

OFFICIAL

SA Department for Health and Wellbeing  
Communicable Disease Control Branch  
Infection Control Service

South Australian Healthcare-associated Infection  
Surveillance Program

# *Clostridioides difficile* Infection Annual Report

2022

August 2023

OFFICIAL

SA Healthcare-Associated Infection Surveillance Program  
*Clostridioides difficile* Infection Annual Report 2022

©Government of South Australia, 2023  
ABN 97643356590

ISBN 978-1-76083-666-5

This annual report was prepared by:  
SA Healthcare-associated Infection Surveillance Program  
Infection Control Service  
Communicable Disease Control Branch  
SA Department for Health and Wellbeing

This annual report can be accessed  
at the Department for Health and Wellbeing  
Internet site [www.sahealth.sa.gov.au/HAlstatistics](http://www.sahealth.sa.gov.au/HAlstatistics)

Department for Health and Wellbeing  
Adelaide, South Australia 5000  
Telephone: 1300 232 272  
Email: [HealthICS@sa.gov.au](mailto:HealthICS@sa.gov.au)

**Disclaimer**

The data presented in this report were correct at the time of publication and reflect rates based on the numerator and denominator data supplied. Minor discrepancies with previous reports may occur as data adjustments are made retrospectively.

## Table of Contents

<b>INTRODUCTION</b> .....	<b>6</b>
<b>KEY FINDINGS</b> .....	<b>7</b>
<b>METHODS</b> .....	<b>8</b>
<b>Numerator</b> .....	<b>8</b>
<b>Denominator</b> .....	<b>8</b>
<b>Statistical methods</b> .....	<b>8</b>
<b>Surveillance definitions</b> .....	<b>8</b>
<b>Hospital type</b> .....	<b>8</b>
<b>Contributing hospitals</b> .....	<b>9</b>
<b>RESULTS</b> .....	<b>11</b>
<b>1. Overall trend in <i>C. difficile</i> infections</b> .....	<b>11</b>
<b>2. <i>C. difficile</i> infection trends in specific contributing hospital groups</b> .....	<b>12</b>
<b>3. <i>C. difficile</i> infection benchmarking</b> .....	<b>14</b>
<b>DISCUSSION</b> .....	<b>14</b>
<b>CONCLUSION</b> .....	<b>14</b>
<b>REFERENCE</b> .....	<b>15</b>

## List of Figures

Figure 1: Rate of hospital identified, and healthcare associated health facility onset <i>C. difficile</i> infection, by year of detection, South Australia, 2015 – 2022. ....	11
Figure 2: Number hospital identified <i>C. difficile</i> infection by age cohort and year of detection, South Australia, 2015 – 2022. ....	11
Figure 3: Rate of hospital identified <i>C. difficile</i> infection by hospital type and year of detection, South Australia, 2015 – 2022. ....	12
Figure 4: Rate of healthcare associated health facility onset <i>C. difficile</i> infection HCA-HCF CDI by hospital type and year of detection, South Australia, 2015 – 2022. ....	13

## List of Tables

Table 1: Contributing hospitals (n=80) .....	9
Table 2: Rates and number of hospital identified <i>C. difficile</i> infection, by year and hospital type, South Australia, 2015 – 2022 .....	12
Table 3: Rate and number of healthcare associated health facility onset <i>C. difficile</i> infection by hospital type and year of detection, South Australia, 2015 – 2022.....	13
Table 4: Rate of hospital identified, and healthcare associated health facility onset <i>C. difficile</i> infection, by financial year for South Australia, and jurisdictional comparator where available .....	14

## Introduction

*Clostridioides difficile* (*C. difficile*) is a bacterium that causes antibacterial-associated gastrointestinal disease, is a common cause of healthcare associated diarrhoea, and has been responsible for outbreaks of severe disease in hospitals overseas<sup>(1, 2)</sup>. SA Health has programs of work and guidance in both [antibiotic stewardship](#) and [environmental hygiene in healthcare](#) in order to minimise *C. difficile* and other healthcare associated infections. Information on *C. difficile* is available via the SA Health [Clostridioides difficile infection \(CDI\)](#) webpage. Additional infection prevention and control (IPC) information is available via the Infection Control Service website: [www.sahealth.sa.gov.au/infectionprevention](http://www.sahealth.sa.gov.au/infectionprevention).

CDI causes significant patient morbidity and mortality for infected patients and has a considerable financial impact on the health care system. Patients with CDI require additional IPC precautions, enhanced hygiene measures, isolation, and ongoing supportive and specific treatment. Patients also spend on average an additional 1-3 weeks in hospital<sup>(3)</sup>.

Continuous, ongoing surveillance of *Clostridioides difficile* infection (CDI) in hospitals is an important quality improvement activity that contributes to safer care for patients and informs strategies to improve practice and minimise CDI cross-transmission.

Hospitals are required to undertake HAI surveillance as per the National Safety and Quality Health Service Standards<sup>(4)</sup>. The Australian Commission on Safety and Quality in Healthcare (ACSQHC) released a set of standardised data criteria to enable a consistent approach to CDI surveillance across Australian jurisdictions<sup>(5, 6)</sup> however, there is currently no national data collection or identified benchmark for CDI, and it is not a notifiable condition in South Australia.

SA Health's Infection Control Service within the Communicable Disease Control Branch commenced surveillance of cases of CDI in January 2006 as part of the voluntary metropolitan hospital statewide surveillance program. In 2009 South Australian CDI surveillance aligned to the published standardised national definitions.

This report presents cumulative data gathered by the Infection Control Service as part of the SA Health Infection Control Healthcare associated infection surveillance program on hospital identified *C. difficile* infection trends in South Australia. Note: this CDI data set comprises of 9 private hospitals which participate in the state HAI program voluntarily and 71 acute care public hospitals including those hospitals defined as public psychiatric hospitals in the [Local Hospital Networks/Public hospital establishments national minimum data set \(NMDS\)](#) Refer to Table 1.

For benchmarking purposes, public hospitals are grouped according to their size and acuity based on the current Australian Institute of Health and Welfare (AIHW) peer groupings. Private hospitals are grouped separately. Refer to the Methods section for applicable definitions.

In conjunction with the CDI annual report, CDI data is also reported monthly via SA Health internal Quality, Information and Performance Hub (QIP HUB) reports for a sub-group of contributors, and quarterly via HAI benchmarking reports for all contributors.

The ACSQHC produce an annual CDI prevalence snapshot via laboratory data<sup>(7)</sup>, as well as capturing enterocolitis due to *C. difficile* via the Hospital-Acquired Complications (HACs) surveillance<sup>(8)</sup>.

## Key Findings

- > A total of 850 hospital-identified *C. difficile* infections (HI-CDIs) were reported in 2022, for an aggregate rate of 4.3 per 10,000 bed days. This represents an increase of 137 HI-CDI cases from 2021 and an aggregate rate of 3.4 per 10,000 bed days.
- > Sixty-five percent of HI-CDI were present in patients prior to hospital attendance.
- > Patients 60 years and older continue to be at greatest risk of CDI acquisition, accounting for 69% of all HI-CDI cases in 2022.
- > Healthcare associated – healthcare facility onset (HCA-HCF) classified CDI rate increased from 1.4 in 2021 to 1.5 per 10,000 bed-days in 2022.

## Methods

Hospital identified *C. difficile* infection (CDI) data are collected by the Infection Prevention and Control Units of participating hospitals (n=80) in accordance with the agreed statewide surveillance definitions. Current state definitions are available via the Infection Control Service website: <http://www.sahealth.sa.gov.au/HAI surveillance>. Data are submitted monthly to the Infection Control Service and Rural Support Service and undergo quality checks prior to entry into the state surveillance database.

CDI surveillance is based on clinical presentation of disease e.g. diarrhoeal episodes, and as such is not influenced by local screening practices.

### Numerator

For contributing hospitals, the numerator includes all *C. difficile* infections identified during a hospital visit (inpatient, outpatient, and emergency) within the period of surveillance. Cases in children less than 2 years of age at admission or where a known previous positive specimen has been recorded within the previous 8 weeks are excluded.

**Hospital identified CDI (HI-CDI)** are CDI identified in a hospital irrespective of attribution of infection.

**Healthcare associated – healthcare facility onset (HCA-HCF)** is a sub-set of hospital identified cases. This category only includes infections where onset occurred 48 hours or more after a patient has been admitted to hospital. The HCA-HCF rate excludes people who present to hospital with symptoms of CDI and/or develop symptoms within two days of admission.

### Denominator

The denominator used for rate calculations in this report is called “bed-days” and includes same day admissions. Bed-days are a combination of patient days and occupied bed days depending on the collection source. There is minimal variance between yearly patient-day and occupied bed-day calculations (less than 1%)<sup>(9)</sup>.

Bed-days for CDI rate calculations exclude children less than 2 years of age at admission.

### Statistical methods

The relative risks for incidence rate (IR) comparisons were calculated using the “ir” command in Stata statistical software, version 15.

### Surveillance definitions

Surveillance definitions can be found via the following webpage:

<http://www.sahealth.sa.gov.au/HAI surveillance>

### Hospital type

Contributing institutions were divided into categories based on a combination of the size and characteristics described by the AIHW Peer Groups<sup>(10, 11)</sup>.

Type 1	public acute group A and principal referral hospitals including specialist women’s and children’s hospitals
Type 2	public acute group B and 6 larger country hospitals from public acute group C which contribute directly to the central SA Health surveillance program
Type 2s	public acute group C hospitals which undertake surgical procedures
Type 3	rehabilitation, psychiatric and public acute group D hospitals
PRIV	private contributors have been grouped together into the PRIV category

Contributing hospitals

Table 1: Contributing hospitals (n=80)

Type	Region	Contributor Name	Type	Region	Contributor Name
Type 1	CALHN	Queen Elizabeth Hospital	Type 3	CALHN	Glenside Hospital
		Royal Adelaide Hospital			Hampstead Rehabilitation Centre
	NALHN	Lyell McEwin Hospital		BHFLHN	Eudunda Hospital
		Modbury Hospital			Gumeracha District Soldiers Memorial Hospital
SALHN	Flinders Medical Centre	EFNLHN	Cleve District Health and Aged Care		
WCHN	Repatriation General Hospital		Coober Pedy Hospital & Health Services		
PRIV	PRIV	Ashford Hospital	FUNLHN	Hawker Memorial Hospital	
		Burnside Hospital		Quorn Health Services	
		Calvary Adelaide Hospital		Roxby Downs Health Services	
		Calvary Hospital		LCLHN	Kingston Soldiers' Memorial Hospital
		Flinders Private Hospital			Penola War Memorial Hospital
		Memorial Hospital			RMCLHN
		North Eastern Hospital		Karoonda & Districts Soldiers' Memorial Hospital	
St Andrew's Hospital	Lameroo District Health Services				
Western Hospital	Mannum District Hospital				
Type 2	SALHN	Noarlunga Public Hospital	YNLHN	Balaklava Soldier's Memorial District Hospital	
	EFNLHN	Port Lincoln Hospital		Boomeroo Centre District Hospital and Health	
	FUNLHN	Port Augusta Hospital		Burra Hospital	
	Whyalla Hospital	Central Yorke Peninsula Hospital (Maitland)			
	LCLHN	Mount Gambier Hospital		Laura & Districts Hospital	
	RMCLHN	Berri Hospital		Orroroo & District Health Service	
YNLHN	Port Pirie Hospital	Peterborough Soldiers' Memorial Hospital			
Type 2s	EFNLHN	Ceduna District Health Service	YNLHN	Port Broughton District Hospital & Health Services	
	LCLHN	Bordertown Memorial Hospital		Riverton District Soldiers' Memorial Hospital	
		Millicent & District Hospital & Health Services		Snowtown Hospital	
		Naracoorte Health Service		Southern Yorke Peninsula Health (Yorketown)	
	RMCLHN	Loxton Hospital Complex		YNLHN	Balaklava Soldier's Memorial District Hospital
		Murray Bridge Soldiers' Memorial Hospital			Boomeroo Centre District Hospital and Health
		Renmark Paringa District Hospital			Burra Hospital
		Waikerie Hospital & Health Services			Central Yorke Peninsula Hospital (Maitland)
	YNLHN	Clare Hospital		YNLHN	Laura & Districts Hospital
		Crystal Brook and District Hospital			Orroroo & District Health Service
Jamestown Hospital & Health Service		Peterborough Soldiers' Memorial Hospital			
BHFLHN	BHFLHN	Angaston District Hospital	Port Broughton District Hospital & Health Services		
		Gawler Health Service	Riverton District Soldiers' Memorial Hospital		
		Kangaroo Island Health Service	Snowtown Hospital		
		Kapunda Hospital	Southern Yorke Peninsula Health (Yorketown)		
		Mount Barker District Soldiers' Memorial Hospital			
		South Coast District Hospital			
		Strathalbyn and District Health Service			
Tanunda War Memorial Hospital					

Type	Region	Contributor Name
Type 1	CALHN	Queen Elizabeth Hospital
		Royal Adelaide Hospital
	NALHN	Lyell McEwin Hospital
		Modbury Hospital
SALHN	Flinders Medical Centre	
WCHN	Repatriation General Hospital	
PRIV	PRIV	Women's And Children's Hospital
		Ashford Hospital
		Burnside Hospital
		Calvary Adelaide Hospital
		Calvary Hospital
		Flinders Private Hospital
		Memorial Hospital
North Eastern Hospital		
St Andrew's Hospital		
Western Hospital		
Type 2	EFNLHN	Port Lincoln Hospital
	FUNLHN	Port Augusta Hospital
	FUNLHN	Whyalla Hospital
		Mount Gambier Hospital



OFFICIAL

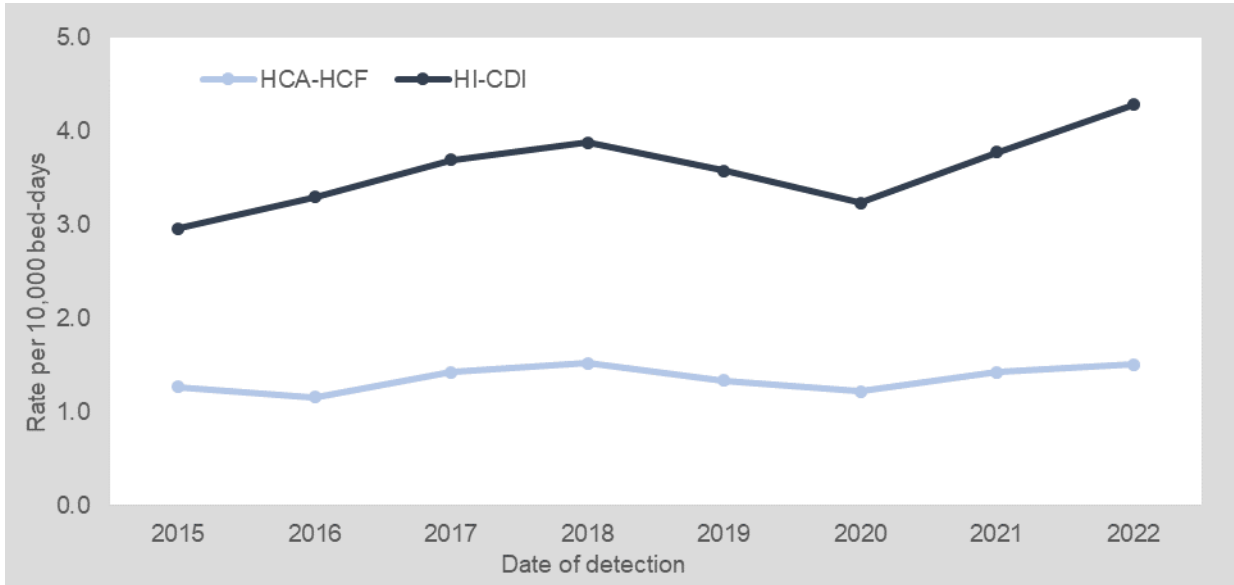
	RMCLH N	Berri Hospital
	SALHN	Noarlunga Public Hospital
	YNLHN	Port Pirie Hospital
Type 2s	BHFLHN	Angaston District Hospital
	BHFLHN	Gawler Health Service Kangaroo Island Health Service Kapunda Hospital
	BHFLHN	Mount Barker District Soldiers' Memorial Hospital South Coast District Hospital Strathalbyn and District Health Service Tanunda War Memorial Hospital
	EFNLHN	Ceduna District Health Service Bordertown Memorial Hospital Millicent & District Hospital & Health Services Naracoorte Health Service
	RMCLH N	Loxton Hospital Complex Murray Bridge Soldiers' Memorial Hospital Renmark Paringa District Hospital Waikerie Hospital & Health Services Clare Hospital Crystal Brook and District Hospital Jamestown Hospital & Health Service

## Results

### 1. Overall trend in *C. difficile* infections

Figure 1 shows the trend over time in overall hospital identified *C. difficile* infections (HI-CDI) and healthcare associated health facility onset (HCA-HCF) cases. The rate of HI-CDI increased from 3.8 per 10,000 bed-days in 2021 to 4.3 per 10,000 bed-days in 2022. This reflects a 19% increase in cases from 613 in 2021 to 850 in 2022.

**Figure 1: Rate of hospital identified, and healthcare associated health facility onset *C. difficile* infection, by year of detection, South Australia, 2015 – 2022.**



Of the 850 HI-CDI cases in 2022, 300 (35%) were classified as HCA-HCF CDI. Historically, the incidence rate for HCA-HCF CDI mirrors the trend for all HI-CDI cases, however the increase for 2022 is less for HCA-HCF classification, increasing from 1.4 in 2021 to 1.5 per 10,000 bed-days in 2022.

**Figure 2: Number hospital identified *C. difficile* infection by age cohort and year of detection, South Australia, 2015 – 2022.**

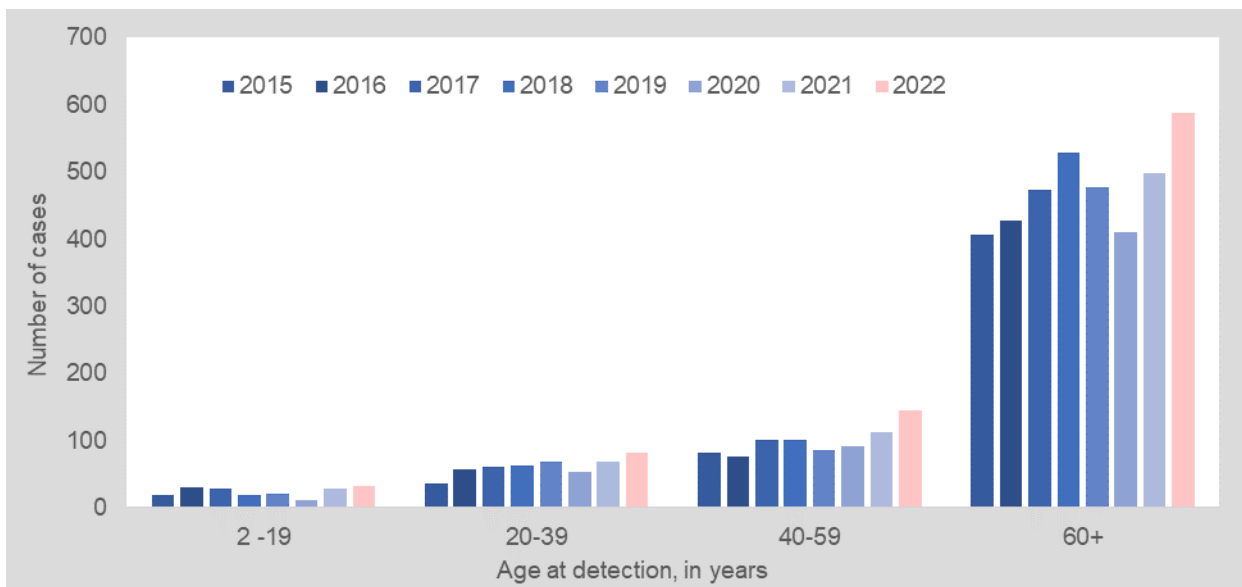
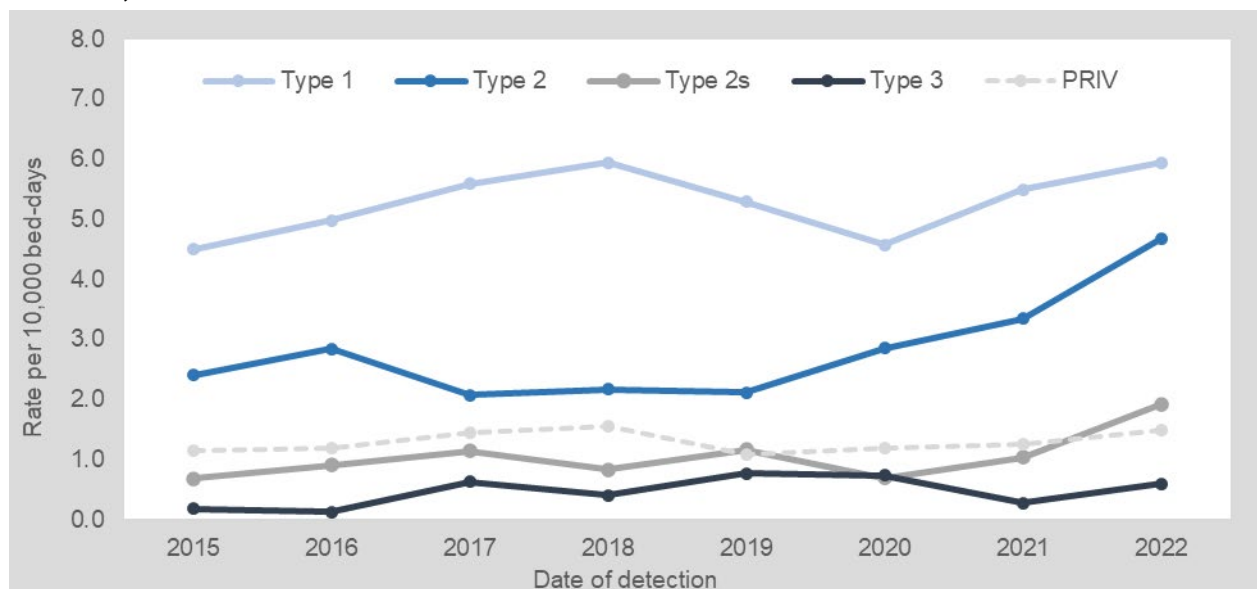


Figure 2 highlights the large proportion of patients in (or presenting to) hospital identified with CDI in the 60 years and over age group (60+) and may reflect known CDI acquisition risk factors such as prolonged hospitalisation, prolonged exposure to antimicrobials and increased susceptibility due to immune system senescence.

## 2. *C. difficile* infection trends in specific contributing hospital groups

The SA Health CDI surveillance program collects data from a variety of hospitals (n=80), such as large public hospitals, rural hospitals, and private hospitals. The hospital type classification defines groups of similar hospitals based on shared characteristics and allows for more valid comparisons. The trend by hospital type is shown in Figures 3 and 4, with the numerical data in Tables 2 and 3 below.

**Figure 3: Rate of hospital identified *C. difficile* infection by hospital type and year of detection, South Australia, 2015 – 2022.**



HI-CDI is a measure of disease burden within the reporting facilities and represents both community and healthcare associated cases. Most CDI episodes are identified during inpatient encounters (88%), with 40% of these associated with a symptom onset date greater than 48 hours after admission (HCA-HCF).

Figure 3 shows that for type 1 hospitals the aggregate rate of HI-CDI shows an increase in HI-CDI for 2022 after a couple of years of lower rates, potentially due to the changes to healthcare access practices during the COVID-19 pandemic. Private facilities showed less variability and lower HI-CDI rates overall, this trend is likely explained by a difference in hospital casemix.

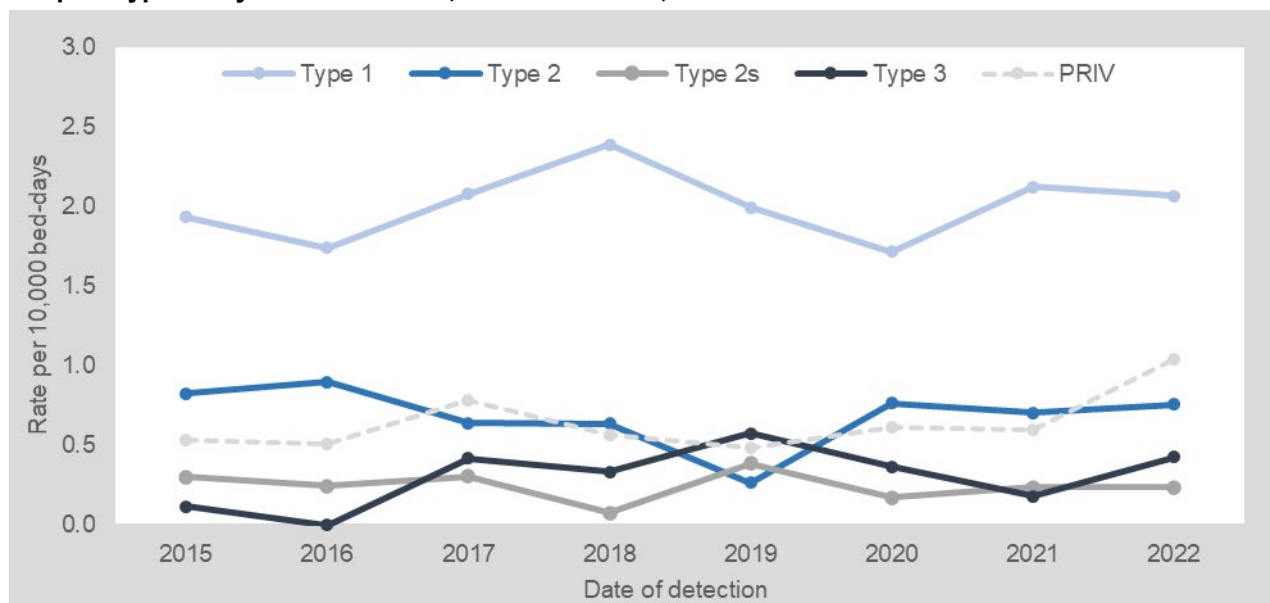
**Table 2: Rates and number of hospital identified *C. difficile* infection, by year and hospital type, South Australia, 2015 – 2022**

Years	Type 1			Type 2			Type 2s			Type 3			PRIV		
	Cases	Bed-days	Rate per 10,000 bed-days	Cases	Bed-days	Rate per 10,000 bed-days	Cases	Bed-days	Rate per 10,000 bed-days	Cases	Bed-days	Rate per 10,000 bed-days	Cases	Bed-days	Rate per 10,000 bed-days
2015	454	1007348	4.5	35	145188	2.4	9	132528	0.7	3	167797	0.2	45	392301	1.1
2016	492	987246	5.0	41	144340	2.8	11	121305	0.9	2	153223	0.1	47	392542	1.2
2017	556	994429	5.6	29	139884	2.1	15	131028	1.1	9	142758	0.6	57	395332	1.4
2018	602	1012186	5.9	34	156991	2.2	11	132603	0.8	6	148675	0.4	60	387604	1.5
2019	556	1050483	5.3	32	150958	2.1	15	129310	1.2	8	104190	0.8	43	392831	1.1
2020	469	1024177	4.6	41	143639	2.9	8	114409	0.7	8	109214	0.7	45	375317	1.2
2021	595	1081884	5.5	52	155294	3.3	13	125462	1.0	3	110319	0.3	50	400545	1.2
2022	686	1154744	5.9	74	158133	4.7	24	124786	1.9	7	116555	0.6	59	392941	1.5

Note, the comparison of type 2s and type 3 facilities with other group types should be undertaken with caution due to the low numbers of bed-days and cases.

*C. difficile* infections are often linked to the prolonged use of antimicrobials<sup>(12)</sup>, consequently, higher CDI rates in type 1 facilities is likely representative of the higher risk patient population and more complex interventions undertaken in these facilities. For information on antimicrobial usage in SA healthcare facilities visit [www.sahealth.sa.gov.au/nausp](http://www.sahealth.sa.gov.au/nausp)

**Figure 4: Rate of healthcare associated health facility onset *C. difficile* infection HCA-HCF CDI by hospital type and year of detection, South Australia, 2015 – 2022.**



While the HCA-CDI rate for most contributors increased in 2022, it is comparable to the recent pre-COVID-19 pandemic figures.

**Table 3: Rate and number of healthcare associated health facility onset *C. difficile* infection by hospital type and year of detection, South Australia, 2015 – 2022**

Years	Type 1			Type 2			Type 2s			Type 3			PRIV		
	Cases	Bed-days	Rate per 10,000 bed-days	Cases	Bed-days	Rate per 10,000 bed-days	Cases	Bed-days	Rate per 10,000 bed-days	Cases	Bed-days	Rate per 10,000 bed-days	Cases	Bed-days	Rate per 10,000 bed-days
2015	195	1007348	1.9	12	145188	0.8	4	132528	0.3	2	167797	0.1	21	392301	0.5
2016	172	987246	1.7	13	144340	0.9	3	121305	0.2	0	153223	0.0	20	392542	0.5
2017	207	994429	2.1	9	139884	0.6	4	131028	0.3	6	142758	0.4	31	395332	0.8
2018	242	1012186	2.4	10	156991	0.6	1	132603	0.1	5	148675	0.3	22	387604	0.6
2019	210	1050483	2.0	4	150958	0.3	5	129310	0.4	6	104190	0.6	19	392831	0.5
2020	176	1024177	1.7	11	143639	0.8	2	114409	0.2	4	109214	0.4	23	375317	0.6
2021	230	1081884	2.1	11	155294	0.7	3	125462	0.2	2	110319	0.2	24	400545	0.6
2022	239	1154744	2.1	12	158133	0.8	3	124786	0.2	5	116555	0.4	41	392941	1.0

In 2022, 80% (239/300) of all reported HCA-HCF episodes were reported by type 1 facilities at a rate of 2.1 per 10,000 bed-days.

### 3. *C. difficile* infection benchmarking

In 2008, the Australian Health Ministers' Conference (AHMC) endorsed the recommendation that all hospitals monitor and report on CDI however, there remains no national data collection or nationally agreed HI-CDI or HCA-HCF targets. Some cross jurisdictional benchmarking can be undertaken due to the implementation of national standardised definitions. HI-CDI benchmarking data should be interpreted with caution as HI-CDI is not a measure of hospital performance and more accurately represents hospital burden of CDI.

CDI data have been included from published state surveillance reports where available <sup>(13-15)</sup>, the comparison data are presented in Table 4 below. The South Australian HCA-HCF CDI rates for 2021/22 are comparable to the published rates available for Victoria, for the corresponding period.

**Table 4: Rate of hospital identified, and healthcare associated health facility onset *C. difficile* infection, by financial year for South Australia, and jurisdictional comparator where available**

	HI-CDI Rate <sup>#</sup>			HCA-HCF Rate <sup>#</sup>		
	SA	WA	TAS*	SA	VIC	TAS*
2015/16	3.3	4.4	5.1	1.3	2.3	2.2
2016/17	3.5	4.2	5.0	1.3	2.1	2.4
2017/18	3.7	5.1	5.7	1.5	2.2	2.2
2018/19	3.9	5.0	5.4	1.5	2.1	2.2
2019/20	3.3	5.0	5.5	1.2	1.6	2.4
2020/21	3.4	5.1	5.7	1.4	1.6	2.5
2021/22	4.4	5.8	N/A	1.5	N/A	N/A

<sup>#</sup>Rate per 10,000 bed-days

Source: Western Australian (WA) data: Communicable Disease Control Directorate Western Australia. Healthcare Infection Surveillance Western Australia (HISWA) - Quarterly Aggregate Reports. 2022;

Victorian (VIC) data: Doherty Institute. Healthcare-associated infection in Victoria. Surveillance report for 2020-21. Victorian Government; 2022;

Tasmanian (TAS) data: Tasmanian Infection Prevention and Control Unit. Healthcare Associated Infection Surveillance – Annual Report 2021. Department of Health Tasmania; 2022

## Discussion

The hospital identified (HI-CDI) data presented in this report is indicative of disease burden rather than cross-infection. The burden of CDI on the South Australian healthcare system has slowly but steadily increased since 2015. Identifying the burden of CDI can assist in detecting at-risk groups for CDI and targeting interventions to minimise the risk of CDI to these groups within the clinical setting. Environmental cleaning and antimicrobial stewardship programs can provide an effective approach to reducing the acquisition of CDI in hospitals.

Recording of associated wards by hospitals allows for the local identification of potential clusters of cases that may indicate an outbreak of cross-infection. There were no clusters of CDI reported by South Australian facilities throughout the 2022 period of surveillance.

There is currently no national target for hospital identified *C. difficile* infection. However, Western Australia has a similar data collection system in place and comparison data are presented in Table 4.

## Conclusion

Continued statewide hospital CDI surveillance will assist with early detection of outbreaks and provide timely intervention and implementation of outbreak management response plans.

## Reference

1. Sunenshine R, McDonald L. Clostridium difficile-associated disease: new challenges from an established pathogen. Cleveland Clinic Journal of Medicine. 2006;73(2):187–97.
2. Kuijper E, Coignard B, Tüll P. Emergence of Clostridium difficile-associated disease in North America and Europe. Clinical Microbiology and Infection. 2006;12 2–18.
3. Australian Commission on Safety and Quality in Health Care. Reducing Harm to Patients from Health Care Associated Infection: The Role of Surveillance. Ferguson J, Cruickshank M, editors: Australian Commission on Safety and Quality in Health Care; 2008.
4. Australian Commission on Safety and Quality in Health Care. National Safety and Quality Health Service Standards (second edition) [Online]. 2017 [Available from: <https://www.safetyandquality.gov.au/publications/national-safety-and-quality-health-service-standards-second-edition/>]
5. Australian Commission on Safety and Quality in Healthcare. Implementation Guide for Surveillance of *Clostridium difficile* infection [Online]. 2013 [Available from: [https://www.safetyandquality.gov.au/wp-content/uploads/2012/02/1303-CDI-Implementation\\_Guide- V10.pdf](https://www.safetyandquality.gov.au/wp-content/uploads/2012/02/1303-CDI-Implementation_Guide- V10.pdf)]
6. Australian Commission on Safety and Quality in Health Care. National definition and calculation of Hospital identified *Clostridium difficile* infection [Online]. 2017 [Available from: <https://www.safetyandquality.gov.au/our-work/healthcare-associated-infection/national-hai-surveillance-initiative/national-definition-and-calculation-of-hospital-identified-clostridium-difficile-infection/>]
7. Australian Commission on Safety and Quality in Health Care. Clostridioides difficile infection monitoring in Australia 2023 [Available from: <https://www.safetyandquality.gov.au/our-work/infection-prevention-and-control/clostridioides-difficile-infection-monitoring-australia>]
8. Australian Commission on Safety and Quality in Health Care. Hospital-acquired complications (HACs) 2023 [Available from: <https://www.safetyandquality.gov.au/our-work/indicators/hospital-acquired-complications>]
9. Australian Infection Control Association Expert Working Group. National Surveillance of Healthcare Associated Infections in Australia. A Report to the Commonwealth Department of Health and Aged Care.; 2001.
10. Australian Commission on Safety and Quality in Health Care. Data Set Specification Version 4.0. 2012.
11. Australian Institute of Health and Welfare. Australian hospital peer groups. Canberra: AIHW; 2015.
12. Pereira JB, Farragher TM, Tully MP, J. JC. Association between Clostridium difficile infection and antimicrobial usage in a large group of English hospitals. British Journal of Clinical Pharmacology 2014;77(5):896-903.
13. Communicable Disease Control Directorate Western Australia. Healthcare Infection Surveillance Western Australia (HISWA) - Quarterly Aggregate Reports. 2021/22.
14. Doherty Institute. Healthcare-associated infection in Victoria. Surveillance report for 2020-21. Victorian Government; 2022.
15. Tasmanian Infection Prevention and Control Unit. Healthcare Associated Infection Surveillance – Annual Report 2021. Department of Health Tasmania; 2022.