Weekly Report on Severe Acute Respiratory Infection (SARI), Week 18 2023 (week ending 07/05/2023)

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 18 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

- In week 18 2023 (week ending 07/05/2023):
  - There were 17 SARI cases reported in week 18 2023, an increase compared to 12 SARI cases reported during week 17 2023
  - The incidence rate per emergency hospitalisations was 65.9 per 1,000 emergency admissions, an increase compared to 37.5 per 1,000 during week 17 2023
  - The incidence rate per hospital catchment population was 5.6 per 100,000 population aged ≥15 years, compared to the rate of 3.9 per 100,000 in week 17 2023
  - The highest proportion of SARI cases was among those aged 65 years and older (n=13; 76.5%), median age was 75 years (interquartile range (IQR): 66-81)
  - Among SARI cases admitted in week 18 2023, 88.2% (n=15) of cases were reported as having underlying medical conditions
  - SARS-CoV-2 PCR testing was carried out on all SARI cases, five (29.4%) of which tested positive, compared to 16.7% (n=2) positivity in week 17 2023
  - Influenza PCR testing was carried out on all SARI cases, none of which tested positive for influenza, there was only one positive influenza case since week 7, 2023
  - Respiratory syncytial virus (RSV) PCR testing was carried out on all SARI cases, none of which tested positive for RSV, there was only one positive RSV case since week 9, 2023
- There were 53 SARI cases admitted to the SARI hospital site between weeks 15 and 18 2023. In total, during 2023 (weeks 1-18), 277 SARI cases have been admitted to the SARI hospital site.
  - The median age of SARI cases admitted during weeks 15-18 2023 was 75 years (IQR: 64-83 years), the median age of all cases admitted to date in 2023 was 74 years (IQR: 62-83 years)
  - Among SARI cases admitted during weeks 15-18 2023 (n=53), 96.2% (n=51) reported having underlying medical conditions; overall 95.3% (n=264) of those admitted to date in 2023 reported having underlying conditions
  - Among SARS-CoV-2 positive SARI cases admitted during weeks 1–16 2023, for whom whole genome sequencing (WGS) data are available, the variant of interest (VOI) XBB.1.5 was identified in 52.5% (21/40) and the variant XBB.1.9 was identified in 20.0% (8/40) of the sequenced samples
  - Of influenza positive SARI cases admitted during the 2022/2023 influenza season (weeks 40 2022 – 18 2023), for whom (sub)typing data were available, 30 cases were subtyped as A(H1)pdm09, 31 A(H3), 4 A(not subtyped) and 2 cases were identified as influenza B/Victoria
  - Among SARI cases for whom admission to ICU is known, admitted during 2023 (weeks 1-18 2023), 62.1% (126/203) were reported to have been admitted to ICU and/or ventilated, compared to 60.6% (432/713) during 2022 (weeks 1-52)
  - Among SARI cases admitted since the roll-out of the second COVID-19 booster (22/04/2022) who tested positive by PCR for SARS-CoV-2 with known vaccination status, 54.7% (82/150) had not received a second booster vaccine dose >7 days prior to their onset of illness
  - Of those discharged, with known outcome, admitted during 2023, eleven deaths (5.9%) have been reported compared to 11.3% (n=80) during 2022

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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, Dublin (SVUH). Surveillance commenced on the 5th 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

22/04/2022 (Week 16 2022) – Rollout of the second COVID-19 booster vaccination

Week number refers to the week of hospital admission. Weeks run from Monday to Sunday, as per the international ISO week[1].

[1] Monday to Sunday (ISO week) used as per ECDC/WHO/international reporting protocol

Results

SARI cases and incidence rates

In total, 277 SARI cases were admitted to St. Vincent's University Hospital (SVUH) during 2023 (weeks 1-18), 729 cases were admitted during 2022 (weeks 1-52).

In week 18 2023:

- 17 SARI cases were reported, compared to 12 SARI cases reported in week 17 2023 (see Figure 1).
- The SARI incidence rate was 5.6 per 100,000 hospital catchment population aged ≥15 years, compared to the rate of 3.9 per 100,000 in week 17 2023.
- The SARI incidence rate per emergency hospitalisations was 65.9 per 1,000, compared to the rate of 37.5 per 1,000 in week 17 2023.

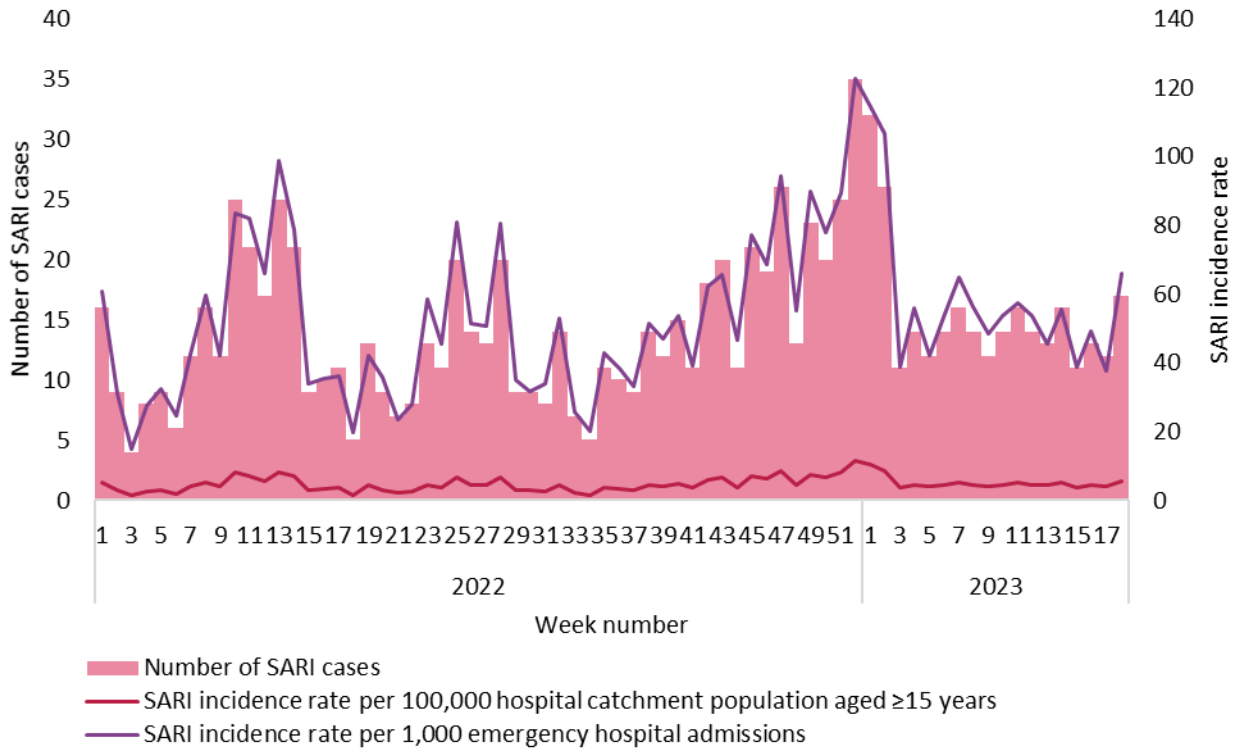


Figure 1 Number and incidence of SARI hospitalised cases (emergency admission) by week of hospital admission, from week 1 2022 to week 18 2023 (n=1006).

NOTE: Data were extracted from the SARI surveillance database at HPSC on 10/05/2023, 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 18 2023, of the 17 SARI cases reported:

- The proportion of female cases was higher than male cases (n=12; 70.6%), see Table 1
- The median age of SARI cases admitted was 75 years (interquartile range: 66 - 81 years)
- The incidence rate amongst those aged 65 years and older was 21.7 per 100,000, compared to the rate of 11.7 per 100,000 in week 17 2023.

Table 1 Number and proportion of SARI cases by sex and age, for the current week, weeks 15-18 2023, weeks 1-18 2023 and for weeks 1-52 2022.

		Week 18 2023		Weeks 15-18 2023		Weeks 1 - 18 2023		Weeks 1-52 2022	
		n	%	n	%	n	%	n	%
Total number of SARI cases		17		53		277		729	
Sex	Male	5	29.4	29	54.7	134	48.4	369	50.6
	Female	12	70.6	24	45.3	143	51.6	360	49.4
Age (years)	Mean	72		72		71		72	
	Median	75		75		74		75	
	IQR	66 - 81		64 - 83		62 - 83		62 - 83	
	Range	33 - 90		25 - 97		17 - 99		16 - 101	
Age group	15-24 years	0	0.0	0	0.0	3	1.1	16	2.2
	25-34 years	1	5.9	2	3.8	8	2.9	17	2.3
	35-44 years	0	0.0	0	0.0	11	4.0	23	3.2
	45-54 years	0	0.0	5	9.4	21	7.6	42	5.8
	55-64 years	3	17.6	7	13.2	45	16.2	93	12.8
	65-74 years	3	17.6	12	22.6	50	18.1	161	22.1
	75-84 years	8	47.1	15	28.3	79	28.5	231	31.7
	85+ years	2	11.8	12	22.6	60	21.7	146	20.0

*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.

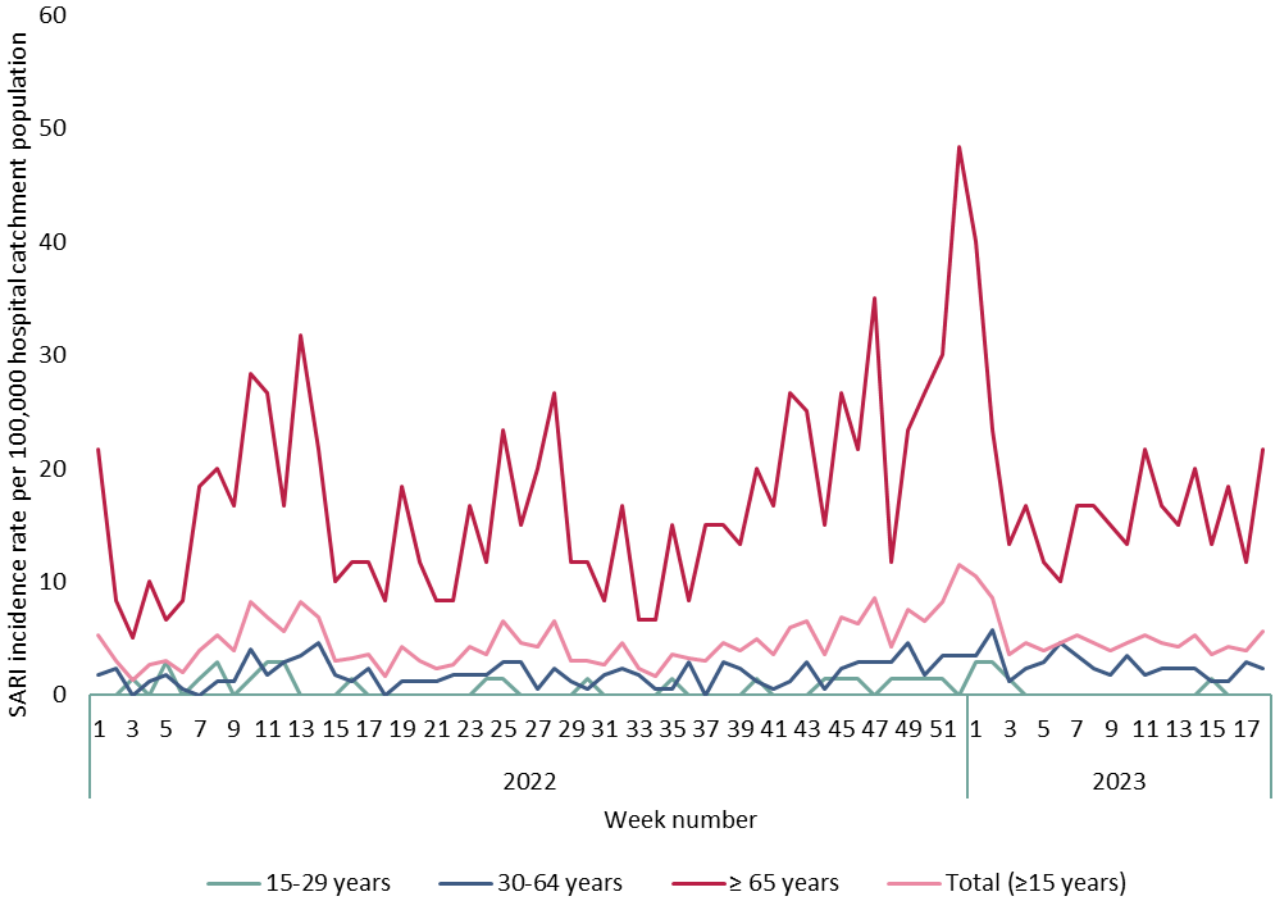


Figure 2 SARI incidence rate per 100,000 hospital catchment population by age group and week of hospital admission, from week 1 2022 to week 18 2023 (n=1006).

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 15-18 2023, weeks 1-18 2023 and weeks 1-52 2022.

Underlying medical condition*	Week 18 2023 (n=15)		Weeks 15-18 2023 (n=51)		Weeks 1 - 18 2023 (n=264)		Weeks 1-52 2022 (n=693)	
	n	%	n	%	n	%	n	%
Heart disease	7	**46.7**	23	**45.1**	96	**36.4**	289	**41.7**
Hypertension	10	**66.7**	24	**47.1**	114	**43.2**	273	**39.4**
Lung disease	6	**40.0**	19	**37.3**	95	**36.0**	242	**34.9**
Cancer	0	0.0	6	11.8	34	12.9	138	19.9
Neurological disease	3	20.0	16	31.4	77	29.2	121	17.5
Asthma	4	26.7	12	23.5	43	16.3	106	15.3
Diabetes	5	33.3	12	23.5	47	17.8	115	16.6
Kidney disease	1	6.7	5	9.8	18	6.8	52	7.5
Intellectual disability	0	0.0	1	2.0	7	2.7	33	4.8
Immunocompromised	0	0.0	0	0.0	2	0.8	17	2.5
Obesity	1	6.7	1	2.0	8	3.0	18	2.6
Cystic fibrosis	0	0.0	0	0.0	0	0.0	2	0.3
Other chronic conditions**	4	26.7	21	41.2	133	50.4	337	48.6

*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 (6.3%) case was reported as being pregnant at the time of admission. In total during 2022, 14.3% (n=6) of the female SARI cases aged 15-49 years were reported as being pregnant at the time of admission.

Among those admitted during 2023 for whom healthcare worker status is known, five (1.9%) cases were reported as being healthcare workers at the time of admission. In total during 2022, 2.2% (n=16) 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 15-18 2023, weeks 1-18 2023 and weeks 1-52 2022.

Clinical symptom*	Week 18 2023 (n=17)		Weeks 15 - 18 2023 (n=53)		Weeks 1 - 18 2023 (n=277)		Weeks 1-52 2022 (n=729)	
	n	%	n	%	n	%	n	%
Cough	14	**82.4**	43	**81.1**	217	**78.3**	569	**78.1**
Shortness of breath	14	**82.4**	40	**75.5**	205	**74.0**	537	**73.7**
Fever	8	47.1	25	47.2	143	51.6	343	47.1
General deterioration	10	58.8	24	45.3	113	40.8	313	42.9
Malaise	3	17.6	8	15.1	20	7.2	94	12.9
Headache	1	5.9	4	7.5	13	4.7	40	5.5
Muscular pain	1	5.9	2	3.8	18	6.5	42	5.8
Sore throat	0	0.0	0	0.0	13	4.7	50	6.9
Ageusia	0	0.0	0	0.0	0	0.0	4	0.5
Anosmia	0	0.0	0	0.0	1	0.4	4	0.5
Dysgeusia	0	0.0	0	0.0	0	0.0	3	0.4

*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 2022 (weeks 1-52) and 2023 (weeks 1-18), the most common complications reported were pneumonia and acute respiratory distress syndrome (ARDS), see table 4 for further information.

Table 4 Number and proportion of discharged SARI cases by complication, for weeks 15-18 2023, weeks 1-18 2023 and weeks 1-52 2022.

Complications*	Weeks 15-18 2023 (n=16)		Weeks 1-18 2023 (n=186)		Weeks 1-52 2022 (n=711)	
	n	%	n	%	n	%
Pneumonia	1	6.3	7	3.8	61	8.6
ARDS	0	0.0	3	1.6	50	7.0
Sepsis	1	6.3	2	1.1	18	2.5
Multiorgan failure	0	0.0	1	0.5	3	0.4
Myocarditis	0	0.0	0	0.0	1	0.1
Encephalitis	0	0.0	0	0.0	1	0.1
Other complications**	4	25.0	41	22.0	197	27.7
No complications	12	75.0	134	72.0	422	59.4
Unknown	0	0.0	1	0.5	3	0.4

*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 15-18 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 15-18 2023, weeks 1-18 2023 and weeks 1-52 2022.

		Weeks 15-18 2023 (n=16)		Weeks 1-18 2023 (n=185)		Weeks 1-52 2022 (n=707)	
		n	%			n	%
Respiratory support	High-flow oxygen therapy*	9	56.3	120	64.9	404	57.1
	Invasive ventilation	0	0.0	3	1.6	28	4.0
	No respiratory support given	7	43.8	62	33.5	275	38.9
		(n=24)		(n=203)		(n=713)	
		n	%			n	%
Admitted to ICU	Yes	1	4.2	9	4.4	37	5.2
	No	23	95.8	194	95.6	676	94.8
	ICU/ventilated**	10	41.7	126	62.1	432	60.6
ICU length of stay (days)	Mean	-		5		19	
	Median	-		4		10	
	Interquartile range	-		3-7		3-30	
	Range	-		2-10		<1-85	

*Non-invasive ventilation

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

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

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[2].

In week 18 2023:

- SARS-CoV-2 PCR testing was carried out on all SARI cases, five (29.4%) of which tested positive for COVID-19, compared to 16.7% (n=2) positivity in week 17 2023 (see Figure 3)
- Influenza PCR testing was carried out on all SARI cases, none of which tested positive for influenza, there was only one positive influenza case since week 7 2023
- RSV PCR testing was carried out on all SARI cases, none of which tested positive for RSV, there was only one positive RSV case since week 9 2023

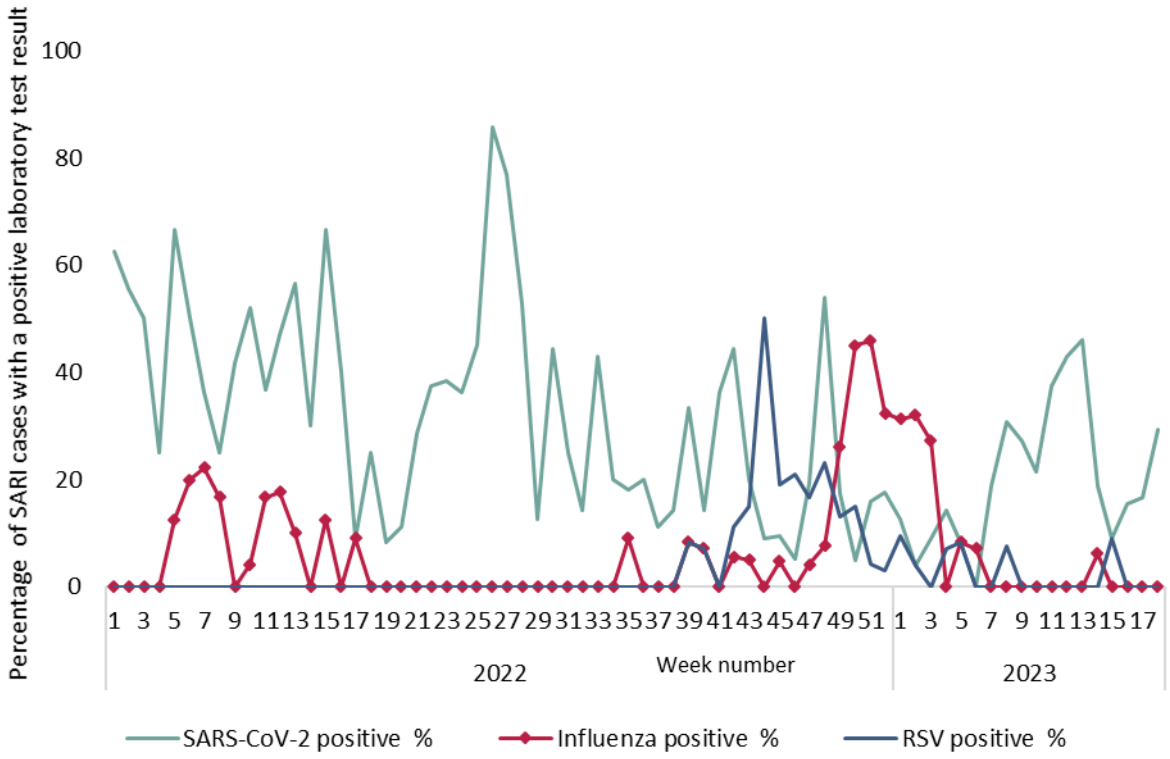


Figure 3 Percentage of SARI cases with a positive laboratory test result for SARS-CoV-2, influenza and RSV by week, from week 1 2022 to week 18 2023.

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.

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

Table 6 Number and proportion of SARI cases tested for SARS-CoV-2, for current week, weeks 15-18 2023, weeks 1-18 2023 and weeks 1-52 2022.

Laboratory test	Laboratory test result	Week 18 2023 (n=17)		Weeks 15-18 2023 (n=53)		Weeks 1-18 2023 (n=274)		Weeks 1-52 2022 (n=717)	
		n	%	n	%	n	%	n	%
Tested for SARS-CoV-2	Positive	5	**29.4**	10	**18.9**	53	**19.3**	230	**32.1**
	Negative	12	70.6	41	77.4	215	78.5	455	63.5
	Indeterminate*	0	0.0	2	3.8	6	2.2	32	4.5

* 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. 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 PCR test results during the 2022/2023 influenza season (weeks 40 2022 - 18 2023).

Table 7 Number of positive RSV and influenza SARI cases and influenza type/subtype for current week, preceding week and 2022/2023 season.

Positive laboratory result	Week 18 2023 (n=17)		Week 17 2023 (n=12)		2022/2023 season (n=525)	
	n	%	n	%	n	%
RSV	0	**0.0**	0	**0.0**	42	**8.0**
Influenza A (H1)pdm09	0	0.0	0	0.0	30	5.7
Influenza A (H3)	0	0.0	0	0.0	31	5.9
Influenza A (not subtyped)	0	0.0	0	0.0	4	0.8
Influenza B (Victoria)/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	**0.0**	0	**0.0**	67	**12.8**

Genomic analysis:

SARS-CoV-2:

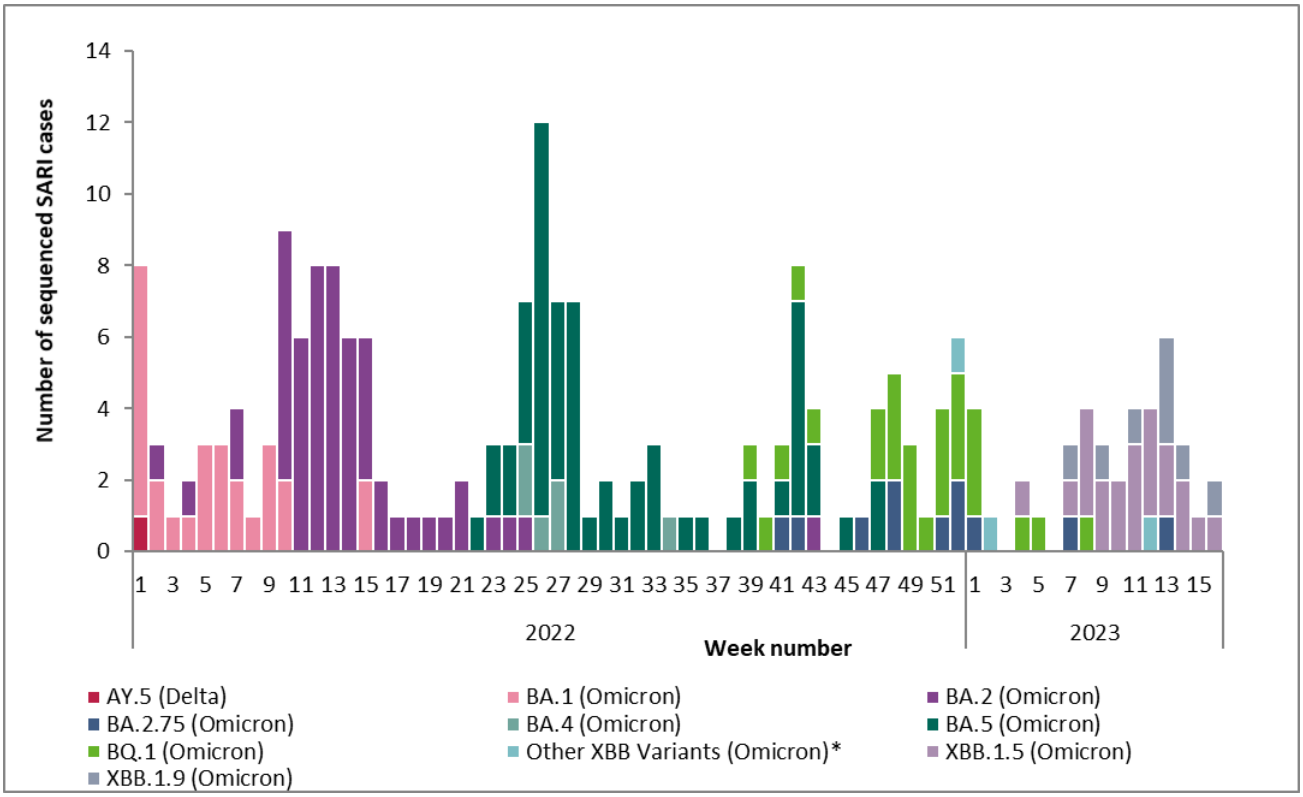
SARI samples that are positive for SARS-CoV-2 and that have a cycle threshold (Ct) value <25 are referred for whole genome sequencing (WGS). All WGS testing was performed in the National Virus Reference Laboratory (NVRL) up to week 44 2022. The molecular lab in SVUH has been identified as a spoke WGS 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. Sequencing results have been received for 216 SARI cases admitted between week 1 2022 and week 16 2023, see figure 4 below.

Omicron has been the dominant variant identified in SARI cases admitted since week 1 2022, 99.5% (n=215) of samples sequenced were identified as Omicron, the last Delta variant was identified in week 1 2022. Omicron BA.2 and BA.5 sublineages with different mutation profiles emerged in 2022, with new sublineages being identified regularly. Moreover, the variant XBB.1.5 was first identified in a SARI case in week 4 2023, and it is currently the dominant circulating variant in Ireland, with 21 XBB.1.5 SARI cases identified between weeks 4 and 16 2023. The sub-lineages of XBB variant (VOI);

XBB.1.9.1 and XBB.1.9.2, have been identified in eight SARI cases between weeks 7-16 2023. In addition, the variant under monitoring (VUM) CH.1.1 has been identified in two SARI cases in weeks 1 and 13 2023.

Figure 4 shows sequenced SARI cases by week of hospitalisation and Pango Lineage for cases admitted during 2022 (weeks 1-52) and 2023 (weeks 1-16), 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 16 2023 (n=216).



* XBB recombinants other than XBB.1.5 and XBB.1.9

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[3].

Amongst the SARI cases, admitted since the rollout of the second booster (22/04/2022), who tested positive by PCR for SARS-CoV-2 with known COVID-19 vaccination status, 54.7% (n=82/150) had not received a second booster vaccine dose >7 days prior to the epidemiological date of 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[4].

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

[3] COVID-19 vaccination data were last received on 27/04/2023 and retrospective vaccination data will be updated in future reports.
[4] Refer to www.hse.ie for further information on the COVID-19 vaccination rollout

Table 8 Number and proportion of SARI cases by COVID-19 vaccination status, SARS-CoV-2 PCR result and date of hospitalisation.

SARS CoV-2 PCR positive	Admitted since rollout of second booster* (n=601)		Admitted 2023 (n=209)		Admitted 2022 (n=579)	
Vaccine status	**n**	**%**	**n**	**%**	**n**	**%**
Not vaccinated	11	7.3	0	0.0	21	10.6
Primary series - Partial	0	0.0	0	0.0	1	0.5
Primary series - Complete	14	9.3	7	15.9	29	14.6
First booster	57	38.0	7	15.9	109	55.1
Second booster	68	45.3	30	68.2	38	19.2
Total	**150**	**100.0**	**44**	**100.0**	**198**	**100.0**
SARS CoV-2 PCR negative						
Vaccine status	**n**	**%**	**n**	**%**	**n**	**%**
Not vaccinated	10	2.2	5	3.0	9	2.4
Primary series - Partial	2	0.4	1	0.6	1	0.3
Primary series - Complete	34	7.5	12	7.3	37	9.7
First booster	166	36.8	33	20.0	209	54.9
Second booster	239	53.0	114	69.1	125	32.8
Total	**451**	**100.0**	**165**	**100.0**	**381**	**100.0**

*Rollout of second booster began on 22/04/2022

Table 9 displays the clinical course and outcome of those admitted since the rollout of the second booster (22/04/2022) by SARS CoV-2 PCR result and vaccination status.
Data collection for clinical course and outcome is on-going for those still admitted.

Table 9 Number and proportion of SARI cases, admitted since the rollout of the second booster, by COVID-19 vaccination status, and SARS-CoV-2 PCR result (n=601).

SARS CoV-2 PCR positive			Required respiratory support		ICU admission		Died in hospital	
Vaccination status	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Not vaccinated	11	7.3	3	4.4	0	0.0	0	0.0
Primary series - Partial	0	0.0	0	0.0	0	0.0	0	0.0
Primary series - Complete	14	9.3	6	8.8	0	0.0	2	15.4
First booster	57	38.0	25	36.8	2	40.0	4	30.8
Second booster	68	45.3	34	50.0	3	60.0	7	53.8
Total	**150**	**100.0**	**68**	**100.0**	**5**	**100.0**	**13**	**100.0**
SARS CoV-2 PCR negative								
Vaccination status	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Not vaccinated	10	2.2	9	3.3	2	11.1	1	2.9
Primary series - Partial	2	0.4	1	0.4	0	0.0	0	0.0
Primary series - Complete	34	7.5	22	8.1	1	5.6	1	2.9
First booster	166	36.8	100	37.0	10	55.6	10	29.4
Second booster	239	53.0	138	51.1	5	27.8	22	64.7
Total	**451**	**100.0**	**270**	**100.0**	**18**	**100.0**	**34**	**100.0**

Outcome

Of the 277 SARI cases admitted to St Vincent's University Hospital in 2023 (weeks 1-18), 67.1% (n=186) have been discharged, of those admitted during 2022 (weeks 1-52), 97.5% (n=711) 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 1-18) and discharged with known outcome, eleven (5.9%) deaths have been reported, five (45.5%) were male and six were (54.5%) female. The median age was 88 years (interquartile range 81-89 years).

Of the 80 (11.3%) cases admitted during 2022, who died in hospital, 52 (65.0%) were male and 28 (35.0%) were female. The median age was 80 years (interquartile range 74 – 86 years).

Table 10 Number and proportion of discharged SARI cases by outcome and hospital length of stay, for weeks 15-18 2023, weeks 1-18 2023 and weeks 1-52 2022.

		Weeks 15-18 2023 (n=16)		Weeks 1-18 2023 (n=186)		Weeks 1-52 2022 (n=711)	
		n	%	n	%	n	%
Outcome	Discharged alive	12	75.0	170	91.4	620	87.2
	Transferred to another hospital	1	6.3	5	2.7	11	1.5
	Died in hospital	3	18.8	11	5.9	80	11.3
Hospital length of stay (days)	Mean	4		8		14	
	Median	3		5		7	
	Interquartile range	1 - 4		2 - 10		3 - 14	
	Range	1 - 18		1 - 44		1 - 210	

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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.

- **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 16 2023 (n=216).

Virus variant	Number of cases	% sequenced cases
Total sequenced	**216**	
Delta and Delta sublineages:	**1**	**0.5**
AY.5	1	0.5
Omicron sublineages:	**215**	**99.5**
BA.1 lineages		
BA.1	16	7.4
BA.1.1	11	5.1
BA.2 lineages		
BA.2	41	19.0
BA.2.9	6	2.8
BA.2.3	5	2.3
BA.2.1	1	0.5
BA.2.18	1	0.5
BA.2.40.1	1	0.5
BA.2.75 lineages		
CH.1.1	4	1.9
CH.1.1.1	1	0.5
CV.1	1	0.5
BN.1.2	1	0.5
BN.1.5	1	0.5
BN.1.2.1	1	0.5
BN.1.9	1	0.5
BM.2	1	0.5
BA.4 lineages		
BA.4	3	1.4
BA.4.1	1	0.5
BA.4.4	1	0.5
BA.4.6	1	0.5
BA.5 lineages		
BA.5.1	19	8.8
BA.5.2	11	5.1
BA.5.2.1	8	3.7
BA.5.2.20	1	0.5
BA.5	5	2.3
BE.1	4	1.9
BF.7	3	1.4
BA.5.2.6	2	0.9
BA.5.3	1	0.5
BE.1.1	1	0.5
BF.11.1	1	0.5
BF.1	1	0.5
BE.1.1.2	1	0.5
BQ.1 lineages		
BQ.1.8	2	0.9
BQ.1	4	1.9
BQ.1.1.18	2	0.9
BQ.1.3	2	0.9

Virus variant	Number of cases	% sequenced cases
BQ.1.1.5	1	0.5
BQ.1.10	1	0.5
BQ.1.1.15	1	0.5
BQ.1.16	1	0.5
BQ.1.1	4	1.9
BQ.1.12	2	0.9
BQ.1.1.22	1	0.5
BQ.1.2	1	0.5
BQ.1.1.29	1	0.5
BQ.1.1.4	1	0.5
BQ.1.5	1	0.5
DR.1	1	0.5
XBB lineages		
XBB.1	2	0.9
XBB.1.9.1	5	2.3
XBB.1.9.2	2	0.9
EG.1*	1	0.5
XBB.2	1	0.5
XBB.1.5 lineages		
XBB.1.5	16	7.4
XBB.1.5.7	1	0.5
XBB.1.5.16	2	0.9
XBB.1.5.18	1	0.5
XBB.1.5.24	1	0.5

* Alias of XBB.1.9.2.1

Table A2

Number of SARI cases sequenced and reported by Pango lineage and week of admission, SARI cases admitted in weeks 12-16 2023.

Virus variant	Pango lineage	2023 W16	2023 W15	2023 W14	2023 W13	2023 W12	Total
BA.2.75	CH.1.1				1		**1**
Omicron, XBB	XBB.1		1				**1**
	XBB.1.9.1				2		**2**
	XBB.1.9.2	1		1			**2**
	EG.1*				1		**1**
Omicron, XBB.1.5	XBB.1.5	1		1		2	**4**
	XBB.1.5.7					1	**1**
	XBB.1.5.16			1	1		**2**
	XBB.1.5.18		1				**1**
	XBB.1.5.24				1		**1**
Total		**2**	**2**	**3**	**6**	**3**	**16**

* Alias of XBB.1.9.2.1