



Weekly Report on Severe Acute Respiratory Infection (SARI), Week 3 2024 (week ending 21/01/2024)

This report includes data on SARI hospitalised cases, aged 15 years and older who were admitted to St. Vincent's University Hospital (SVUH), Dublin, up to week 3 2024.

Please note that this report on SARI surveillance pertains to one hospital site only, data are not nationally representative. Therefore, caution is advised when interpreting rates and trends outlined in this report, as these may fluctuate due to the low case numbers.

Key points

Week 3 2024 (week ending 21/01/2024):

- **Number of cases:** 11 SARI cases admitted to the SARI hospital site, compared to 17 cases in week 2 2024 (35.3% decrease).
- **Incidence rate per hospital catchment population:** 3.5 per 100,000 population aged 15 years and older, compared to 5.4 per 100,000 in week 2 2024.
- **Incidence rate per emergency hospitalisations:** 35.6 per 1,000, compared to 50.1 per 1,000 in week 2 2024 (28.9% decrease).
- **Age profile:** 10 (90.9%) of SARI cases aged ≥ 65 years; Median age: 82 years; IQR: 74-86 years.
- **Underlying medical conditions:** 10 (90.9%) SARI cases reported having underlying medical conditions.
- **PCR testing:** Of those tested, 3 (27.3%) tested positive for influenza A (not subtyped); and none tested positive for SARS-CoV-2 or RSV.

Last four weeks (weeks 52 2023-3 2024)

- **Number of cases:** 67 SARI cases admitted to the SARI hospital site.
- **Age profile:** 53 (79.1%) of SARI cases aged ≥ 65 years. Median age: 78 years; IQR: 68-84 years.
- **Underlying medical conditions:** 59 (88.1%) SARI cases reported having underlying medical conditions.
- **PCR testing:** Of those tested, 7 (10.8%) tested positive for SARS-CoV-2; 15 (23.1%) tested positive for influenza (4 A(not subtyped); 6 AH3; 5 A(H1)pdm09); and 4 (6.2%) tested positive for RSV.
- **SARS-CoV-2 whole genome sequencing (WGS):** *There can be a lag-time before WGS results are available.* Among those sequenced (n=6), all (100%) identified as variant BA.2.86 sub-lineage JN.1.

Season 2023/2024 to date (weeks 40 2023 - 3 2024)

Collection of discharge data is a manual process, there is a significant lag time between discharge and data collection. Vaccination data is available approximately one week after cases are notified.

- **Number of cases:** 242 SARI cases admitted to the SARI hospital site.
- **PCR testing:** Of those tested, 36 (15.6%) tested positive for SARS-CoV-2; 19 (8.2%) tested positive for influenza (5 A(not subtyped); 9 AH3; 5 A(H1)pdm09); and 18 (7.8%) tested positive for RSV.
- **COVID-19 vaccination status:** Of those who tested positive by PCR for SARS-COV-2 with known vaccination status (n=32), 17 (53.1%) had not received a vaccine dose within 180 days prior to their episode of illness.
- **ICU admissions:** Among those for whom admission to ICU and/or respiratory status is known (n=230), 61 (26.5%) reported admission to ICU and/or required respiratory support.
- **Outcome:** Of those discharged, with known outcome (n=84), 2 (2.4%) SARI cases died in hospital.

Table of contents

Table of contents.....	2
Background.....	3
Methods.....	3
Case definition.....	3
Denominator data.....	4
Laboratory testing.....	4
Data collection and reporting.....	4
The influenza season.....	4
Reference dates.....	5
Results.....	6
SARI cases and incidence rates.....	6
Demographics.....	7
Underlying medical conditions and risk factors.....	8
Symptoms.....	10
Severe clinical course during hospitalisation.....	11
Laboratory testing for SARS-CoV-2, Influenza and RSV.....	12
Outcome.....	16
COVID-19 Vaccination status.....	16
Influenza Vaccination status.....	18
Acknowledgements.....	19
Technical notes.....	19
Appendix.....	21
Table A1.....	21
Table A2.....	21
Table A3.....	22

Background

Severe acute respiratory infection (SARI) is of major relevance to public health worldwide. Surveillance of SARI is essential to monitor the (co-) circulation of respiratory pathogens and to assess disease severity. Data collected as part of SARI surveillance can provide important early warning information in the context of respiratory disease outbreaks and pandemics. SARI data can also be used as a platform to measure vaccine and antiviral effectiveness and impact. The objectives of SARI surveillance are:

- To describe the number and incidence of SARI cases by aetiology, time, place and person
- To describe and monitor trends, intensity of activity and severity of SARI infections
- To identify groups at risk of severe disease
- To detect unusual and unexpected events
- To assess the SARI burden of disease in the participating hospital
- To assess and monitor vaccine effectiveness

Methods

SARI surveillance was implemented in one tertiary care adult hospital; St. Vincent's University Hospital (SVUH), Dublin. Surveillance commenced on the 5th of July 2021. The SARI surveillance system includes people who are aged 15 years or older.

Case definition

SARI cases are identified from new admissions through the Emergency Department, based on clinical symptoms. Patients that develop SARI during their admission, or are admitted through alternate routes, are not included.

Clinical SARI case:

The European Centre for Disease Prevention and Control (ECDC) clinical SARI case definition is used for SARI surveillance in Ireland since week 34 2021:

- ECDC SARI definition: A hospitalised¹ person 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.

¹ Hospitalised for at least 24 hours

Denominator data

Denominator data for the hospital catchment area are based on the Census of Population, 2022. The hospital catchment data were prepared and provided by the Health Intelligence Unit (HIU) of the Health Service Executive (HSE) and were extracted from Health Atlas Ireland on 15/12/2023.

Weekly denominator data on all-cause hospital admissions, through the Emergency Department, are provided by the SVUH Statistics Department.

Laboratory testing

SARS-CoV-2, influenza, and RSV PCR testing is carried out on admission.

SARI samples that are positive for SARS-CoV-2 and that have a cycle threshold (Ct) value <25 are referred for whole genome sequencing (WGS). All WGS testing was performed in the NVRL up to week 44 2022. The molecular laboratory in SVUH has been identified as a spoke WGS testing site as part of the national SARS-CoV-2 WGS surveillance programme. From week 45 2022, SARI WGS testing has been performed on-site at SVUH.

Samples that are PCR positive for influenza are sent to the National Virus Reference Laboratory (NVRL) for influenza typing/subtyping/genetic and antigenic characterisation.

Data collection and reporting

Clinical data are collected and managed using REDCap electronic data capture tools hosted at University College Dublin. Laboratory data are extracted from APEX, the laboratory information management system (LIMS), using IBM Cognos software hosted at SVUH.

Case-based data are reported by SVUH to the HSE Health Protection Surveillance Centre (HPSC) on a weekly basis. Data are also reported by HPSC to ECDC via The European Surveillance System (TESSy) on weekly basis as part of European level SARI surveillance.

COVID-19 vaccination data are obtained from the National COVID-19 Vaccination Management System (COVAX) and linked to SARI cases by the HSE-Integrated Information Service (IIS), where data are available.

The influenza season

The influenza surveillance season runs from week 40 (early October) to week 20 (end of May). During this time, seasonal viruses usually circulate at higher levels, compared to the summer period (weeks 21 to 39). The seasonal comparisons used in this report refer to the influenza surveillance season.

Reference dates

05/07/2021 (Week 27 2021) – commencement of SARI surveillance project
27/09/2021 (Week 39 2021) – rollout of the first COVID-19 booster vaccination campaign
22/04/2022 (Week 16 2022) – rollout of the second COVID-19 booster vaccination campaign
03/10/2022 (Week 40 2022) – rollout of the third COVID-19 booster vaccination campaign
28/04/2023 (Week 17 2023) – rollout of the fourth COVID-19 booster vaccination campaign
02/10/2023 (Week 40 2023) – rollout of the fifth COVID-19 booster vaccination campaign
04/10/2021 (Week 40 2021) - start of the 2021/2022 season
03/10/2022 (Week 40 2022) - start of the 2022/2023 season
02/10/2023 (Week 40 2023) - start of the 2023/2024 season

Week number refers to the week of hospital admission. Weeks are from Monday to Sunday, as per the international ISO week².

² Monday to Sunday (ISO week) used as per ECDC/WHO/International reporting protocol.

Results

Data were extracted from the HPSC SARI surveillance database on **24/01/2024**. Data are provisional and subject to ongoing review, validation and update. As a result, figures presented in this report may differ from previously published figures.

SARI cases and incidence rates

In total, 242 SARI cases were admitted to St. Vincent's University Hospital (SVUH) during the current season (weeks 40 2023 - 3 2024), 326 SARI cases were admitted during the same period in the 2022/2023 season (weeks 40 2022 - 3 2023).

In week 3 2024:

- 11 SARI cases were reported, a 35.3% decrease compared to 17 SARI cases reported in week 2 2024 (Figure 1)
- The SARI incidence rate was 3.5 per 100,000 hospital catchment population aged 15 years and older, compared to the rate of 5.4 per 100,000 in week 2 2024.
- The incidence rate per emergency hospitalisations was 35.6 per 1,000 emergency admissions, a 28.9% decrease compared to the rate of 50.1 per 1,000 emergency admissions in week 2 2024.

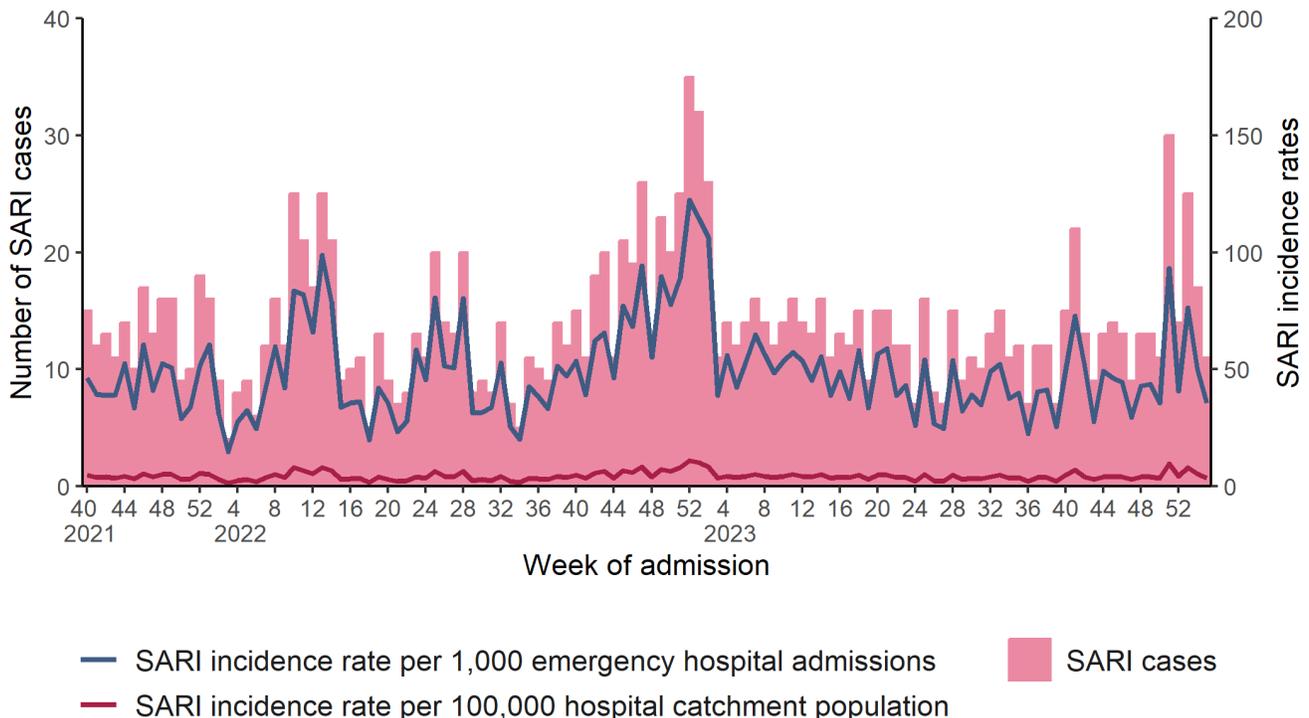


Figure 1: Number and incidence of SARI hospitalised cases (emergency admissions) by week of hospital admission, week 40 2021 to week 3 2024 (n=1654)

Demographics

In week 3 2024, of the 11 SARI cases reported:

- Males accounted for a higher proportion of SARI cases, n=6 (54.5%) (Table 1)
- Median age of SARI cases admitted was 82 years (interquartile range: 74-86 years)
- Age specific incidence rate amongst those aged 65 years and older was 15.9 per 100,000 compared to 17.5 per 100,000 in week 2 2024.

The incidence rate per 100,000 hospital catchment population by age group is shown in Figure 2.

Table 1: Number and proportion of SARI cases by sex and age, for the current week, last four weeks (weeks 52 2023 - 3 2024), current 2023/2024 season (weeks 40 2023 - 3 2024) and the previous 2022/2023 season (weeks 40 2022 - 3 2023).

Season Week/Year	Current week		Last four weeks		Current season		Previous season	
	W3 2024		W52 2023- W3 2024		W40 2023- W3 2024		W40 2022- W3 2023	
	n	(%)	n	(%)	n	(%)	n	(%)
All SARI cases	11		67		242		326	
Gender								
Male	6	54.5	35	52.2	117	48.3	157	48.2
Female	5	45.5	32	47.8	125	51.7	169	51.8
Age (years)								
Mean	80		73		72		71	
Median	82		78		77		75	
IQR	74-86		68-84		67-84		64-83	
Range	62-91		19-96		18-99		17-101	
Age groups (years)								
15-24	0	0.0	2	3.0	4	1.7	9	2.8
25-34	0	0.0	3	4.5	10	4.1	7	2.1
35-44	0	0.0	2	3.0	11	4.5	10	3.1
45-54	0	0.0	2	3.0	12	5.0	14	4.3
55-64	1	9.1	5	7.5	16	6.6	44	13.5
65-74	2	18.2	14	20.9	52	21.5	78	23.9
75-84	4	36.4	23	34.3	81	33.5	107	32.8
85+	4	36.4	16	23.9	56	23.1	57	17.5

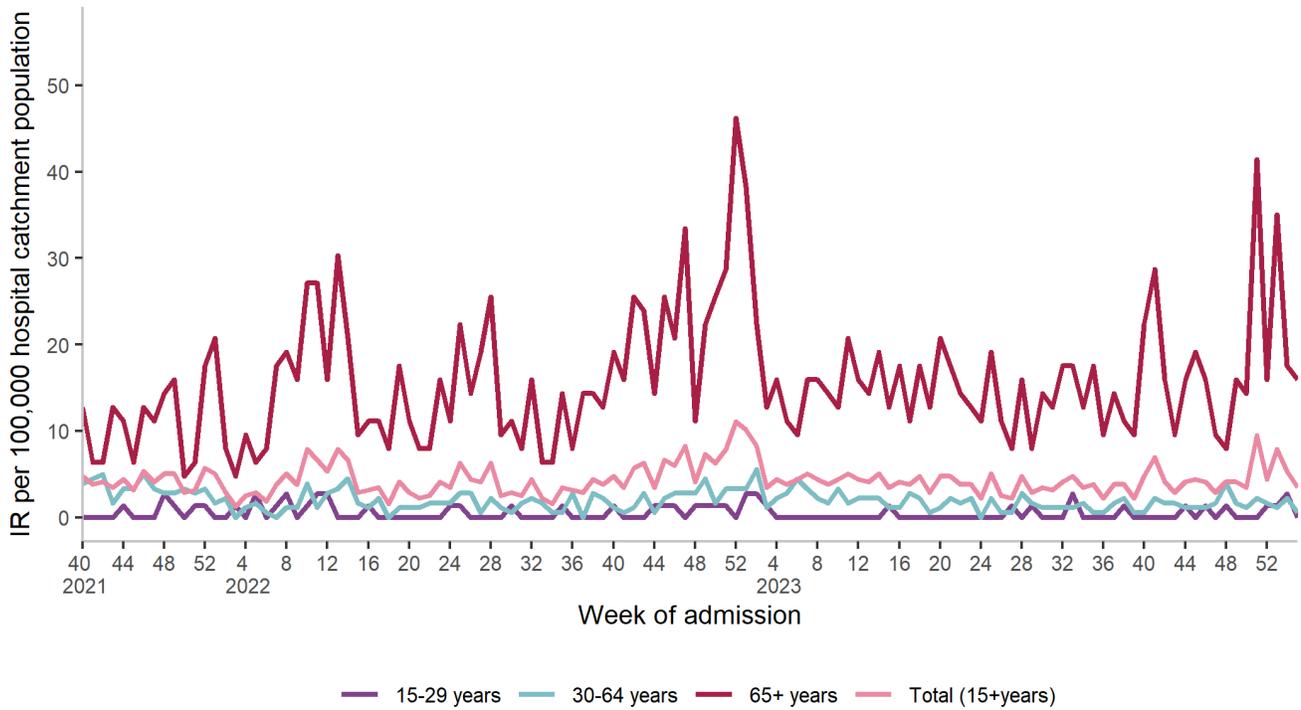


Figure 2: SARI incidence rate per 100,000 hospital catchment population by age group and week of hospital admission, from week 40 2021 to week 3 2024 (n=1654)

Underlying medical conditions and risk factors

The number and proportion of individuals with underlying medical conditions, where known, among those that reported having underlying medical conditions are displayed in Table 2.

Weekly proportions can be based on small numbers and vary from week to week, caution is therefore advised when interpreting changes in weekly proportions.

Table 2: Number and proportion of SARI cases with underlying medical conditions, reported on hospital admission, for the current week, last four weeks (weeks 52 2023 - 3 2024), current 2023/2024 season (weeks 40 2023 - 3 2024) and the previous 2022/2023 season (weeks 40 2022 - 3 2023).

Period	Current week		Last four weeks		Current season		Previous season	
Weeks	W3 2024		W52 2023- W3 2024		W40 2023- W3 2024		W40 2022- W3 2023	
Medical conditions*	n	%	n	%	n	%	n	%
Total cases*	10		59		222		307	
Heart disease	2	20.0	17	28.8	81	36.5	117	38.1
Hypertension	4	40.0	19	32.2	79	35.6	131	42.7
Lung disease	5	50.0	18	30.5	67	30.2	113	36.8
Cancer	2	20.0	14	23.7	43	19.4	48	15.6
Neurological disease	2	20.0	6	10.2	42	18.9	59	19.2
Asthma	2	20.0	8	13.6	30	13.5	50	16.3
Diabetes	2	20.0	9	15.3	40	18.0	49	16.0
Kidney disease	1	10.0	8	13.6	25	11.3	20	6.5
Intellectual disability	0	0.0	1	1.7	4	1.8	13	4.2
Immunocompromised	0	0.0	2	3.4	4	1.8	2	0.7
Obesity	0	0.0	0	0.0	2	0.9	8	2.6
Cystic fibrosis	0	0.0	1	1.7	2	0.9	1	0.3
Asplenia**	0	0.0	0	0.0	0	0.0	-	-
Dementia**	2	20.0	9	15.3	16	7.2	-	-
Down syndrome**	0	0.0	0	0.0	0	0.0	-	-
Long COVID**	0	0.0	0	0.0	0	0.0	-	-
Tuberculosis**	0	0.0	0	0.0	0	0.0	-	-
Rheumatological disease**	0	0.0	1	1.7	2	0.9	-	-
Other chronic conditions***	3	30.0	18	30.5	87	39.2	154	50.2

*SARI cases could be reported with one or more underlying medical conditions, only cases where underlying medical conditions are reported are included.

**Data collection for these underlying medical conditions began in week 49 2023.

***Data reported on other chronic conditions may include some of the chronic conditions listed above, these data are under review and may change over time

Among female SARI cases aged 15-49 years admitted during the 2023/2024 season (weeks 40 2023 - 3 2024), 1 (6.2%) case was reported as being pregnant at the time of admission. During the previous 2022/2023 season (weeks 40 2022 - 3 2023), 3 (17.6%) SARI cases were reported as being pregnant at the time of admission.

Among those admitted during the 2023/2024 season for whom healthcare worker status is known, 2 (0.8%) cases were reported as being healthcare workers at the time of admission. During the previous 2022/2023 season, 2 (0.6%) SARI cases were reported as being healthcare workers.

Symptoms

Information on clinical symptoms, either at or prior to hospital admission, was reported for all SARI cases. The most common symptoms reported were cough and shortness of breath (Table 3).

Table 3: Number and proportion of SARI cases with clinical symptoms, either at or prior to hospital admission, for the current week, last four weeks (weeks 52 2023 - 3 2024), current 2023/2024 season (weeks 40 2023 - 3 2024) and the previous 2022/2023 season (weeks 40 2022 - 3 2023).

Period	Current week		Last four weeks		Current season		Previous season	
	W3 2024		W52 2023- W3 2024		W40 2023- W3 2024		W40 2022- W3 2023	
Weeks	n	%	n	%	n	%	n	%
Clinical symptoms*	n	%	n	%	n	%	n	%
Total cases	11		67		242		326	
Cough	8	72.7	46	68.7	174	71.9	269	82.5
Shortness of breath	10	90.9	48	71.6	176	72.7	246	75.5
Fever	4	36.4	32	47.8	110	45.5	156	47.9
General deterioration	4	36.4	10	14.9	82	33.9	160	49.1
Malaise	6	54.5	20	29.9	47	19.4	28	8.6
Headache	2	18.2	3	4.5	9	3.7	16	4.9
Muscular pain	1	9.1	5	7.5	15	6.2	20	6.1
Sore throat	1	9.1	8	11.9	15	6.2	17	5.2
Ageusia	0	0.0	0	0.0	1	0.4	1	0.3
Anosmia	0	0.0	0	0.0	1	0.4	2	0.6
Dysgeusia	0	0.0	0	0.0	1	0.4	0	0.0

*SARI cases could be reported with one or more clinical symptoms

Severe clinical course during hospitalisation

Information on the clinical course during hospitalisation is only available after discharge, and there may be a delay between discharge and data collection, due to the manual data collection methods required. Among those for whom discharge information is available the most common complication reported was pneumonia (Table 4).

Information on ICU admission and respiratory support may be available prior to discharge, see Table 5. However, length of stay in ICU is only available after discharge, therefore, data on ICU length of stay for the current season are not included, due to the small numbers involved.

Data collection is ongoing for those not yet discharged from hospital.

Table 4: Number and proportion of SARI cases by complication, for the current 2023/2024 season (weeks 40 2023 - 3 2024), the previous 2022/2023 season (weeks 40 2022 - 3 2023), and cases admitted between week 40 2022 and week 3 2024.

Season(s) Week/Year	Current season		Previous season		Since W40 2022	
	W40 2023- W3 2024		W40 2022- W3 2023		W40 2022- W3 2024	
Complications*	n	%	n	%	n	%
Total discharged cases	84		326		830	
Pneumonia	7	8.3	19	5.8	103	12.4
ARDS	3	3.6	6	1.8	40	4.8
Sepsis	2	2.4	8	2.5	20	2.4
Multiorgan failure	0	0.0	2	0.6	8	1.0
Myocarditis	0	0.0	0	0.0	0	0.0
Encephalitis	0	0.0	0	0.0	0	0.0
Bronchiolitis	0	0.0	0	0.0	1	0.1
Acute kidney injury**	1	1.2	-	-	2	0.2
Heart failure**	1	1.2	-	-	1	0.1
Secondary bacterial infection**	0	0.0	-	-	0	0.0
Other complications***	11	13.1	88	27.0	198	23.9
No complications	61	72.6	215	66.0	503	60.6

*SARI cases could be reported with one or more complications.

**Data collection for these complications began in week 49 2023.

***Data reported on "other complications" may include some of the complications listed above, these data are under review and may change over time.

Table 5: Number and proportion of SARI cases by respiratory support and ICU admission, for the current 2023/2024 season (weeks 40 2023 - 3 2024), the previous 2022/2023 season (weeks 40 2022 - 3 2023), and cases admitted between week 40 2022 and week 3 2024.

Season(s) Week/Year	Current season		Previous season		Since W40 2022	
	W40 2023- W3 2024		W40 2022- W3 2023		W40 2022- W3 2024	
	n	%	n	%	n	%
Respiratory support status known	85		326		831	
High-flow oxygen therapy*	58	68.2	198	60.7	517	62.2
Invasive ventilation	0	0.0	11	3.4	18	1.3
No respiratory support	27	31.8	117	35.9	294	35.4
ICU status known	230		326		984	
ICU/ventilated**	61	26.5	209	64.1	539	54.8
Admitted to ICU	3	1.3	19	5.8	43	4.4
Admitted and discharged	0	0.0	19	5.8	40	4.1
ICU length of stay (days)						
Mean	-		10		9	
Median	-		3		5	
Interquartile range	-		2-13		2-10	
Range	-		<1-42		<1-42	

*Non-invasive ventilation

**SARI cases which required invasive and/or non-invasive ventilation and/or ICU admission

Laboratory testing for SARS-CoV-2, Influenza and RSV

PCR testing

SARI cases are tested by PCR for SARS-CoV-2, influenza and RSV on admission.

In week 3 2024:

- SARS-CoV-2 PCR testing was carried out on 11 (100.0%) SARI cases, none tested positive, compared to 2 (11.8%) in week 2 2024.
- Influenza PCR testing was carried out on 11 (100.0%) SARI cases, 3 (27.3%) were positive for influenza. There were 5 (29.4%) positive in week 2 2024.
- Respiratory syncytial virus (RSV) PCR testing was carried out on 11 (100.0%) SARI cases, none were positive for RSV, compared to 2 (11.8%) positive in week 2 2024.

The weekly positivity rate of SARI cases for the three acute respiratory pathogens are presented in Figure 3. Table 6 displays the number and proportion of SARI cases tested by PCR and positive for SARS-CoV-2, influenza and RSV, and the type/subtype for all influenza PCR positive test results.

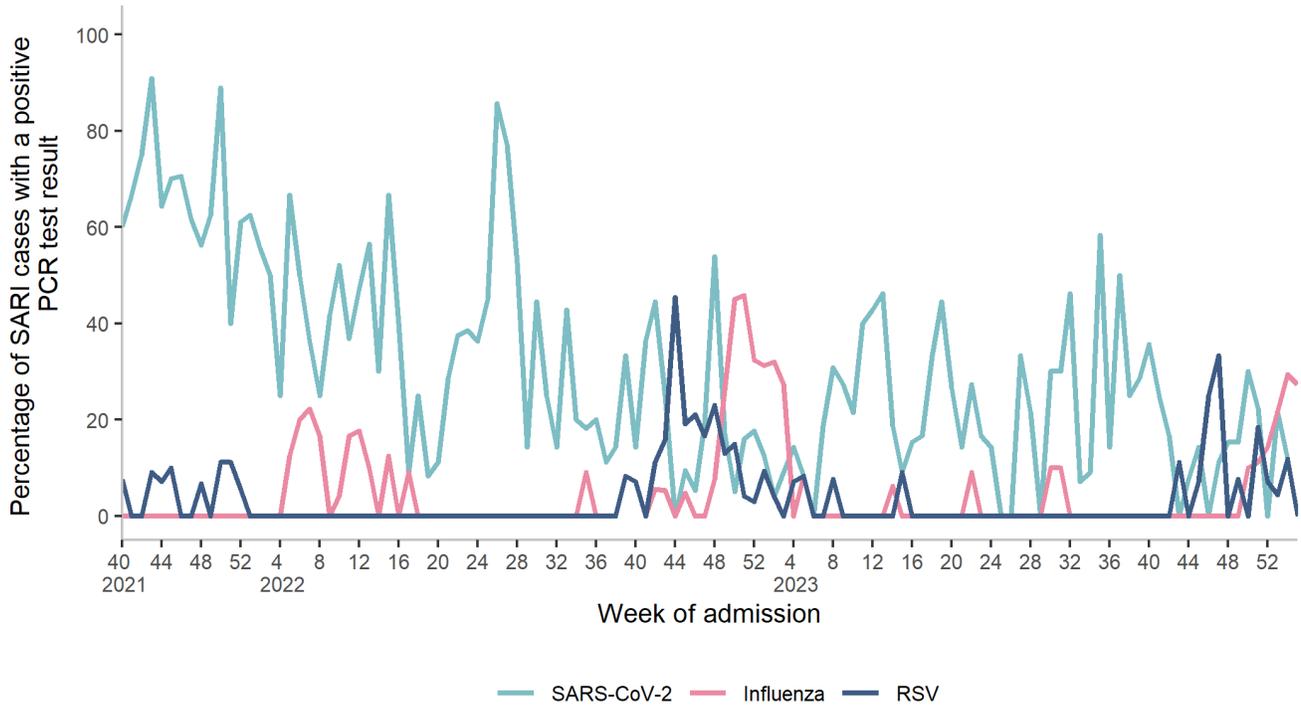


Figure 3: Percentage of SARI cases with a positive laboratory test result for SARS-CoV-2, influenza and RSV by week, from week 40 2021 to week 3 2024.

Table 6: Number of positive SARS-CoV-2, influenza, and RSV SARI cases, and influenza type/subtype for the current week, previous two weeks, current 2023/2024 season (weeks 40 2023 - 3 2024), and the previous 2022/2023 season (weeks 40 2022 - 3 2023).

Period	Individual weeks						Current season		Previous season	
	W3 2024		W2 2024		W1 2024		W40 2023-W3 2024		W40 2022-W3 2023	
Test result	n	%	n	%	n	%	n	%	n	%
SARS-CoV-2										
Total tested	11		17		23		231		323	
Positive	0	0.0	2	11.8	5	21.7	36	15.6	55	23.8
RSV										
Total tested	11		17		23		231		319	
Positive	0	0.0	2	11.8	1	4.3	18	7.8	38	16.5
Influenza										
Total tested	11		17		23		231		319	
Positive	3	27.3	5	29.4	5	21.7	19	8.2	64	27.7
Influenza A (H3)	0	0.0	2	11.8	4	17.4	9	3.9	30	13.0
Influenza A (H1)pdm09	0	0.0	2	11.8	1	4.3	5	2.2	29	12.6
Influenza A (not subtyped)	3	27.3	1	5.9	0	0.0	5	2.2	4	1.7
Influenza B (Victoria)	0	0.0	0	0.0	0	0.0	0	0.0	1	0.4
Influenza B (no lineage)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

In the current season (weeks 40 2023 – 3 2024), two cases with co-infections were reported; one case tested positive for SARS CoV-2 and influenza AH3, and one case tested positive for SARS COV-2 and RSV.

SARS-CoV-2 Genomic analysis

There can be a lag-time before WGS results are available. The WGS data presented is up to week 2 2024

Sequencing results have been received for 370 SARI cases admitted between week 40 2021 and week 2 2024 (Figure 4).

BA.2.86 sub-lineage JN.1 is the dominant variant circulating among SARI cases admitted to the hospital site in the current season. Among SARS-CoV-2 positive SARI cases admitted during the current season (weeks 40 2023 - 3 2024), for whom WGS data are available, 17 (51.5%) were variant BA.2.86 sub-lineage JN.1, 9 (27.3%) were XBB.1.5-like lineages, and 7 (21.2%) were XBB.1.5-like+F456L mutation. Over the last four weeks, among those sequenced 100% (n=6) were BA.2.86 sub-lineage JN.1.

Further information on SARI variants is available in the appendix (Table A1 and A2). For further information on circulating variants in Ireland, see the COVID-19 virus variants reports on the HPSC website³.

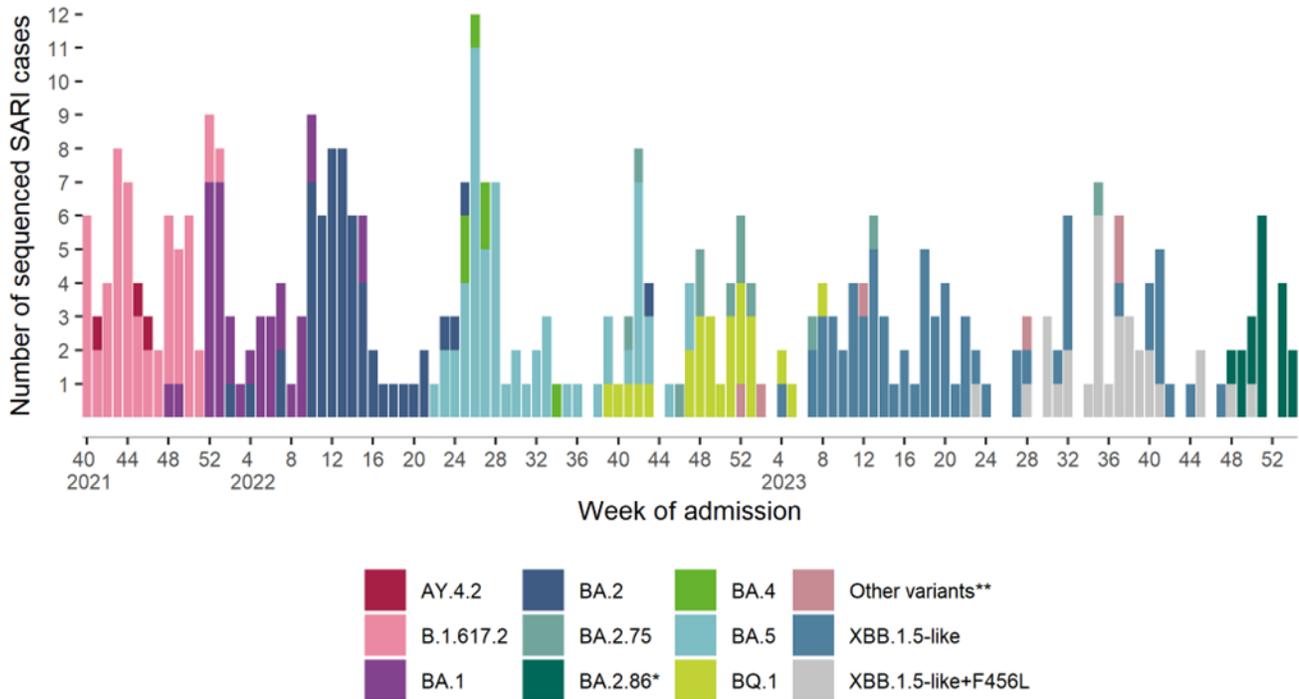


Figure 4: Number of SARI cases sequenced and reported, by week of hospitalisation, week 40 2021 to week 2 2024 (n=370)

*Includes sub-lineage JN.1

**All other variants

Note: As described by the ECDC, ‘XBB.1.5-like’ and ‘XBB.1.5-like + F456L’ refer to groupings of lineages that share sets of spike protein mutations

³ <https://www.hpsc.ie/a-z/respiratory/coronavirus/novelcoronavirus/surveillance/summaryofcovid-19virusvariantsinireland/>

Outcome

Collection of discharge data is a manual process, therefore there is a significant lag time between patient discharge and data collection.

Of the 242 SARI cases admitted to the SARI hospital site during the current 2023/2024 season (weeks 40 2023 - 3 2024), 84 (34.7%) have discharge data available. Of those admitted during the previous 2022/2023 season (weeks 40 2022 - 3 2023) all cases (n=326) have been discharged (Table 7).

Among SARI cases admitted during the current 2023/2024 season (weeks 40 2023 - 3 2024) and discharged with known outcome, 2 (2.4%) deaths have been reported.

Among SARI cases admitted during the previous 2022/2023 season (weeks 40 2022 - 3 2023) and discharged with known outcome, 40 (12.3%) died in hospital, 19 (47.5%) were male and 21 (52.5%) were female. The median age was 76.5 years (IQR: 74-84 years).

Table 7: Number and proportion of discharged SARI cases by outcome and hospital length of stay, for the current 2023/2024 season (weeks 40 2023 - 3 2024), the previous 2022/2023 season (weeks 40 2022 - 3 2023), and cases admitted between week 40 2022 and week 3 2024.

Season(s) Week/Year	Current season		Previous season		Since W40 2022	
	W40 2023-W3 2024		W40 2022-W3 2023		W40 2022-W3 2024	
	n	%	n	%	n	%
Known outcome	84		326		830	
Discharged alive	82	97.6	284	87.1	758	91.3
Transferred*	0	0.0	2	0.6	8	1.0
Died in hospital	2	2.4	40	12.3	64	7.7
Hospital length of stay (days)						
Mean	9		13		11	
Median	5		6		5	
Interquartile range	3-9		3-12		3-11	
Range	1-53		1-140		1-271	

*Transferred to another hospital

Vaccination status

Vaccination data are available approximately one week after cases are notified to HPSC, therefore the vaccination status for the current week's SARI cases is recorded as unknown.

COVID-19 vaccination status

Amongst the SARI cases, admitted in the current season (weeks 40 2023 - 3 2024) who were PCR positive for SARS-CoV-2, with known COVID-19 vaccination status, 17 (53.1%) had not received a vaccine dose within the six months prior to their episode of illness (Table 8). Characteristics of **all** SARI cases by time since last COVID-19 vaccine dose and hospitalisation during the current season are presented in the Appendix (Table A3). Please refer to the technical notes for the full list of definitions on COVID-19 vaccination status⁴.

Table 8: Characteristics of SARS-CoV-2 positive SARI cases by time since last COVID-19 vaccine dose and hospitalisation during the current season (weeks 40 2023 – 2 2024). Note: SARS-CoV-2 positive SARI cases with unknown vaccination status (n=4 (11.1%)) are excluded.

Weeks	Week 40 2023 - 2 2024		
	<180 days, N = 15 ¹	>=180 days, N = 17 ¹	Not vaccinated, N = 0 ¹
Total	15 (46.9%)	17 (53.1%)	0 (0.0%)
Age(years)			
Mean	77	73	-
Median	77	74	-
IQR	73 - 82	68 - 82	-
Range	65 - 91	33 - 92	-
Gender			
Female	5 (45.5%)	6 (54.5%)	0 (0.0%)
Male	10 (47.6%)	11 (52.4%)	0 (0.0%)
Age groups (years)			
15-49	0 (0.0%)	1 (100.0%)	0 (0.0%)
50-69	3 (42.9%)	4 (57.1%)	0 (0.0%)
70+	12 (50.0%)	12 (50.0%)	0 (0.0%)
Patient residence			
Residential care facility	3 (100.0%)	0 (0.0%)	0 (0.0%)
Private residence/home	10 (43.5%)	13 (56.5%)	0 (0.0%)
Other residence	0 (0.0%)	0 (0.0%)	0 (0.0%)
Patient residence not known	2 (33.3%)	4 (66.7%)	0 (0.0%)
Underlying medical conditions			
Yes	15 (46.9%)	17 (53.1%)	0 (0.0%)
No	0 (0.0%)	0 (0.0%)	0 (0.0%)
Unknown	0 (0.0%)	0 (0.0%)	0 (0.0%)

¹n (%)

⁴ Refer to www.hse.ie for further information on the COVID-19 vaccination rollout

Influenza vaccination status

Amongst the SARI cases, admitted in the current season (weeks 40 2023 - 3 2024) who were PCR positive for influenza and with known influenza vaccination status, 8 (50.0%) had not received a vaccine dose in the current influenza vaccination campaign prior to their episode of illness (Table 8).

Table 9: Characteristics of influenza positive SARI cases by influenza vaccination status during the current season (weeks 40 2023 – 2 2024).

Characteristic	Week 40 2023 - 2 2024		
	Vaccinated, N = 8 ¹	Not vaccinated, N = 6 ¹	Vaccine status unknown, N = 2 ¹
Total	8 (50.0%)	6 (37.5%)	2 (12.5%)
Age(years)			
Mean	79	70	83
Median	81	74	83
IQR	74 - 84	58 - 80	79 - 88
Range	65 - 90	50 - 90	74 - 92
Gender			
Female	5 (55.6%)	4 (44.4%)	0 (0.0%)
Male	3 (42.9%)	2 (28.6%)	2 (28.6%)
Age groups (years)			
15-49	0 (0.0%)	1 (100.0%)	0 (0.0%)
50-69	1 (50.0%)	1 (50.0%)	0 (0.0%)
70+	7 (53.8%)	4 (30.8%)	2 (15.4%)
Patient residence			
Residential care facility	3 (60.0%)	2 (40.0%)	0 (0.0%)
Private residence/home	2 (28.6%)	3 (42.9%)	2 (28.6%)
Other residence	0 (0.0%)	0 (0.0%)	0 (0.0%)
Patient residence not known	3 (75.0%)	1 (25.0%)	0 (0.0%)
Underlying medical conditions			
Yes	8 (57.1%)	4 (28.6%)	2 (14.3%)
No	0 (0.0%)	1 (100.0%)	0 (0.0%)
Unknown	0 (0.0%)	1 (100.0%)	0 (0.0%)

¹n (%)

Acknowledgements

Sincere thanks are extended to all those who participate in SARI surveillance, including those in St. Vincent's University Hospital, the UCD Clinical Research Centre and the National Virus Reference Laboratory. Thanks to members of the HSE Integrated Information Services (IIS) for work on the SARI-COVAX data linkages.

This report was produced by the SARI surveillance team at HPSC.

This report was produced using R studio software.

Technical notes

1. SARI case
 - A SARI case refers to an individual patient episode of care.
2. Epidemiological date
 - Epidemiological date is used to determine timing of Severe Acute Respiratory Infections. Epidemiological date is based on the earliest date available on the case, taken from date of onset of symptoms, laboratory specimen collection date, and date of hospitalisation.
3. Vaccination status
 - For the purposes of SARI surveillance, vaccination status of cases is as follows:

Vaccinated: A case who received their last primary COVID-19 vaccine dose ≥ 14 days prior to the epidemiological date or their last booster COVID-19 vaccine dose ≥ 7 days prior to the epidemiological date.

Time since vaccination: For vaccinated cases, time since vaccination is calculated by subtracting the date of vaccination from the epidemiological date and categorised as <180 days or ≥ 180 days since vaccination.

Not vaccinated, if the following applies:

- Vaccination record on the National COVID-19 Immunisation system indicates the person was vaccinated after the epidemiological date.
- The SARI patient was reported as not vaccinated on the SARI hospital clinical questionnaire, and there is no identifiable linked record of COVID-19 vaccination on the National COVID-19 Immunisation system.

Vaccine status unknown, if:

- The SARI patient is reported on the SARI hospital clinical questionnaire as vaccinated, however there is no identifiable linked record of COVID-19 vaccination on the National COVID-19 Immunisation system. Vaccination status is reported as unknown, until verified on the National COVID-19 Immunisation system.
- The SARI patient is reported on the SARI hospital clinical questionnaire as vaccination status unknown, AND there is no identifiable linked record of COVID-19 vaccination on the National COVID-19 Immunisation system.

Appendix

Table A1

Number and proportion of SARI cases sequenced and reported, by pango lineage and variant, admitted during the 2023/2024 season, weeks 40 2023-3 2024 (n=33)

Virus Variant	Pango Lineage	Number of cases	Sequenced cases %
BA.2.86 lineages	JN.1	17	51.5
XBB.1.5like+F456L	EG.5.1	1	3.0
	EG.5.1.1	1	3.0
	EG.5.1.3	1	3.0
	HK.3	1	3.0
	HV.1	1	3.0
	XBB.1.16.6	2	6.1
XBB.1.5-like lineages	FL.15	1	3.0
	FL.9	1	3.0
	GE.1	2	6.1
	XBB.1.5	2	6.1
	XBB.2.3	1	3.0
	XBB.2.3.11	1	3.0
	XBB.2.3.13	1	3.0
Total		33	

Table A2

Number of SARI cases sequenced and reported by Pango Lineage and week of admission for the previous five weeks (weeks 49 2023-2 2024)

Virus variant	Lineage	2023-W49	2023-W50	2023-W51	2024-W01	2024-W02	Total
BA.2.86	JN.1	2	2	6	4	2	16
XBB.1.5-like+F456L	EG.5.1.3	0	1	0	0	0	1
Total	-	2	3	6	4	2	17

Table A3

Characteristics of **all** SARI cases by COVID-19 vaccination status by time since last COVID-19 vaccine dose and hospitalisation during the current influenza season (40-52). Note: SARI cases with unknown vaccination status are excluded (n=57 (23.6%))

Weeks Characteristic	Week 40 2023 - 2 2024		
	<180 days, N = 100 ¹	>=180 days, N = 83 ¹	Not vaccinated, N = 2 ¹
Total	100 (54.1%)	83 (44.9%)	2 (1.1%)
Age(years)			
Mean	77	69	-
Median	80	74	-
IQR	73 - 85	62 - 83	-
Range	18 - 99	18 - 94	28 - 41
Gender			
Female	55 (55.0%)	40 (48.2%)	0 (0.0%)
Male	45 (45.0%)	43 (51.8%)	2 (100.0%)
Age groups (years)			
15-49	7 (7.0%)	13 (15.7%)	2 (100.0%)
50-69	11 (11.0%)	22 (26.5%)	0 (0.0%)
70+	82 (82.0%)	48 (57.8%)	0 (0.0%)
Patient residence			
Long-term care facility	0 (0.0%)	0 (0.0%)	0 (0.0%)
Private residence/home	0 (0.0%)	0 (0.0%)	0 (0.0%)
Other residence	0 (0.0%)	0 (0.0%)	0 (0.0%)
Patient residence not known	100 (100.0%)	83 (100.0%)	2 (100.0%)
Underlying medical conditions			
Yes	96 (96.0%)	78 (94.0%)	0 (0.0%)
No	3 (3.0%)	5 (6.0%)	2 (100.0%)
Unknown	1 (1.0%)	0 (0.0%)	0 (0.0%)

¹n (%)