Weekly Report on Severe Acute Respiratory Infections (SARI), Ireland

Week 20 2025 (week ending 18/05/2025)
Report prepared on 21/05/2025

About this report

Three sentinel hospital sites are now participating in the severe acute respiratory infections (SARI) surveillance programme in Ireland. Along with St Vincent's University Hospital (SVUH) (commenced on 5th July 2021), both St James's Hospital (SJH) and University Hospital Limerick (UHL) (paediatric cases only) commenced SARI surveillance on 30th September 2024 (Week 40 2024).

Data were extracted from the HPSC SARI surveillance database on **21/05/2025**. Data are provisional and subject to ongoing review, validation and update. As a result, figures presented in this report may differ from previously published figures.

All three SARI sentinel hospital sites reported data for the current week (W20 2025). Variations in the number of sentinel sites reporting each week, should be considered when comparing incidence rates and case numbers from previous weeks.

Key messages

Based on data from the three sentinel hospital sites, 51 SARI cases were reported in week 20 2025, an increase for the second consecutive week. SARS-CoV-2 positivity increased from 2.4% (n=1) in week 19 to 7.8% (n=4) in week 20, while influenza positivity decreased from 2.3% (n=1) to 0% over the same period. There were no RSV positive cases reported in weeks 19 and 20 2025.

Summary

- **SARI case numbers and incidence:** 51 SARI cases were admitted to three SARI sentinel sites in week 20 2025, compared to 44 cases from three sites in week 19 2025 (15.9% increase).
    - **SARI cases <15 years**: 20 cases in week 20 2025 compared to 18 in week 19 2025 (11.1% increase)
    - **SARI cases ≥15 years**: 31 cases in week 20 2025 compared to 26 in week 19 2025 (19.2% increase)

- The incidence rates per 100,000 hospital catchment population were as follows:
    - **All SARI cases**: 8.9 in week 20 2025, compared to 7.6 in week 19 2025 (15.9% increase).
    - **SARI cases <15 years**: 27.7 in week 20 2025, compared to 24.9 in week 19 2025 (11.1% increase).
    - **SARI cases ≥15 years**: 6.2 in week 20 2025, compared to 5.2 in week 19 2025 (19.2% increase).

- The incidence rates per 1,000 hospital admissions via emergency departments were as follows:
    - **All SARI cases**: 68.5 in week 20 2025, compared to 61.7 in week 19 2025 (10.9% increase).
    - **SARI cases <15 years**: 298.5 in week 20 2025, compared to 257.1 in week 19 2025 (16.1% increase).
    - **SARI cases ≥15 years**: 45.7 in week 20 2025, compared to 40.5 in week 19 2025 (12.9% increase).

- **Age profile (W20 2025):** 29.4% (n=15) cases were aged ≥65 years and 27.5% (n=14) cases aged <5 years (Table 1):
    - **All SARI cases**: median age 44 years; IQR: 4-71 years.
    - **SARI cases <15 years**: median age 3 years, IQR: 1-5 years.
    - **SARI cases ≥15 years**: median age 64 years, IQR: 48-80 years.

- **Virus positivity rate among SARI cases (W20 2025):**
    - Among those tested (100%, n=51), 7.8% (n=4) tested positive for SARS-CoV-2, compared to 2.4% (n=1) in week 19 2025
    - Among those tested (96.1%, n=49)
        - no cases tested positive for influenza, compared to 2.3% (n=1) in week 19 2025
        - no cases tested positive for RSV in weeks 19 & 20 2025
    - For the current 2024/2025 season, influenza A(H1N1)pdm09 is the predominant virus circulating amongst influenza positive SARI cases at 64.7% (n=290)
    - For the current 2024/2025 season, RSV A and B are circulating in equal proportions
    - See Figures 5, 6a & 6b, 7a & 7b, 8a and 8b and Table 2 for further details

- **Genomic surveillance (W40 2024-W20 2025):** Among SARI SARS-CoV-2 positive specimens sequenced in the current 2024/2025 season (n=39), XEC variant was the most frequent variant identified, accounting for 41.0% (n=16), followed by KP.3 variant, accounting for 25.6% (n=10) of specimens sequenced. Variant LP.8.1 was identified in 12.8% (n=5) and XDV sublineage NB.1.8.1 was identified in 2.6% (n=1) of specimens sequenced (Figure 9 and Table 3). Among SARI SARS-CoV-2 positive specimens sequenced over the last 10 weeks (n=5), LP.8.1 was the most common variant identified, accounting for 80% (n=4) of specimens sequenced.

- **Underlying medical conditions (W20 2025):** 62.7% (n=32) of SARI cases reported at least one underlying medical condition; among those <15 years 20.0% (n=4) and among those aged ≥15 years 90.3% (n=28) of cases reported at least one underlying medical condition (Table 5).

- **Severe outcomes among SARI cases admitted during the current season (W40 2024-W20 2025)**
    - 3.5% (n=70) of SARI cases were admitted to ICU. The median length of stay was 6 days, IQR 3-12 days (Table 8). Among SARI cases admitted to ICU, 1.4% (n=1) were positive for SARS-CoV-2, 22.9% (n=16) for influenza and 7.1% (n=5) for RSV.
    - 2.7% (n=59) of SARI cases died in hospital. The median age was 79 years, IQR 72-84.5 years, 83.1% (n=49) were ≥65 years of age (Table 8)

- **Vaccination status of SARI cases admitted during the current season (W40 2024-W20 2025)**
    - Amongst SARI cases positive for SARS CoV-2, aged ≥6 months and with known vaccination status, (n=41), 22% (n=9) had received a COVID-19 vaccine dose in the six months prior to the reported episode of illness (Table 9).
    - Amongst SARI cases positive for influenza, aged ≥6 months with known vaccination status, (n=430), 34.4% (n=148) had received the 2024/2025 influenza season vaccine prior to the reported episode of illness (Table 10).

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SARI cases and incidence rates

The number of SARI cases admitted per sentinel hospital site by week of admission is displayed in Figure 1, along with the combined SARI incidence rate per 1,000 admissions via emergency department for all hospital sites.

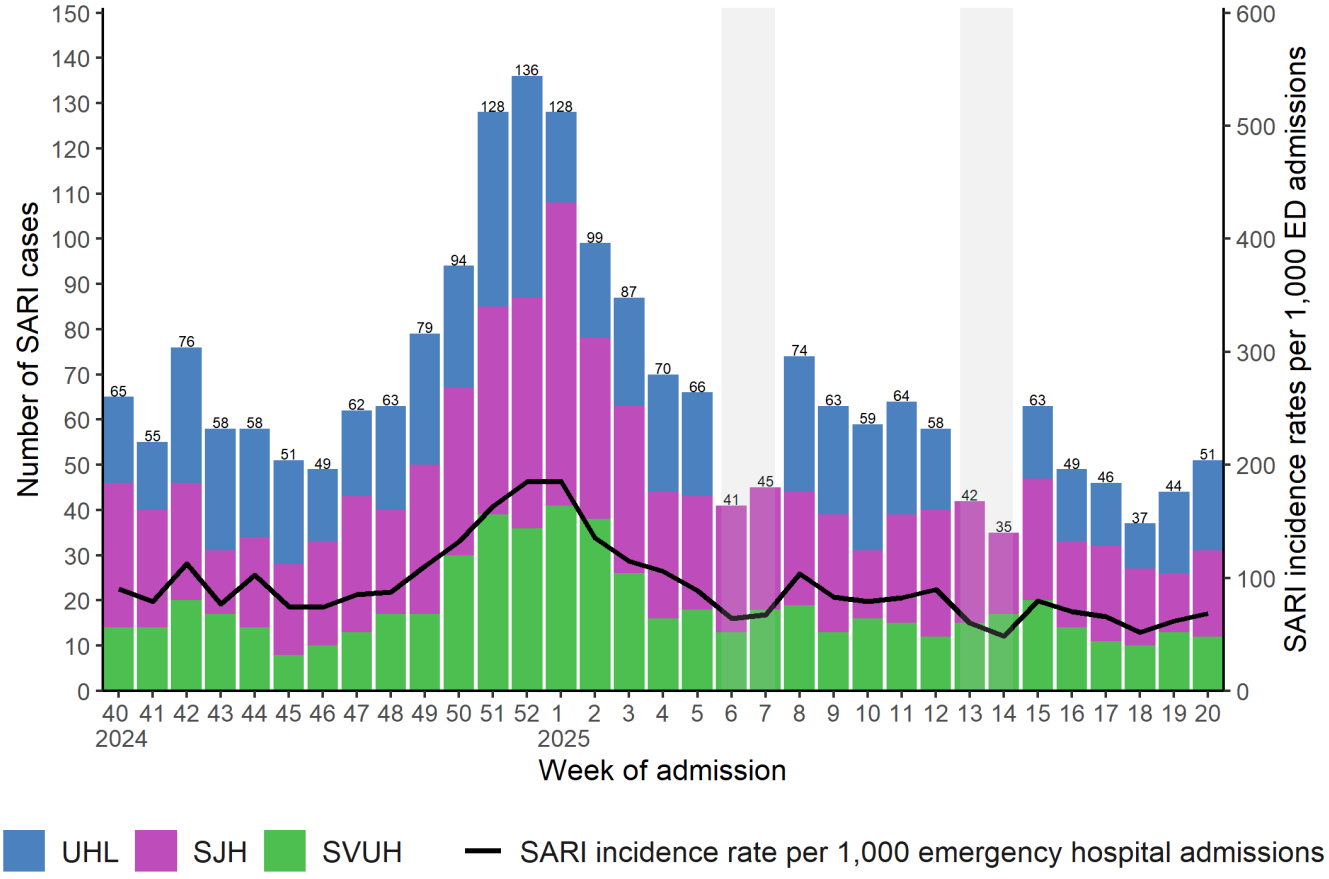

Figure 1: Number and incidence of SARI cases per 1,000 hospital admissions via emergency departments, by sentinel hospital site and week of admission, W40 2024-W20 2025 (n=2195)

Note: UHL data relates to paediatric cases <15 years of age, while SJH and SVUH data relates to adult cases, 15 years of age and older.

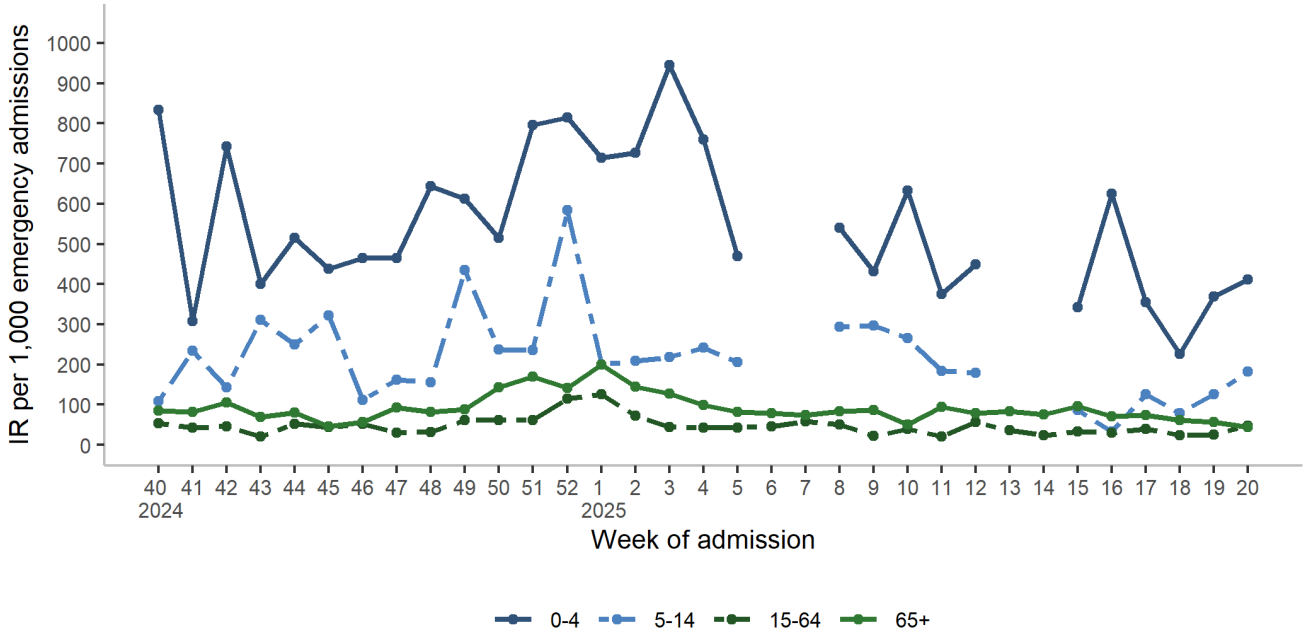

Figure 2: SARI age-specific incidence rates per 1,000 hospital admissions via emergency departments by week of admission, W40 2024-W20 2025 (n=2195)

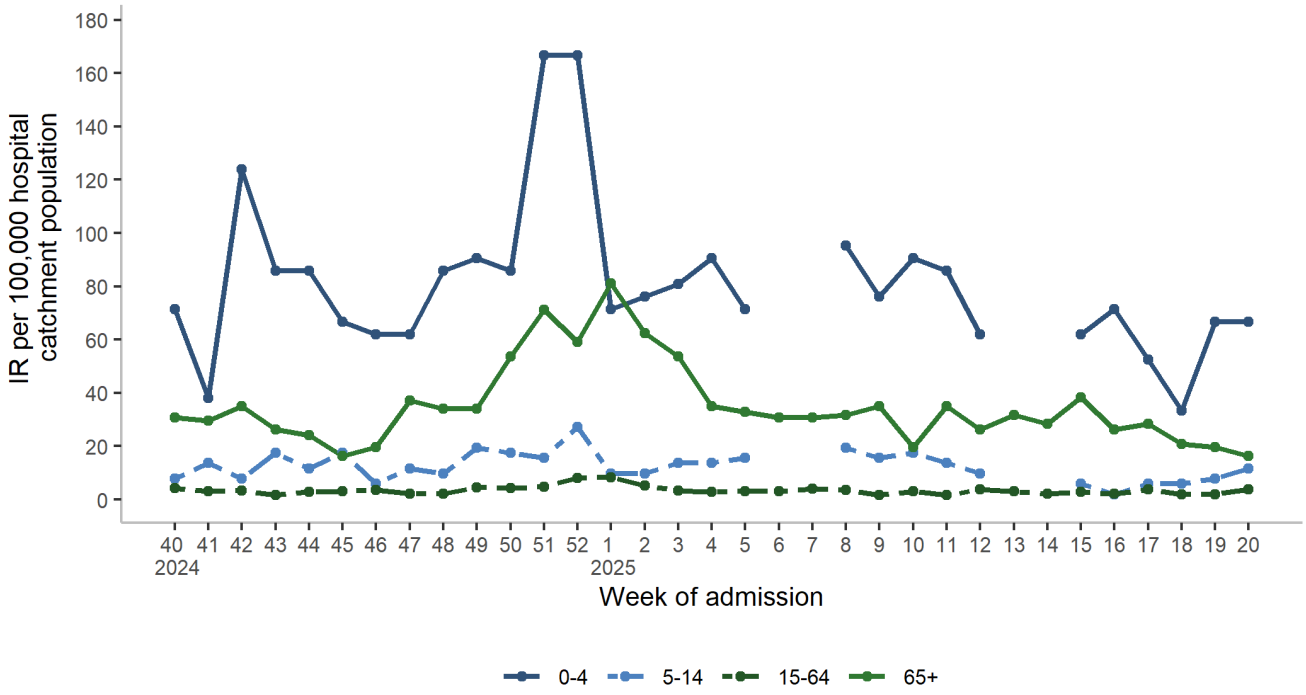

Figure 3: SARI age-specific incidence rates per 100,000 hospital catchment population by week of hospital admission, W40 2024-W20 2025 (n=2195)

Demographics

Table 1: Number and proportion of SARI cases by sex and age, for the current week (W20 2025), last four weeks (W17 2025-W20 2025) and current 2024/2025 season (W40 2024-W20 2025)

Characteristic	Category	Current week W20 2025 N = 51	Last four weeks W17 2025-W20 2025 N = 178	Current season W40 2024-W20 2025 N = 2,195
Gender	Female	23 (45.1)	94 (52.8)	1,081 (49.2)
	Male	28 (54.9)	84 (47.2)	1,114 (50.8)
Age <15 years (in years)	Median (IQR)	3 (1 - 5)	2 (1 - 5)	2 (1 - 5)
	Range	0 - 10	0 - 14	0 - 14
Age ≥15 years (in years)	Median (IQR)	64 (48 - 80)	75 (58 - 81)	73 (61 - 82)
	Range	20 - 93	19 - 98	16 - 102
Age groups (years)	<1	5 (9.8)	14 (7.9)	169 (7.7)
	1-4	9 (17.6)	32 (18.0)	323 (14.7)
	5-14	6 (11.8)	16 (9.0)	185 (8.4)
	15-34	5 (9.8)	8 (4.5)	74 (3.4)
	35-64	11 (21.6)	30 (16.9)	389 (17.7)
	65-79	7 (13.7)	44 (24.7)	590 (26.9)
	80+	8 (15.7)	34 (19.1)	465 (21.2)

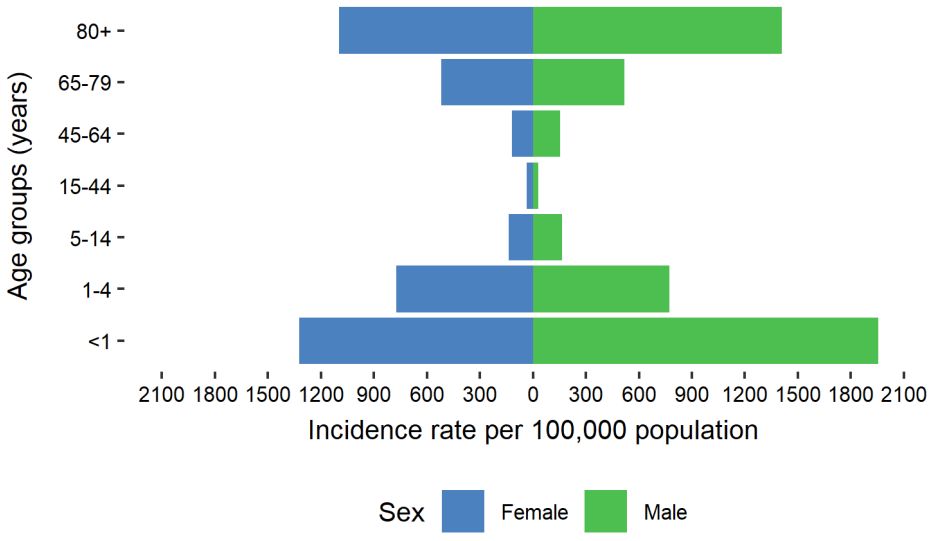

Figure 4: Age- and sex-specific incidence rates per 100,000 hospital catchment population for the current 2024/2025 season (W40 2024-W20 2025)

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

PCR testing:

Note: SARI cases are tested, on-site in each hospital, by PCR for SARS-CoV-2, influenza and RSV on admission.

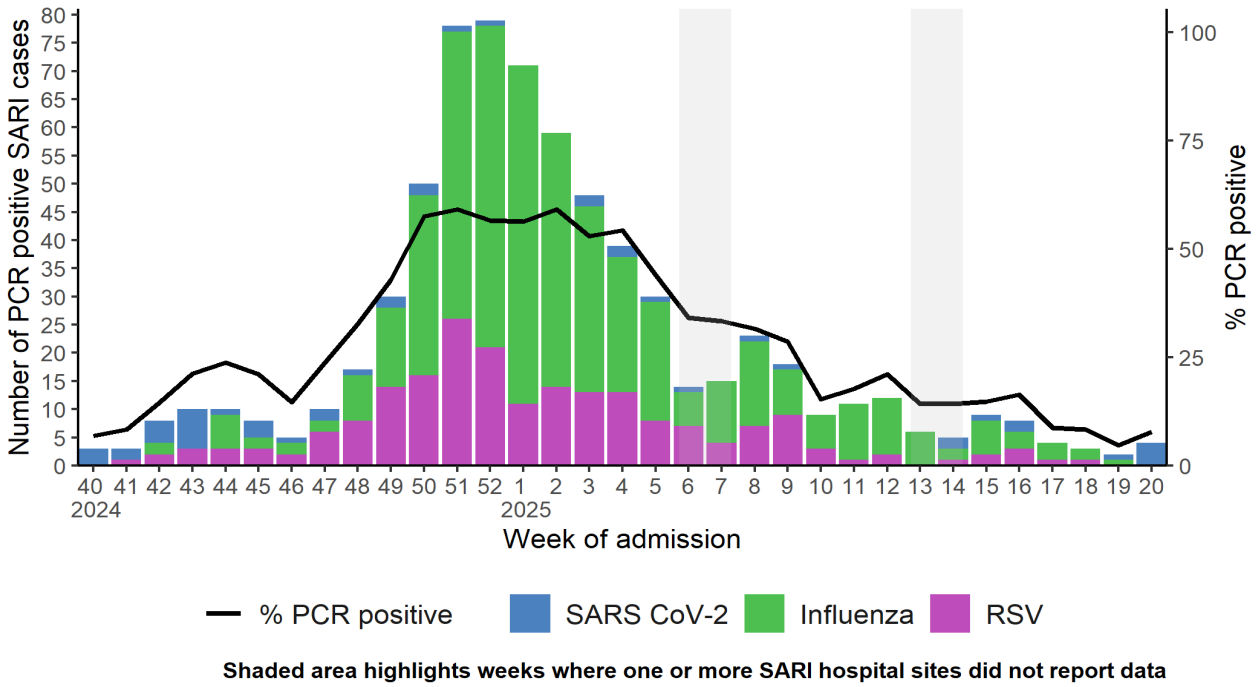

Figure 5: Number of SARI cases PCR positive for SARS-CoV-2, influenza and RSV by week and overall positivity rate for the three pathogens, W40 2024-W20 2025

Table 2: Number and proportion of SARI cases PCR positive for SARS-CoV-2, influenza, and RSV for the current week, last four weeks (W17 2025-W20 2025) and season total (W40 2024-W20 2025)

	Current week W20 2025		Last four weeks W17 2025-W20 2025		Season total W40 2024-W20 2025	
	<15y N = 20[1]	≥15y N = 31[1]	<15y N = 62[1]	≥15y N = 113[1]	<15y N = 667[1]	≥15y N = 1,352[1]
SARS-CoV-2	2 (10.0)	2 (6.5)	2 (3.2)	3 (2.7)	8 (1.2)	40 (3.0)
Influenza	0 (0.0)	0 (0.0)	3 (4.8)	3 (2.7)	140 (21.0)	308 (22.8)
RSV	0 (0.0)	0 (0.0)	0 (0.0)	2 (1.8)	103 (15.4)	102 (7.5)

[1]n (%)

Note: in the current season (W40 2024-W20 2025) 10 SARI cases were coinfected with more than one of the three viruses under surveillance.

A further breakdown of SARI positivity by hospital site is available in the Appendix.

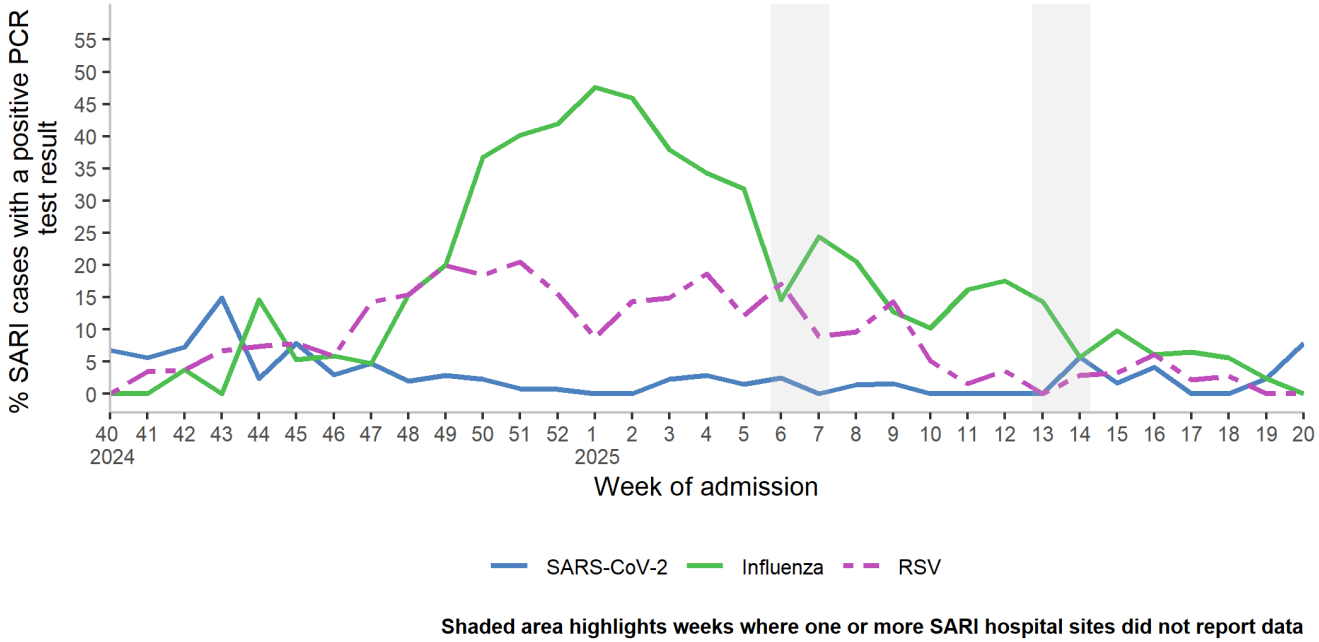

Figure 6a: Percentage of SARI cases PCR positive for SARS-CoV-2, influenza and RSV by week, W40 2024-W20 2025

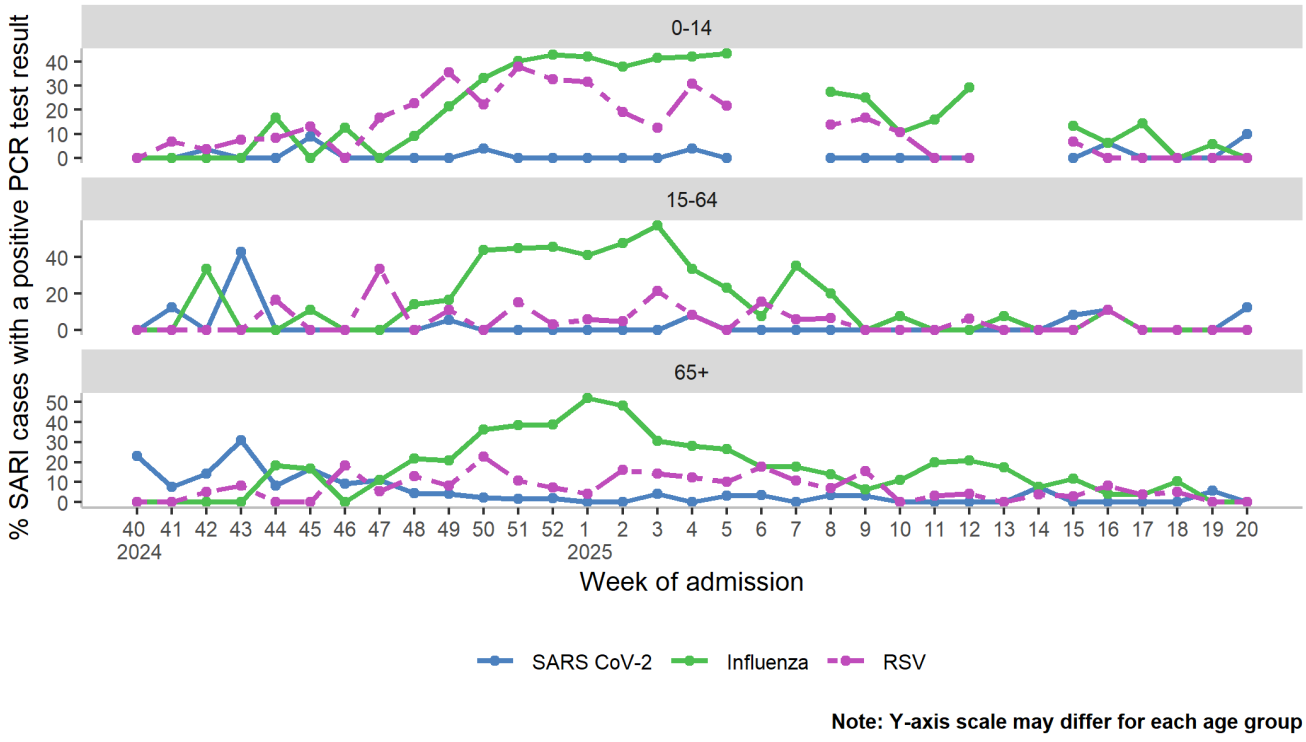

Figure 6b: Weekly positivity rate of SARI cases PCR positive for SARS-CoV-2, influenza and RSV, by age group, W40 2024-W20 2025

Influenza typing:

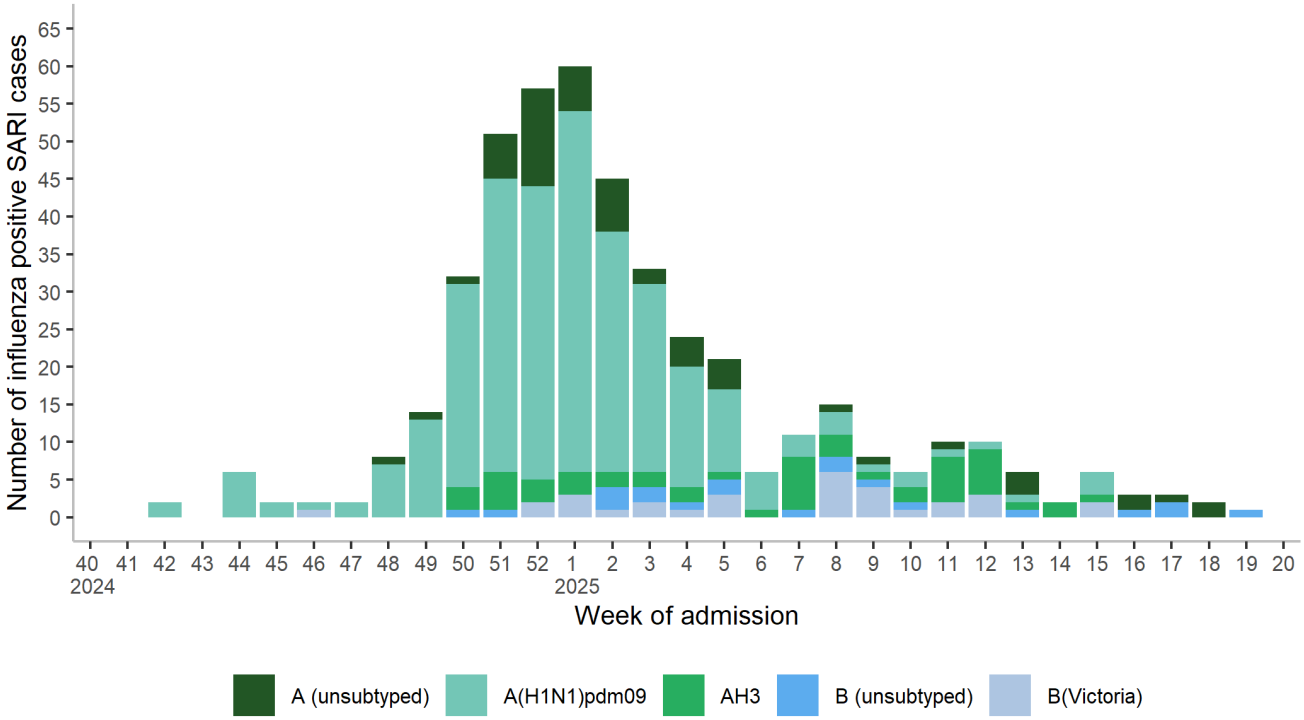

Figure 7a: Number of influenza positive SARI cases by influenza type/subtype, W40 2024-W20 2025 (n=448)

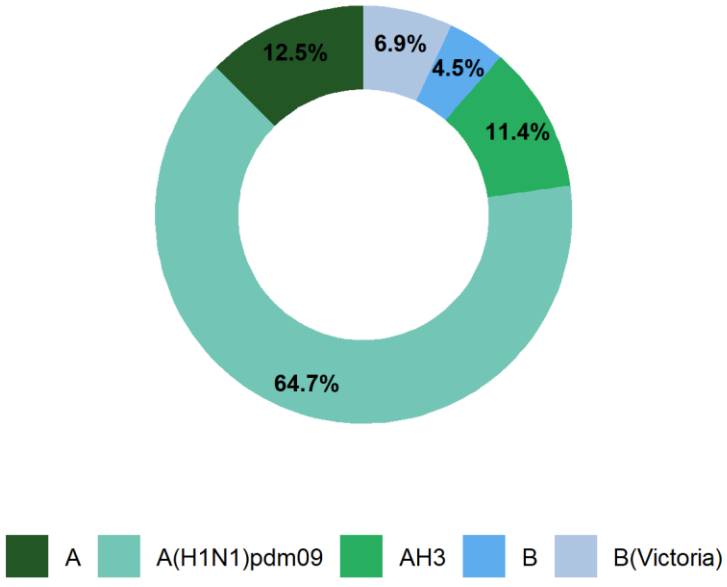

Figure 7b: Proportion of influenza positive SARI cases by type/subtype, W40 2024-W20 2025 (n=448)

RSV Typing

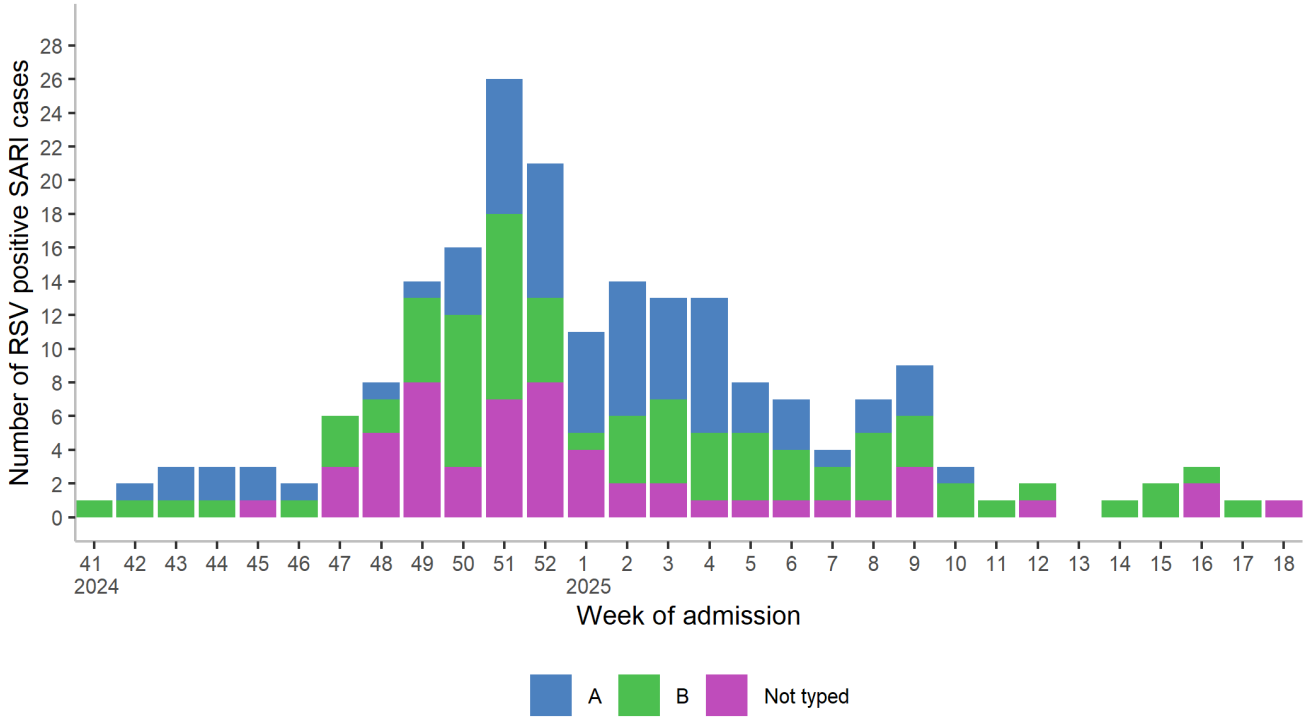

Figure 8a: Number of RSV positive SARI cases by RSV type, W40 2024-W20 2025 (n=205)

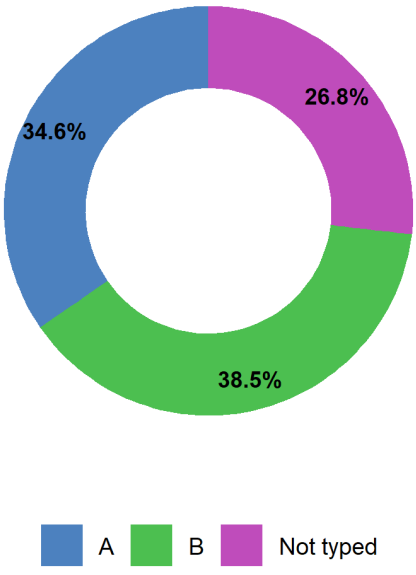

Figure 8b: Proportion of RSV positive SARI cases by type, W40 2024-W20 2025 (n=205)

Genomic analysis: SARS-CoV-2

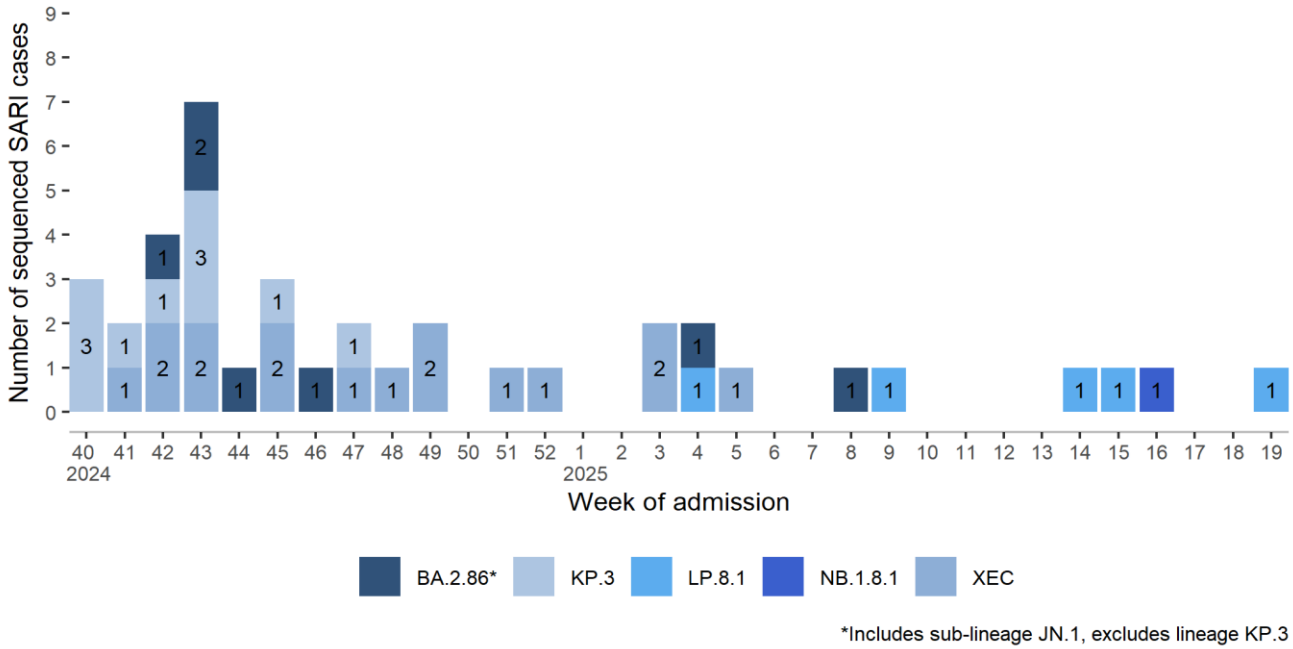

Figure 9: Number of SARS CoV-2 positive SARI cases sequenced, by week of hospital admission, W40 2024-W20 2025 (n=39)

Table 3: Number and proportion of SARS CoV-2 positive SARI cases sequenced and reported by Pango lineage and variant, for the 2024/2025 season (W40 2024-W20 2025)

Virus Variant	Pango Lineage	Number of cases	Sequenced cases %
NB.1.8.1 lineages	NB.1.8.1	1	2.6
LP.8.1 lineages	LP.8.1.1	4	10.3
	LP.8.1.6	1	2.6
XEC lineages	XEC	12	30.8
	XEC.2	1	2.6
	XEC.6	3	7.7
KP.3 lineages	KP.3.1.1	8	20.5
	MC.13	2	5.1
BA.2.86 lineages	KP.1.1.3	3	7.7
	KP.2.11	1	2.6
	KP.2.15.1	1	2.6
	LF.7	1	2.6
	LF.7.1.3	1	2.6
Total		**39**	

Note: There is typically a lag time of at least 3 weeks between a case being admitted, positive samples selected for sequencing and sequencing being completed.

For further information on circulating variants in Ireland, see Summary of COVID-19 virus variants in Ireland - Health Protection Surveillance Centre (hpsc.ie).

Symptoms

Table 4: Number and proportion of SARI cases' clinical symptoms, either at or prior to hospital admission, for the last four weeks (W17 2025-W20 2025), and current season (W40 2024-W20 2025)

	Last four weeks		Season total	
	W17 2025-W20 2025		W40 2024-W20 2025	
Condition	<15y N = 62	≥15y N = 116	<15y N = 677	≥15y N = 1,518
Cough	42 (67.7)	101 (87.1)	498 (73.6)	1,382 (91.0)
Shortness of breath	14 (22.6)	103 (88.8)	262 (38.7)	1,310 (86.3)
Fever	49 (79.0)	62 (53.4)	542 (80.1)	853 (56.2)
General deterioration	0 (0.0)	45 (38.8)	0 (0.0)	630 (41.5)
Malaise	22 (35.5)	21 (18.1)	209 (30.9)	230 (15.2)
Nausea/Vomiting	22 (35.5)	12 (10.3)	232 (34.3)	200 (13.2)
Sore throat	25 (40.3)	7 (6.0)	262 (38.7)	115 (7.6)
Muscular pain	1 (1.6)	13 (11.2)	18 (2.7)	245 (16.1)
Diarrhoea	6 (9.7)	7 (6.0)	73 (10.8)	100 (6.6)
Acute confusion	0 (0.0)	9 (7.8)	0 (0.0)	153 (10.1)
Headache	6 (9.7)	8 (6.9)	47 (6.9)	105 (6.9)
Sepsis	0 (0.0)	0 (0.0)	4 (0.6)	31 (2.0)
Ageusia/Dysgeusia/Anosmia	0 (0.0)	0 (0.0)	9 (1.3)	4 (0.3)
Apnoea	1 (1.6)	0 (0.0)	3 (0.4)	0 (0.0)

Underlying medical conditions and risk factors

SARI cases may be reported with one or more underlying medical conditions, weekly proportions can be based on small numbers and vary from week to week, caution is therefore advised when interpreting changes in weekly proportions (Table 5).

Table 5: Number and proportion of SARI cases with underlying medical conditions reported on hospital admission (among those who reported having underlying medical conditions), for the last four weeks (W17 2025-W20 2025), and current season (W40 2024-W20 2025)

	Last four weeks		Season total	
	W17 2025-W20 2025		W40 2024-W20 2025	
Condition	**<15y N = 62**	**≥15y N = 116**	**<15y N = 677**	**≥15y N = 1,518**
Lung disease	0 (0.0)	60 (51.7)	14 (2.1)	646 (42.6)
Heart disease	4 (6.5)	53 (45.7)	21 (3.1)	625 (41.2)
Hypertension	0 (0.0)	40 (34.5)	0 (0.0)	553 (36.4)
Cancer	0 (0.0)	31 (26.7)	0 (0.0)	375 (24.7)
Rheumatological disease	0 (0.0)	31 (26.7)	0 (0.0)	357 (23.5)
Asthma	7 (11.3)	22 (19.0)	72 (10.6)	220 (14.5)
Neurological disease	1 (1.6)	17 (14.7)	24 (3.5)	251 (16.5)
Diabetes	0 (0.0)	21 (18.1)	5 (0.7)	248 (16.3)
Immunocompromised	0 (0.0)	14 (12.1)	2 (0.3)	214 (14.1)
Kidney disease	1 (1.6)	12 (10.3)	8 (1.2)	136 (9.0)
Dementia	0 (0.0)	9 (7.8)	0 (0.0)	129 (8.5)
Liver disease	0 (0.0)	9 (7.8)	0 (0.0)	119 (7.8)
Obesity	0 (0.0)	4 (3.4)	0 (0.0)	74 (4.9)
Intellectual disability	1 (1.6)	1 (0.9)	35 (5.2)	28 (1.8)
Down syndrome	0 (0.0)	0 (0.0)	10 (1.5)	3 (0.2)
Cystic fibrosis	0 (0.0)	0 (0.0)	0 (0.0)	5 (0.3)
Asplenia	0 (0.0)	0 (0.0)	0 (0.0)	5 (0.3)
Tuberculosis	0 (0.0)	1 (0.9)	0 (0.0)	5 (0.3)
Long COVID	0 (0.0)	0 (0.0)	0 (0.0)	3 (0.2)

Clinical course and outcome

Complications

Information on the clinical course during hospitalisation is only available after patient discharge, and there may be a delay between discharge and data collection, due to the manual data collection methods required. Furthermore, data collection is ongoing for those not yet discharged from hospital.

SARI cases could be reported with one or more complications; among those for whom discharge information is available the most common complication reported was pneumonia (Table 6).

Table 6: Number and proportion of SARI cases and complications among discharged SARI cases, for the last four weeks (W17 2025-W20 2025), and current season (W40 2024-W20 2025)

	Last four weeks		Season total	
	W17 2025-W20 2025		W40 2024-W20 2025	
Complication	<15y N = 57	≥15y N = 44	<15y N = 671	≥15y N = 1,270
Pneumonia	8 (14.0)	35 (79.5)	111 (16.5)	925 (72.8)
Acute kidney injury	0 (0.0)	2 (4.5)	3 (0.4)	130 (10.2)
Heart failure	0 (0.0)	3 (6.8)	0 (0.0)	132 (10.4)
Bronchiolitis	6 (10.5)	0 (0.0)	128 (19.1)	0 (0.0)
Sepsis	0 (0.0)	0 (0.0)	5 (0.7)	43 (3.4)
ARDS	3 (5.3)	0 (0.0)	25 (3.7)	9 (0.7)
Secondary bacterial infections	0 (0.0)	0 (0.0)	0 (0.0)	30 (2.4)
Multi organ failure	0 (0.0)	0 (0.0)	0 (0.0)	7 (0.6)
Myocarditis	0 (0.0)	0 (0.0)	0 (0.0)	6 (0.5)
Other complications	2 (3.5)	2 (4.5)	24 (3.6)	168 (13.2)
No complications	42 (73.7)	7 (15.9)	412 (61.4)	205 (16.1)

Note: The following complications have been removed from the table, as there are no cases reporting these conditions in the above time-periods: Encephalitis, PIMS*

*Paediatric inflammatory multisystem syndrome

Respiratory support

Among SARI cases who have been discharged, the highest level of respiratory support received during hospitalisation is described in Table 7.

Table 7: Number and proportion of SARI cases by level of respiratory support received, among discharged SARI cases, for the last four weeks (W17 2025-W20 2025), and current season (W40 2024-W20 2025)

Respiratory support	Last four weeks W17 2025-W20 2025		Current season W40 2024-W20 2025	
	<15y N = 57[1]	≥15y N = 44[1]	<15y N = 671[1]	≥15y N = 1,270[1]
No respiratory support given	47 (82%)	23 (55%)	482 (76%)	393 (31%)
Low-flow oxygen therapy	7 (12%)	17 (40%)	87 (14%)	618 (49%)
Non-invasive ventilation	3 (5.3%)	2 (4.8%)	56 (8.9%)	228 (18%)
Invasive ventilation	0 (0%)	0 (0%)	7 (1.1%)	28 (2.2%)

[1]n (%)

Severe outcomes

SARI cases are considered to have severe outcomes if they were admitted to ICU and/or died during their hospital stay.

Table 8: Number and proportion of SARI cases with severe outcomes, for the last four weeks (W17 2025-W20 2025), and current season (W40 2024-W20 2025)

	Last four weeks W17 2025-W20 2025 N = 178	Current season W40 2024-W20 2025 N = 2,195
Hospital length of stay (days)		
Median (IQR)	2 (2 - 4)	4 (2 - 8)
Range	1 - 16	1 - 142
Admitted to ICU, n (%)	3 (2.1%)	70 (3.5%)
ICU length of stay (days)		
Median (IQR)	-	6 (3 - 12)
Range	-	0 - 56
Died in hospital, n (%)	1 (0.6%)	59 (2.7%)

Note: Paediatric cases may be reported as admitted to ICU, if transferred to an ICU in a paediatric hospital. However, these cases are excluded from the calculation of length of stay in ICU.

Vaccination status

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

COVID-19 vaccination status

During the current season (W40 2024-W20 2025) among SARI cases PCR positive for SARS-CoV-2, aged ≥6 months and with known COVID-19 vaccination status (n=41), **22% (n=9)** had received a vaccine dose in the six months prior to the reported episode of illness (Table 9).

Table 9: Characteristics of SARI cases positive for SARS-CoV-2 during the current season (W40 2024-W20 2025) by time since last COVID-19 vaccine dose

		W40 2024-W20 2025	
Characteristic	**Category**	**<180 days N = 9**	**≥180 days N = 32**
Gender	Female	2 (10.0%)	18 (90.0%)
	Male	7 (33.3%)	14 (66.7%)
Age (years)	Median (IQR)	85 (77 - 87)	72 (49 - 82)
	Range	65 - 90	0 - 94
Age groups (years)	0-14	0 (0.0%)	4 (100.0%)
	15-59	0 (0.0%)	7 (100.0%)
	60-69	1 (16.7%)	5 (83.3%)
	70-79	2 (25.0%)	6 (75.0%)
	80+	6 (37.5%)	10 (62.5%)
Underlying medical conditions	Yes	9 (25.7%)	26 (74.3%)
	No	0 (0.0%)	5 (100.0%)
Patient residence	Residential care facility	2 (50.0%)	2 (50.0%)
	Private residence/home	7 (18.9%)	30 (81.1%)

Note: Due to small numbers of cases reported as not vaccinated, this group has been included in the ≥180 days group.

Excluded from analysis:

- SARS-CoV-2 positive SARI cases with unknown vaccination status, 4 (8.3%) are excluded.
- SARS-CoV-2 positive SARI cases aged <6 months, 3 (6.2%) are excluded.

Influenza vaccination status

During the current season (W40 2024-W20 2025) among SARI cases PCR positive for influenza, aged ≥6 months and with known influenza vaccination status (n=430), **34.4% (n=148)** had received the 2024/2025 influenza season vaccine prior to the reported episode of illness (Table 10).

Table 10: Characteristics of SARI cases positive for influenza during the current season (W40 2024-W20 2025) by vaccination status for the current season's influenza vaccine

		W40 2024-W20 2025	
Characteristic	**Category**	**Vaccinated N = 148**	**Not vaccinated N = 282**
Gender	Female	73 (34.9%)	136 (65.1%)
	Male	75 (33.9%)	146 (66.1%)
Age (years)	Median (IQR)	77 (71 - 85)	35 (5 - 68)
	Range	3 - 97	0 - 95
Age groups (years)	0-14	2 (1.6%)	125 (98.4%)
	15-59	9 (14.3%)	54 (85.7%)
	60-69	24 (40.0%)	36 (60.0%)
	70-79	50 (61.7%)	31 (38.3%)
	80+	63 (63.6%)	36 (36.4%)
Underlying medical conditions	Yes	146 (44.8%)	180 (55.2%)
	No	2 (2.0%)	100 (98.0%)
Patient residence	Residential care facility	24 (68.6%)	11 (31.4%)
	Private residence/home	124 (31.7%)	267 (68.3%)

Excluded from analysis:
- Influenza positive SARI cases with unknown vaccination status, 5 (1.1%) are excluded
- Influenza positive SARI cases aged <6 months, 13 (2.9%) are excluded

Links to other national respiratory virus reports

Respiratory viruses

- Integrated Respiratory Virus Bulletin
- Respiratory Virus Notification Hub

COVID-19

- Summary of COVID-19 virus variants in Ireland.
- National Wastewater Surveillance Programme

Appendix

Table A1: Number of SARI cases, number tested and positivity by hospital site for the current week (W20 2025), previous week (W19 2025) and season total (W40 2024-W20 2025)

	Cases	SARS CoV-2 tested	SARS CoV-2 positive	Influenza & RSV tested	Influenza positive	RSV positive
Site	n	n	n (%)	n	n (%)	n (%)
W20 2025	**51**	**51**	**4 (7.8)**	**49**	**0 (0)**	**0 (0)**
SVUH	12	12	1 (8.3)	10	0 (0)	0 (0)
SJH	19	19	1 (5.3)	19	0 (0)	0 (0)
UHL	20	20	2 (10)	20	0 (0)	0 (0)
W19 2025	**44**	**42**	**1 (2.4)**	**43**	**1 (2.3)**	**0 (0)**
SVUH	13	12	1 (8.3)	12	0 (0)	0 (0)
SJH	13	12	0 (0)	13	0 (0)	0 (0)
UHL	18	18	0 (0)	18	1 (5.6)	0 (0)
W40 2024-W20 2025	**2195**	**2019**	**48 (2.4)**	**2002**	**448 (22.4)**	**205 (10.2)**
SVUH	606	598	28 (4.7)	596	157 (26.3)	59 (9.9)
SJH	912	754	12 (1.6)	739	151 (20.4)	43 (5.8)
UHL	677	667	8 (1.2)	667	140 (21)	103 (15.4)

Technical Notes

1. SARI Surveillance objectives

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

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

2. Sentinel hospital SARI surveillance sites

SARI surveillance was implemented in one tertiary care adult hospital, St.Vincent's University Hospital (SVUH), Dublin on the 5th of July 2021. In September 2024 a second tertiary care adult hospital, St James's Hospital (SJH), was included, both sites reporting on SARI cases aged 15 years and older.

A third tertiary care hospital, University Hospital Limerick (UHL), reporting on SARI cases aged under 15 years of age only, began surveillance in September 2024.

3. Case definition

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

Clinical SARI case:

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

SARI case definition: A person hospitalised for at least 24 hours with acute respiratory infection, with at least one of the following symptoms: cough, fever, shortness of breath OR sudden onset of anosmia, ageusia or dysgeusia with onset of symptoms within 14 days prior to hospital admission.

A SARI case refers to an individual patient episode of care

4. Denominator data

Denominator data for the hospital catchment area are based on the Census of Population, 2022. The hospital catchment data were prepared and provided by the Health Intelligence Unit (HIU) of the Health Service Executive (HSE) and were extracted from Health Atlas Ireland on 07/05/2024.

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

5. Laboratory testing

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

SARI samples that are positive for SARS-CoV-2 and have a cycle threshold (Ct) value <25 are referred for whole genome sequencing (WGS). The molecular laboratories in SVUH, SJH and UHL are spoke WGS testing sites as part of the national SARS-CoV-2 WGS surveillance programme, for further information please see Whole Genome Sequencing Programme - Health Protection Surveillance Centre (hpsc.ie). SARI WGS testing is performed on-site at SVUH, SJH and UHL.

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

Samples that are PCR positive for RSV are sent to the National Virus Reference Laboratory (NVRL) for RSV typing.

6. Data collection and reporting

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

St. James's Hospital: Clinical data are collected and managed on a specifically adapted electronic form within the patient's electronic patient record (EPR). Laboratory data are extracted from Telepath LIMS.

University Hospital Limerick: Clinical data are collected manually on the hard copy of the UHL SARI Case Report Form (CRF) and then recorded in the electronic SARI questionnaire on ICNET. Details of laboratory results are obtained from ICNET and are also recorded in the electronic SARI questionnaire on ICNET.

Case-based data are reported by SVUH, SJH and UHL 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 the European SARI surveillance programme.

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

7. Reference dates

Influenza season

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

SARI Surveillance

05/07/2021 (Week 27 2021) – commenced of SARI surveillance at first sentinel hospital site
30/09/2024 (Week 40 2024) - commenced SARI surveillance at the second and third sentinel sites

Vaccination campaign

27/09/2021 (Week 39 2021) – first COVID-19 booster vaccination campaign commenced
22/04/2022 (Week 16 2022) – second COVID-19 booster vaccination campaign commenced
03/10/2022 (Week 40 2022) – Autumn 2022 COVID-19 booster vaccination campaign commenced
28/04/2023 (Week 17 2023) – Spring 2023 COVID-19 booster vaccination campaign commenced
02/10/2023 (Week 40 2023) – Autumn 2023 COVID-19 booster vaccination campaign commenced
22/04/2024 (Week 17 2024) – Spring 2024 COVID-19 booster vaccination campaign commenced
30/09/2024 (Week 40 2024) – Autumn 2024 COVID-19 booster vaccination campaign commenced
03/04/2025 (Week 13 2025) – Spring 2025 COVID-19 booster vaccination campaign commenced

Winter respiratory virus seasons

04/10/2021 (Week 40 2021) - start of the 2021/2022 season
03/10/2022 (Week 40 2022) - start of the 2022/2023 season
02/10/2023 (Week 40 2023) - start of the 2023/2024 season
30/09/2024 (Week 40 2024) - start of the 2024/2025 season

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

8. Vaccination status definitions

For the purposes of SARI surveillance, vaccination status of cases is as follows:

Vaccinated COVID case: A confirmed case of COVID-19 who received any dose of a COVID-19 vaccine, ≥14 days before onset of symptoms.

Unvaccinated COVID-19 case: A confirmed case of COVID-19 who did not receive any dose of a COVID-19 vaccine i.e. was never vaccinated.

Time since vaccination: For a vaccinated COVID-19 case, this is the time between the date of last dose vaccination and the date of symptom onset and categorised as <180 days or ≥180 days since vaccination.

Vaccinated influenza case: A confirmed case of influenza will be considered as vaccinated against influenza if they received one dose of the influenza vaccine as part of the current season's influenza vaccination campaign ≥14 days before onset of symptoms.

Unvaccinated influenza case: A confirmed case of influenza will be considered as unvaccinated if they did not receive an influenza vaccine as part of the current season's influenza vaccination campaign or if they were vaccinated after onset of symptoms.

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

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