



## Weekly Report on Severe Acute Respiratory Infection (SARI), Week 39 2023 (week ending 01/10/2023)

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 39 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 39 2023 (week ending 01/10/2023):

- **Number of cases:** 7 SARI cases admitted to the SARI hospital site, a decrease compared to 12 cases reported in week 38 2023.
- **Incidence rate per hospital catchment population:** 2.3 per 100,000 population aged ≥15 years, a decrease compared to 3.9 per 100,000 in week 38 2023.
- **Incidence rate per emergency hospitalisations:** 25.5 per 1,000 emergency admissions, a decrease compared to 41.2 per 1,000 emergency admissions in week 38 2023.
- **Age profile:** 85.7% (n=6) of SARI cases aged 65 years and older, median age was 77 years (interquartile range (IQR): 66-86).
- **Underlying medical conditions:** All (100%) of SARI cases.
- **PCR testing:**
  - All (100%) SARI cases were tested for SARS-CoV-2, two cases (28.6%) tested positive, compared to three (25.0%) positive cases in week 38 2023.
  - Influenza PCR testing was carried out on all 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 all SARI cases, none of whom tested positive for RSV, the last positive RSV case was in week 15 2023.

#### Last four weeks (Weeks 36-39 2023)

- **Number of cases:** 38 SARI cases admitted to the SARI hospital site; based on PCR testing, 12 (31.6%) 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 eight (72.7%) identified as XBB.1.5-like with F456L mutation, two (18.2%) identified as other variants and one (9.1%) identified as XBB.1.5-like.
  - No SARI cases with variant BA.2.86 detected.
- **Influenza types/subtypes:** No influenza positive SARI cases were admitted.
- **Age profile:** 73.7% (n=28) of SARI cases aged 65 years and older, median age was 76 years (interquartile range (IQR): 62-84).
- **Underlying medical conditions:** 97.4% (n=37) of SARI cases.

#### Year-to-date (Weeks 1-39 2023)

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

- **ICU admissions:** Among SARI cases for whom admission to ICU is known, 289 (61.2%) were reported to have been admitted to ICU and/or ventilated.
- **Outcome:** Of those discharged, with known outcome, 25 deaths (5.6%) have been reported.
- **Vaccination status:**
  - Among cases where vaccination status is known, 53 (54.6%) SARS CoV-2 positive SARI cases had not received at least one vaccine dose within the six months prior to their hospitalisation.

## Table of Contents

Background .....	3
Methods.....	3
Results .....	5
SARI cases and incidence rates.....	5
Demographics.....	6
Underlying medical conditions and risk factors .....	7
Symptoms .....	8
Severe clinical course during hospitalisation .....	9
Laboratory testing for SARS-CoV-2, influenza and RSV .....	10
COVID-19 Vaccination status.....	13
Outcome .....	15
Acknowledgements.....	16
Technical notes.....	16
Appendix.....	18
Table A1.....	18
Table A2.....	20

## 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, Dublin (SVUH). Surveillance commenced on the 5<sup>th</sup> of July 2021. SARI cases are identified from new admissions through the Emergency Department (ED). 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 the SARI surveillance project in Ireland:

ECDC SARI definition: A hospitalised (defined as hospitalised for at least 24 hours) person with acute respiratory infection, with at least one of the following symptoms:

- cough,
- fever,
- shortness of breath,
- sudden onset of anosmia, ageusia or dysgeusia
- AND onset of symptoms within 14 days prior to hospital admission.

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

## 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 week<sup>1</sup>.

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<sup>1</sup> Monday to Sunday (ISO week) used as per ECDC/WHO/international reporting protocol

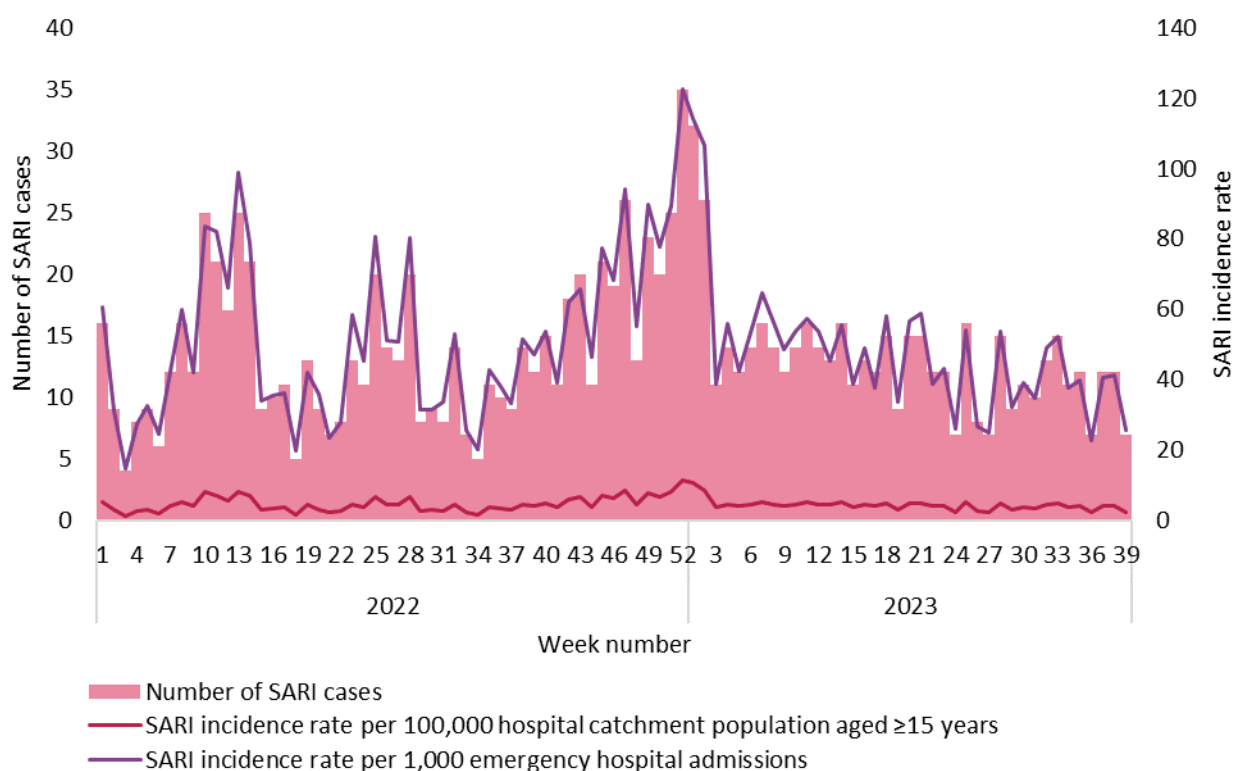
## Results

### SARI cases and incidence rates

In total, 510 SARI cases were admitted to St. Vincent’s University Hospital (SVUH) during 2023 (weeks 1-39), 471 SARI cases were admitted during the same period in 2022 (weeks 1- 39).

In week 39 2023:

- 7 SARI cases were reported, a decrease compared to 12 SARI cases reported during week 38 2023 (Figure 1).
- The SARI incidence rate was 2.3 per 100,000 hospital catchment population aged ≥15 years, a decrease compared to the rate of 3.9 per 100,000 reported in week 38 2023.
- The SARI incidence rate per emergency hospitalisations was 25.5 per 1,000, a decrease compared to the rate of 41.2 per 1,000 in week 38 2023.



**Figure 1** Number and incidence of SARI hospitalised cases (emergency admission) by week of hospital admission, from week 1 2022 to week 39 2023 (n=1238)

**NOTE:** Data were extracted from the SARI surveillance database at HPSC on 04/10/2023, 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 39 2023, of the 7 SARI cases reported:

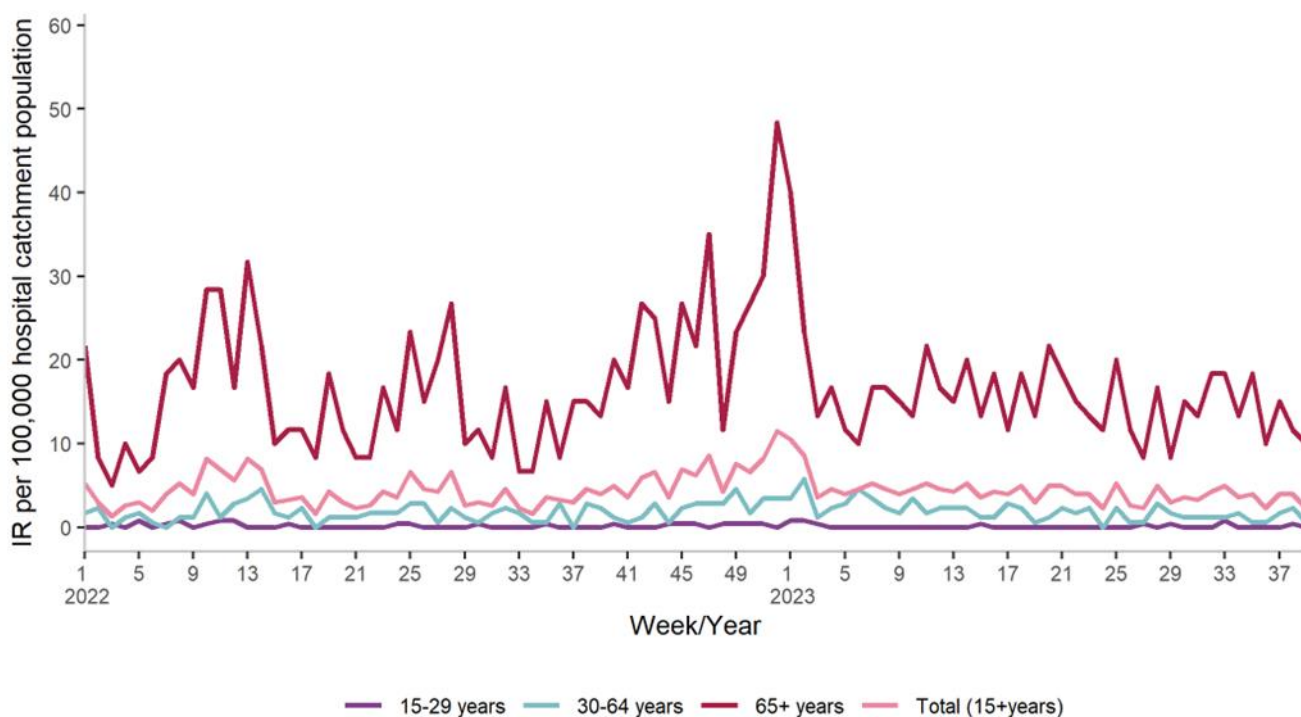
- Females accounted for a slightly higher proportion of SARI cases (n=4; 57.1%), see Table 1
- The median age of SARI cases admitted was 77 years (interquartile range: 66-86 years)
- The age-specific incidence rate amongst those aged 65 years and older was 10.0 per 100,000, a decrease compared to 11.7 per 100,000 in week 38 2023.

**Table 1** Number and proportion of SARI cases by sex and age, for the current week, weeks 36-39 2023, weeks 1-39 2023 and weeks 1-39 2022

	Week 39 2023		Weeks 36 - 39 2023		Weeks 1 - 39 2023		Weeks 1 - 39 2022	
	n	(%)	n	(%)	n	(%)	n	(%)
Total number of SARI cases	7		38		510		471	
Male	3	42.9	24	63.2	241	47.3	247	52.4
Female	4	57.1	14	36.8	269	52.7	224	47.6
Mean age (years)	73		71		71		72	
Median age (years)	77		76		74		75	
IQR (years)	66-86		62-84		63-83		63-83	
Range (years)	46-87		18-91		16-99		16-101	
<b>Age groups (years)</b>								
15-24	0	0.0	1	2.6	7	1.4	10	2.1
25-34	0	0.0	0	0.0	11	2.2	13	2.8
35-44	0	0.0	2	5.3	28	5.5	14	3.0
45-54	1	14.3	3	7.9	34	6.7	33	7.0
55-64	0	0.0	4	10.5	62	12.2	59	12.5
65-74	2	28.6	8	21.1	114	22.4	96	20.4
75-84	1	14.3	11	28.9	150	29.4	144	30.6
85+	3	42.9	9	23.7	104	20.4	102	21.7

\*Surveillance excludes children under 15 years of age

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



**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 39 2023 (n=1238)

### Underlying medical conditions and risk factors

The number and proportion of individual 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 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 36-39 2023, weeks 1-39 2023 and weeks 1-39 2022

Underlying medical condition*	Week 39 2023 (n=7)		Weeks 36 - 39 2023 (n=37)		Weeks 1 - 39 2023 (n=489)		Weeks 1 - 39 2022 (n=452)	
	n	%	n	%	n	%	n	%
<b>Heart disease</b>	<b>1</b>	<b>14.3</b>	<b>14</b>	<b>37.8</b>	<b>197</b>	<b>40.3</b>	<b>191</b>	<b>42.3</b>
<b>Hypertension</b>	<b>2</b>	<b>28.6</b>	<b>10</b>	<b>27.0</b>	<b>188</b>	<b>38.4</b>	<b>178</b>	<b>39.4</b>
<b>Lung disease</b>	<b>2</b>	<b>28.6</b>	<b>9</b>	<b>24.3</b>	<b>185</b>	<b>37.8</b>	<b>149</b>	<b>33.0</b>
Cancer	1	14.3	9	24.3	76	15.5	97	21.5
Neurological disease	1	14.3	4	10.8	133	27.2	77	17.0
Asthma	1	14.3	1	2.7	84	17.2	66	14.6
Diabetes	1	14.3	5	13.5	82	16.8	75	16.6
Kidney disease	1	14.3	3	8.1	31	6.3	35	7.7
Intellectual disability	1	14.3	3	8.1	16	3.3	22	4.9
Immunocompromised	0	0.0	1	2.7	6	1.2	15	3.3
Obesity	0	0.0	1	2.7	11	2.2	13	2.9
Cystic fibrosis	0	0.0	0	0.0	1	0.2	2	0.4
Other chronic conditions**	2	28.6	15	40.5	234	47.9	215	47.6

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

\*\*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 (2.9%) case was reported as being pregnant at the time of admission. During the same period in 2022 (weeks 1-39), four (13.8%) were reported as being pregnant at the time of admission.

Among those admitted during 2023 for whom healthcare worker status is known, five (1.0%) cases were reported as being healthcare workers at the time of admission. During the same period in 2022 (weeks 1-39), 13 (2.8%) 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 36-39 2023, weeks 1-39 2023 and weeks 1-39 2022

Clinical symptom*	Week 39 2023 (n=7)		Weeks 36 - 39 2023 (n=38)		Weeks 1 - 39 2023 (n=510)		Weeks 1 - 39 2022 (n=471)	
	n	%	n	%	n	%	n	%
<b>Cough</b>	<b>4</b>	<b>57.1</b>	<b>26</b>	<b>68.4</b>	<b>382</b>	<b>74.9</b>	<b>358</b>	<b>76.0</b>
<b>Shortness of breath</b>	<b>5</b>	<b>71.4</b>	<b>23</b>	<b>60.5</b>	<b>375</b>	<b>73.5</b>	<b>347</b>	<b>73.7</b>
Fever	2	28.6	21	55.3	258	50.6	216	45.9
General deterioration	2	28.6	11	28.9	205	40.2	179	38.0
Malaise	1	14.3	4	10.5	35	6.9	67	14.2
Headache	0	0.0	1	2.6	24	4.7	27	5.7
Muscular pain	0	0.0	0	0.0	29	5.7	28	5.9
Sore throat	0	0.0	3	7.9	31	6.1	37	7.9
Ageusia	0	0.0	0	0.0	0	0.0	3	0.6
Anosmia	0	0.0	0	0.0	1	0.2	3	0.6
Dysgeusia	0	0.0	0	0.0	0	0.0	3	0.6

\*SARI cases could be reported with one or more clinical symptom

## 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 in 2023 (weeks 1-39) and for the same period in 2022, the most common complications reported were pneumonia and ARDS (table 4).

**Table 4** Number and proportion of discharged SARI cases by complication, for weeks 36-39 2023, weeks 1-39 2023 and weeks 1-39 2022

Complications*	Weeks 36 - 39 2023 (n = 13)		Weeks 1 - 39 2023 (n=446)		Weeks 1 - 39 2022 (n=471)	
	n	%	n	%	n	%
<b>Pneumonia</b>	<b>3</b>	<b>23.1</b>	<b>73</b>	<b>16.4</b>	<b>48</b>	<b>10.2</b>
<b>ARDS</b>	<b>4</b>	<b>30.8</b>	<b>26</b>	<b>5.8</b>	<b>44</b>	<b>9.3</b>
Sepsis	0	0.0	8	1.8	13	2.8
Multiorgan failure	0	0.0	6	1.3	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
Bronchiolitis	0	0.0	1	0.2	0	0.0
Other complications**	3	23.1	105	23.5	134	28.5
No complications	2	15.4	252	56.5	263	55.8
Unknown	2	15.4	6	1.3	0	0.0

\*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 data are only available after discharge, therefore, data on ICU length of stay for weeks 36-39 2023 are not included, due to the small numbers involved. Data collection is ongoing for those not yet discharged from hospital.

**Table 5** Number and proportion of SARI cases by respiratory support and ICU admission, for weeks 36-39 2023, weeks 1-39 2023 and weeks 1-39 2022

		Weeks 36-39 2023 (n=13)		Weeks 1-39 2023 (n=440)		Weeks 1-39 2022 (n=471)	
		n	%	n	%	n	%
Respiratory support	High-flow oxygen therapy*	10	76.9	280	63.6	266	56.5
	Invasive ventilation	0	0.0	6	1.4	18	3.8
	No respiratory support given	3	23.1	154	35.0	187	39.7
		(n=31)		(n=471)		(n=471)	
		n	%	n	%	n	%
Admitted to ICU	Yes	1	3.2	24	5.1	24	5.1
	No	30	96.8	447	94.9	447	94.9
	ICU/ventilated**	11	34.4	289	61.2	284	60.3
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

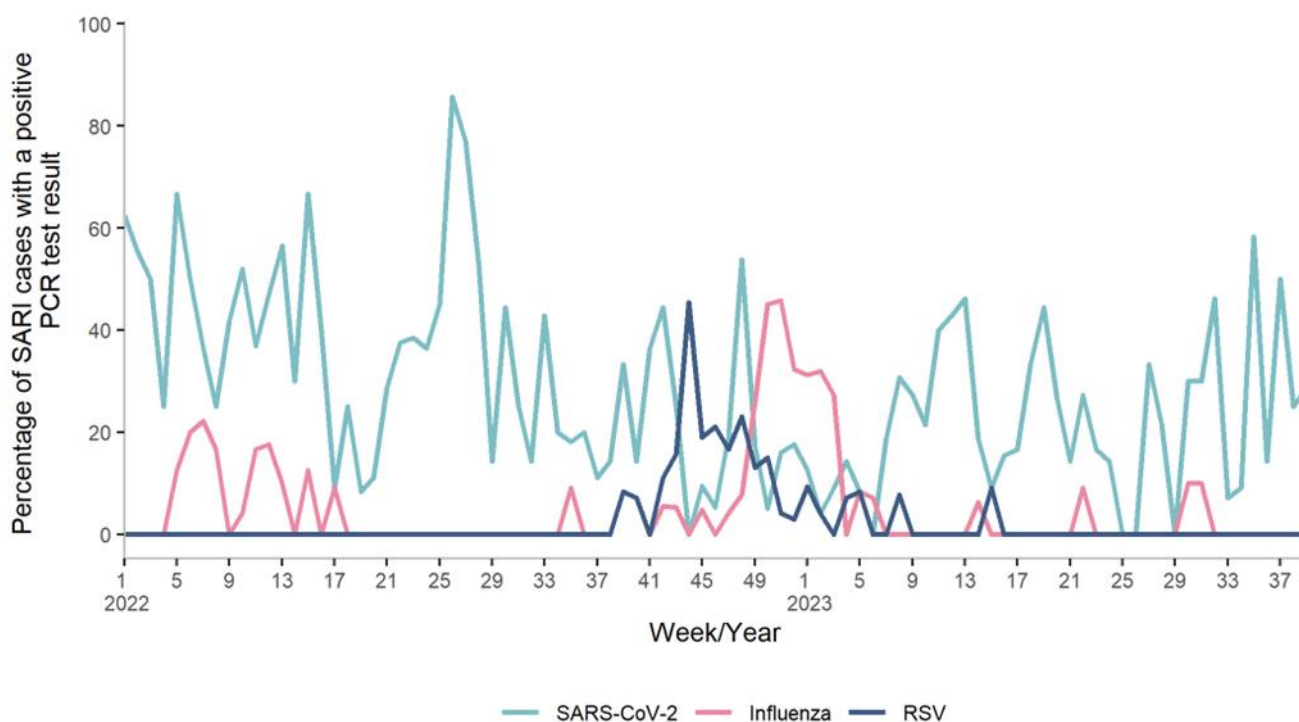
### PCR testing:

SARI cases are tested by PCR for SARS-CoV-2, influenza and RSV on admission. For a small proportion of cases, there is a lag time with testing for influenza and RSV<sup>2</sup>.

In week 39 2023:

- SARS-CoV-2 PCR testing was carried out on all SARI cases, two (28.6%) of whom tested positive for COVID-19, compared to 25.0% (n=3) positivity in week 38 2023
- Influenza PCR testing was carried out on all SARI cases, none of whom tested positive for influenza, the last positive influenza case was in week 31 2023
- RSV PCR testing was carried out on all SARI cases, none of whom tested positive for RSV, the last positive RSV case was in week 15 2023

<sup>2</sup> Due to reagent supply issues, samples are occasionally sent to external laboratories for influenza and RSV testing.



**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 39 2023

**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 36-39 2023, weeks 1-39 2023 and weeks 1-39 2022

Laboratory test	Laboratory test result	Week 39 2023 (n=7)		Weeks 36-39 2023 (n=38)		Weeks 1-39 2023 (n=494)		Weeks 1-39 2022 (n=461)	
		n	%	n	%	n	%	n	%
Tested for SARS-CoV-2	Positive	2	28.6	12	31.6	107	21.7	181	39.3
	Negative	5	71.4	25	65.8	379	76.7	255	55.3
	Indeterminate*	0	0.0	1	2.6	8	1.6	25	5.4

\* Ct value (cycle threshold) >30

**RSV and influenza:**

The influenza surveillance season runs from week 40 (early October) to week 20 (end of May) each season. During this time, seasonal influenza viruses and RSV usually circulate at higher levels, compared to the summer period (week 21 to week 39). Samples that are PCR positive for influenza are sent to the NVRL for influenza typing/subtyping/genetic and antigenic characterisation.

Table 7 displays the influenza type/subtype for all influenza positive samples and RSV positive PCR test results during the current week, the 2023 summer period (week commencing 22/05/2023) and the 2022/2023 influenza season (weeks 40 2022 - 20 2023).

**Table 7** Number of positive RSV and influenza SARI cases and influenza type/subtype for current week, 2023 summer period (from week 21 2023) and 2022/2023 season

Positive laboratory result	Week 39 2023 (n=7)		Summer 2023 (n=199)		2022/2023 season (n=547)	
	n	%	n	%	n	%
RSV	0	<b>0.0</b>	0	<b>0.0</b>	42	<b>7.7</b>
Influenza A (H1)pdm09	0	0.0	1	0.5	30	5.5
Influenza A (H3)	0	0.0	2	1.0	31	5.7
Influenza A (not subtyped)	0	0.0	0	0.0	4	0.7
Influenza B (Victoria lineage)	0	0.0	0	0.0	2	0.4
Influenza B (no lineage reported)	0	0.0	0	0.0	0	0.0
Total influenza	0	<b>0.0</b>	3	<b>1.5</b>	67	<b>12.2</b>

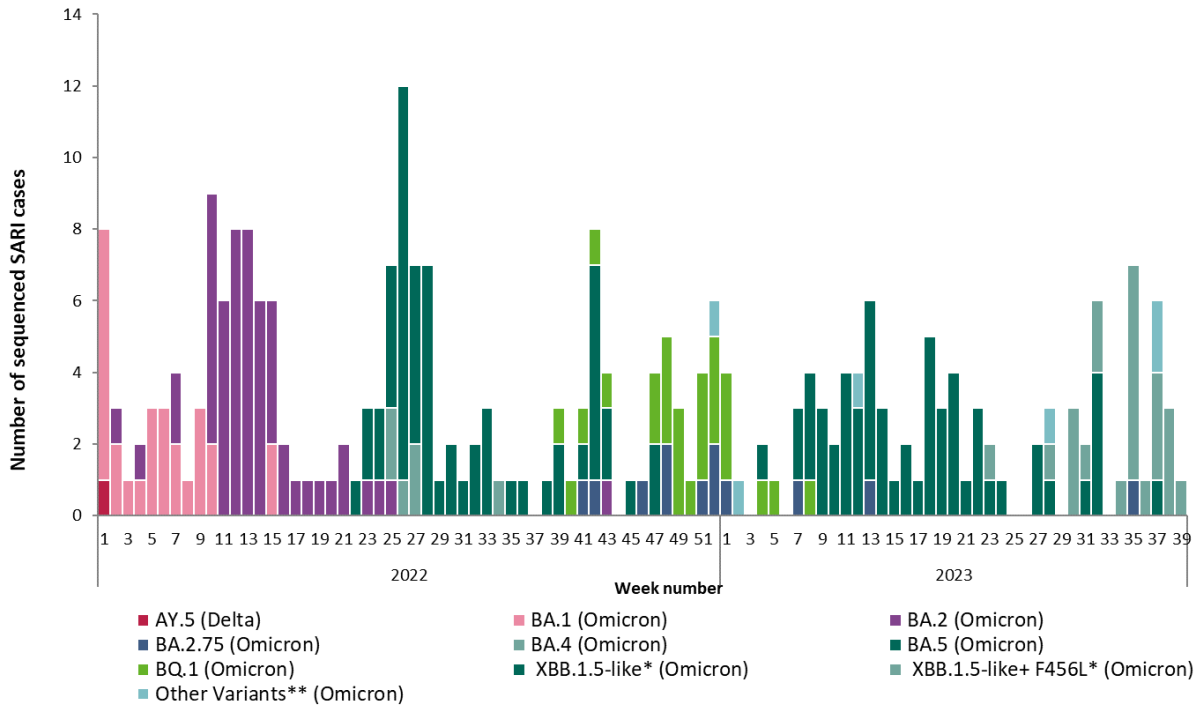
**Genomic analysis:****SARS-CoV-2:**

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 National Virus Reference Laboratory (NVRL) up to week 44 2022. The molecular lab in SVUH has been identified as a spoke WGS testing site as part of the national SARS-CoV-2 WGS surveillance programme, and from week 45 2022, SARI WGS testing has been performed on-site at SVUH. WGS results have been received for 271 SARI cases admitted between week 1 2022 and week 39 2023, see figure 4 below.

Omicron XBB.1.5-like lineages are the dominant variants circulating among SARI cases admitted to hospital in 2023. Among SARS-CoV-2 positive SARI cases admitted during weeks 1–39 2023, for whom WGS data are available, 57 (60.0%) were identified as XBB.1.5-like lineages, and 23 (24.2%) were identified as XBB.1.5-like + F456L. No SARI cases with variant BA.2.86 detected. For further information on circulating variants in Ireland see the COVID-19 virus variants report on the HPSC website.<sup>3</sup>

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

Figure 4 shows sequenced SARI cases by week of hospitalisation and Pango Lineage for cases admitted during 2022 (weeks 1-52) and 2023 (weeks 1-39), further information on Pango Lineage is available in the appendix (Table A1 and A2).



**Figure 4** Number of SARI cases sequenced and reported, by week of hospitalisation, week 1 2022 to week 39 2023 (n=271)

\*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

\*\*All other variants

### 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.

Among SARI cases admitted in weeks 1-39 2023 who tested positive by PCR for SARS-CoV-2 with known vaccination status, 54.6% (53/97) had not received at least one vaccine dose within the six months prior to their hospitalisation (Table 8).

Please refer to the technical notes for the full list of definitions regarding epidemiological date and COVID-19 vaccination status<sup>4</sup>.

<sup>4</sup> Refer to [www.hse.ie](http://www.hse.ie) for further information on the COVID-19 vaccination rollout

**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

Vaccination status	Days since vaccination	Weeks 36 - 39 2023		Weeks 1 - 39 2023		Weeks 1 - 39 2022	
		n	%	n	%	n	%
Not vaccinated		0	0.0	1	1.0	19	12.2
Partial primary series		0	0.0	0	0.0	1	0.6
Primary series completed	<180 days	0	0.0	0	0.0	12	7.7
	≥180 days	1	11.1	6	6.2	14	9.0
First booster	<180 days	0	0.0	1	1.0	70	44.9
	≥180 days	1	11.1	13	13.4	28	17.9
Second booster	<180 days	0	0.0	6	6.2	12	7.7
	≥180 days	2	22.2	19	19.6	0	0.0
Third booster	<180 days	3	33.3	31	32.0	0	0.0
	≥180 days	0	0.0	15	15.5	0	0.0
Fourth booster	<180 days	2	22.2	5	5.2	0	0.0
	≥180 days	0	0.0	0	0.0	0	0.0
<b>Total</b>		<b>9</b>		<b>97</b>		<b>156</b>	

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

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

**Table 9** Number and proportion of SARS-CoV-2 positive SARI cases, with known vaccination status, admitted in weeks 1 - 39 2023, by COVID-19 vaccination status, time since vaccination, the clinical course and outcome

Vaccination status	Days since vaccination	n	Respiratory support		ICU admission		Died in hospital	
			n	%	n	%	n	%
Not vaccinated		1	0	0.0	0	0.0	0	0.0
Primary series completed	<180 days	0	0	0.0	0	0.0	0	0.0
	≥180 days	6	2	33.3	0	0.0	1	16.7
First booster only	<180 days	1	1	100.0	0	0.0	0	0.0
	≥180 days	13	5	38.5	0	0.0	0	0.0
Second booster only	<180 days	6	3	50.0	0	0.0	1	16.7
	≥180 days	19	10	52.6	1	5.3	2	10.5
Third booster only	<180 days	31	15	48.4	2	6.5	2	6.5
	≥180 days	15	8	53.3	1	6.7	1	6.7
Fourth booster only	<180 days	5	4	80.0	0	0.0	0	0.0
	≥180 days	0	0	0.0	0	0.0	0	0.0

## Outcome

Of the 510 SARI cases admitted to St Vincent's University Hospital in 2023 (weeks 1-39), 446 (87.5%) have been discharged. Of those admitted during the same period in 2022 (weeks 1-39), all cases (n=471, 100%) have been reported as 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 1-39) and discharged with known outcome, 25 (5.6%) deaths have been reported, 11 (44.0%) were male and 14 (56.0%) were female. The median age was 82 years (IQR: 74-89 years).

Among SARI cases admitted during the same period in 2022 and discharged with known outcome, 53 (11.3%) died in hospital, 38 (71.7%) were male and 15 (28.3%) were female. The median age was 82 years (IQR: 74-87 years).

**Table 10** Number and proportion of discharged SARI cases by outcome and hospital length of stay, for weeks 36-39 2023, weeks 1-39 2023 and weeks 1-39 2022

		Weeks 36 - 39 2023 (n=13)		Weeks 1 - 39 2023 (n=446)		Weeks 1 - 39 2022 (n=471)	
		n	%	n	%	n	%
Outcome	Discharged alive	12	92.3	414	92.8	408	86.6
	Transferred*	0	0.0	7	1.6	10	2.1
	Died in hospital	1	7.7	25	5.6	53	11.3
Hospital length of stay (days)	Mean	4		10		14	
	Median	4		5		7	
	Interquartile range	2-5		3-10		3-15	
	Range	1-7		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  $\geq 14$  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  $\geq 14$  days after receipt of the dose.
  - Received two doses of a recommended two-dose vaccine schedule, and the epidemiological date is  $\geq 14$  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  $\leq 7$  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, SARI cases week 1 2022 to week 39 2023 (n=271)

<b>Virus variant</b>	<b>Number of cases</b>	<b>% sequenced cases</b>
<b>Total sequenced</b>	<b>271</b>	
<b>Delta and Delta sublineages:</b>	<b>1</b>	<b>0.4</b>
AY.5	1	0.4
<b>Omicron sublineages:</b>	<b>270</b>	<b>99.6</b>
<b>BA.1 lineages</b>		
BA.1	16	5.9
BA.1.1	11	4.1
<b>BA.2 lineages</b>		
BA.2	41	15.1
BA.2.9	6	2.2
BA.2.3	5	1.8
BA.2.1	1	0.4
BA.2.18	1	0.4
BA.2.40.1	1	0.4
<b>BA.2.75 lineages</b>		
CH.1.1	4	1.5
CH.1.1.1	1	0.4
CV.1	1	0.4
DV.7	1	0.4
BN.1.2	1	0.4
BN.1.5	1	0.4
BN.1.2.1	1	0.4
BN.1.9	1	0.4
BM.2	1	0.4
<b>BA.4 lineages</b>		
BA.4	3	1.1
BA.4.1	1	0.4
BA.4.4	1	0.4
BA.4.6	1	0.4
<b>BA.5 lineages</b>		
BA.5.1	19	7.0
BA.5.2	11	4.1
BA.5.2.1	8	3.0
BA.5.2.20	1	0.4
BA.5	5	1.8
BE.1	4	1.5
BF.7	3	1.1
BA.5.2.6	2	0.7
BA.5.3	1	0.4
BE.1.1	1	0.4
BF.11.1	1	0.4
BF.1	1	0.4
BE.1.1.2	1	0.4
<b>BQ.1 lineages</b>		
BQ.1.8	2	0.7
BQ.1	4	1.5
BQ.1.1.18	2	0.7

Virus variant	Number of cases	% sequenced cases
BQ.1.3	2	0.7
BQ.1.1.5	1	0.4
BQ.1.10	1	0.4
BQ.1.1.15	1	0.4
BQ.1.16	1	0.4
BQ.1.1	4	1.5
BQ.1.12	2	0.7
BQ.1.1.22	1	0.4
BQ.1.2	1	0.4
BQ.1.1.29	1	0.4
BQ.1.1.4	1	0.4
BQ.1.5	1	0.4
DR.1	1	0.4
<b>Other variants</b>		
GW.5	1	0.4
XBB.1	2	0.7
XBB.1.41.1	1	0.4
XCF	1	0.4
XBB.2	1	0.4
<b>XBB.1.5-like lineages</b>		
EG.1	2	0.7
FL.3	1	0.4
FU.1	1	0.4
XBB.1.5	21	7.7
XBB.1.5.7	2	0.7
XBB.1.5.13	1	0.4
XBB.1.5.16	2	0.7
XBB.1.5.18	1	0.4
XBB.1.5.24	1	0.4
XBB.1.5.28	1	0.4
XBB.1.5.38	1	0.4
XBB.1.5.51	1	0.4
XBB.1.16	5	1.8
XBB.1.16.11	3	1.1
XBB.2.3.2	1	0.4
XBB.1.9.1	9	3.3
XBB.1.9.2	4	1.5
<b>XBB.1.5-like+ F456L lineages</b>		
EG.5.1	4	1.5
EG.5.1.1	7	2.6
EG.5.1.3	1	0.4
FE.1.1.1	1	0.4
FE.1.2	1	0.4
GK.1	1	0.4
HV.1	1	0.4
XBB.1.16.6	7	2.6

**Table A2**

Number of SARI cases sequenced and reported by Pango lineage and week of admission, SARI cases admitted in weeks 33-39 2023

Virus variant	Pango lineage	2023							Total
		W39	W38	W37	W36	W35	W34	W33	
Omicron, BA.2.75	DV.7					1			1
Omicron, XBB.1.5-like	XBB.1.5.28			1					1
	GK.1				1				1
	EG.5.1					1			1
	EG.5.1.1		1	2		1	1		5
Omicron, XBB.1.5-like+ F456L	EG.5.1.3		1						1
	FE.1.2			1					1
	HV.1	1							1
	XBB.1.16.6		1			4			5
Other Variants	GW.5			1					1
	XBB.1.41.1			1					1
<b>Total</b>		<b>1</b>	<b>3</b>	<b>6</b>	<b>1</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>19</b>