (43%), Russian Federation (35%) and the Republic of Moldova (15%). Influenza A and B viruses were detected with a dominance of A(H3) viruses across all monitoring systems. <https://flunewseurope.org/>

The influenza epidemic threshold in Europe is usually defined as two consecutive weeks in which, at the European Region level, $\geq 10\%$ of patients in sentinel primary care settings tested positive for influenza virus infection. Following on from 11.7% of such patients testing positive for an influenza virus in week 49 2021, there was 9.5% positivity in week 50 2021. Given how close this is to the threshold and in light of the on-going COVID-19 pandemic with its impact on health care systems, ECDC consider it prudent not to wait for additional data (which often leads to a retrospective increase of prior weeks' positivity rates) before defining the influenza epidemic to have started. **ECDC have therefore declared the 2021/2022 influenza epidemic has started.** <https://www.ecdc.europa.eu/en/news-events/winters-flu-season-epidemic-has-started-what-we-know-so-far-and-what-needs-be-done>

- 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

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