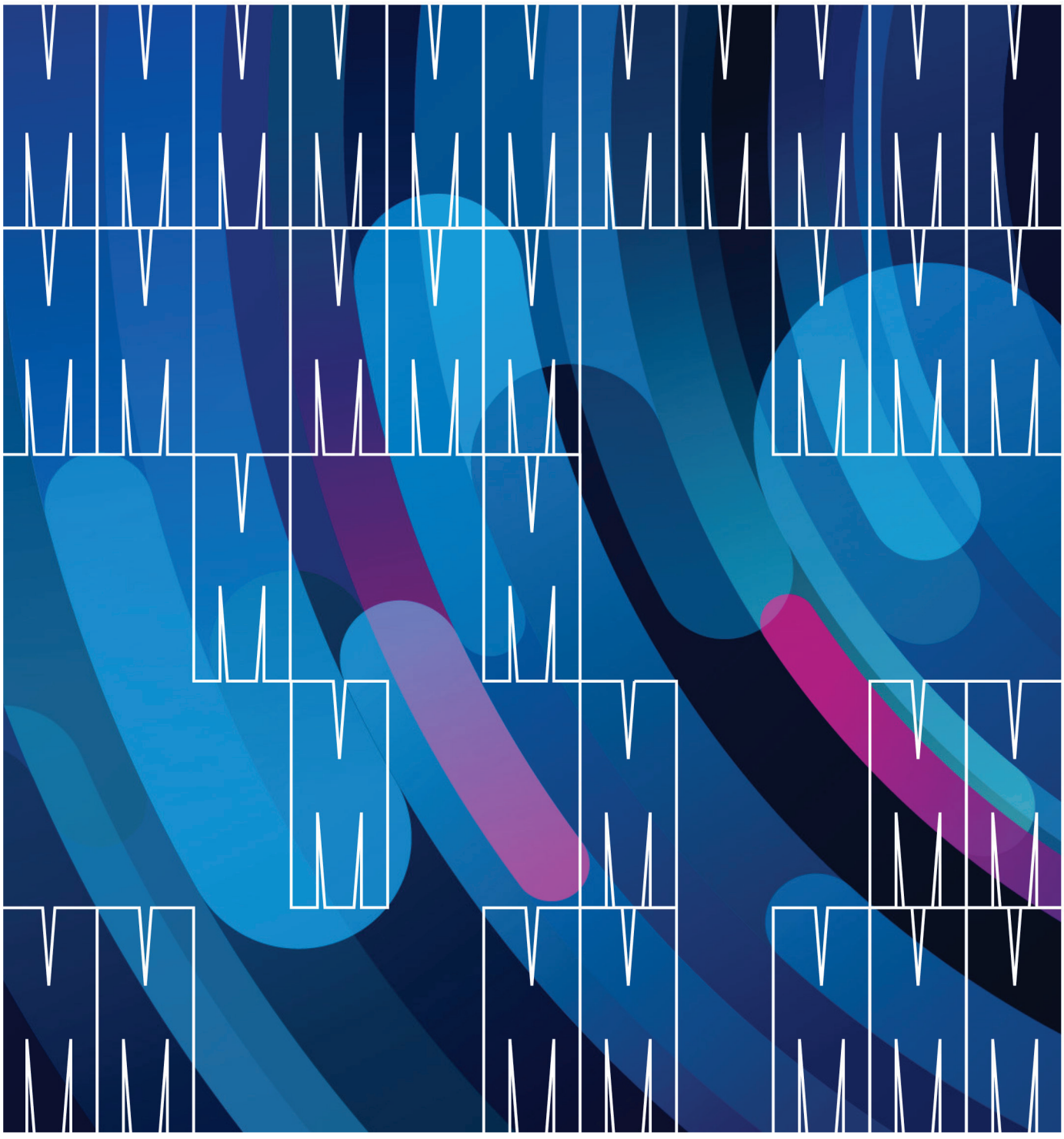
MONASH University

SPRINT SARI

SHORT PERIOD INCIDENCE STUDY OF SEVERE ACUTE RESPIRATORY INFECTION (SPRINT-SARI)

2025 Annual Report



SPRINT-SARI Annual Report

2025

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ABOUT THIS REPORT

This report is divided into:
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- Acknowledgments

SPRINT-SARI AUS 2025 Annual Report on COVID-19 and non-COVID SARI Admissions to Intensive Care Units in Australia

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Australian and New Zealand Intensive Care Research Centre

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EXECUTIVE SUMMARY 2025

SPRINT-SARI Australia is a national, multi-centre registry of critically ill patients admitted to Intensive Care Units (ICUs) with severe acute respiratory infection (SARI).

From **January 1st to 31 December 2025**, the SPRINT-SARI AUS database collected data on **4,244 ICU patients** from **55 sites** across all six states and two territories, including **674 PCR or RAT confirmed COVID-19 cases**. Compared to the last few years, cases of admission with severe COVID-19 have reduced, while the incidence of influenza increased.

To date, there are over **20,465** patients (**15,813** Adult)* in the SPRINT-SARI database and this data.

Key findings from 2025 to highlight include:

- **2,765** adults and **1,479** paediatric SARI cases
- **140** ICU beds occupied daily by SARI during the winter peak
- **674** COVID-19 cases, which was the least number of cases since 2020
- **1,493** influenza cases, which has steadily increased since 2023
- **497** RSV cases, which was the main cause of admission in paediatric cases
- **1,580** cases other than COVID-19, influenza or RSV, which has remained stable

SPRINT SARI delivers monthly Australian Respiratory Surveillance Reports to the Commonwealth NRSIC group, and has delivered additional reports to Commonwealth and state governments, 75 individual site reports, and produced 22 publications.

BACKGROUND AND METHODS

SPRINT-SARI International is a global collaboration designed to characterise patients with Severe Acute Respiratory Infection (SARI), inform clinical management, and strengthen health system readiness for emerging outbreaks. SPRINT-SARI Australia is a national, multi-centre registry of critically ill SARI patients admitted to Intensive Care Units (ICUs). It was rapidly mobilised in March 2020 by the Australian and New Zealand Intensive Care Society Clinical Trials Group (ANZICS-CTG), the Australian and New Zealand Intensive Care Research Centre (ANZIC-RC), and Monash University to capture real-time data on patients with Coronavirus Disease 2019 (COVID-19), supporting both frontline clinical care and the national public health response.

SCOPE AND EVOLUTION:

- 2020 (March–June): Adults with confirmed or suspected COVID-19 (PCR/RAT).
- From July 2020: Only confirmed COVID-19 cases.
- From June 2022: Expanded to non-COVID viral SARI (Influenza A/B, Parainfluenza, RSV, and other respiratory viruses).
- Paediatric cases now included.

METHODS & DATA COLLECTION:

Data are entered by trained ICU research coordinators into a secure REDCap database hosted by Monash University. The Case Report Form (CRF), aligned with international standards, captures demographics, pathogen testing, treatments (IMV, ECMO, RRT, prone positioning), and outcomes. In 2022, the CRF was streamlined to a minimum dataset (version 4.5) to reduce site workload while maintaining essential surveillance capability.

IMPACT SINCE 2020:

- Over **20,465** patients (**15,813** Adult; **4,648** Paediatric)* recorded to date.
  *4 patients have no date of birth recorded
- Monthly contributions to the Australian Respiratory Surveillance Reports.
- Informed Australia's COVID-19 preparedness and response strategies.
- Supported more than **22 peer-reviewed publications**.

KEY CONSIDERATIONS:

- Data reflect only ICU-managed SARI cases, not all infections.
- Some records are incomplete; transfers aggregated where possible.
- Analyses are descriptive; causal interpretations should be made cautiously.

ACKNOWLEDGEMENTS:

The success of SPRINT-SARI relies on the dedication of ICU research coordinators and clinicians across Australia, particularly during the most challenging phases of the COVID-19 pandemic.

SUMMARY

During the year of 2025, a total of **76 ICU sites** were participating in the SPRINT-SARI COVID-19 database, and **55 ICU sites** contributed data. A total of **4,244 ICU COVID-19 admissions** were reported to SPRINT-SARI in the period. Considering PCR-positive and RAT-positive patients, **674** COVID-19 admissions were reported to SPRINT-SARI. **Table 1** provides a breakdown by State and Territory.

Table 1. Overview by State/Territory – Participation and Admissions

	Number of ICU Sites		Number of ICU Admissions		
State / Territory	Participating	Contributing Data	Confirmed COVID-19	Non-COVID SARI	Paediatric patient
NSW	17	11	144	661	361
VIC	25	18	254	1325	464
QLD	15	14	107	664	368
WA	9	5	48	352	257
SA	5	4	65	334	3
TAS	2	1	10	34	3
NT	2	1	26	117	15
ACT	1	1	20	83	8
TOTAL	**76**	**55**	**674**	**3570**	**1479**

COMBINED (ADULT AND PAEDIATRIC) NUMBER OF ICU ADMISSIONS

The daily number of ICU beds occupied by COVID-19 patients are shown in Figure 1 and a State/Territory breakdown of admissions is presented in Figure 2.

Figure 1. Daily number of ICU beds occupied by patients with confirmed or strong clinical suspicion of COVID-19

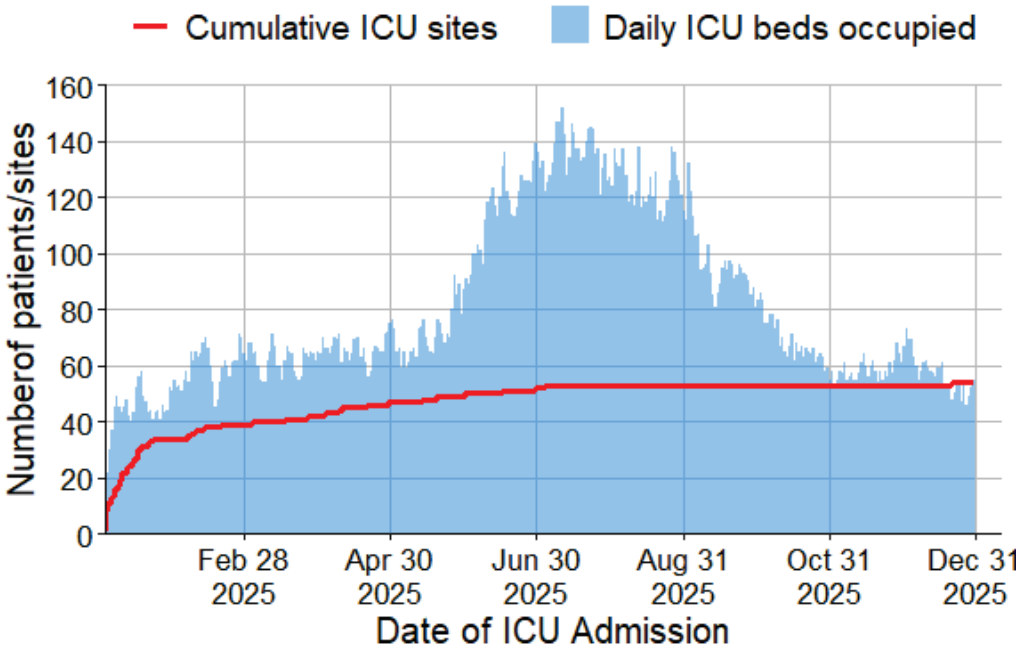
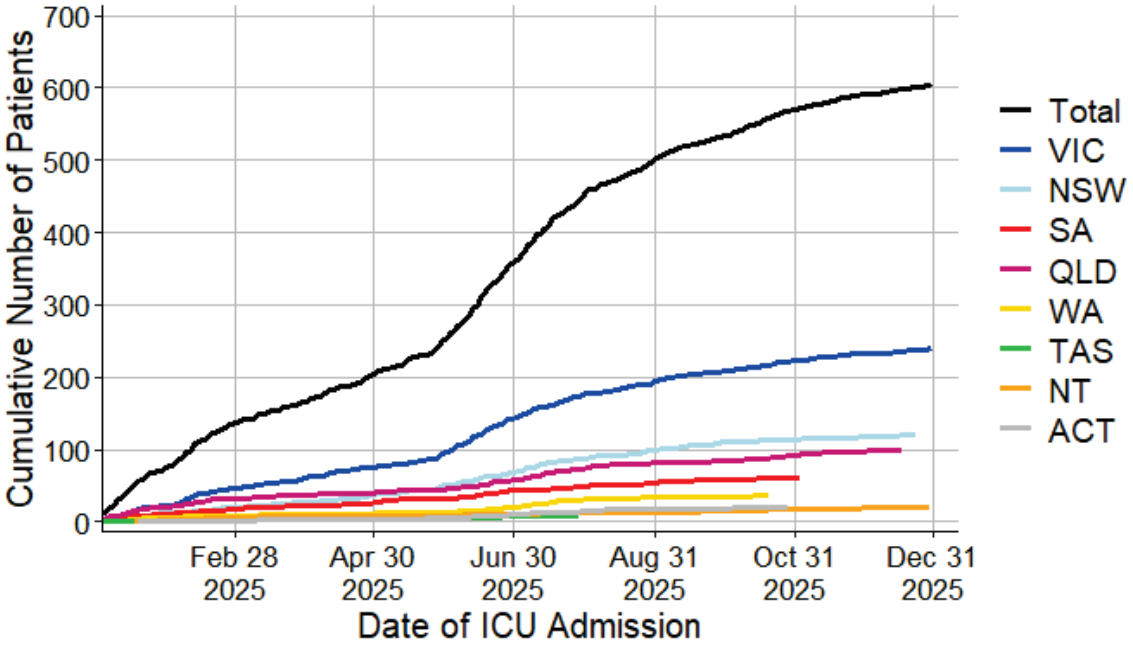


Figure 2. Cumulative number of ICU admissions with confirmed or strong clinical suspicion of COVID-19 by State and Territory



DEMOGRAPHICS

Patient characteristics of ICU admissions are provided in **Table 2** and **Figures 3 to 5**.

Table 2. Characteristics of patients admitted to ICU

	2025*†‡		pre-2025		Overall	
	COVID SARI N = 674[1]	non-COVID SARI N = 3,570[1]	COVID SARI N = 11,563[1]	non-COVID SARI N = 4,658[1]	COVID SARI N = 12,237[1]	non-COVID SARI N = 8,228[1]
Age	53.5 (26.9)	38.2 (28.8)	57.3 (20.8)	29.3 (28.1)	57.1 (21.2)	33.1 (28.7)
Age group						
0-9 years	95 (14.1%)	1,015 (28.4%)	445 (3.8%)	1,900 (40.8%)	540 (4.4%)	2,915 (35.4%)
10-19 years	33 (4.9%)	389 (10.9%)	353 (3.1%)	610 (13.1%)	386 (3.2%)	999 (12.1%)
20-29 years	17 (2.5%)	164 (4.6%)	572 (4.9%)	204 (4.4%)	589 (4.8%)	368 (4.5%)
30-39 years	27 (4.0%)	187 (5.2%)	890 (7.7%)	203 (4.4%)	917 (7.5%)	390 (4.7%)
40-49 years	55 (8.2%)	261 (7.3%)	1,123 (9.7%)	299 (6.4%)	1,178 (9.6%)	560 (6.8%)
50-59 years	78 (11.6%)	383 (10.7%)	1,858 (16.1%)	393 (8.4%)	1,936 (15.8%)	776 (9.4%)
60-69 years	135 (20.0%)	548 (15.4%)	2,487 (21.5%)	483 (10.4%)	2,622 (21.4%)	1,031 (12.5%)
70-79 years	146 (21.7%)	407 (11.4%)	2,591 (22.4%)	391 (8.4%)	2,737 (22.4%)	798 (9.7%)
80-89 years	82 (12.2%)	203 (5.7%)	1,144 (9.9%)	158 (3.4%)	1,226 (10.0%)	361 (4.4%)
≥ 90 years	6 (0.9%)	13 (0.4%)	99 (0.9%)	14 (0.3%)	105 (0.9%)	27 (0.3%)
Sex						
Male	369 (54.7%)	1,935 (54.2%)	6,990 (60.5%)	2,489 (53.5%)	7,359 (60.2%)	4,424 (53.8%)
Female	305 (45.3%)	1,634 (45.8%)	4,566 (39.5%)	2,166 (46.5%)	4,871 (39.8%)	3,800 (46.2%)
Received COVID-19 vaccine	283 (74.9%)	-	5,927 (64.9%)	0 (0.0%)	6,210 (65.3%)	0 (0.0%)
Pregnant						
Yes	1 (0.4%)	27 (2.0%)	158 (3.6%)	20 (1.1%)	159 (3.4%)	47 (1.4%)
No	229 (83.6%)	1,018 (75.5%)	3,564 (80.3%)	1,144 (60.1%)	3,793 (80.5%)	2,162 (66.5%)
Unknown	9 (3.3%)	44 (3.3%)	185 (4.2%)	110 (5.8%)	194 (4.1%)	154 (4.7%)
N/A	35 (12.8%)	259 (19.2%)	533 (12.0%)	630 (33.1%)	568 (12.0%)	889 (27.3%)
Indigenous	64 (9.5%)	297 (8.3%)	457 (4.0%)	407 (8.7%)	521 (4.3%)	704 (8.6%)
BMI	27.6 (8.0)	26.8 (8.2)	29.7 (7.8)	26.2 (8.8)	29.6 (7.8)	26.5 (8.5)
BMI category						
Underweight	36 (5.6%)	333 (9.8%)	316 (2.8%)	493 (11.2%)	352 (2.9%)	826 (10.6%)
Normal weight	156 (24.1%)	563 (16.5%)	1,653 (14.5%)	559 (12.7%)	1,809 (15.0%)	1,122 (14.3%)
Overweight	112 (17.3%)	518 (15.2%)	2,261 (19.8%)	516 (11.7%)	2,373 (19.7%)	1,034 (13.2%)
Obese - Class I	72 (11.1%)	303 (8.9%)	1,557 (13.7%)	276 (6.3%)	1,629 (13.5%)	579 (7.4%)
Obese - Class II	41 (6.3%)	166 (4.9%)	865 (7.6%)	155 (3.5%)	906 (7.5%)	321 (4.1%)
Obese - Class III	35 (5.4%)	161 (4.7%)	830 (7.3%)	194 (4.4%)	865 (7.2%)	355 (4.5%)
Not stated	195 (30.1%)	1,367 (40.1%)	3,918 (34.4%)	2,222 (50.3%)	4,113 (34.1%)	3,589 (45.9%)
Steroids	505 (75.5%)	2,114 (59.7%)	8,060 (75.9%)	2,435 (53.0%)	8,565 (75.9%)	4,549 (55.9%)
Tocilizumab	13 (1.9%)	3 (0.1%)	688 (6.0%)	4 (0.1%)	701 (5.7%)	7 (0.1%)
Neutralizing antibodies	0 (0.0%)	0 (0.0%)	176 (1.5%)	0 (0.0%)	176 (1.4%)	0 (0.0%)
Remdesivir	7 (1.0%)	0 (0.0%)	43 (0.4%)	0 (0.0%)	50 (0.4%)	0 (0.0%)
Invasive ventilation*	197 (29.4%)	1,125 (31.6%)	3,960 (36.2%)	1,474 (31.7%)	4,157 (35.8%)	2,599 (31.6%)
Prone positioning†	15 (2.2%)	169 (4.7%)	740 (11.3%)	199 (4.3%)	755 (10.5%)	368 (4.5%)
ECMO	2 (0.3%)	67 (1.9%)	153 (1.4%)	90 (1.9%)	155 (1.3%)	157 (1.9%)
Dialysis	39 (5.9%)	263 (7.8%)	581 (8.9%)	280 (6.0%)	620 (8.6%)	543 (6.8%)
Antibiotic therapy	589 (88.0%)	3,232 (90.9%)	5,869 (82.3%)	4,080 (88.8%)	6,458 (82.8%)	7,312 (89.7%)

[1]Mean (SD); n (%)
*Mean and SD were based on at least one episode of mechanical ventilation
†Defined as at least one observation of prone positioning while not receiving invasive ventilation
‡BMI values < 15 or > 60 were excluded from the BMI analysis

Figure 3. Outcome of ICU admission (2025)

Age and sex distribution

The outcome of ICU admission for SARI, grouped by sex and age range are presented below.

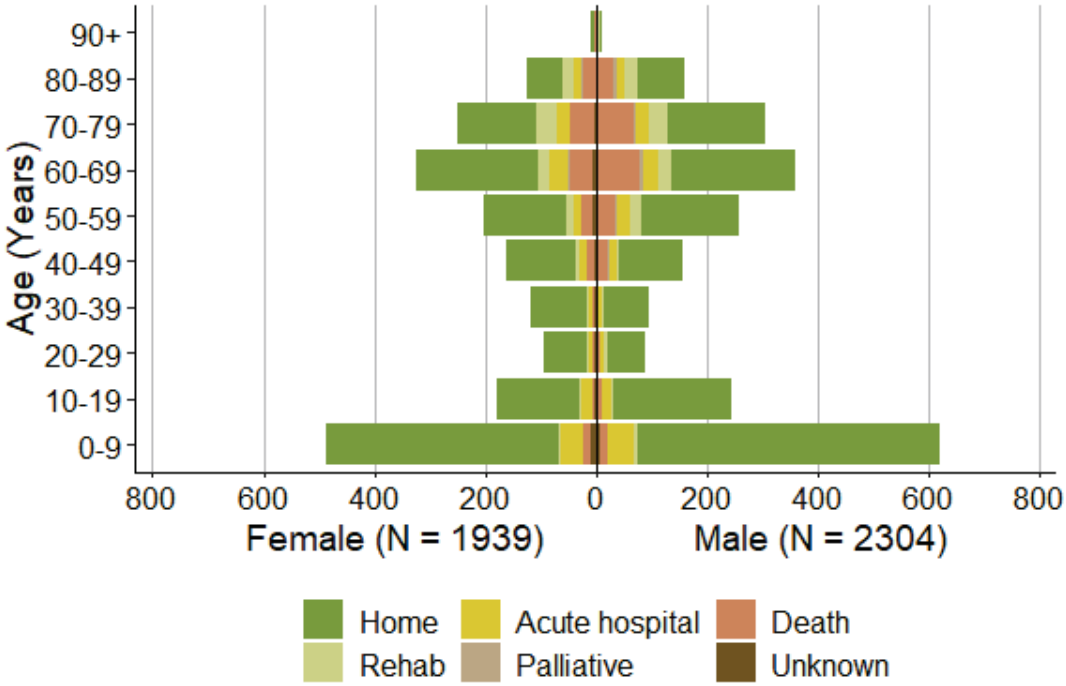


Figure 4. Age range and mortality distribution

Figure 4 presents the average percent mortality over the past 6 years (2020 to 2025), grouped by age range

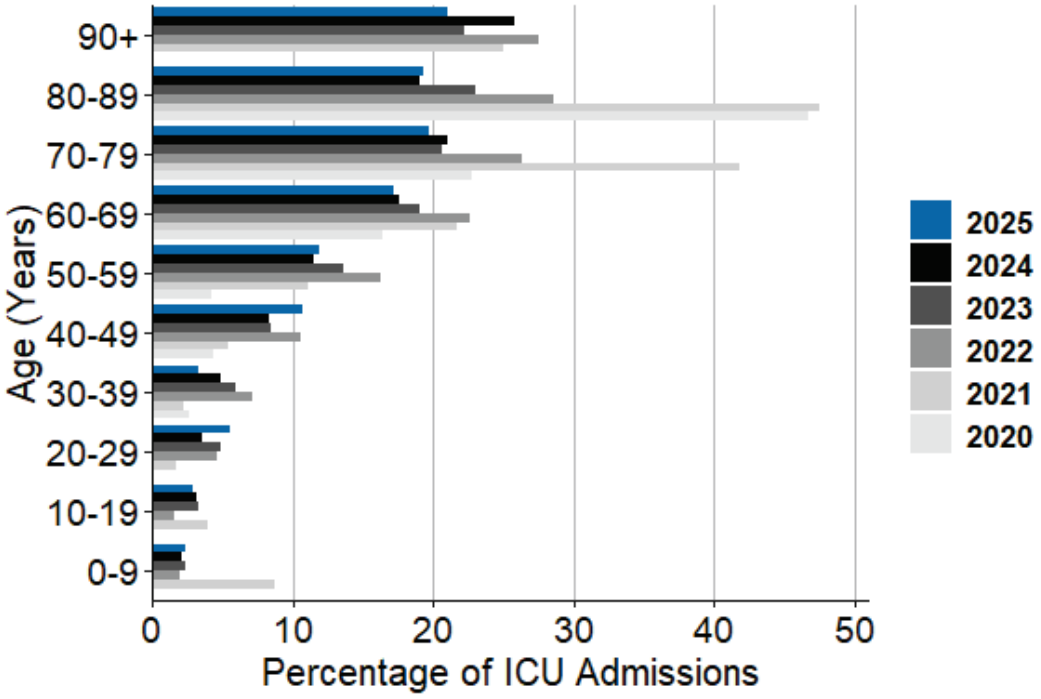
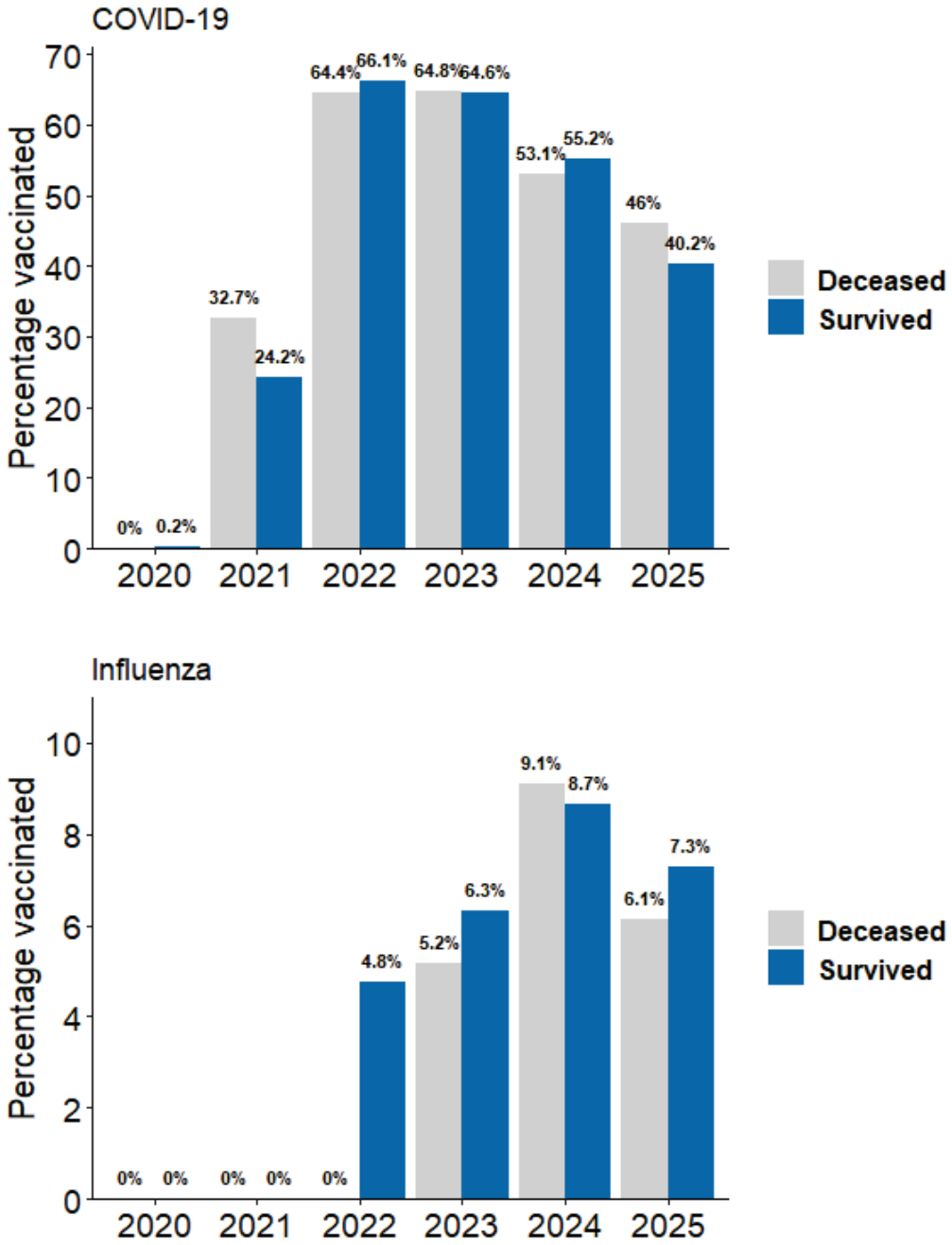


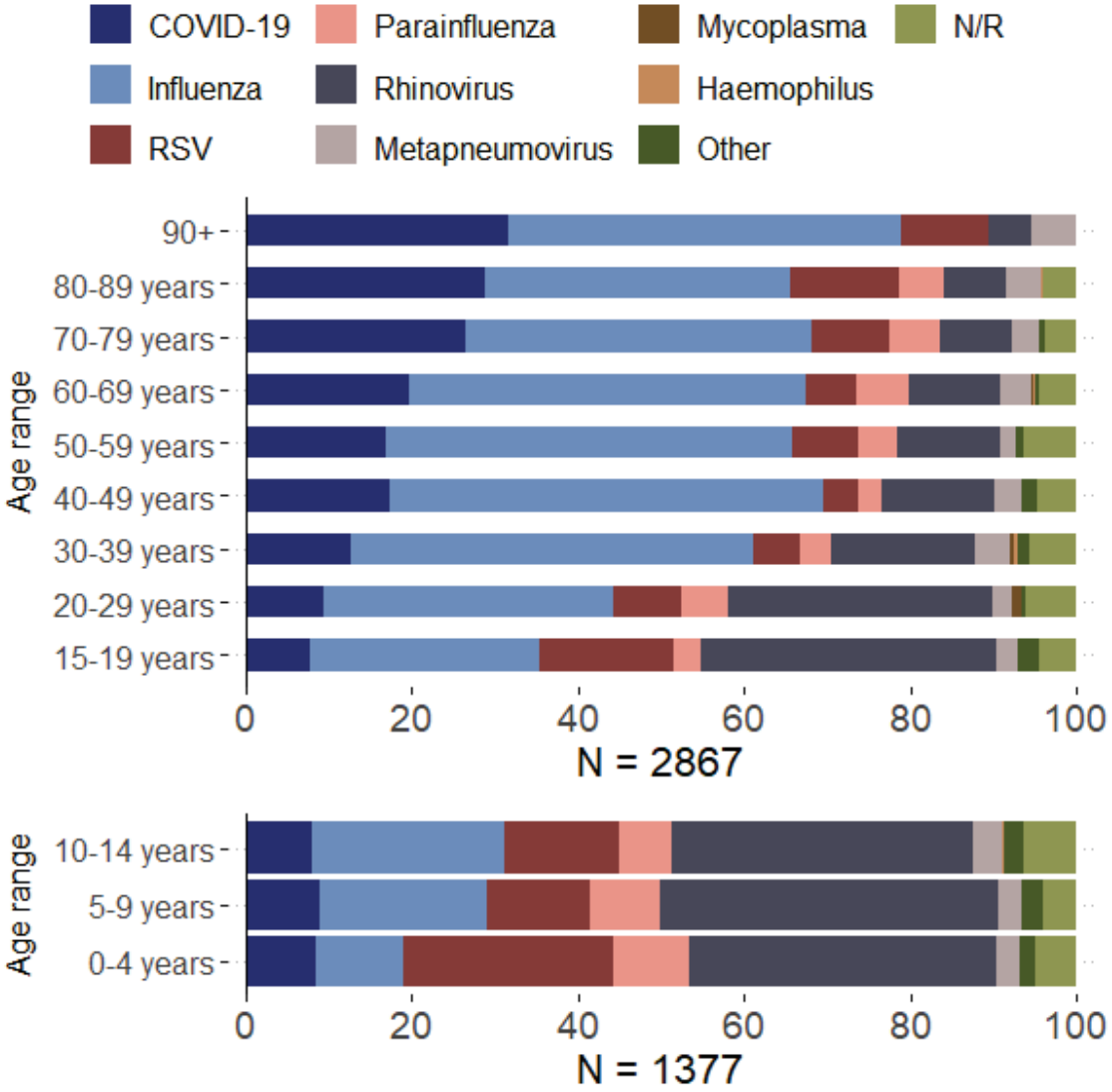
Figure 5. Vaccination rates by year



The percentage of patients recorded as having been vaccinated against COVID-19 and Influenza by year of ICU admission is described in these graphs. NOTE: Vaccination status was only recorded against the pathogen causing the SARI that the patient was hospitalised with ie. vaccination against influenza was **only** recorded in those patients who were diagnosed with influenza. Likewise, vaccination against COVID-19 is only recorded in patients diagnosed with COVID-19.

*Very low numbers of patients (40) were recorded in SPRIT-SARI as having been diagnosed with influenza between 2020 and 2022, compared with 8,494 patients admitted with COVID-19 during the same period. This is the reason for 0% of patients recorded as having received vaccination against influenza during this period.

Figure 6. Adult and Paediatric patients admitted to ICU with a SARI in 2025 - Percentage of confirmed pathogens by age group



ADULT POPULATION

ANALYSIS OF ADULT POPULATION (15 YEARS AND OLDER)

NUMBER OF ICU ADMISSIONS

The daily number of ICU beds occupied by Adult COVID-19 patients are shown in Figure 6 and a State/Territory breakdown of admissions is presented in Figure 7.

Figure 7. Daily number of ICU beds occupied by patients with confirmed or strong clinical suspicion of COVID-19

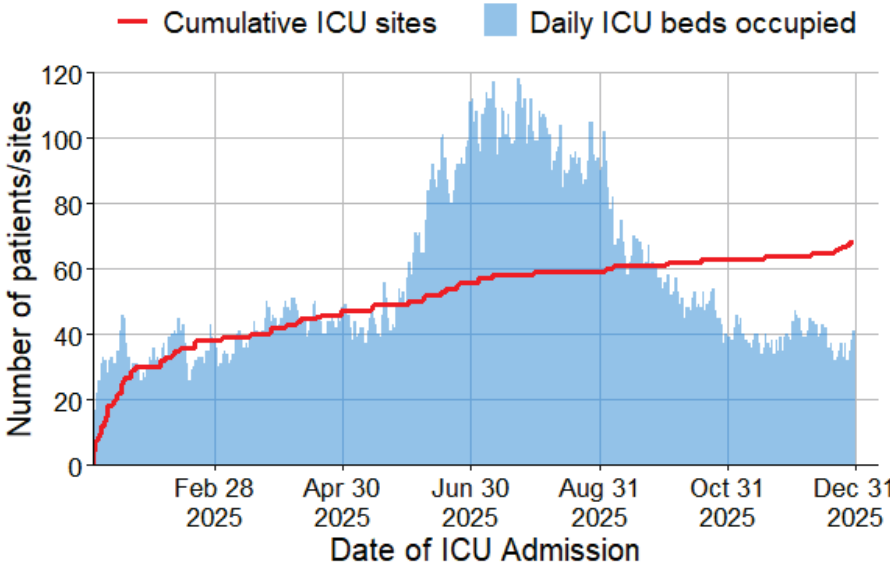
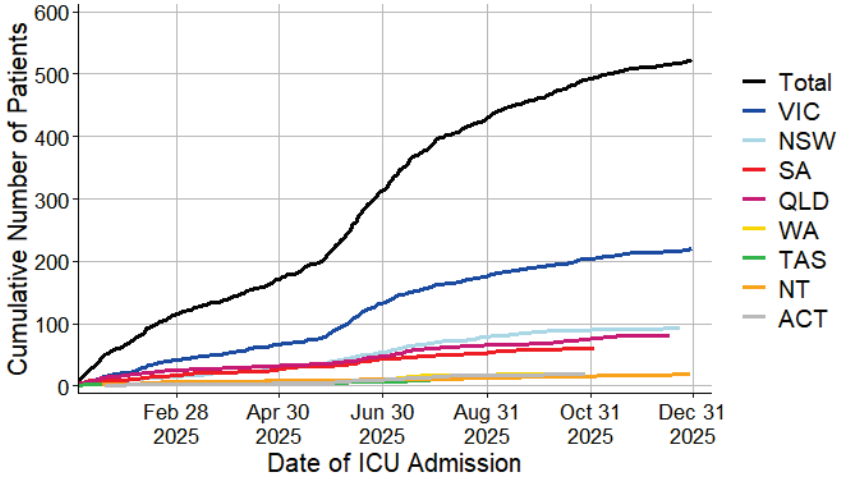


Figure 8. Cumulative number of ICU admissions with confirmed or strong clinical suspicion of COVID-19 by State and Territory



DEMOGRAPHICS

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15-19 years	33 (5.8)	389 (15.3)	353 (3.2)	610 (22.3)	386 (3.3)	999 (18.9)
20-29 years	17 (3.0)	164 (6.5)	572 (5.2)	204 (7.4)	589 (5.1)	368 (7.0)
30-39 years	27 (4.7)	187 (7.4)	890 (8.1)	203 (7.4)	917 (7.9)	390 (7.4)
40-49 years	55 (9.6)	261 (10.3)	1,123 (10.2)	299 (10.9)	1,178 (10.2)	560 (10.6)
50-59 years	78 (13.6)	383 (15.1)	1,858 (16.9)	393 (14.3)	1,936 (16.7)	776 (14.7)
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Female	305 (45.3)	1,634 (45.8)	4,566 (39.5)	2,166 (46.5)	4,871 (39.8)	3,800 (46.2)
Received COVID-19 vaccine	283 (74.9)	0 (NA)	5,927 (64.9)	0 (0.0)	6,210 (65.3)	0 (0.0)
Pregnant						
Yes	1 (0.4)	27 (2.0)	158 (3.6)	20 (1.1)	159 (3.4)	47 (1.4)
No	229 (83.6)	1,018 (75.5)	3,564 (80.3)	1,144 (60.1)	3,793 (80.5)	2,162 (66.5)
Unknown	9 (3.3)	44 (3.3)	185 (4.2)	110 (5.8)	194 (4.1)	154 (4.7)
N/A	35 (12.8)	259 (19.2)	533 (12.0)	630 (33.1)	568 (12.0)	889 (27.3)
Indigenous	64 (9.5)	297 (8.3)	457 (4.0)	407 (8.7)	521 (4.3)	704 (8.6)
BMI‡	27.6 (8.0)	26.8 (8.2)	29.7 (7.8)	26.2 (8.8)	29.6 (7.8)	26.5 (8.5)
BMI category						
Underweight	36 (5.6)	333 (9.8)	316 (2.8)	493 (11.2)	352 (2.9)	826 (10.6)
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Overweight	112 (17.3)	518 (15.2)	2,261 (19.8)	516 (11.7)	2,373 (19.7)	1,034 (13.2)
Obese - Class I	72 (11.1)	303 (8.9)	1,557 (13.7)	276 (6.3)	1,629 (13.5)	579 (7.4)
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Not stated	195 (30.1)	1,367 (40.1)	3,918 (34.4)	2,222 (50.3)	4,113 (34.1)	3,589 (45.9)
Steroids	505 (75.5)	2,114 (59.7)	8,060 (75.9)	2,435 (53.0)	8,565 (75.9)	4,549 (55.9)
Tocilizumab	13 (1.9)	3 (0.1)	688 (6.0)	4 (0.1)	701 (5.7)	7 (0.1)
Neutralizing antibodies	0 (0.0)	0 (0.0)	176 (1.5)	0 (0.0)	176 (1.4)	0 (0.0)
Remdesivir	7 (1.0)	0 (0.0)	43 (0.4)	0 (0.0)	50 (0.4)	0 (0.0)
Invasive ventilation*	197 (29.4)	1,125 (31.6)	3,960 (36.2)	1,474 (31.7)	4,157 (35.8)	2,599 (31.6)
Prone positioning†	15 (2.2)	169 (4.7)	740 (11.3)	199 (4.3)	755 (10.5)	368 (4.5)
ECMO	2 (0.3)	67 (1.9)	153 (1.4)	90 (1.9)	155 (1.3)	157 (1.9)
Dialysis	39 (5.9)	263 (7.8)	581 (8.9)	280 (6.0)	620 (8.6)	543 (6.8)
Antibiotic therapy	589 (88.0)	3,232 (90.9)	5,869 (82.3)	4,080 (88.8)	6,458 (82.8)	7,312 (89.7)

[1]Mean (SD); n (%)
*Mean and SD were based on at least one episode of mechanical ventilation
†Defined as at least one observation of prone positioning while not receiving invasive ventilation
‡BMI values < 15 or > 60 were excluded from the BMI analysis

Figure 9. Outcome of Adult ICU admission (2025)

The outcome of Adult ICU admission for SARI, grouped by sex and age range are presented below.

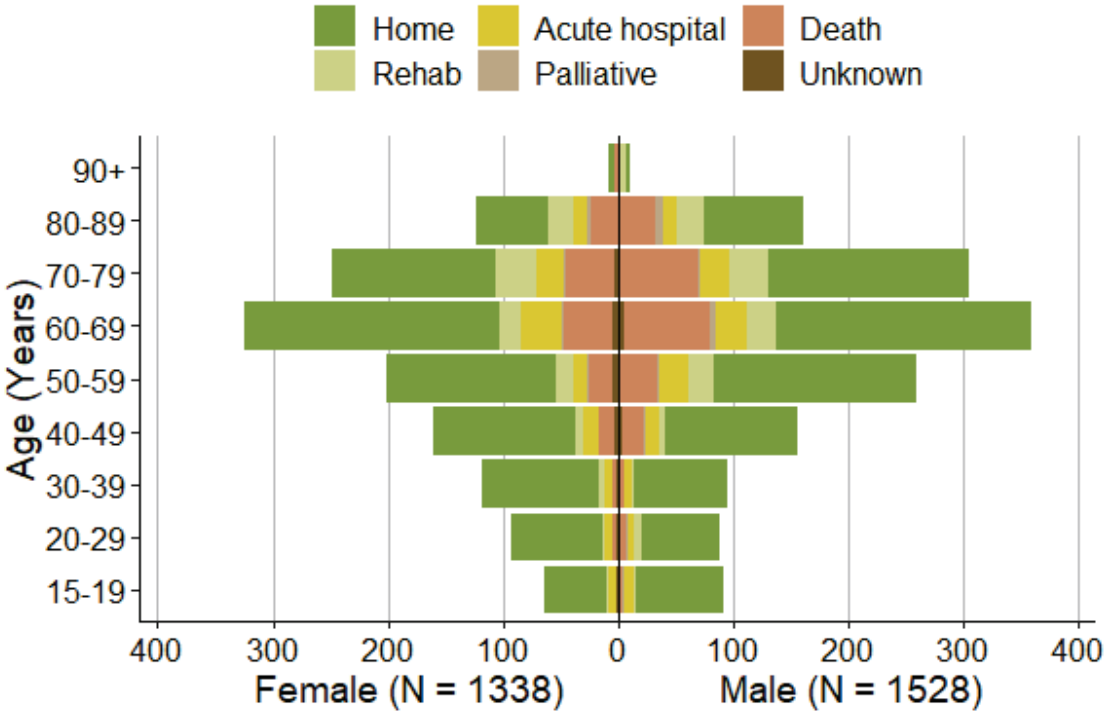
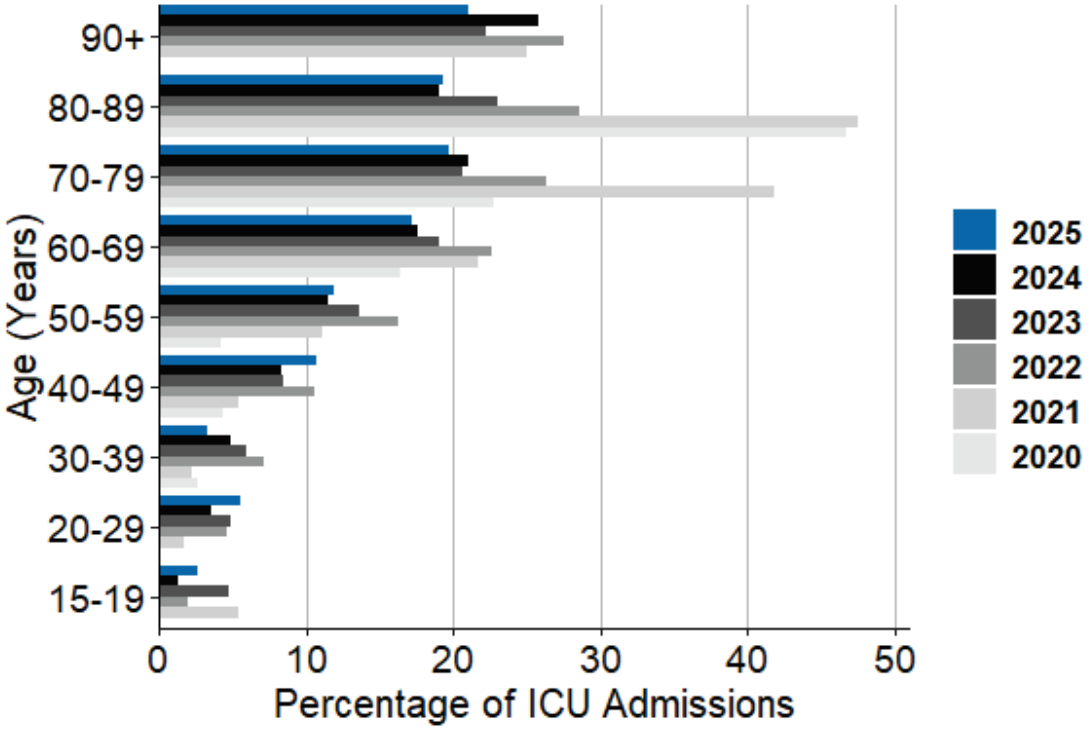


Figure 10. Age range and mortality distribution by Year of ICU admission

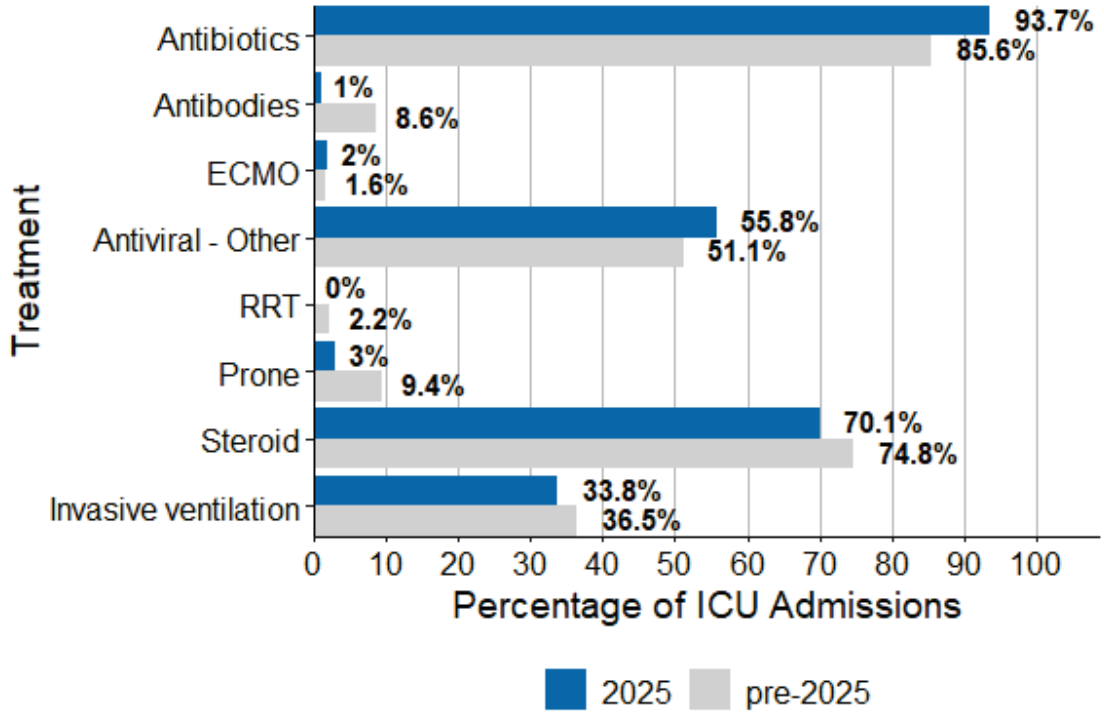
Figure 10 presents the average percent mortality over the past 6 years (2020 to 2025), grouped by age range



TREATMENTS

Figure 11. Comparison of treatments reported at any time during Adult ICU admission

The treatments received by adult patients at any time during ICU admission are presented in Figure 11.



COMORBIDITIES

The prevalence and type of reported comorbidities in ICU admissions is displayed in Figures 12 and 13.

Figure 12. Number of comorbidities reported in admitted ICU patients (2025)

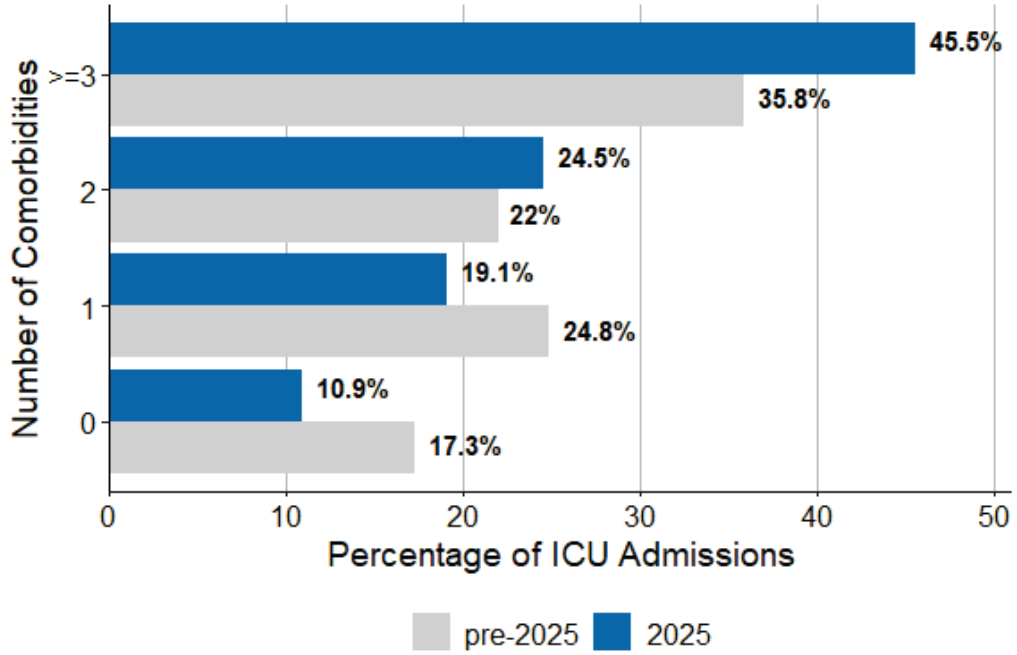
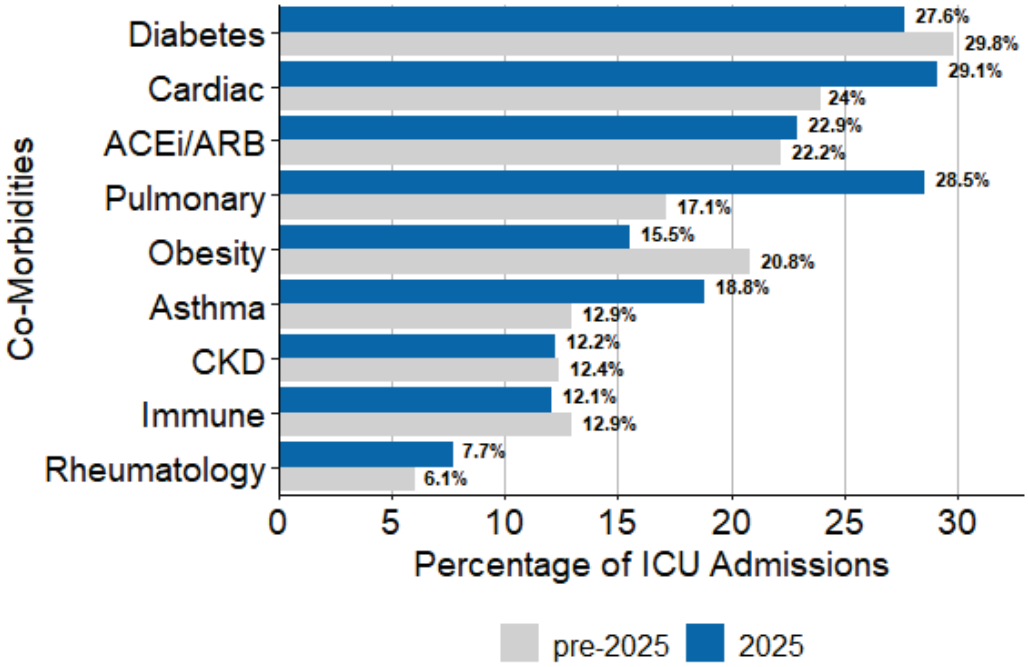


Figure 13. Prevalence of comorbidities in patients admitted to ICU with SARI



OUTCOME

Table 4. Patient outcome summary

ICU and hospital outcomes are summarised for ICU admissions. P-values are calculated using t-test (continuous variables) or Chi-square test (categorical variables). The Pearson residuals and expected counts of Chi-square test are listed. High residual values indicate large deviations between the observe counts and expected counts.

	2025*		pre-2025		Overall	
	COVID SARI N = 558[1]	**non-COVID SARI** N = 2,309[1]	**COVID SARI** N = 10,951[1]	**non-COVID SARI** N = 2,353[1]	**COVID SARI** N = 11,509[1]	**non-COVID SARI** N = 4,662[1]
Length of stay (ICU)	4.7 (6.1)	6.6 (9.1)	7.8 (14.1)	7.0 (16.4)	7.6 (13.8)	6.8 (13.3)
Length of stay (Hospital)	14.1 (20.4)	14.1 (16.4)	16.5 (23.9)	14.9 (24.1)	16.4 (23.7)	14.5 (20.7)
Days of ventilation	7.7 (34.9)	10.3 (24.6)	10.9 (23.8)	9.7 (23.5)	10.7 (24.4)	10.0 (24.0)
ICU outcome						
Death	71 (12.7)	215 (9.3)	1,470 (13.4)	209 (8.9)	1,541 (13.4)	424 (9.1)
Home	38 (6.8)	107 (4.6)	396 (3.6)	132 (5.6)	434 (3.8)	239 (5.1)
Other hospital	17 (3.0)	81 (3.5)	358 (3.3)	71 (3.0)	375 (3.3)	152 (3.3)
Other rehab	1 (0.2)	4 (0.2)	32 (0.3)	3 (0.1)	33 (0.3)	7 (0.2)
Unknown	1 (0.2)	10 (0.4)	64 (0.6)	6 (0.3)	65 (0.6)	16 (0.3)
Wards	430 (77.1)	1,892 (81.9)	8,631 (78.8)	1,932 (82.1)	9,061 (78.7)	3,824 (82.0)
Hospital outcome						
Death	107 (19.2)	288 (12.5)	1,963 (17.9)	293 (12.5)	2,070 (18.0)	581 (12.5)
Discharged home	327 (58.6)	1,614 (69.9)	6,944 (63.4)	1,705 (72.5)	7,271 (63.2)	3,319 (71.2)
Palliative discharge	7 (1.3)	18 (0.8)	53 (0.5)	10 (0.4)	60 (0.5)	28 (0.6)
Transfer to another facility (rehab)	58 (10.4)	170 (7.4)	1,054 (9.6)	122 (5.2)	1,112 (9.7)	292 (6.3)
Transfer to other facility (acute hospital)	51 (9.1)	191 (8.3)	807 (7.4)	211 (9.0)	858 (7.5)	402 (8.6)
Unknown	8 (1.4)	28 (1.2)	130 (1.2)	12 (0.5)	138 (1.2)	40 (0.9)

[1]Mean (SD); n (%)

Figure 14. Kaplan-Meier curve of ventillated and non ventillated Adult ICU SARI patients

The over-all unadjusted survival status of ICU admissions with and without invasive ventilation are shown in Figure 14. The survival data is censored when patients were deceased in hospital or discharged from the hospital. P-values were calculated using log-ranked test.

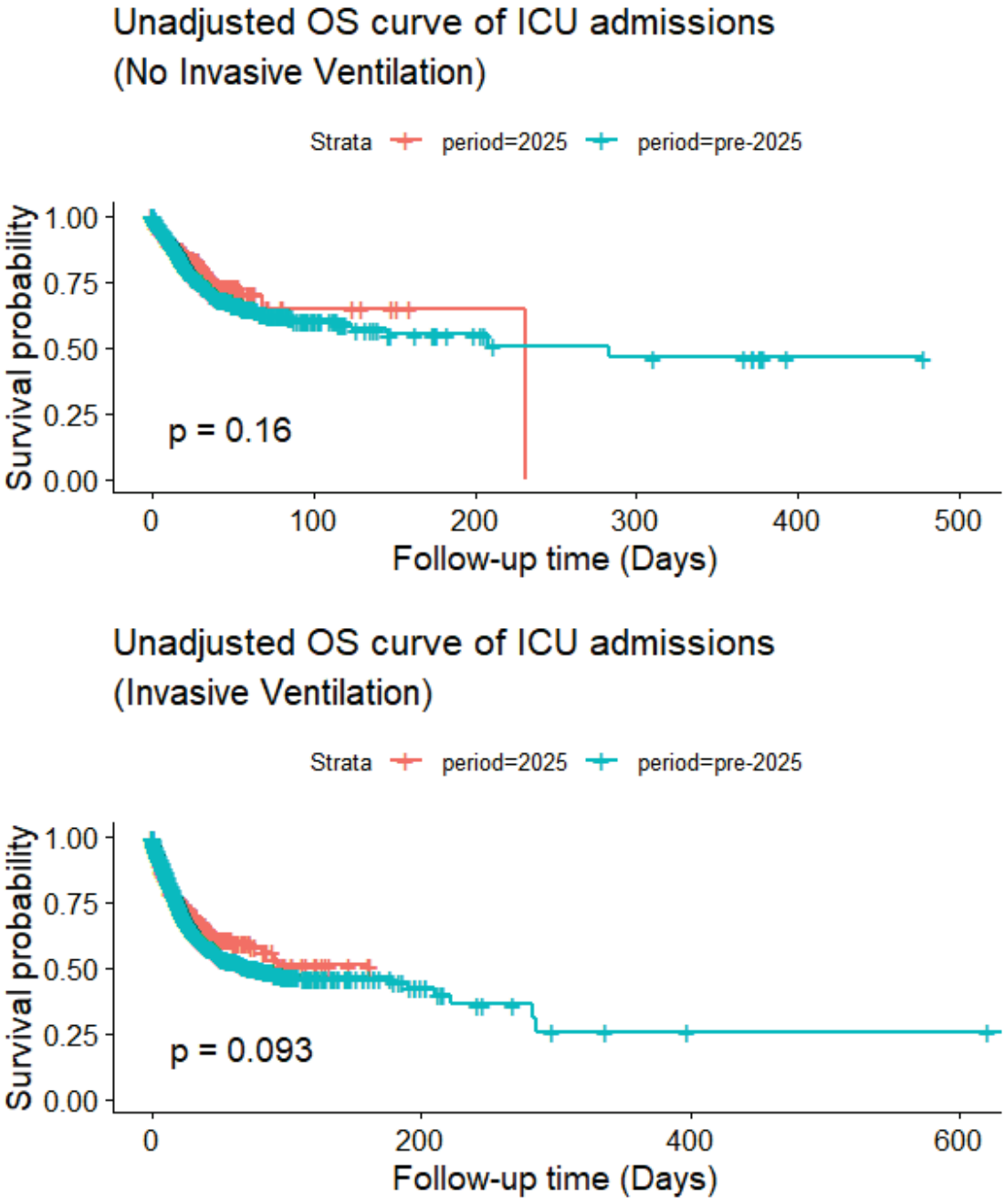


Figure 15. SARI Pathogen numbers by Age Group in patients admitted to ICU with SARI (2025)

The numbers of each pathogen causing SARI ICU admissions during 2025, categorised by age group, is presented in Figure 15.

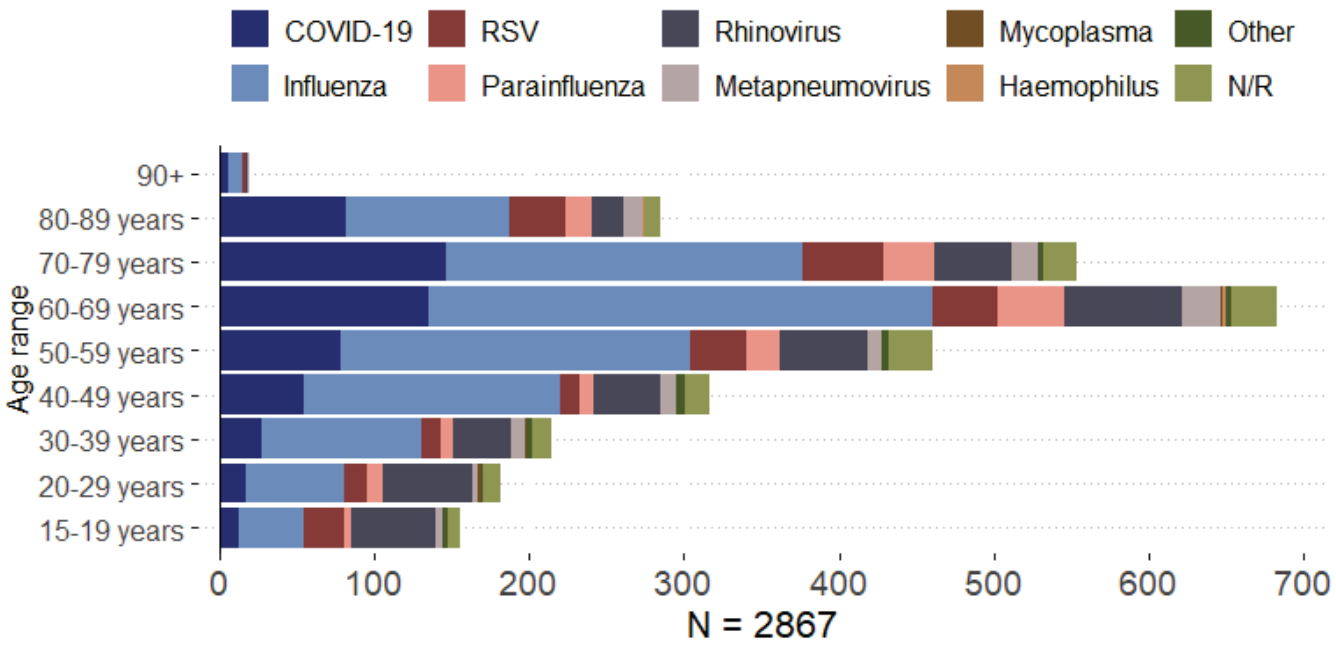


Figure 16. Pathogen prevalence in ICU SARI admissions - Percentage of confirmed cases, 2025

The percentage of patient presentations to ICU with SARI, listed by pathogen type, is displayed in Figure 16.

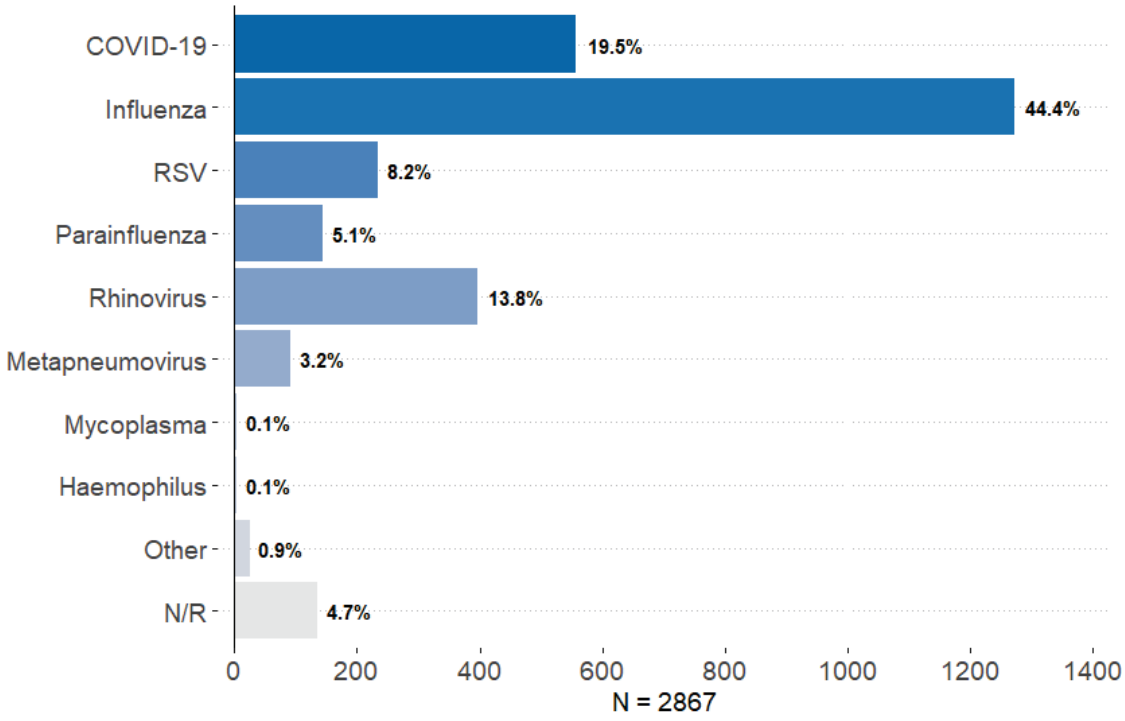
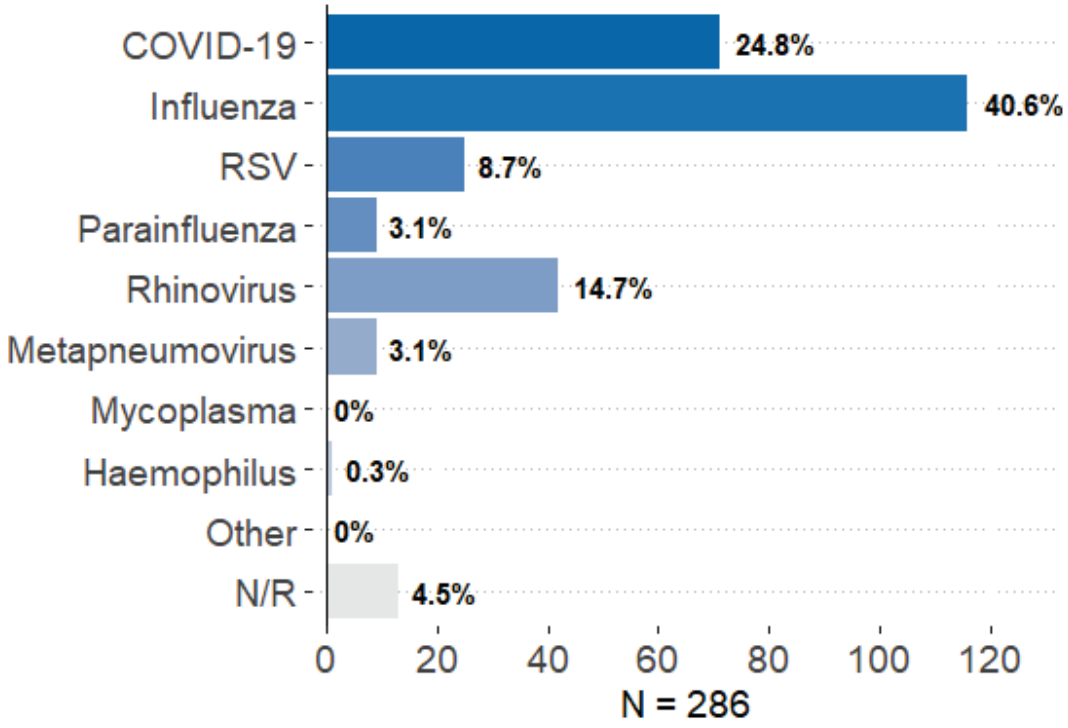


Figure 17. Percentage of Mortalities in Patients admitted to ICU with SARI in 2025 by Pathogen type

The number of deaths in ICU of patients admitted with SARI, as a percentage of the initially identified pathogen is displayed in Figure 17. Death may not be attributable to the diagnosed pathogen and may have been from other causes.



PAEDIATRIC POPULATION

ANALYSIS OF PAEDIATRIC POPULATION (0 TO 14 YEARS OLD)

NUMBER OF ICU ADMISSIONS

The daily number of ICU beds occupied by Paediatric COVID-19 patients, together with the cumulative number of sites contributing data for 2025 is shown in Figure 18 and a State/Territory breakdown of admissions is presented in Figure 19.

Figure 18. Daily number of ICU beds occupied by Paediatric patients with confirmed or strong clinical suspicion of COVID-19

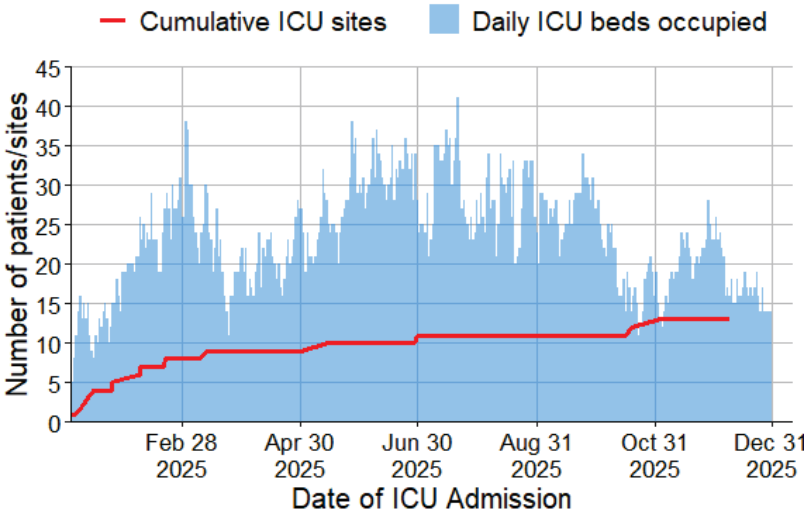
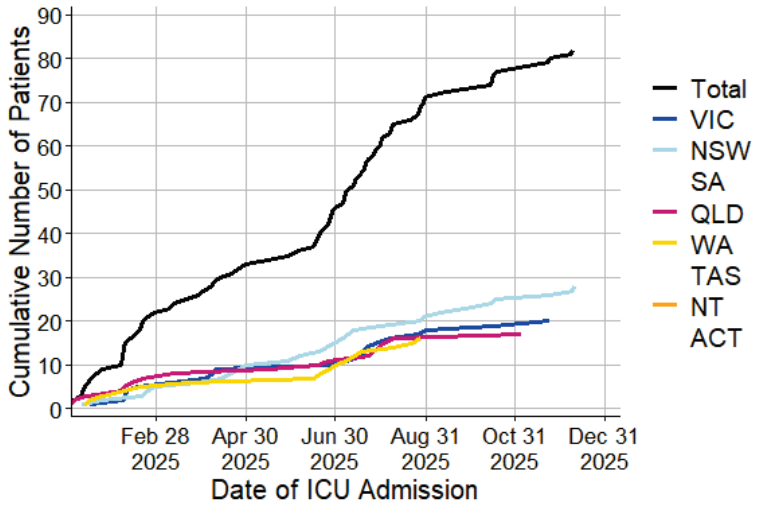


Figure 19. Cumulative number of Paediatric ICU admissions with confirmed or strong clinical suspicion of COVID-19 by State and Territory



DEMOGRAPHICS

Patient characteristics of Paediatric ICU admissions with SARI are provided in Table 5 and Figures 20 to 22.

Table 5. Characteristics of Paediatric patients admitted to ICU with SARI

	2025*†‡		pre-2025		Overall	
	COVID SARI N = 116[1]	non-COVID SARI N = 1,261[1]	COVID SARI N = 611[1]	non-COVID SARI N = 2,302[1]	COVID SARI N = 727[1]	non-COVID SARI N = 3,563[1]
Age	5.4 (4.0)	5.5 (3.9)	6.4 (4.2)	5.0 (3.8)	6.3 (4.2)	5.2 (3.9)
Age group						
0-4 years	56 (48.3%)	616 (48.9%)	244 (39.9%)	1,275 (55.4%)	300 (41.3%)	1,891 (53.1%)
5-9 years	39 (33.6%)	399 (31.6%)	201 (32.9%)	625 (27.2%)	240 (33.0%)	1,024 (28.7%)
10-14 years	21 (18.1%)	246 (19.5%)	166 (27.2%)	402 (17.5%)	187 (25.7%)	648 (18.2%)
Sex						
Male	62 (53.4%)	714 (56.6%)	350 (57.4%)	1,311 (57.0%)	412 (56.7%)	2,025 (56.8%)
Female	54 (46.6%)	547 (43.4%)	260 (42.6%)	991 (43.0%)	314 (43.3%)	1,538 (43.2%)
Received COVID-19 vaccine	2 (3.9%)	-	44 (10.9%)	0 (0.0%)	46 (10.2%)	0 (0.0%)
Indigenous	17 (14.7%)	99 (7.9%)	45 (7.4%)	194 (8.4%)	62 (8.5%)	293 (8.2%)
BMI‡	16.5 (4.2)	18.1 (17.6)	17.1 (5.7)	17.2 (6.0)	17.0 (5.4)	17.5 (11.7)
BMI category						
Underweight	32 (27.6%)	325 (25.8%)	111 (18.2%)	590 (25.6%)	143 (19.7%)	915 (25.7%)
Normal weight	7 (6.0%)	101 (8.0%)	24 (3.9%)	136 (5.9%)	31 (4.3%)	237 (6.7%)
Overweight	2 (1.7%)	18 (1.4%)	10 (1.6%)	23 (1.0%)	12 (1.7%)	41 (1.2%)
Obese - Class I	0 (0.0%)	3 (0.2%)	2 (0.3%)	8 (0.3%)	2 (0.3%)	11 (0.3%)
Obese - Class II	0 (0.0%)	3 (0.2%)	1 (0.2%)	5 (0.2%)	1 (0.1%)	8 (0.2%)
Obese - Class III	0 (0.0%)	3 (0.2%)	1 (0.2%)	11 (0.5%)	1 (0.1%)	14 (0.4%)
Not stated	75 (64.7%)	808 (64.1%)	462 (75.6%)	1,529 (66.4%)	537 (73.9%)	2,337 (65.6%)
Steroids	68 (60.7%)	554 (44.2%)	337 (58.1%)	934 (40.8%)	405 (58.5%)	1,488 (42.0%)
Tocilizumab	1 (0.9%)	0 (0.0%)	4 (0.7%)	1 (0.0%)	5 (0.7%)	1 (0.0%)
Neutralizing antibodies	0 (0.0%)	0 (0.0%)	3 (0.5%)	0 (0.0%)	3 (0.4%)	0 (0.0%)
Remdesivir	0 (0.0%)	0 (0.0%)	1 (0.2%)	0 (0.0%)	1 (0.1%)	0 (0.0%)
Invasive ventilation*	39 (34.5%)	315 (25.0%)	185 (30.9%)	622 (27.0%)	224 (31.5%)	937 (26.3%)
Prone positioning†	8 (7.1%)	89 (7.1%)	27 (5.7%)	122 (5.3%)	35 (6.0%)	211 (5.9%)
ECMO	0 (0.0%)	12 (1.0%)	5 (0.8%)	31 (1.3%)	5 (0.7%)	43 (1.2%)
Dialysis	2 (1.8%)	19 (1.6%)	11 (2.3%)	48 (2.1%)	13 (2.2%)	67 (1.9%)
Antibiotic therapy	96 (85.0%)	1,051 (83.5%)	349 (75.1%)	1,925 (84.1%)	445 (77.0%)	2,976 (83.9%)

[1]Mean (SD); n (%)
*Mean and SD were based on at least one episode of mechanical ventilation
†Defined as at least one observation of prone positioning while not receiving invasive ventilation
‡BMI values where Height/length, weight or BMI values are outside the WHO z-score ranges for patient age were excluded from the BMI analysis

Figure 20. Outcome of Paediatric ICU admissions in 2025

Age and sex distribution

The outcome of ICU admission for SARI, grouped by sex and age range is presented below.

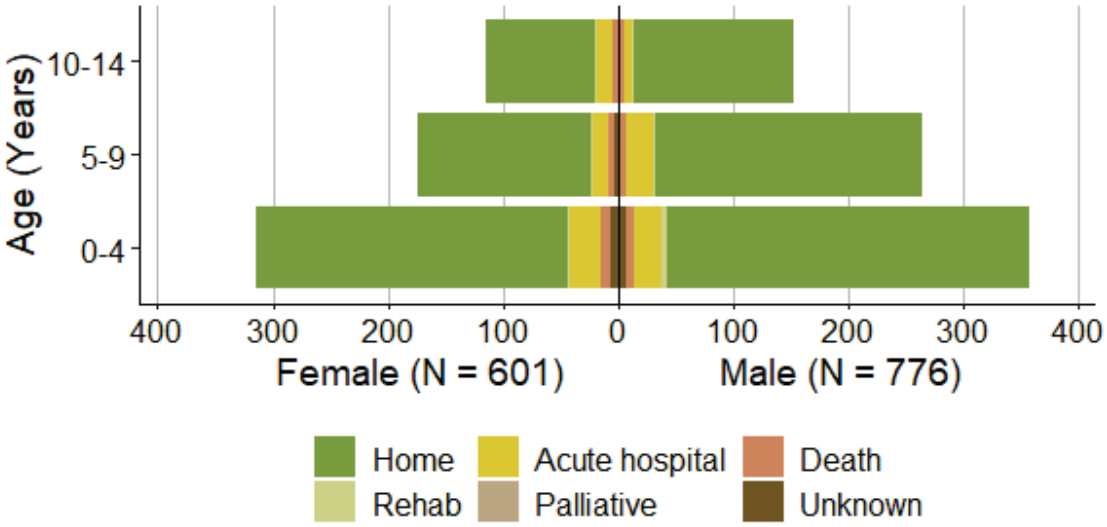


Figure 21. Age range and mortality distribution, ICU SARI admissions - 2020 to 2025

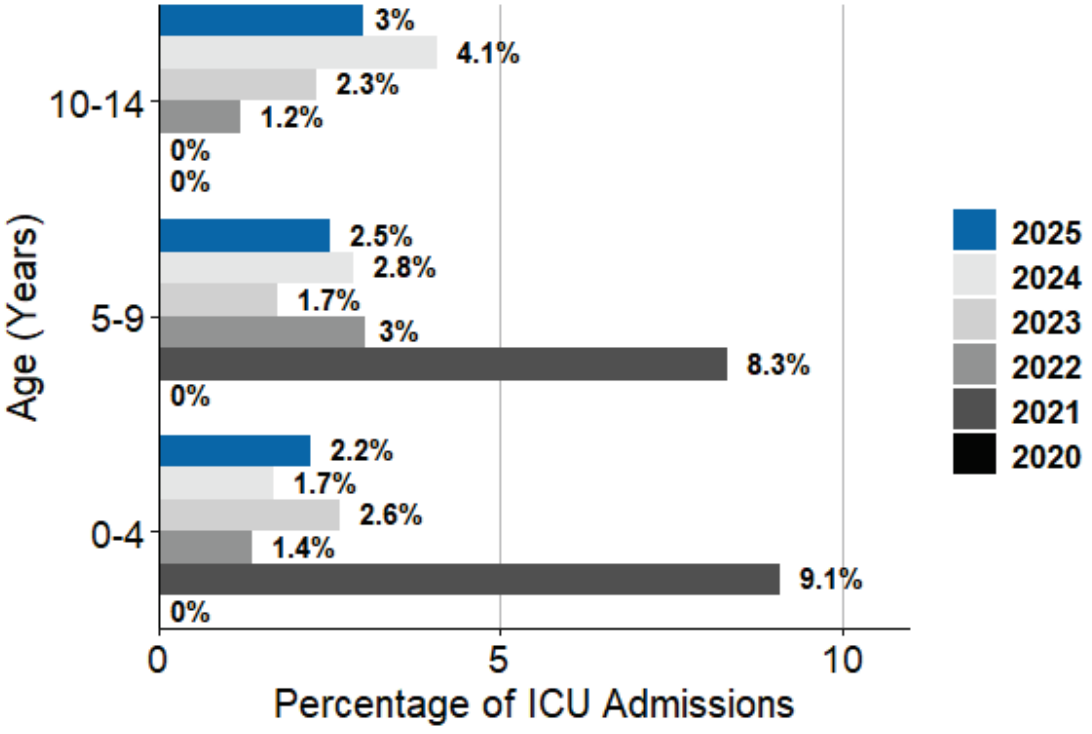
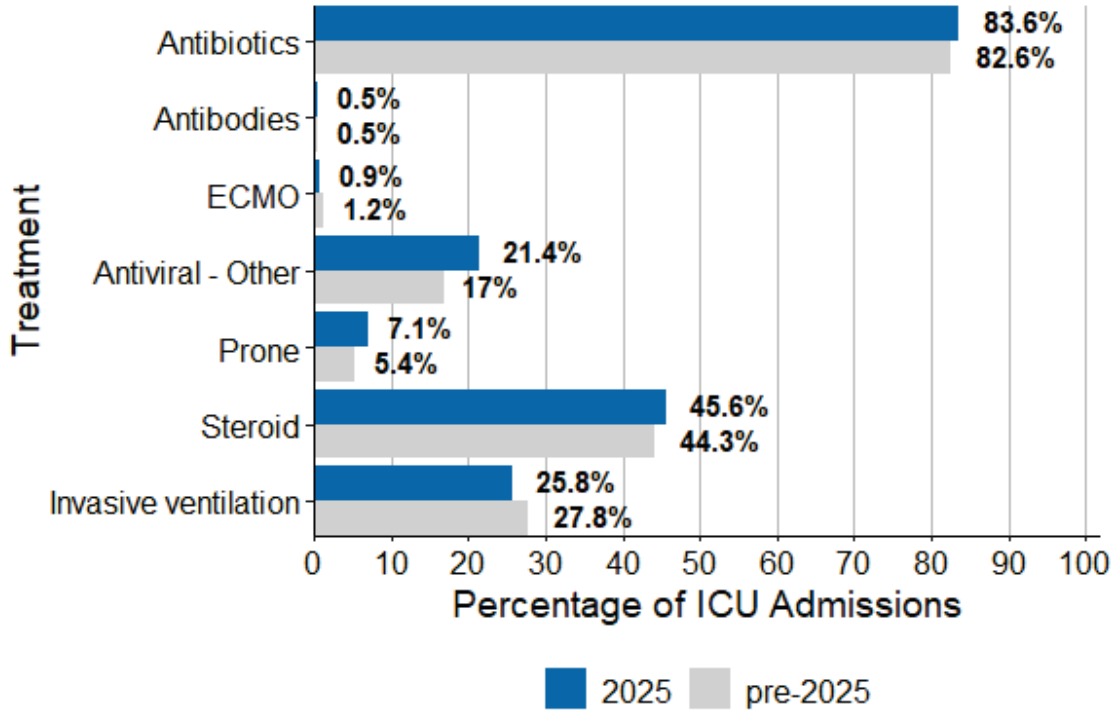


Figure 21 presents the average percent mortality over the past 6 years (2020 to 2025), grouped by age range and year of admission to ICU

TREATMENTS

Figure 22. Comparisson of treatments reported at any time during Paediatric ICU SARI admission



The treatments received by patients at any time during ICU admission for SARI are presented in Figure 22.

COMORBIDITIES

The number and prevalence of reported comorbidities for Paediatric ICU admissions is shown in Figures 23 and 24.

Figure 23. Number of comorbidities recorded in Paediatric ICU patients admitted with SARI

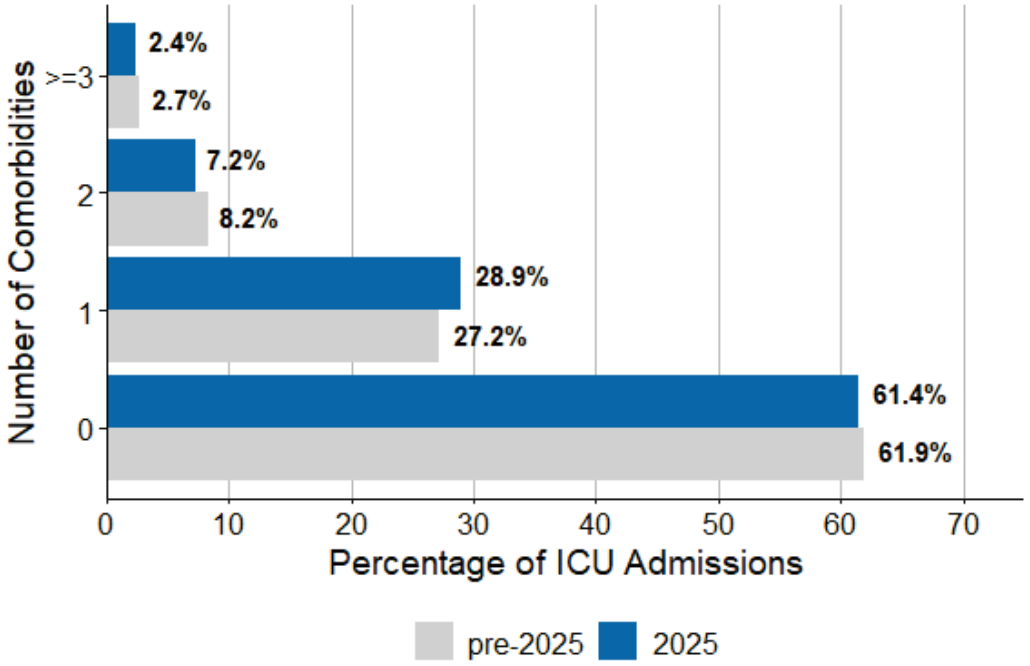
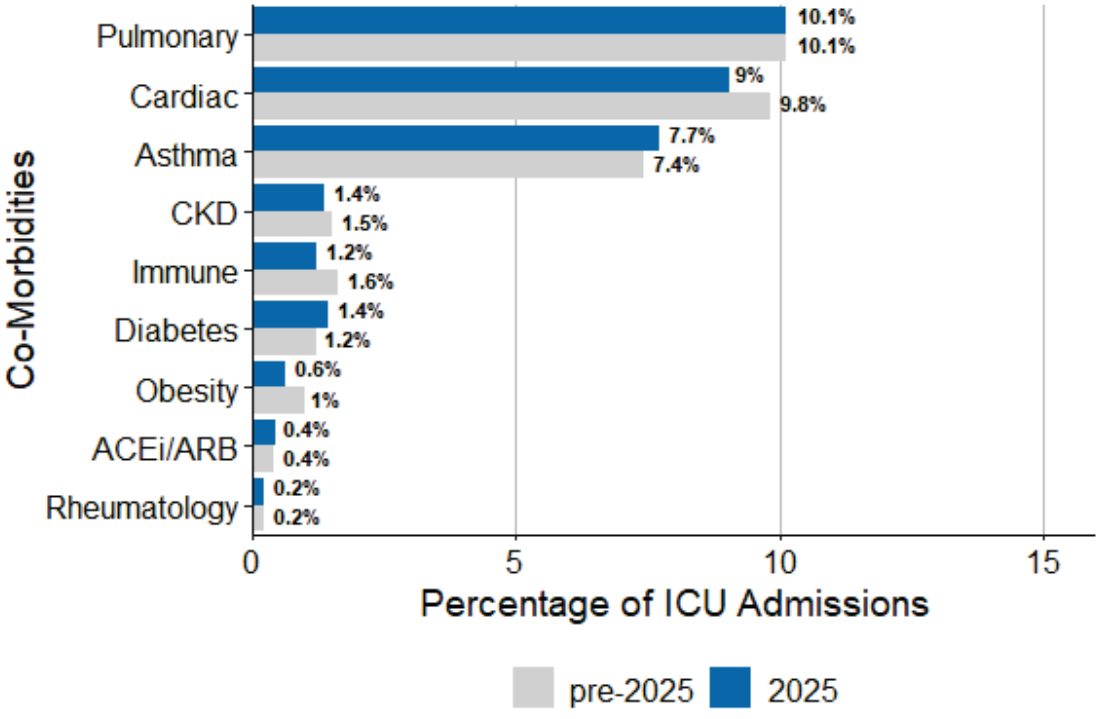


Figure 24. Prevalence of comorbidities for admitted Paediatric ICU patients



OUTCOME

Table 6. Patient outcome summary

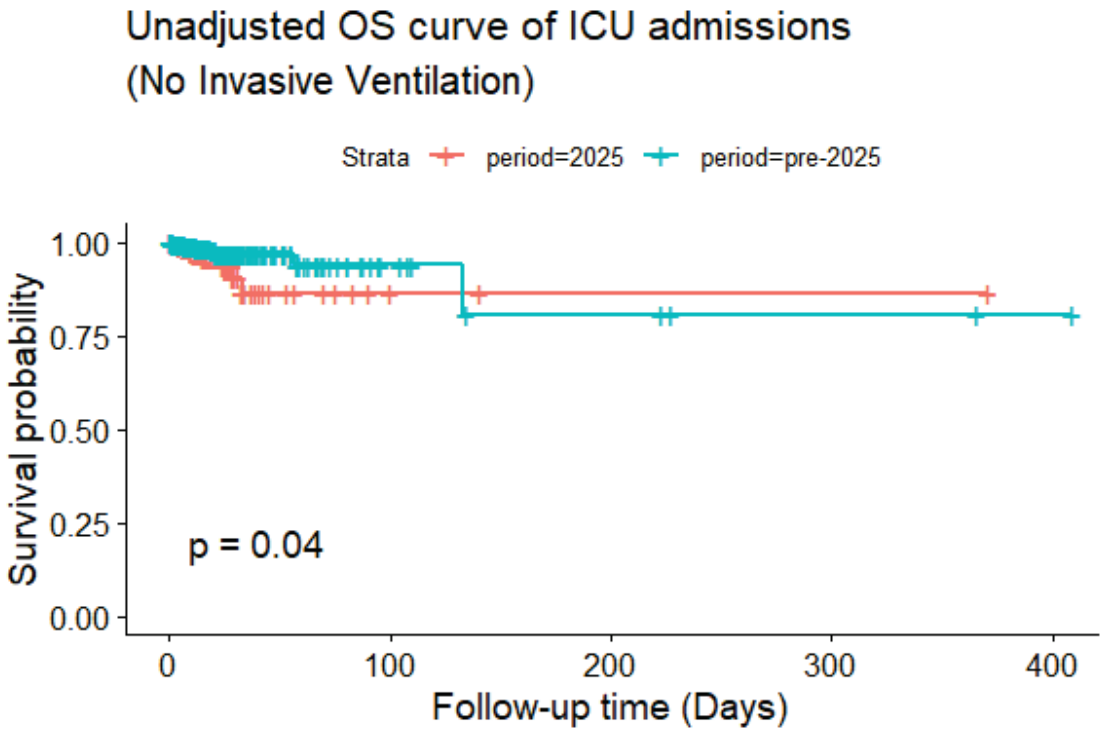
ICU and hospital outcomes are summarised for Paediatric ICU admissions. P-values are calculated using t-test (continuous variables) or Chi-square test (categorical variables). The Pearson residuals and expected counts of Chi-square test are listed. High residual values indicate large deviations between the observe counts and expected counts.

	2025*		pre-2025		Total	
	COVID SARI N = 116[1]	**non-COVID SARI** N = 1,261[1]	**COVID SARI** N = 611[1]	**non-COVID SARI** N = 2,302[1]	**COVID SARI** N = 727[1]	**non-COVID SARI** N = 3,563[1]
Length of stay (ICU)	4.1 (6.2)	4.2 (12.0)	5.7 (21.2)	4.6 (12.6)	5.5 (19.6)	4.4 (12.4)
Length of stay (Hospital)	10.3 (15.7)	9.9 (19.2)	13.7 (34.2)	10.9 (21.2)	13.1 (32.0)	10.6 (20.5)
Days of ventilation*	3.9 (5.4)	6.8 (24.4)	6.7 (20.2)	8.7 (37.2)	6.3 (18.5)	8.1 (33.4)
ICU outcome						
Death	4 (3%)	21 (2%)	19 (3%)	40 (2%)	23 (3%)	61 (2%)
Home	9 (8%)	123 (10%)	77 (13%)	168 (7%)	86 (12%)	291 (8%)
Other hospital	2 (2%)	43 (3%)	23 (4%)	98 (4%)	25 (3%)	141 (4%)
Other rehab	2 (2%)	2 (0%)	4 (1%)	3 (0%)	6 (1%)	5 (0%)
Unknown	2 (2%)	3 (0%)	1 (0%)	0 (0%)	3 (0%)	3 (0%)
Wards	97 (84%)	1,069 (85%)	487 (80%)	1,993 (87%)	584 (80%)	3,062 (86%)
Hospital outcome						
Death	5 (4%)	29 (2%)	21 (3%)	48 (2%)	26 (4%)	77 (2%)
Discharged home	100 (86%)	1,102 (87%)	541 (89%)	1,971 (86%)	641 (88%)	3,073 (86%)
Palliative discharge	0 (0%)	1 (0%)	1 (0%)	7 (0%)	1 (0%)	8 (0%)
Transfer to another facility (rehab)	1 (1%)	10 (1%)	3 (0%)	12 (1%)	4 (1%)	22 (1%)
Transfer to other facility (acute hospital)	7 (6%)	102 (8%)	43 (7%)	260 (11%)	50 (7%)	362 (10%)
Unknown	3 (3%)	17 (1%)	2 (0%)	4 (0%)	5 (1%)	21 (1%)

[1]Mean (SD); n (%)

Figure 25. Kaplan-Meier curve of ventillated and non ventillated Paediatric ICU SARI patients

The over-all unadjusted survival status of ICU admissions with and without invasive ventilation are shown in Figure 25. The survival data is censored when patients were deceased in hospital or discharged from the hospital. P-values were calculated using log-ranked test.



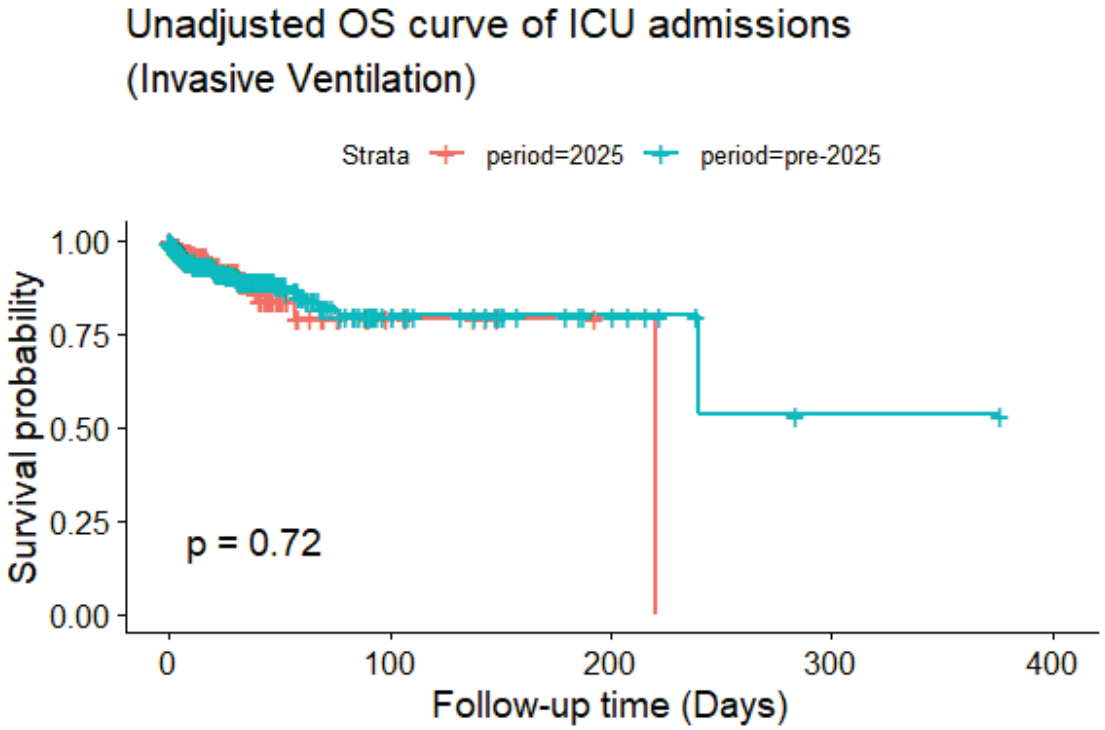


Figure 26. SARI Pathogen numbers by Paediatric Age Group, 2025

The numbers of pathogens causing SARI Paediatric ICU admissions in 2025, by age group, is displayed in Figure 26.

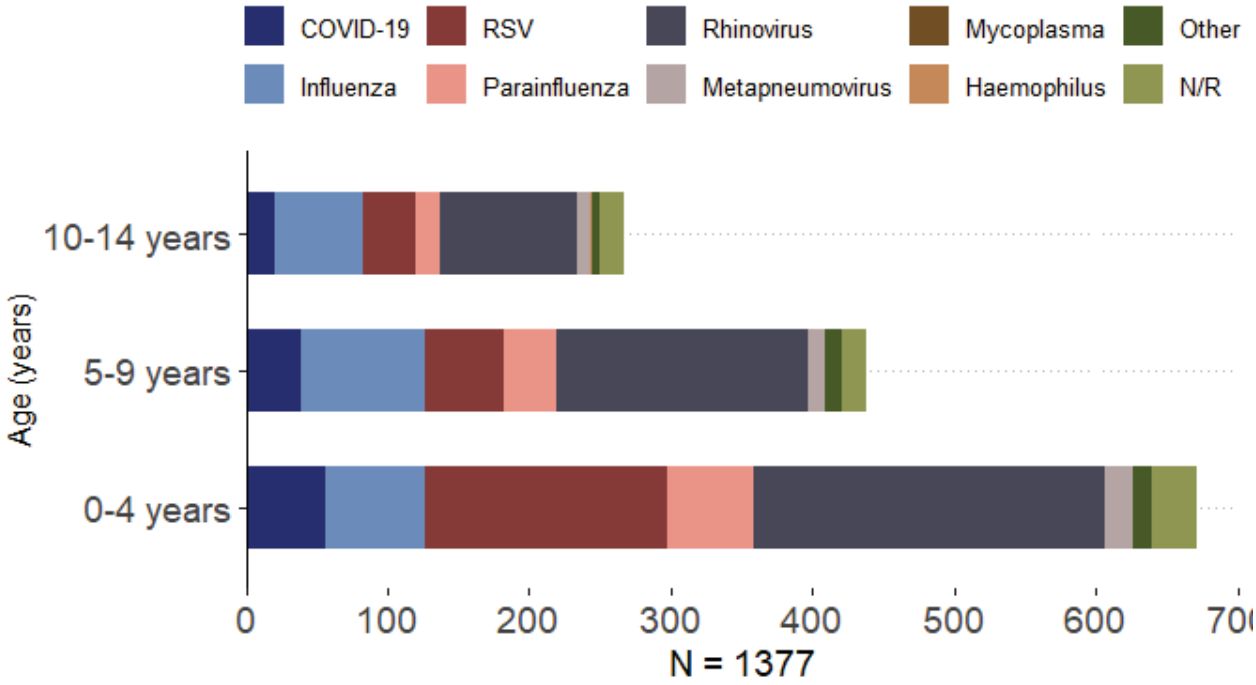


Figure 27. SARI Pathogen type

The percentage of Paediatric patient presentations to ICU with SARI in 2025, listed by pathogen type, is displayed in Figure 27.

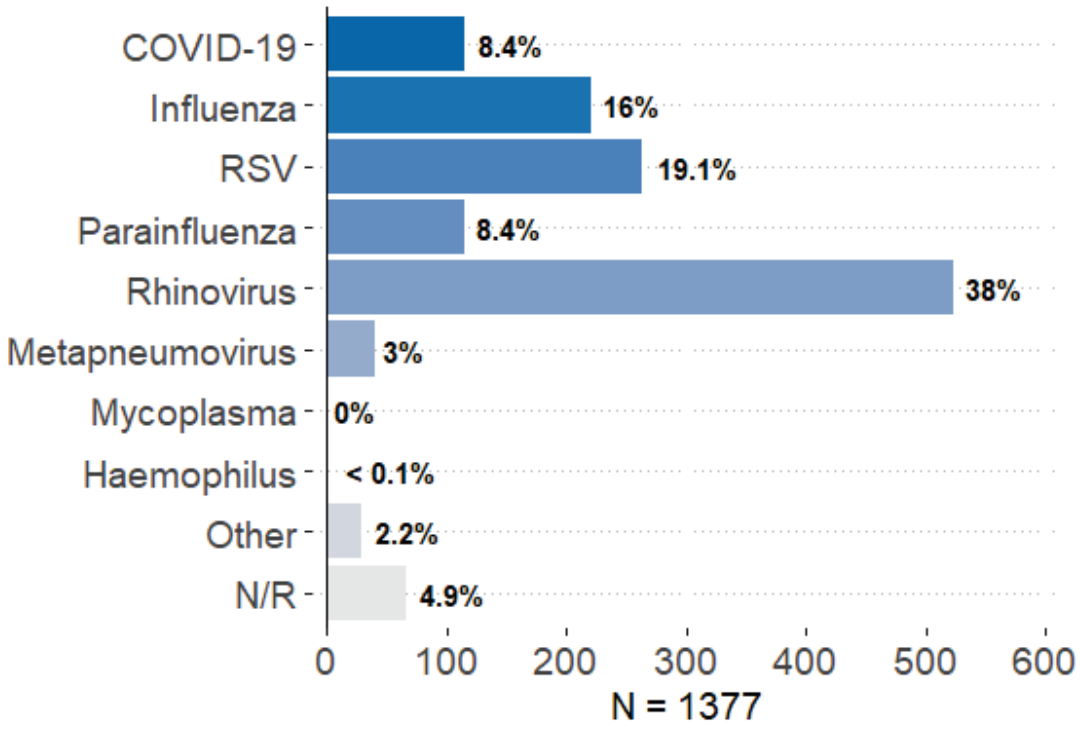
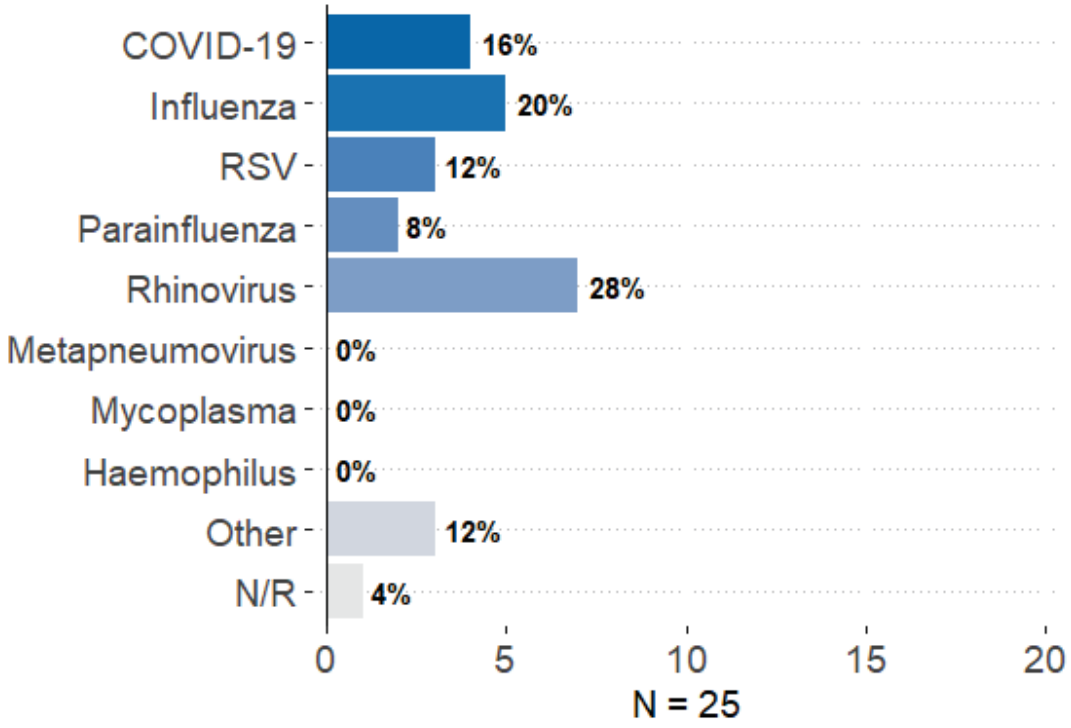


Figure 28. Mortalities of Paediatric Patients admitted to ICU with SARI in 2025, by Pathogen type

Numbers of deaths in ICU of Paediatric patients admitted with SARI in 2025, by initially isolated pathogen is presented in Figure 28. Death may not be attributable to the diagnosed pathogen and may have been from other causes.



ACKNOWLEDGEMENTS

Participating sites

State	Site	State	Site
ACT	Canberra Hospital	SA	Lyell McEwin
NSW	Bankstown-Lidcombe Hospital	SA	Adelaide Women's and Children's Hospital
NSW	Calvary Mater Newcastle	TAS	Launceston Hospital
NSW	Campbelltown Hospital	TAS	Royal Hobart Hospital
NSW	Children's Hospital at Westmead	VIC	Angliss Hospital
NSW	Concord Hospital	VIC	Austin Hospital
NSW	John Hunter Hospital	VIC	Barwon Health
NSW	Lismore Base Hospital	VIC	Bendigo Hospital
NSW	Liverpool Hospital	VIC	Box Hill Hospital
NSW	Nepean Hospital	VIC	Cabrini Hospital
NSW	Prince of Wales Hospital	VIC	Casey Hospital
NSW	Royal North Shore Hospital	VIC	Dandenong Hospital
NSW	Royal Prince Alfred Hospital	VIC	Epworth Richmond
NSW	St George Hospital	VIC	Footscray Hospital (Western Health)
NSW	St Vincent's Hospital Sydney	VIC	Frankston Hospital
NSW	Sydney Children's Hospital, Randwick	VIC	Grampians Health (previously Ballarat Base Hospital)
NSW	Westmead Hospital	VIC	Maroondah Hospital
NSW	Wollongong Hospital	VIC	Mildura Base Hospital
NSW	Shoalhaven District Memorial Hospital	VIC	Monash Children's Hospital
NT	Royal Darwin Hospital	VIC	Monash Medical Centre
NT	Alice Springs Hospital	VIC	Northeast Health Wangaratta
QLD	Bundaberg Hospital	VIC	Royal Children's Hospital
QLD	Caboolture Hospital	VIC	Royal Melbourne Hospital
QLD	Cairns Hospital	VIC	St Vincent's Hospital Melbourne
QLD	Gold Coast University Hospital	VIC	Sunshine Hospital (Western Health)
QLD	Hervey Bay Hospital	VIC	The Alfred Hospital
QLD	Ipswich Hospital	VIC	The Northern Hospital
QLD	Logan Hospital	VIC	Warrnambool Base Hospital
QLD	Mater Misericordiae Limited	VIC	Werribee Mercy Hospital
QLD	Princess Alexandra Hospital	WA	Bunbury Hospital
QLD	Queensland Children's Hospital	WA	Fiona Stanley Hospital
QLD	Redcliffe Hospital	WA	Joondalup Health Campus
QLD	Royal Brisbane and Women's Hospital	WA	Perth Children's Hospital
QLD	Sunshine Coast University Hospital (ICU and PCCU)	WA	Royal Perth Hospital
QLD	The Prince Charles Hospital	WA	Rockingham General Hospital
QLD	Toowoomba Hospital	WA	Sir Charles Gairdner Hospital
SA	The Queen Elizabeth Hospital	WA	St John of God Midland
SA	Flinders Medical Centre	WA	St John of God Murdoch
SA	Royal Adelaide Hospital		

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