



Weekly Report on Severe Acute Respiratory Infection (SARI), Week 42 2023 (week ending 22/10/2023)

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 42 2023.

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 as outlined in the report, which may fluctuate due to the low case numbers.

Key points

Week 42 2023 (week ending 22/10/2023):

- **Number of cases:** 16 SARI cases admitted to the SARI hospital site, compared to 22 cases reported during week 41 2023 (27.3% decrease).
- **Incidence rate per hospital catchment population:** 5.3 per 100,000 population aged 15 years and older, compared to 7.2 per 100,000 in week 41 2023.
- **Incidence rate per emergency hospitalisations:** 63.7 per 1,000, compared to 72.8 per 1,000 in week 41 2023 (12.5% decrease).
- **Age profile:** 11 (68.8%) of SARI cases aged ≥ 65 years, median age: 79 years; IQR: 63-88 years.
- **Underlying medical conditions:** 16 (100.0%) SARI cases reported having underlying medical conditions.
- **PCR testing:** Of those tested, two (13.3%) tested positive for SARS-CoV-2; none tested positive for influenza or for RSV.

Last four weeks (weeks 39-42 2023)

- **Number of cases:** 61 SARI cases admitted to the SARI hospital site.
- **Age profile:** 50 (82.0%) of SARI cases aged ≥ 65 years. Median age: 79 years; IQR: 69-87 years.
- **Underlying Medical Conditions:** 59 (96.7%) SARI cases reported having underlying medical conditions.
- **PCR testing:** Of those tested, 14 (24.6%) tested positive for SARS-CoV-2; none tested positive for influenza or for RSV.
- **SARS-CoV-2 whole genome sequencing (WGS):** *There can be a lag-time for the latest WGS data.* Among those sequenced six (60.0%) identified as XBB.1.5-like lineages and four (40.0%) identified as XBB.1.5-like with F456L mutation. No SARI cases with variant BA.2.86 detected.

Year to date (weeks 1-42 2023)

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.

- **COVID-19 vaccination status:** Of those who tested positive by PCR for SARS-COV-2 with known vaccination status (n=107), 58 (54.2%) had not received a vaccine dose within the six months prior to their episode of illness.
- **ICU Admissions:** Among those for whom admission to ICU and/or respiratory status is known (n=531), 310 (58.4%) reported admission to ICU and/or required respiratory support.
- **Outcome:** Of those discharged with known outcome (n=472), 28 (5.9%) SARI cases died in hospital.

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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 and antiviral 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. SARI cases are identified from new admissions through the Emergency Department. 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 in the surveillance system.

Clinical SARI case:

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

- 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.

The ECDC clinical SARI case definition has been used for SARI surveillance since week 34 2021.

¹ hospitalised for at least 24 hours

Denominator data

Denominator data for hospital catchment area are based on population projections for 2021. Population projections are provided by the Health Intelligence Unit (HIU) of the Health Service Executive (HSE) and were extracted from Health Atlas Ireland on 31/08/2021.

Denominator data on all-cause hospital admissions, via the Emergency Department, were provided by the SVUH statistics department.

Data collection and reporting

Clinical data were 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 were collected from the National COVID-19 Vaccination Management System (COVAX) and linked to SARI cases by the HSE-Integrated Information service, where data were available.

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

Week number refers to the week of hospital admission. Weeks run 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

SARI cases and incidence rates

In total, 564 SARI cases were admitted to St. Vincent’s University Hospital (SVUH) during 2023 (weeks 1-42), 515 SARI cases were admitted during the same period in 2022 (weeks 1-42).

In week 42 2023:

- 16 SARI cases were reported in week 42 2023, a 27.3% decrease compared to 22 SARI cases reported in week 41 2023 (Figure 1)
- The SARI incidence rate was 5.3 per 100,000 hospital catchment population aged 15 years and older, compared to the rate of 7.2 per 100,000 in week 41 2023.
- The incidence rate per emergency hospitalisations was 63.7 per 1,000 emergency admissions, a 12.5% decrease compared to the rate of 72.8 per 1,000 emergency admissions in week 41 2023.

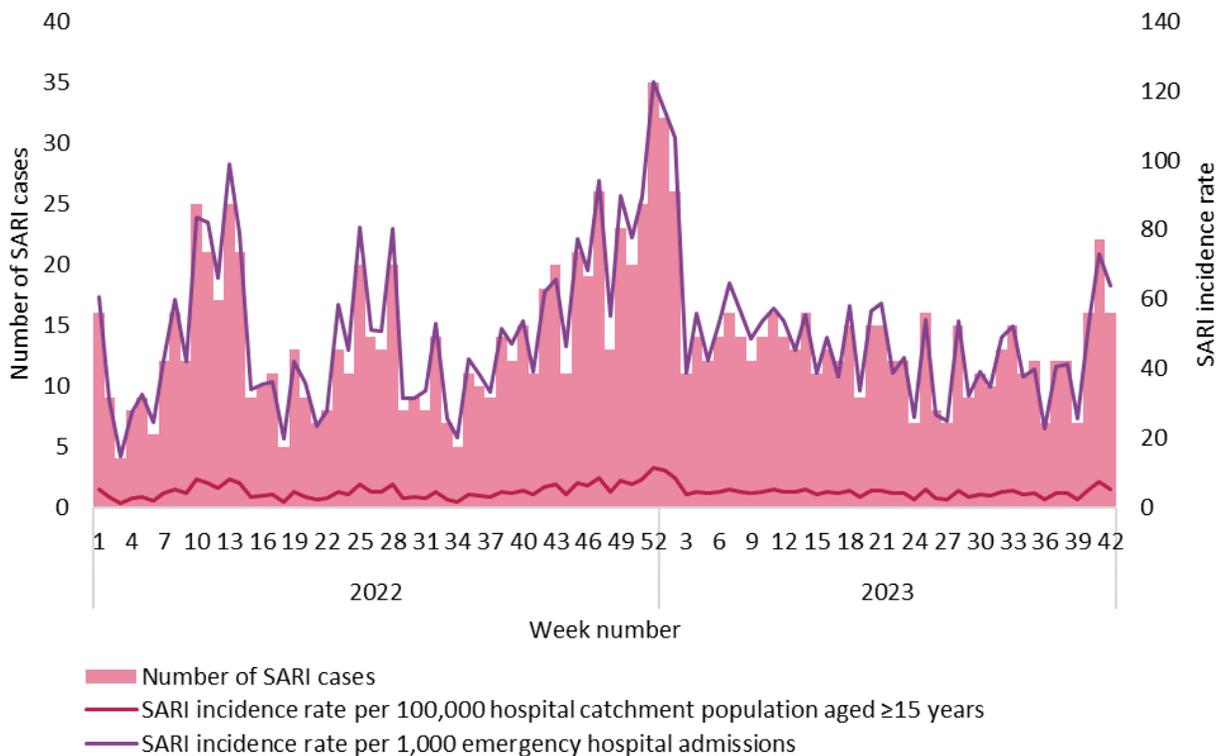


Figure 1 Number and incidence of SARI hospitalised cases (emergency admissions) by week of hospital admission, week 1 2022 to week 42 2023 (n=1292)

NOTE: Data were extracted from the SARI surveillance database at HPSC on **25/10/2023**, and are subject to ongoing review, validation and update. As a result, figures in this report may differ from previously published figures.

Demographics

In week 42 2023 of the 16 SARI cases reported:

- Males accounted for a higher proportion of SARI cases, n=10 (62.5%) (Table 1)
- The median age of SARI cases admitted was 79 years (interquartile range: 63-88 years)
- The age specific incidence rate amongst those aged 65 years and older was 18.4 per 100,000, a decrease compared to 30.0 per 100,000 in week 41 2023.

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, weeks 39-42 2023, weeks 1-42 2023 and weeks 1-42 2022

Year Weeks	2023 42		2023 39-42		2023 1-42		2022 1-42	
	n	(%)	n	(%)	n	(%)	n	(%)
All SARI cases	16		61		564		515	
Gender								
Male	10	62.5	29	47.5	267	47.3	272	52.8
Female	6	37.5	32	52.5	297	52.7	243	47.2
Age (years)								
Mean	72		75		71		72	
Median	79		79		75		75	
IQR	63-88		69-87		64-83		63-83	
Range	31-92		31-96		16-99		16-101	
Age groups (years)								
15-24	0	0.0	0	0.0	7	1.2	11	2.1
25-34	1	6.3	1	1.6	12	2.1	13	2.5
35-44	2	12.5	3	4.9	31	5.5	15	2.9
45-54	0	0.0	4	6.6	37	6.6	35	6.8
55-64	2	12.5	3	4.9	65	11.5	61	11.8
65-74	1	6.3	11	18.0	123	21.8	110	21.4
75-84	5	31.3	18	29.5	167	29.6	158	30.7
85+	5	31.3	21	34.4	122	21.6	112	21.7

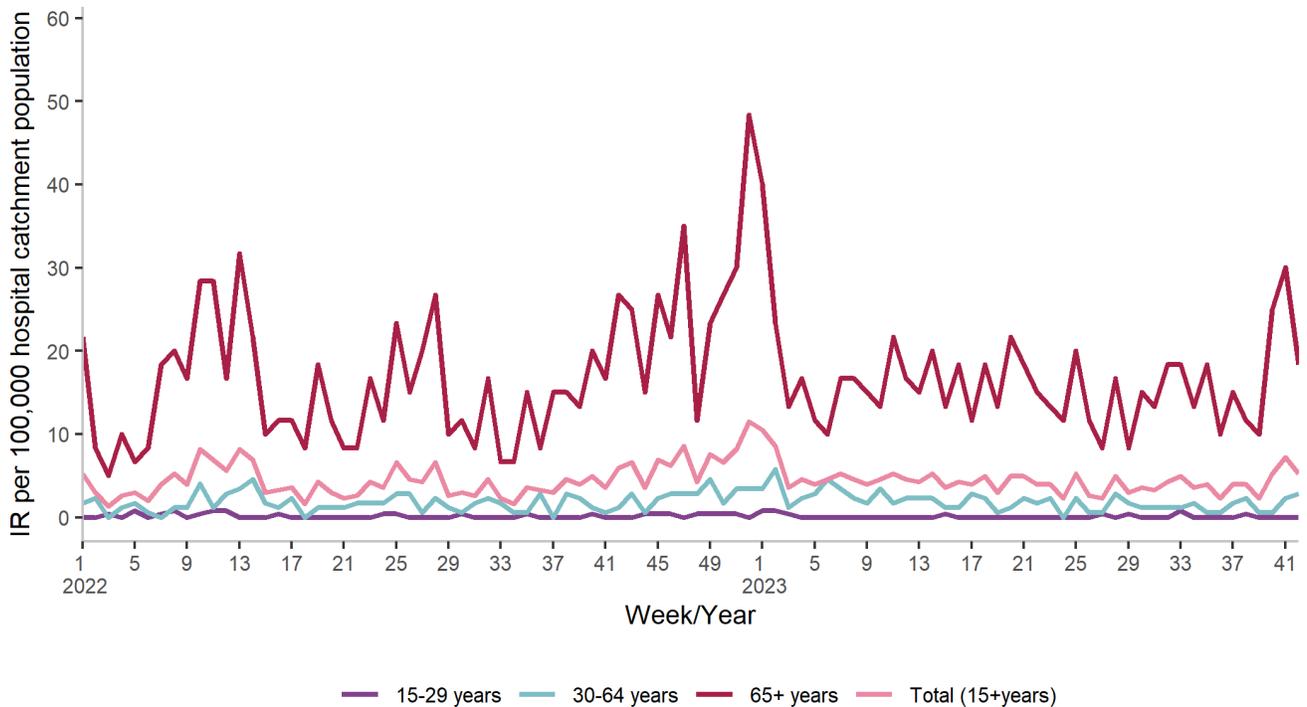


Figure 2 SARI incidence rate per 100,000 hospital catchment population by age group and week of hospital admission, from week 1 2022 to week 42 2023 (n=1292)

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 can vary from week to week, caution is therefore advised when interpreting changes in weekly proportions.

Table 2 Number and proportion of SARI cases with pre-existing conditions, reported on hospital admission, for current week, weeks 39-42 2023, weeks 1-42 2023 and for weeks 1-42 2022.

Year	2023		2023		2023		2022	
	42		39-42		1-42		1-42	
Weeks	(n=16)		(n=59)		(n=542)		(n=492)	
Medical condition*	n	%	n	%	n	%	n	%
Heart disease	10	62.5	27	45.8	223	41.1	204	41.5
Hypertension	6	37.5	17	28.8	203	37.5	198	40.2
Lung disease	3	18.8	15	25.4	198	36.5	162	32.9
Cancer	3	18.8	8	13.6	83	15.3	105	21.3
Neurological disease	4	25.0	13	22.0	145	26.8	84	17.1
Asthma	4	25.0	9	15.3	93	17.2	72	14.6
Diabetes	5	31.3	9	15.3	90	16.6	82	16.7
Kidney disease	1	6.3	5	8.5	35	6.5	35	7.1
Intellectual disability	1	6.3	2	3.4	17	3.1	23	4.7
Immunocompromised	0	0.0	0	0.0	6	1.1	16	3.3
Obesity	0	0.0	0	0.0	11	2.0	15	3.0
Cystic fibrosis	0	0.0	0	0.0	1	0.2	2	0.4
Other chronic conditions**	4	25.0	22	37.3	254	46.9	237	48.2

*SARI cases could be reported with one or more underlying medical conditions

**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 2023, one (2.8%) case was reported as being pregnant at the time of admission. During the same period in 2022 (weeks 1-42), four (13.3%) were reported as being pregnant at the time of admission.

Among those admitted during 2023 for whom healthcare worker status is known, five (0.9%) cases were reported as being healthcare workers at the time of admission. During the same period in 2022 (weeks 1-42), 13 (2.5%) of 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 current week, weeks 39-42 2023, weeks 1-42 2023 and for weeks 1-42 2022.

Year	2023		2023		2023		2022	
Weeks	42		39-42		1-42		1-42	
	(n=16)		(n=61)		(n=564)		(n=515)	
Clinical symptom*	n	%	n	%	n	%	n	%
Cough	12	75.0	41	67.2	419	74.3	395	76.7
Shortness of breath	14	87.5	47	77.0	417	73.9	380	73.8
Fever	2	12.5	19	31.1	275	48.8	242	47.0
General deterioration	7	43.8	30	49.2	233	41.3	203	39.4
Malaise	1	6.3	6	9.8	40	7.1	71	13.8
Headache	0	0.0	3	4.9	27	4.8	28	5.4
Muscular pain	0	0.0	4	6.6	33	5.9	30	5.8
Sore throat	0	0.0	2	3.3	33	5.9	39	7.6
Ageusia	0	0.0	1	1.6	1	0.2	3	0.6
Anosmia	0	0.0	1	1.6	2	0.4	3	0.6
Dysgeusia	0	0.0	1	1.6	1	0.2	3	0.6

*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).

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

Table 4 Number and proportion of SARI cases by complication, for weeks 39-42 2023, weeks 1-42 2023 and for weeks 1-42 2022.

Year Weeks	2023		2023		2022	
	39-42		1-42		1-42	
	(n=9)		(n=472)		(n=515)	
Complications*	n	%	n	%	n	%
Pneumonia	1	11.1	75	15.9	55	10.7
ARDS	0	0.0	28	5.9	45	8.7
Sepsis	1	11.1	11	2.3	13	2.5
Multiorgan failure	0	0.0	7	1.5	2	0.4
Myocarditis	0	0.0	0	0.0	1	0.2
Encephalitis	0	0.0	0	0.0	1	0.2
Long Covid	0	0.0	0	0.0	1	0.2
Coagulopathy	0	0.0	0	0.0	0	0.0
Bronchiolitis	0	0.0	1	0.2	0	0.0
Other complications**	3	33.3	111	23.5	146	28.3
No complications	4	44.4	266	56.4	287	55.7
Unknown	0	0.0	4	0.8	1	0.2

*SARI cases could be reported with one or more complication

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

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 weeks 39-42 2023 are not included, due to the small numbers involved.

Table 5 Number and proportion of SARI cases by respiratory support and ICU admission, for weeks 39-42 2023, weeks 1-42 2023 and for weeks 1-42 2022.

Year Weeks	2023		2023		2022		
	39-42		1-42		1-42		
	(n=9)		(n=468)		(n=515)		
	n	%	n	%	n	%	
Respiratory support	High-flow oxygen therapy*	7	77.8	300	64.1	291	56.5
	Invasive ventilation	0	0.0	6	1.3	18	3.5
	No respiratory support	2	22.2	162	34.6	206	40.0
		(n=56)	(n=531)	(n=515)			
Admitted to ICU	Yes	1	1.8	25	4.7	24	4.7
	No	55	98.2	506	95.3	491	95.3
	ICU/ventilated**	8	14.3	310	58.4	309	60.0
ICU length of stay (days)	Mean	-	-	7	-	24	-
	Median	-	-	5	-	12	-
	Interquartile range	-	-	2-8	-	6-37	-
	Range	-	-	<1-36	-	<1-85	-

*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. For a small proportion of SARI cases, there is a lag time with testing for influenza and RSV ³

In week 42 2023:

- SARS-CoV-2 PCR testing was carried out on 15 (93.8%) SARI cases, two (13.3%) tested positive, compared to 5 (25.0%) in week 41 2023.
- Influenza PCR testing was carried out on 15 (93.8%) SARI cases, none of whom tested positive for influenza, the last positive influenza case was in week 31 2023.
- Respiratory syncytial virus (RSV) PCR testing was carried out on 15 (93.8%) SARI cases, none of whom tested positive for RSV, the last positive RSV case was in week 15 2023.

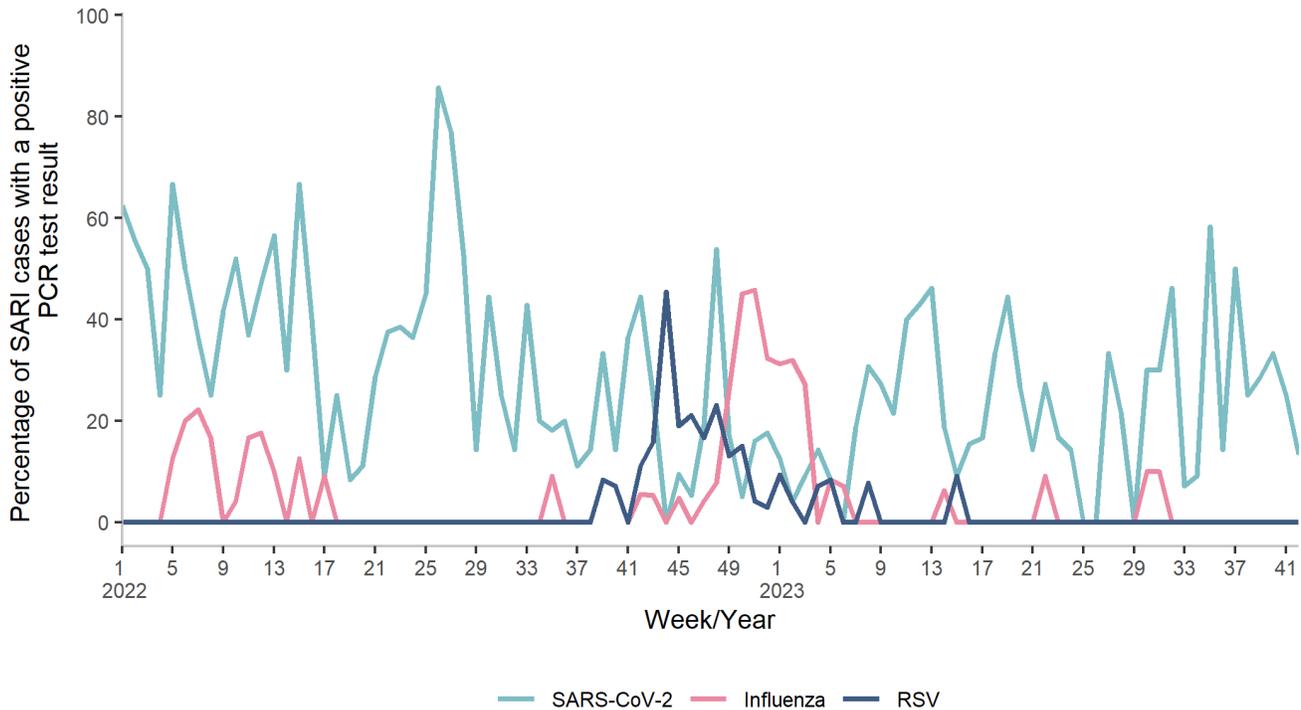


Figure 3 Percentage of SARI cases with a positive laboratory test result for SARS-CoV-2, influenza and RSV by week, from week 1 2022 to week 42 2023.

³ Due to reagent supply issues, samples are occasionally sent to external laboratories for influenza and RSV testing.

SARS-CoV-2:

SARS-CoV-2 PCR testing is carried out on admission, table 6 displays the number and proportion of SARI cases tested for SARS-CoV-2 by PCR test result.

Table 6 Number and proportion of SARI cases tested for SARS-CoV-2, for current week, weeks 39-42 2023, weeks 1-42 2023 and for weeks 1-42 2022.

Year	2023		2023		2023		2022	
Weeks	42		39-42		1-42		1-42	
Test result	n	%	n	%	n	%	n	%
Positive	2	13.3	14	24.6	119	21.9	195	38.7
Negative	12	80.0	42	73.7	416	76.5	283	56.2
Indeterminate*	1	6.7	1	1.8	9	1.7	26	5.2
Total tested	15		57		544		504	

*Ct value (cycle threshold) >30

RSV and influenza

The influenza surveillance season runs from week 40 (early October) to week 20 (end of May). During this time, seasonal influenza viruses and RSV usually circulate at higher levels, compared to the summer period. Samples that are PCR positive for influenza are sent to the National Virus Reference Laboratory (NVRL) for influenza typing/subtyping/genetic and antigenic characterisation. Table 7 displays the influenza type/subtype for all influenza and RSV PCR positive test results.

Table 7 Number of positive RSV and influenza SARI cases and influenza type/subtype for current week, weeks 39-42 2023, weeks to date in the current influenza season (40-42) and the corresponding weeks in the 2022/2023 flu season (40-42).

Year/season	2023		2023		2023/2024		2022/2023	
Weeks	42		39-42		40-42		40-42	
	(n=15)		(n=57)		(n=50)		(n=43)	
Positive laboratory result	n	%	n	%	n	%	n	%
RSV	0	0.0	0	0.0	0	0.0	3	7.0
Influenza A(H3)	0	0.0	0	0.0	0	0.0	1	2.3
Influenza A(H1)pdm09	0	0.0	0	0.0	0	0.0	1	2.3
Influenza A (not subtyped)	0	0.0	0	0.0	0	0.0	0	0.0
Influenza B (Victoria lineage)	0	0.0	0	0.0	0	0.0	0	0.0
Influenza B (no lineage reported)	0	0.0	0	0.0	0	0.0	0	0.0
Total influenza	0	0.0	0	0.0	0	0.0	2	4.7

Genomic analysis

SARS-CoV-2

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. Sequencing results have been received for 280 SARI cases admitted between week 1 2022 and week 42 2023, see figure 4 below. *There can be a lag-time for the latest WGS data.*

Omicron XBB.1.5-like lineages are the dominant variants circulating among SARI cases admitted to the hospital site in 2023. Among SARS-CoV-2 positive SARI cases admitted during weeks 1-42 2023, for whom WGS data are available, 63 (60.6%) were identified as XBB.1.5-like lineages, and 26 (25.0%) were identified as XBB.1.5-like+F456L mutation.

No SARI cases with variant BA.2.86 have been detected.

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 website⁴.

⁴ <https://www.hpsc.ie/a-z/respiratory/coronavirus/novelcoronavirus/surveillance/summaryofcovid-19virusvariantsinireland/>

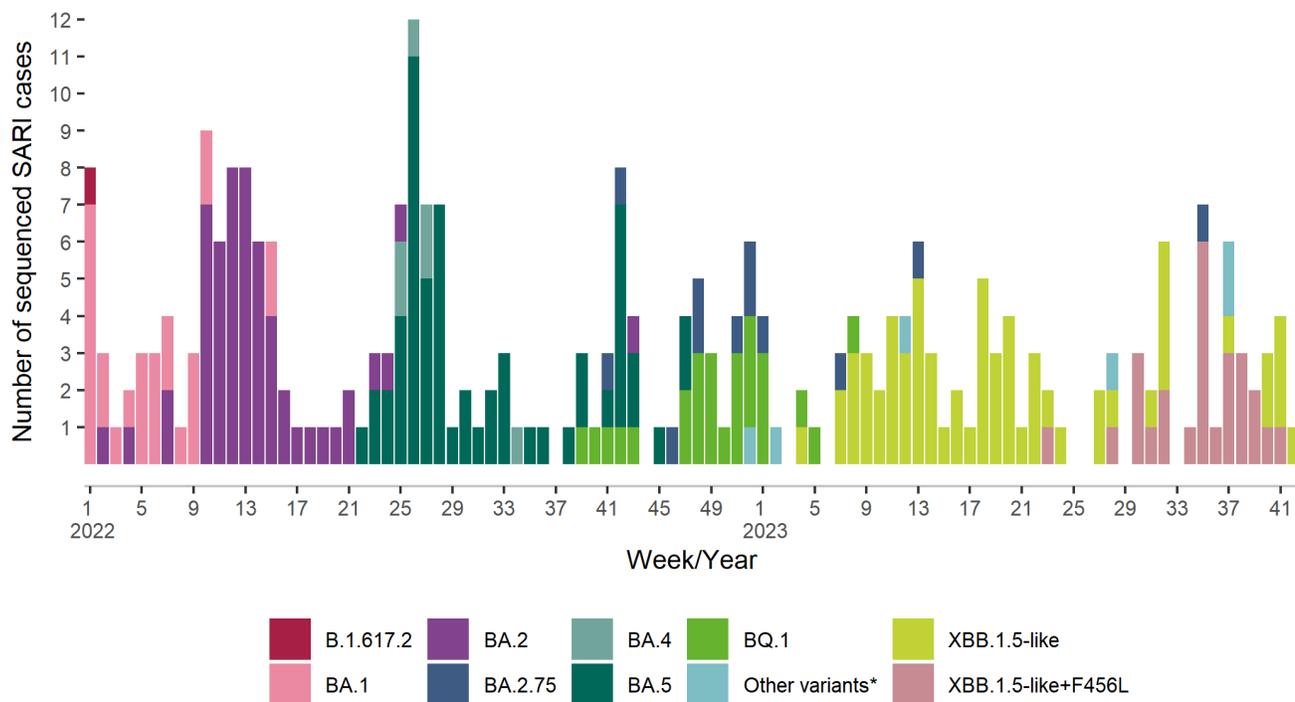


Figure 4 Number of SARI cases sequenced and reported, by week of hospitalisation, week 1 2022 to week 42 2023, (n=280)

*All other variants

**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

COVID-19 Vaccination status

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

Amongst the SARI cases, admitted in 2023 (weeks 1-42) who tested positive by PCR for SARS-CoV-2 and with known COVID-19 vaccination status, 58 (54.2%) had not received a vaccine dose within the six months prior to their episode of illness (Table 8).

Refer to the technical notes for the full list of definitions regarding epidemiological date and COVID-19 vaccination status ⁵.

NOTE: Data are provisional and subject to ongoing review, validation and update.

Table 8 Number and proportion of SARS-CoV-2 positive SARI cases with known vaccination status by COVID-19 vaccination status, time since vaccination and date of hospitalisation

Year Weeks Vaccination status	Days since vaccination	2023 39-42		2023 1-42		2022 1-42	
		n	%	n	%	n	%
Not vaccinated		0	0.0	1	0.9	20	12.0
Partial primary series		0	0.0	0	0.0	1	0.6
Primary series completed	<180 days	0	0.0	0	0.0	12	7.2
	≥180 days	0	0.0	6	5.6	14	8.4
First booster	<180 days	0	0.0	1	0.9	70	41.9
	≥180 days	2	20.0	15	14.0	32	19.2
Second booster	<180 days	1	10.0	7	6.5	17	10.2
	≥180 days	1	10.0	20	18.7	0	0.0
Third booster	<180 days	1	10.0	32	29.9	1	0.6
	≥180 days	2	20.0	17	15.9	0	0.0
Fourth booster	<180 days	3	30.0	8	7.5	0	0.0
	≥180 days	0	0.0	0	0.0	0	0.0
Total		10		107		167	

⁵ Refer to www.hse.ie for further information on the COVID-19 vaccination rollout

Table 9 displays the clinical course and outcome of those admitted between weeks 1-42 2023 by SARS-CoV-2 PCR result and vaccination status.

Data collection for clinical course and outcome is on-going.

Table 9 Number and proportion of SARS-CoV-2 positive SARI cases, with known vaccination status, admitted in weeks 1-42 2023, by COVID-19 vaccination status, time since vaccination, the clinical course and outcome

Vaccination status	Days since vaccination	SARI cases*		Respiratory support		ICU admission		Died in hospital	
		n	%	n	%	n	%	n	%
Not vaccinated		1	0.0	0	0.0	0	0.0	0	0.0
Partial primary series		0	0.0	0	0.0	0	0.0	0	0.0
Primary series completed	<180 days	0	0.0	0	0.0	0	0.0	0	0.0
	≥180 days	6	33.3	2	33.3	0	0.0	1	16.7
First booster only	<180 days	1	100.0	1	100.0	0	0.0	0	0.0
	≥180 days	15	40.0	6	40.0	0	0.0	0	0.0
Second booster only	<180 days	7	42.9	3	42.9	0	0.0	2	28.6
	≥180 days	20	55.0	11	55.0	1	5.0	2	10.0
Third booster only	<180 days	32	56.2	18	56.2	2	6.2	3	9.4
	≥180 days	17	47.1	8	47.1	1	5.9	1	5.9
Fourth booster only	<180 days	8	50.0	4	50.0	0	0.0	0	0.0
	≥180 days	0	0.0	0	0.0	0	0.0	0	0.0

*Number of SARS-CoV-2 positive SARI cases, with known vaccination status, admitted in weeks 1-42

Outcome

Of the 564 SARI cases admitted to St Vincent's University Hospital in 2023 (weeks 1-42), 472 (83.7%) have been discharged. Of those admitted during the same period in 2022 (weeks 1-42), all cases (n=515) have been discharged (Table 10).

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

Among SARI cases admitted in 2023 (weeks 1-42) and discharged with known outcome, 28 (5.9%) deaths have been reported, 13 (46.4%) were male and 15 (53.6%) were female. The median age was 86 years (IQR: 76-89 years).

Among SARI cases admitted during the same period in 2022 and discharged with known outcome, 54 (10.5%) died in hospital, 38 (70.4%) were male and 16 (29.6%) were female. The median age was 82 years (IQR: 74-87 years).

Table10 Number and proportion of discharged SARI cases by outcome and hospital length of stay, for weeks 39-42 2023 and weeks 1-42 2023 and weeks 1-42 2022.

Year Weeks		2023 39-42 (n=9)		2023 1-42 (n=472)		2022 1-42 (n=515)	
		n	%	n	%	n	%
		Outcome	Discharged alive	8	88.9	437	92.6
	Transferred*	0	0.0	7	1.5	10	1.9
	Died in hospital	1	11.1	28	5.9	54	10.5
Hospital length of stay (days)	Mean	6		10		14	
	Median	5		5		7	
	Interquartile range	2-8		3-10		3-15	
	Range	1-16		1-175		1-210	

*Transferred to another hospital

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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:

Primary vaccination series – Partial completion, if:

- Received one dose of a recommended two-dose vaccine schedule and the epidemiological date is ≥ 14 days after receipt of dose one.
- Date of receipt of dose two of a recommended two-dose vaccine schedule is < 14 days before the epidemiological date.
- No identifiable linked record on the National COVID-19 Immunisation system, of receiving dose two of a recommended two-dose COVID-19 vaccine schedule.

Primary vaccination series - Complete, if:

- Received one dose of a recommended one-dose vaccine schedule, and the epidemiological date is ≥ 14 days after receipt of the dose.
- Received two doses of a recommended two-dose vaccine schedule, and the epidemiological date is ≥ 14 days after receipt of the second dose.
- Received three doses of a recommended three-dose vaccine schedule, and the epidemiological date is > 7 days after receipt of the third dose. The recommended primary series for immunocompromised individuals is three doses of a recommended vaccine.
- Date of receipt of first booster dose is ≤ 7 days before the epidemiological date.
- There is no identifiable linked record on the National COVID-19 Immunisation system of receiving a booster dose of a recommended COVID-19 vaccine schedule.

First booster dose, if:

- They had a first booster dose of a recommended vaccine schedule, and the epidemiological date is > 7 days after receipt of the booster dose.
- Date of receipt of second booster dose is ≤ 7 days before the epidemiological date.
- There is no identifiable linked record on the National COVID-19 Immunisation system of receiving a second booster dose of a recommended COVID-19 vaccine schedule.

Second booster dose, if:

- They had a second booster dose of a recommended vaccine schedule, and the epidemiological date is >7 days after receipt of the booster dose.
- Date of receipt of third booster dose is ≤ 7 days before the epidemiological date.
- There is no identifiable linked record on the National COVID-19 Immunisation system of receiving a third booster dose of a recommended COVID-19 vaccine schedule.

Third booster dose, if:

- They had a third booster dose of a recommended vaccine schedule, and the epidemiological date is >7 days after receipt of the booster dose.
- Date of receipt of fourth booster dose is ≤ 7 days before the epidemiological date.
- There is no identifiable linked record on the National COVID-19 Immunisation system of receiving a fourth booster dose of a recommended COVID-19 vaccine schedule.

Fourth booster dose, if:

- They had a fourth booster dose of a recommended vaccine schedule, and the epidemiological date is >7 days after receipt of the booster dose.

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 weeks 1 - 42 2023 (n=104)

Virus Variant	Pango Lineage	Number of cases	Sequenced cases %
XBB.1.5-like+F456L	EG.5.1	5	4.8
	EG.5.1.1	8	7.7
	EG.5.1.3	1	1.0
	FE.1.1.1	1	1.0
	FE.1.2	1	1.0
	GK.1	1	1.0
	HV.1	1	1.0
	XBB.1.16.6	8	7.7
XBB.1.5-like lineages	EG.1	2	1.9
	FL.15	1	1.0
	FL.3	1	1.0
	FL.9	1	1.0
	FU.1	1	1.0
	GE.1	2	1.9
	XBB.1.16	5	4.8
	XBB.1.16.11	3	2.9
	XBB.1.5	22	21.2
	XBB.1.5.13	1	1.0
	XBB.1.5.16	2	1.9
	XBB.1.5.18	1	1.0
	XBB.1.5.24	1	1.0
	XBB.1.5.28	1	1.0
	XBB.1.5.38	1	1.0
	XBB.1.5.51	1	1.0
	XBB.1.5.7	2	1.9
	XBB.1.9.1	9	8.7
	XBB.1.9.2	4	3.8
	XBB.2.3	1	1.0
XBB.2.3.2	1	1.0	
BA.2.75 lineages	BM.2	1	1.0
	CH.1.1	2	1.9
	DV.7	1	1.0
BQ.1 lineages	BQ.1.1.18	1	1.0
	BQ.1.10	1	1.0
	BQ.1.12	1	1.0

Virus Variant	Pango Lineage	Number of cases	Sequenced cases %
	BQ.1.3	2	1.9
	DR.1	1	1.0
Other Variants	GW.5	1	1.0
	XBB.1	2	1.9
	XBB.1.41.1	1	1.0
	XCF	1	1.0
Total		104	

Table A2

Number of SARI cases sequenced and reported by Pango Lineage and week of admission, SARI cases admitted in weeks 37-42 2023

Virus variant	lineage	2023-W37	2023-W38	2023-W39	2023-W40	2023-W41	2023-W42	Total
Total	-	6	3	2	3	4	1	19
XBB.1.5-like+F456L	EG.5.1.1	2	1	1	0	0	0	4
	XBB.1.16.6	0	1	0	1	0	0	2
XBB.1.5-like	GE.1	0	0	0	0	2	0	2
	FE.1.2	1	0	0	0	0	0	1
	EG.5.1.3	0	1	0	0	0	0	1
	HV.1	0	0	1	0	0	0	1
	EG.5.1	0	0	0	0	1	0	1
	XBB.1.5.28	1	0	0	0	0	0	1
	FL.15	0	0	0	1	0	0	1
	FL.9	0	0	0	1	0	0	1
	XBB.1.5	0	0	0	0	1	0	1
	XBB.2.3	0	0	0	0	0	1	1
Other variants	XBB.1.41.1	1	0	0	0	0	0	1
	GW.5	1	0	0	0	0	0	1