Government of **Western Australia**
Department of **Health**

Healthcare Infection Surveillance Western Australia (HISWA)

Quarterly aggregate report

Quarter 3, 2022-2023

Data for January to March 2023

Infection Prevention, Policy, and Surveillance Unit

Communicable Disease Control Directorate

19 October 2023

Contents

Data quality statement

Date Extracted: 19/10/2023 Publication Date: 19/10/2023

The following may impact on aggregated rates:

2022-23

March 2023: Mount Hospital bed day and separation denominators not available.

January and February 2023: Fitzroy Renal Health Centre was temporarily closed due to flooding. Services were transferred to Derby Renal Health Centre.

December 2022: Carnarvon Hospital haemodialysis denominators not available.

May and June 2022: Sir Charles Gairdner Hospital haemodialysis denominators not available.

May 2022: Northam Dialysis Clinic commenced reporting.

March 2022: Fresenius Home Dialysis Clinic Midland commenced reporting.

March 14, 2022 – May 2022: Category 2 and 3 elective surgeries across WA were deferred.

Prior to 2022-23

Please refer to previous reports or contact IPPSU for details if you wish your data to be updated.

All surveillance enquiries

✉ **IPPSU@health.wa.gov.au**

IPPSU news

Committees

The Infection Prevention and Control Advisory Group (IPCAG) – is scheduled for 18th May 2023. Please discuss any issues you wish addressed with your representatives.

The Healthcare Infection Council of Western Australia (HICWA) is scheduled for 2nd June 2023. Please discuss any issues you wish addressed with your representatives.

Western Australia Multi Resistant Organism Expert group (WAMRO)- is scheduled for 26th May 2023. Please discuss any issues you wish addressed with your representatives.

HISWA forum

The next forum is scheduled for 7th June 2023. The forum will be held in the theatrette at 189 Royal Street, East Perth (Department of Health), commencing at 1330. Anyone wishing to participate via Microsoft Teams, please email us at ippsu@health.wa.gov.au.

Reminders

Data quality is paramount to producing meaningful reports, please ensure you check your data prior to finalising, including date of birth, infection onset date and that the 30- and 90-day rule is applied to superficial and deep SSI respectively. Please do not enter strain data for either MRSA or CDI and ALL HI-CDI are entered as 'CDI Hospital' in the 'place of acquisition'.

Check the HISWA manual for HCW categories before entering occupational exposures as 'other'. Common mistakes include not entering student HCWs under their respective specialty or technicians not being entered as patient support services.

Data finalisation

Please finalise your data as soon as possible to meet prescribed data submission deadlines. If a data deadline is on the horizon please let us know so we can assist in your data finalisation.

ICNet

User forum held on 9th May 2023, education on Reports and the Hospitalised Outside Australia and outside WA tags delivered. The forum was not greatly attended. Staff are encouraged to attend and utilise forums as upskill sessions. Next forum scheduled for 9th August 2023.

Please continue to contact us for support and upskilling through MS Teams channel and DoH.ICNet@health.wa.gov.au

Report notes

Report highlights

- ☐ The knee arthroplasty SSI rate remained below the comparator for the 7th consecutive Qtr.
- ☐ The HA-SABSI rates attributable to intravascular devices decreased at both WACHS and private hospital groups.
- ☐ There was ONE adult ICU CLABSI reported from the 13 adult ICUs.
- ☐ The total MRSA HAI rate remains below the comparator for 4th consecutive Qtr and is the lowest rate reported over a 5-year period.
- ☐ The parenteral occupational exposure rate decreased to 3.51 exposures per 10,000 bed-days.
- ☐ The haematology CLABSI rate decreased this Qtr.

Report concerns

- ☐ The total caesarean section SSI rate increased to 1.14 infections per 100 procedures, with an increase evident for both elective and non-elective procedures.
- ☐ Haemodialysis access-associated BSIs associated with cuffed catheters increased this Qtr, to 1.2 infections per 100 patient-months (from 0.72 infections per 100 patient-months).
- ☐ A total of 51 HA-SABSI were reported, and of these 34 (67%) would be classified as preventable adverse events (28: IVD; 6: procedural).
- ☐ Of the 28 HA-SABSI attributed to intravascular devices, 20 (71.4%) were associated with PIVC, of which eight (40%) had a time insitu recorded as less than 72 hours, four (20%) as 72 hours, four (20%) as more than 72 hours, and four (20%) recorded as unknown.

Surgical site infection following hip arthroplasty

Key points

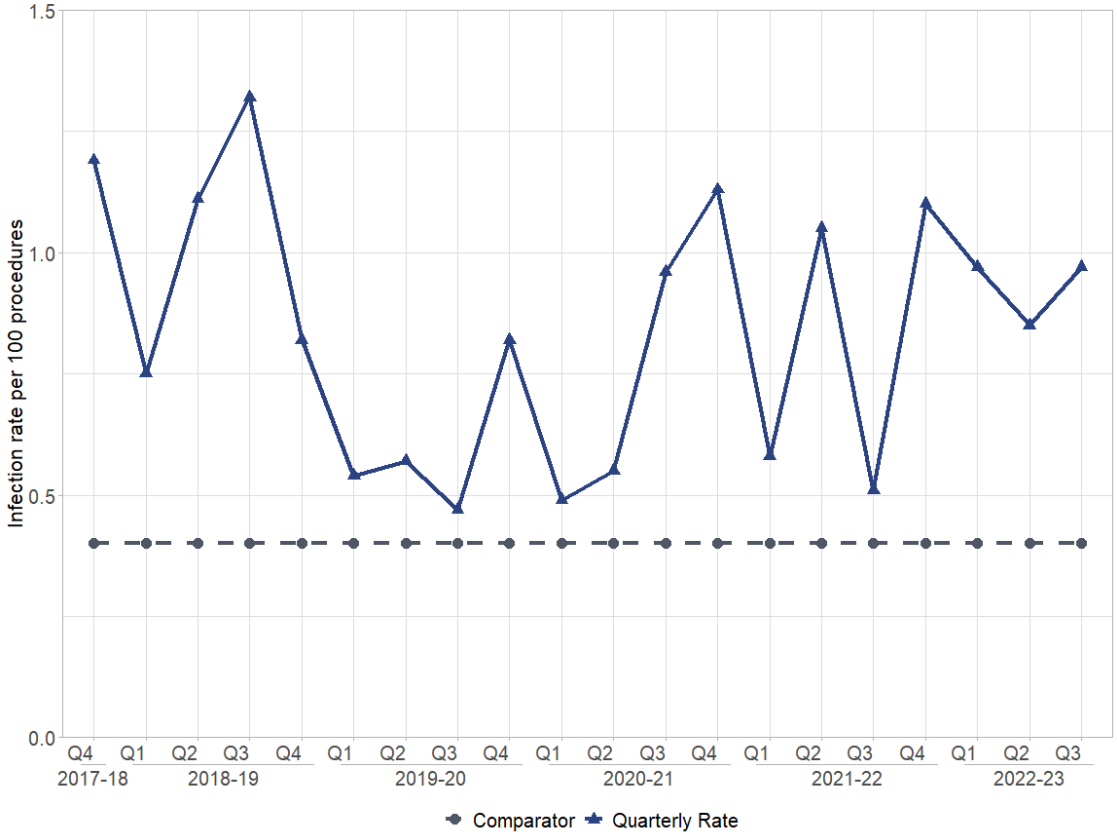
- ☐ There were 1,440 procedures reported (1,343 primary; 97 revision).
- ☐ A total of 14 SSIs following hip arthroplasty were reported, ten from primary procedures and four from revision procedures.
- ☐ Ten SSIs were deep or organ space infections.
- ☐ The total SSI rate following hip arthroplasty increased to 0.97 infections per 100 procedures from 0.85 reported in Qtr 2, 2022-23 (Figure 1).
- ☐ The deep SSI hip rate decreased to 0.69 infections per 100 procedures from 0.79 reported for Qtr 2, 2022-23(Table 3, Figure 3).

Table 1 Hip arthroplasty SSI rate, by risk index

Risk index*	Number of contributing hospitals	Number of procedures	Number of SSI	Aggregate rate (95% CI)	Cumulative aggregate rate (95% CI)
Risk index 0	23	819	4	0.49 [0.01-0.97]	0 [0-0]
Risk index 1	23	552	8	1.45 [0.45-2.45]	1 [0.8-1.2]
Risk index 2	23	62	2	3.23 [0-7.63]	3 [2.05-3.95]
Risk index 3	23	7	0	0 [0-0]	15 [6.32-23.68]
Total hip arthroplasty	**23**	**1,440**	**14**	**0.97 [0.46-1.48]**	**0.83 [0.72-0.94]**

Refer to Appendix 1- SSI Data Notes

Figure 1 Hip arthroplasty SSI rate



Surgical site infection following knee arthroplasty

Key points

- ☐ There were 2,102 procedures reported (1,964 primary; 138 revision).
- ☐ A total of seven SSIs following knee arthroplasty were reported, five from primary procedures and two from revision procedures.
- ☐ Five SSIs were deep or organ space infections, all of which were identified on readmission to hospital.
- ☐ The total SSI rate following knee arthroplasty increased to 0.33 infections per 100 procedures from 0.1 reported in Qtr 2, 2022-23 (Figure 2).
- ☐ The deep SSI knee rate increased to 0.24 infections per 100 procedures from 0.05 reported for Qtr 2, 2022-23 (Table 3, Figure 4).

Table 2 Knee arthroplasty SSI rate, by risk index

Risk index*	Number of contributing hospitals	Number of procedures	Number of SSI	Aggregate rate (95% CI)	Cumulative aggregate rate (95% CI)
Risk All	23	0	0	0 [0-0]	0 [0-0]
Risk index 0	23	1,144	2	0.17 [0-0.41]	0 [0-0]
Risk index 1	23	824	2	0.24 [0-0.57]	0 [0-0]
Risk index 2	23	131	3	2.29 [0-4.85]	2 [1.42-2.58]
Risk index 3	23	3	0	0 [0-0]	4 [0-8.38]
Total knee arthroplasty	**23**	**2,102**	**7**	**0.33 [0.08-0.58]**	**0.4 [0.34-0.46]**

**Refer to Appendix 1- SSI Data Notes*

Figure 2 Knee arthroplasty SSI rate

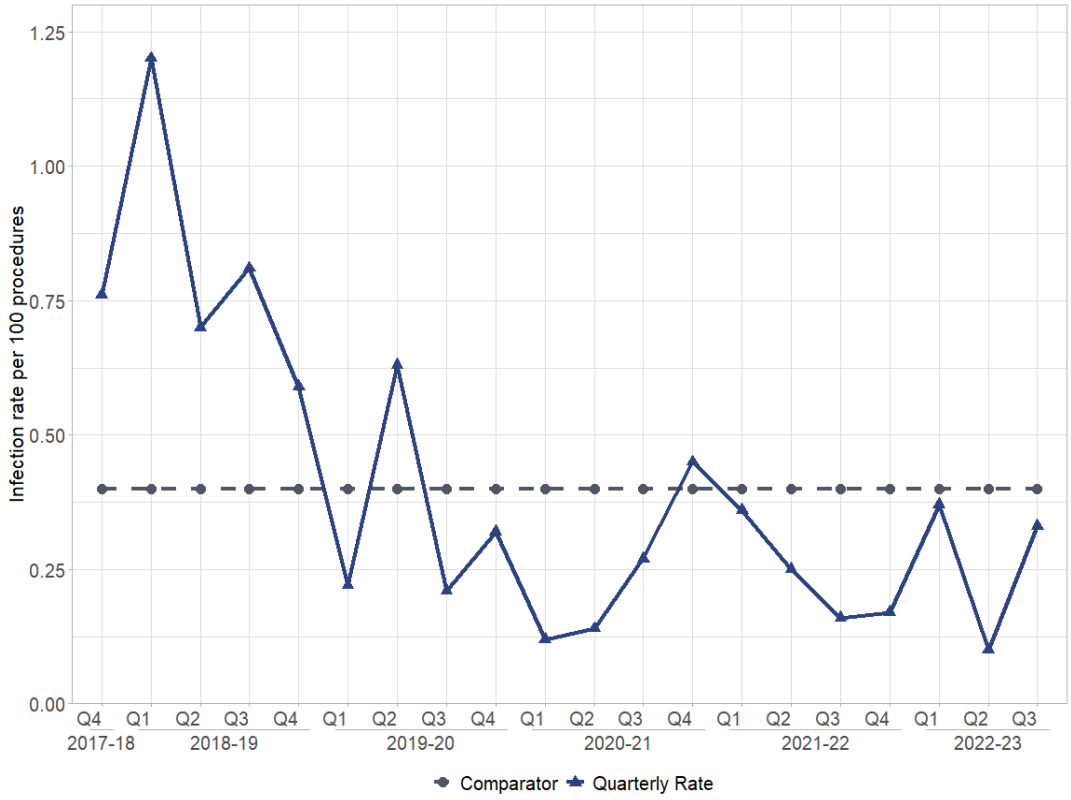


Table 3 SSI rates, by superficial and deep or organ/ space infections

Type	Number of superficial SSI	Number of deep SSI	Total number of SSI	Number of procedures	Aggregate superficial SSI rate (95% CI)	Aggregate deep SSI rate (95% CI)
Hip arthroplasty	4	10	14	1,440	0.28 [0.01-0.55]	0.69 [0.26-1.12]
Knee arthroplasty	2	5	7	2,102	0.1 [0-0.24]	0.24 [0.03-0.45]
Total	**6**	**15**	**21**	**3,542**	**0.0 [0.00-0.00]**	**0.0 [0.00-0.00]**

Figure 3 Hip arthroplasty SSI rate, by superficial and deep

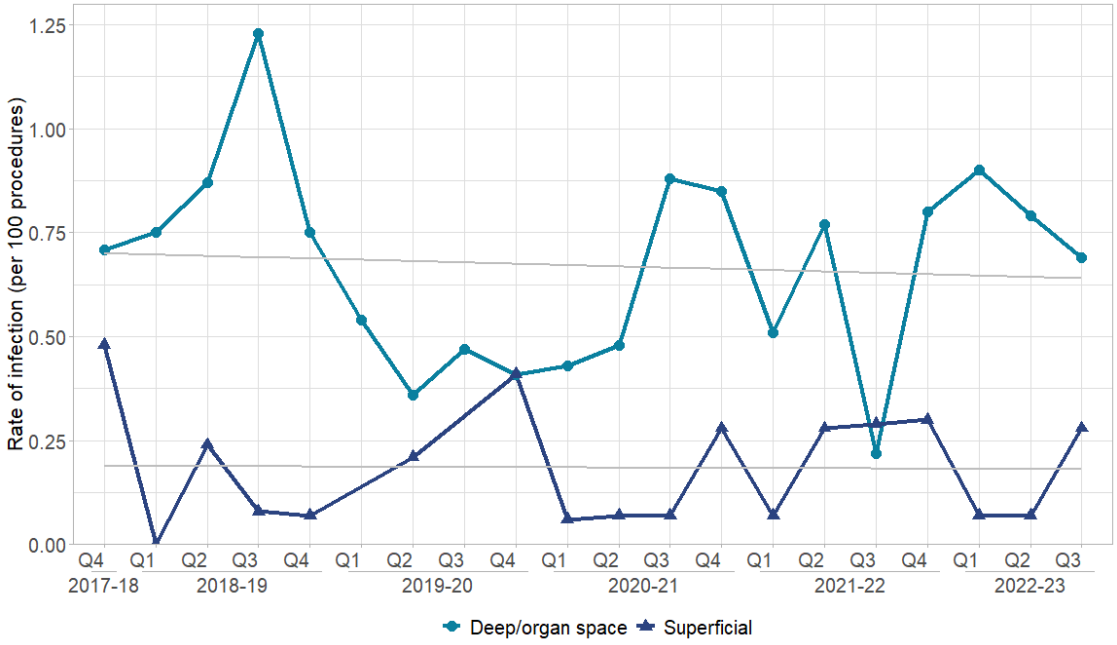
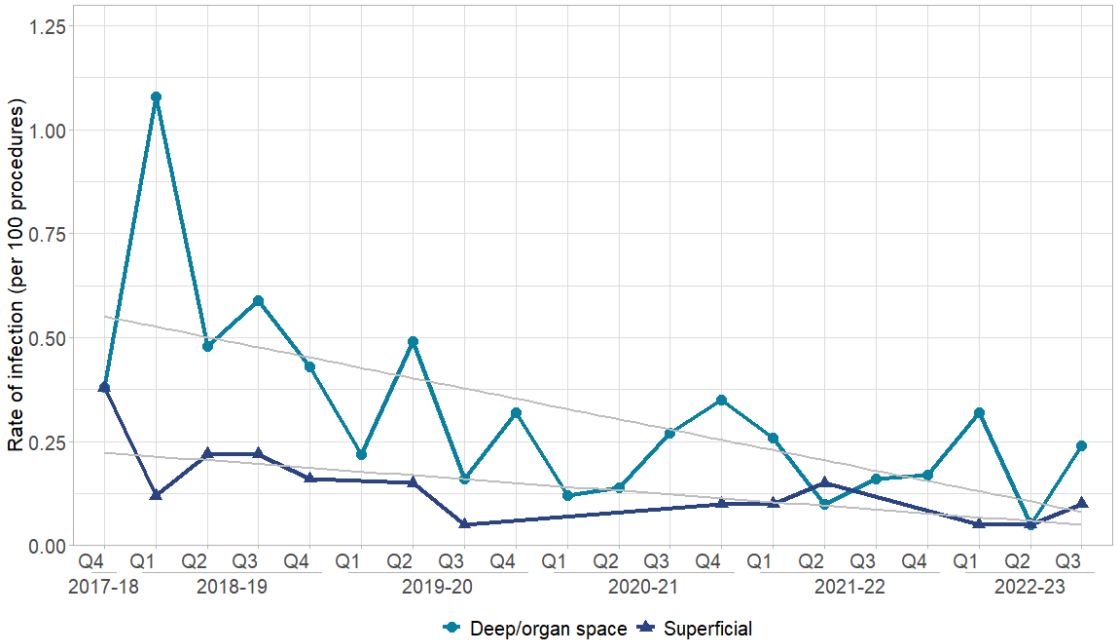


Figure 4 Knee arthroplasty SSI rate, by superficial and deep



Surgical site infection following caesarean section

Key points

- 2,408 caesarean section procedures were reported, of which 1,290 (53.6%) were emergency and 1,118 (46.4%) were elective procedures.
- A total of 50 SSIs were reported, 22 of which were identified post discharge and are not included in further data analysis or in HISWA calculated rates*.
- Of the remaining 28 SSIs, 18 were classified as superficial and 10 as deep/organ space SSI.
- The majority (85.8)% of SSI were identified when the patient required readmission to hospital for care, with 2 superficial SSI identified on initial admission.
- Nnineteen (67.9%) SSIs were following emergency procedures and included six deep / organ space SSIs.
- The total inpatient SSI rate (includes readmissions and excludes post-discharge) increased to 1.16 infections per 100 procedures from 0.56 reported in Qtr 2, 2022-23, and the rates of superficial (from 0.34 to 0.75 infections per 100 procedures) increased, and deep / organ space (from 0.23 to 0.42 infections per 100 procedures) infections increased (Figure 5).
- The elective procedure inpatient SSI rate increased to 0.37 infections per 100 procedures from 0.19 reported in Qtr 2, 2022-23 (Figure 6).
- The emergency procedure inpatient SSI rate increased to 0.79 infections per 100 procedures from 0.38 reported in Qtr 2, 2022-23 (Figure 6).

Table 4 Caesarean section SSI rate per 100 procedures, by risk index

Item	Number of contributing hospitals	Number of procedures	Number of superficial SSI	Number of deep SSI	Total number of SSI	Total aggregate rate (95% CI)	Cumulative aggregate rate (95% CI)
Risk All	4	33	0	0	0	0 [0-0]	1.06 [0.53-1.59]
Risk index 0	23	1,037	6	4	10	0.96 [0.37-1.55]	0.45 [0.37-0.53]
Risk index 1	23	986	5	4	9	0.91 [0.32-1.5]	0.87 [0.73-1.01]
Risk index 2	23	329	7	1	8	2.43 [0.77-4.09]	1.92 [1.56-2.28]
Risk index 3	23	23	0	1	1	4.35 [0-12.69]	2.61 [1.21-4.01]
Post-discharge	0	0	22	0	22	NA	NA
Total Inpatient	27	2,408	18	10	28	1.16 [0.73-1.59]	0.8 [0.72-0.88]
Total SSI*	**NA**	**2,408**	**40**	**10**	**50**	**NA**	**NA**

****HISWA does not include SSI detected by post discharge surveillance (PDS) or identified in outpatient clinics in calculated rates as not all hospitals perform PDS.***

Figure 5 Caesarean section SSI rates by deep and superficial (inpatient only)

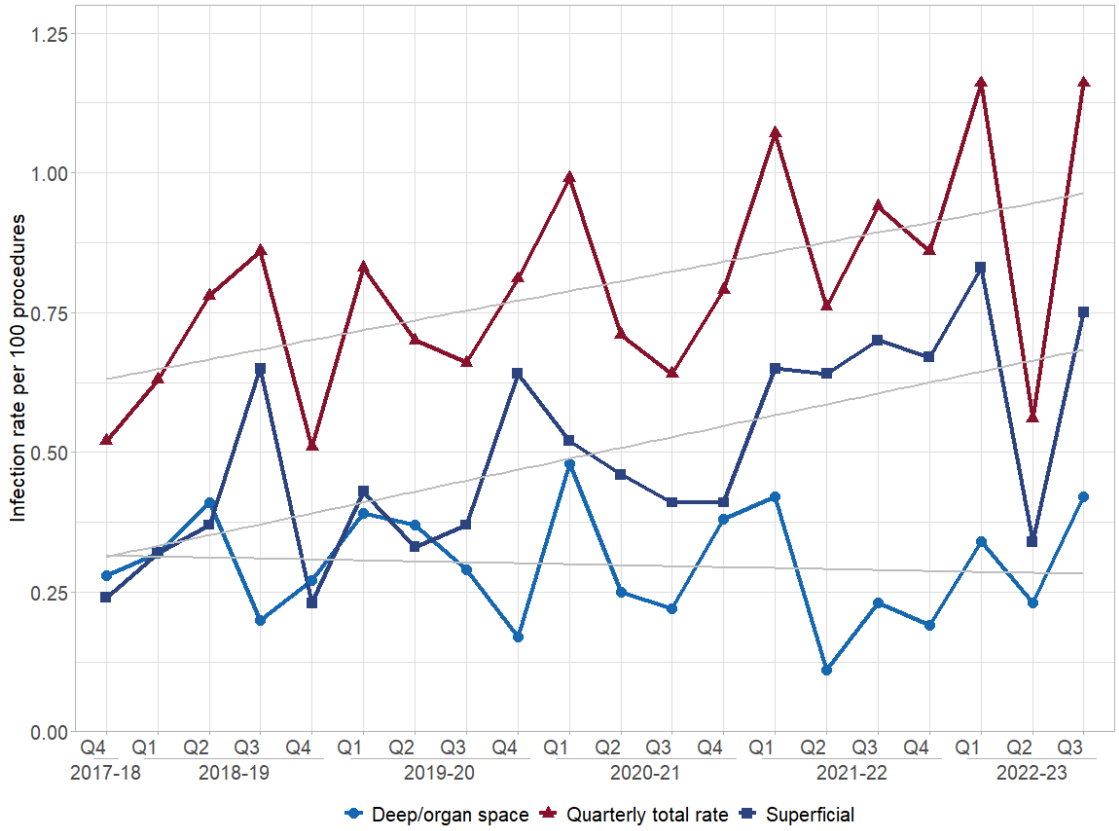
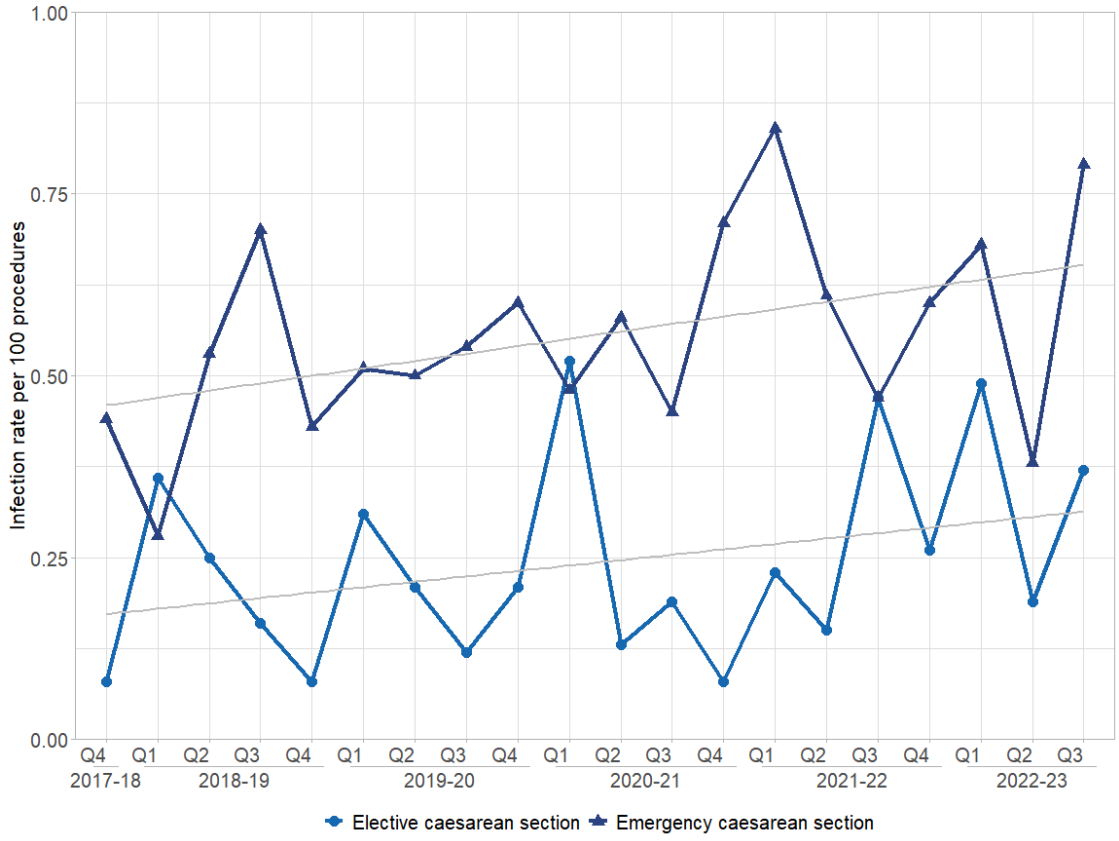


Figure 6 Caesarean section SSI rates by elective and emergency procedures (inpatient only)



Healthcare associated *Staphylococcus aureus* bloodstream infection

Key points

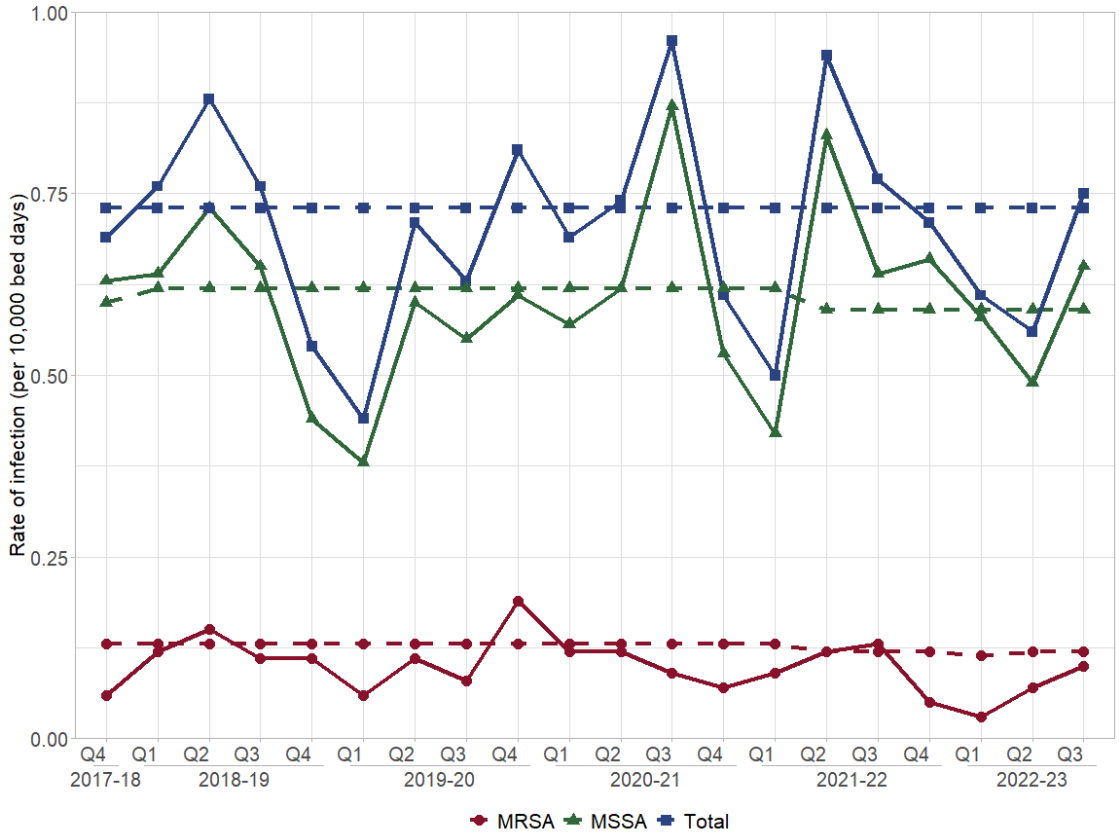
- ☐ There were 51 HA-SABSI (MSSA 44; MRSA 7) reported.
- ☐ The total HA-SABSI rate increased to 0.75 infections from 0.56 per 10,000 bed-days reported in Q2, 2022-23. This remains below the national benchmark of 1.0 infection per 10,000 patient days and is also above the national comparator rate of 0.68* (Figure 7).
- ☐ The MSSA HA-SABSI rate of 0.65 infections per 10,000 bed-days is higher than to the rate of 0.49 reported in Q2, 2022-23 and is below the comparator rate of 0.57* (Figure 7).
- ☐ The MRSA HA-SABSI rate slightly increased to 0.1 infections per 10,000 bed-days from 0.07 reported in Q2, 2022-23 and is below the comparator rate of 0.11* (Figure 7).
- ☐ Of the 51 HA-SABSI reported, 28 (55%) were attributable to IVDs. A further six (12%) were procedure related and six (12%) had an organ site focus (Figure 8).
- ☐ Of the 28 IVD related HA-SABSI, 20 (71%) were attributed to PIVC (Figure 9).
- ☐ The rates for WACHS and private hospital groups decreased while the rates for metro tertiary and metro non-tertiary increased (Figure 11).
- ☐ The IVD SABSI rate increased to 0.41 infections per 10,000 bed-days from 0.35 reported in Q2 2022-2023 (Figure 12).
- ☐ Seventeen (60.7%) of the 28 IVD SABSI were reported from tertiary hospitals (Figure 13).

NOTE: As of July 1 2020 the National benchmark for HA-SABSI decreased to 1.0 per 10,000 patient days (previously a rate of 2.0) and this will align with the existing WA benchmark utilised for health service performance reporting. ****The comparator rates in Figure 7 are the Australian Institute Health and Welfare (AIHW) National public hospital aggregate rates.*** *Refer to Data notes for information on comparator rates.*

Table 5 HA-SABSI rates per 10,000 bed-days

Organism name	Number of contributing hospitals	Number of bed-days	Number of HA-SABSI	Aggregate rate (95% CI)	Cumulative aggregate rate (95% CI)
Total methicillin-sensitive Staphylococcus aureus (MSSA) bloodstream infection	48	676,722	44	0.65 [0.63-0.67]	0.19 [0.19-0.19]
Total methicillin- resistant Staphylococcus aureus (MRSA) bloodstream infection	48	676,722	7	0.1 [0.09-0.11]	0.03 [0.03-0.03]
Total Staphylococcus aureus bloodstream infection	**48**	**676,722**	**51**	**0.75 [0.73-0.77]**	**0.22 [0.22-0.22]**

Figure 7 HA-SABSI rates, by MRSA, MSSA and total



Note: The dotted line is the comparator rate for the corresponding infection.

Figure 8 Number of HA-SABSI, by attributable source

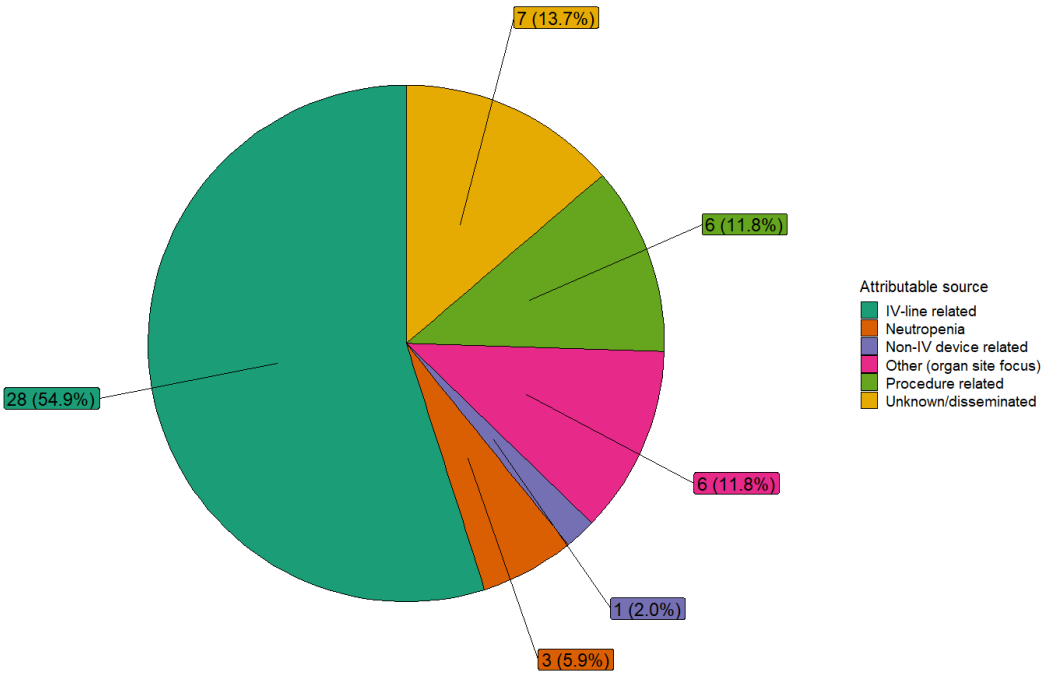
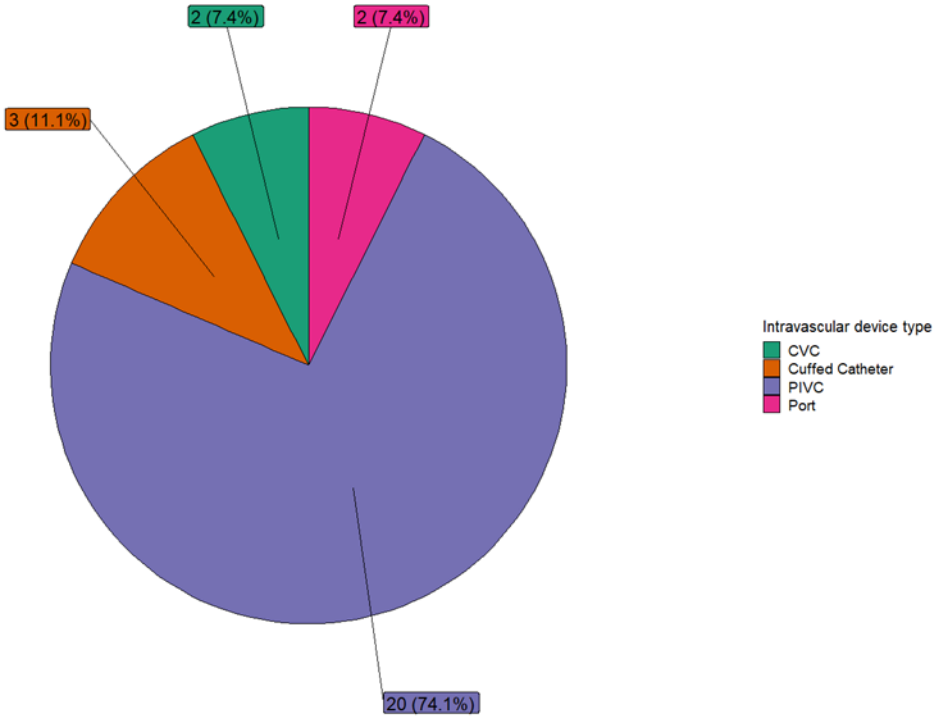


Figure 9 Number of HA-SABSI by intravascular device type



Note: IVD-related HA-SABSIs with device type “undetermined” are not included in Figure 9.

Figure 10 Time in situ (hours) for HA-SABSI attributed to PIVC

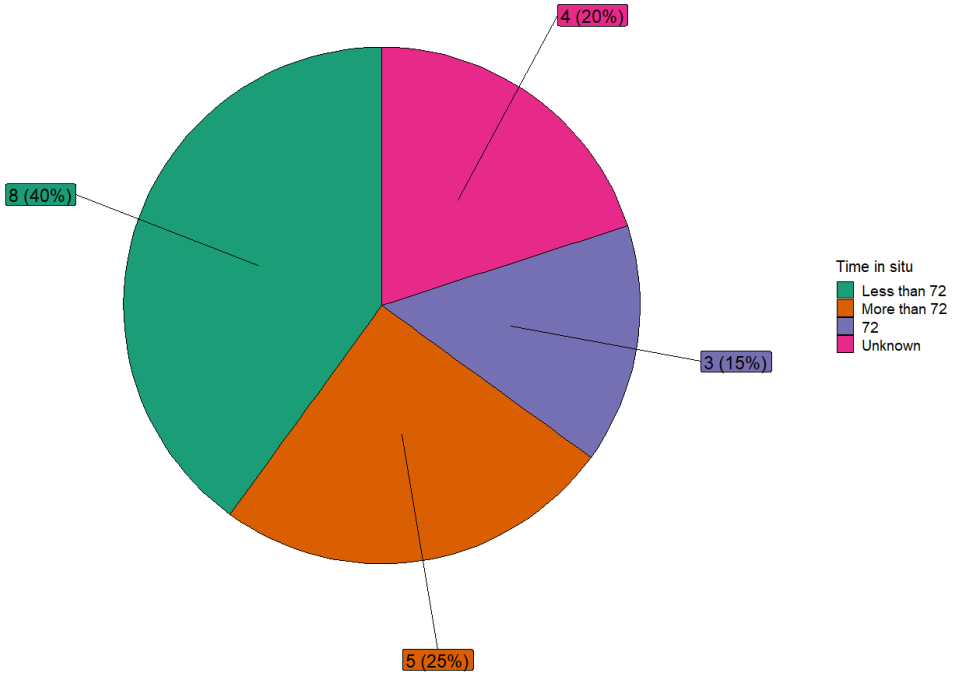


Figure 11 HA-SABSI intravascular device rates, by hospital group

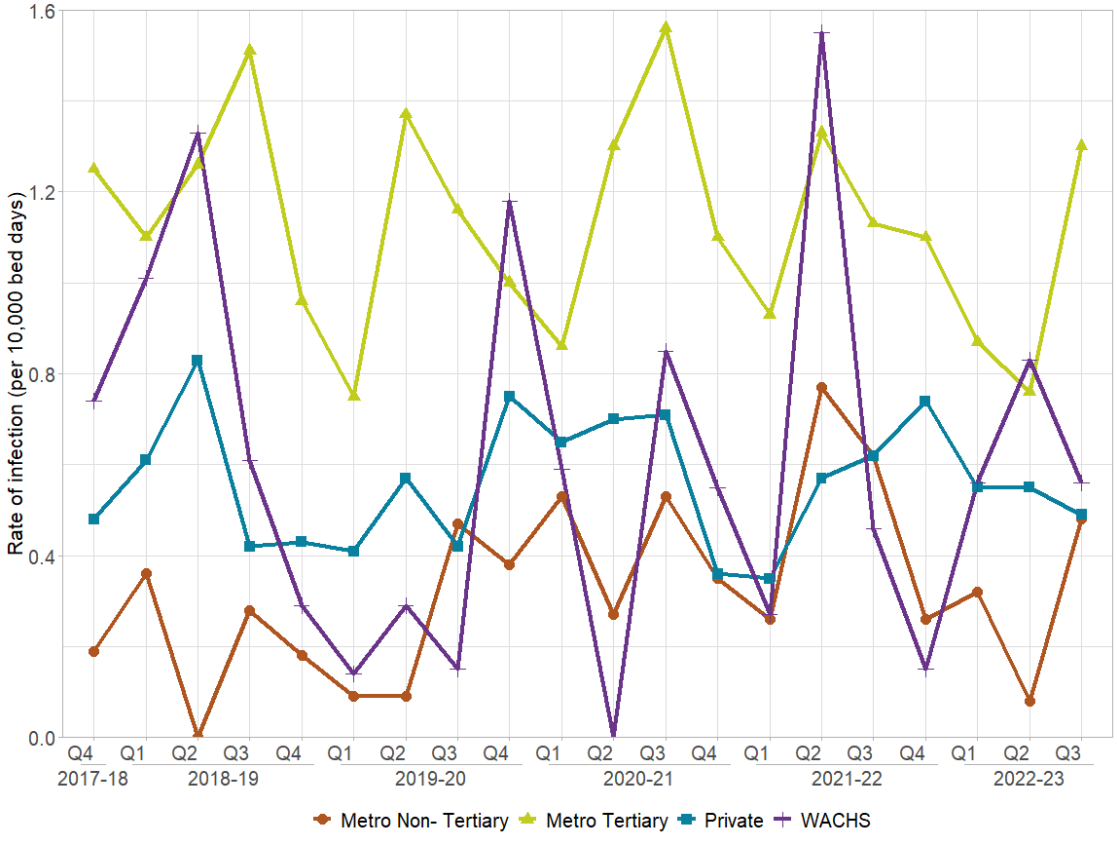


Figure 12 Rate and percentage of HA-SABSI attributed to intravascular devices by patient location

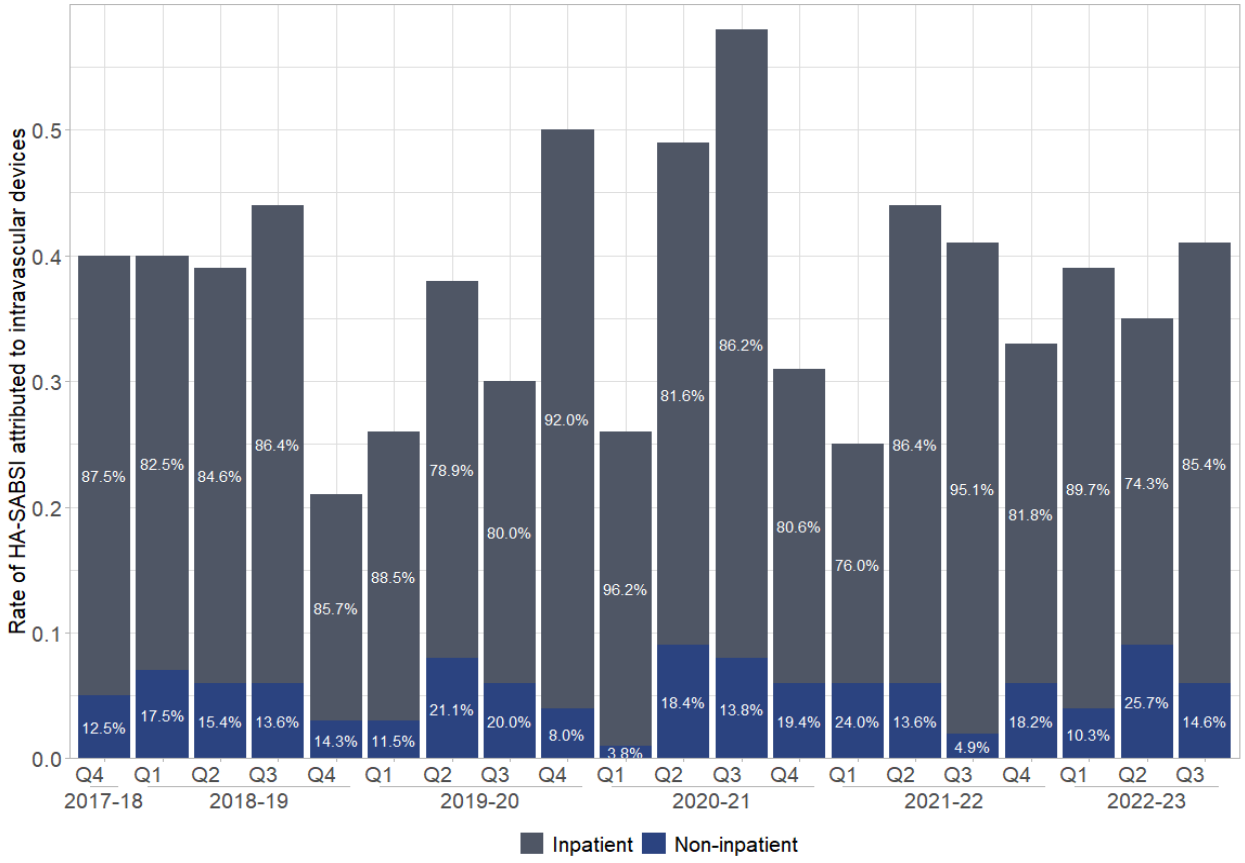
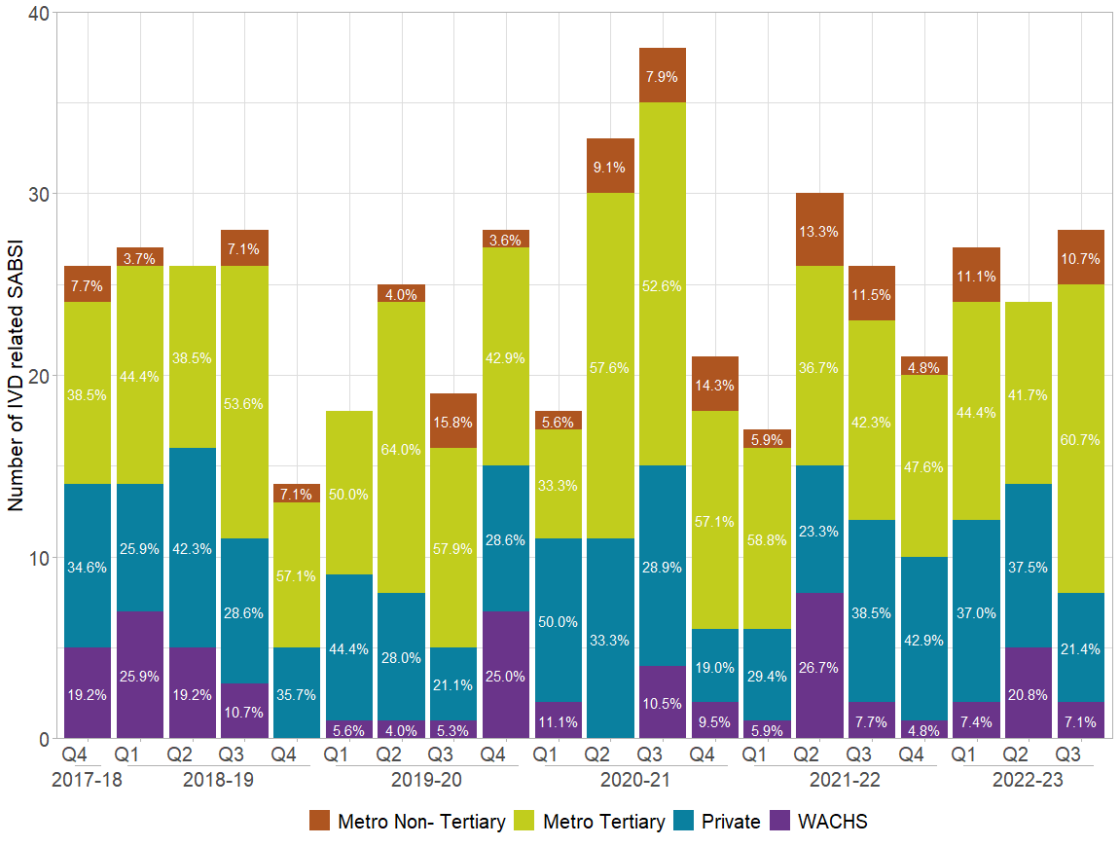


Figure 13 Number and percentage of HA-SABSI attributed to intravascular devices, by hospital group



Haemodialysis access-associated bloodstream infections

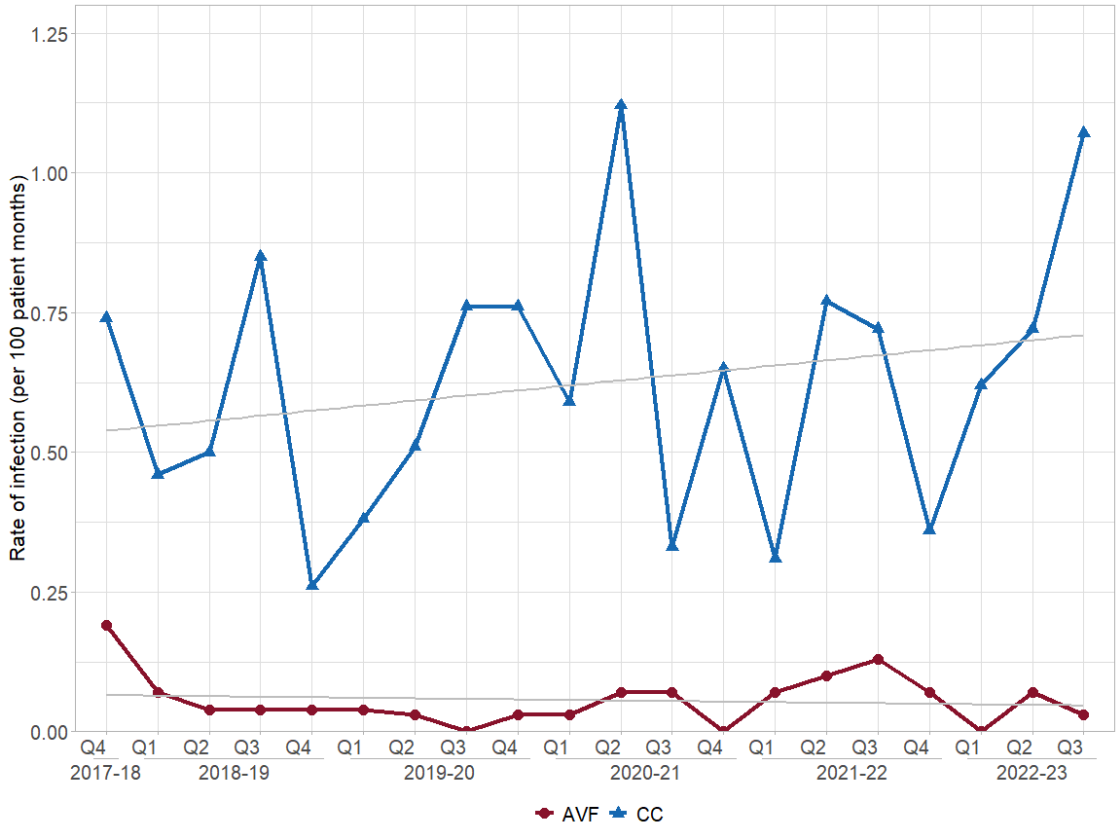
Key points

- ☐ The majority (74.26) of patients received haemodialysis via an AVF.
- ☐ Eleven cuffed catheter (CC) access-associated BSI were reported.
- ☐ The CC BSI rate increased to 1.07 infections per 100 patient-months from 0.72 reported in Q2, 2022-23.
- ☐ There was one AVF access-associated BSIs reported.
- ☐ The AVG BSI rate decreased to 0 infections per 100 patient-months from 1.52 reported in Q2, 2022-23.

Table 6 HD-BSI rate, by type of access

Type of access	Number of contributing units	Aggregate utilisation ratio (%)	Number of BSI	Number of patient months	Aggregate rate (95% CI)	Cumulative aggregate (95% CI)
AVF	26	74.26	1	3,196	0.03 [0-0.09]	0.06 [0.04-0.08]
AVG	26	1.56	0	67	0 [0-0]	0.25 [0.01-0.49]
Cuffed catheter (CC)	26	23.86	11	1,027	1.07 [0.44-1.7]	0.63 [0.51-0.75]
Non-cuffed catheter	3	0.33	0	14	0 [0-0]	1.42 [0.18-2.66]

Figure 14 AVF and cuffed catheter BSI rate



Central line-associated bloodstream infection

Key points

- ☐ There was one adult ICU CLABSIs reported this quarter.
- ☐ The total ICU CLABSI rate decreased to 0.13 infections per 1,000 line-days from 0.35 reported in Q2 2022-2023.
- ☐ The majority (76%) of central lines utilised in adult ICUs were centrally-inserted.
- ☐ Two haematology CLABSIs were reported this quarter and the rate decreased to 0.35 infections per 1,000 line days from 1.26 reported in Q2, 2022-23.
- ☐ One oncology CLABSIs was reported and the rate increased to 0.01 infections per 1,000 line days from 0 reported in Q2, 2022-23.

Table 7 Adult ICU CLABSI

Central line type	Number of contributing hospitals	Number of line days	Number of CLABSI	Aggregate rate (95% CI)	Cumulative aggregate rate (95% CI)
Peripherally inserted CLABSI	13	1,857	0	0 [0-0]	0.27 [0.2-0.34]
Centrally inserted CLABSI	13	5,748	1	0.17 [0.06-0.28]	0.48 [0.43-0.53]
Total CLABSI	**13**	**7,605**	**1**	**0.13 [0.05-0.21]**	**0.43 0.39-0.47]**

Table 8 Adult ICU central line utilisation ratio (CLUR)

Central line type	Number of contributing hospitals	Number of line days	Number of bed-days	Tertiary Aggregate CLUR (%)	Total Aggregate CLUR (%)
Adult ICU peripherally inserted CLUR	13	1,857	12,396	24.42	14.98
Adult ICU centrally inserted CLUR	13	5,748	12,396	75.58	46.37

Table 9 Haematology Unit CLABSI

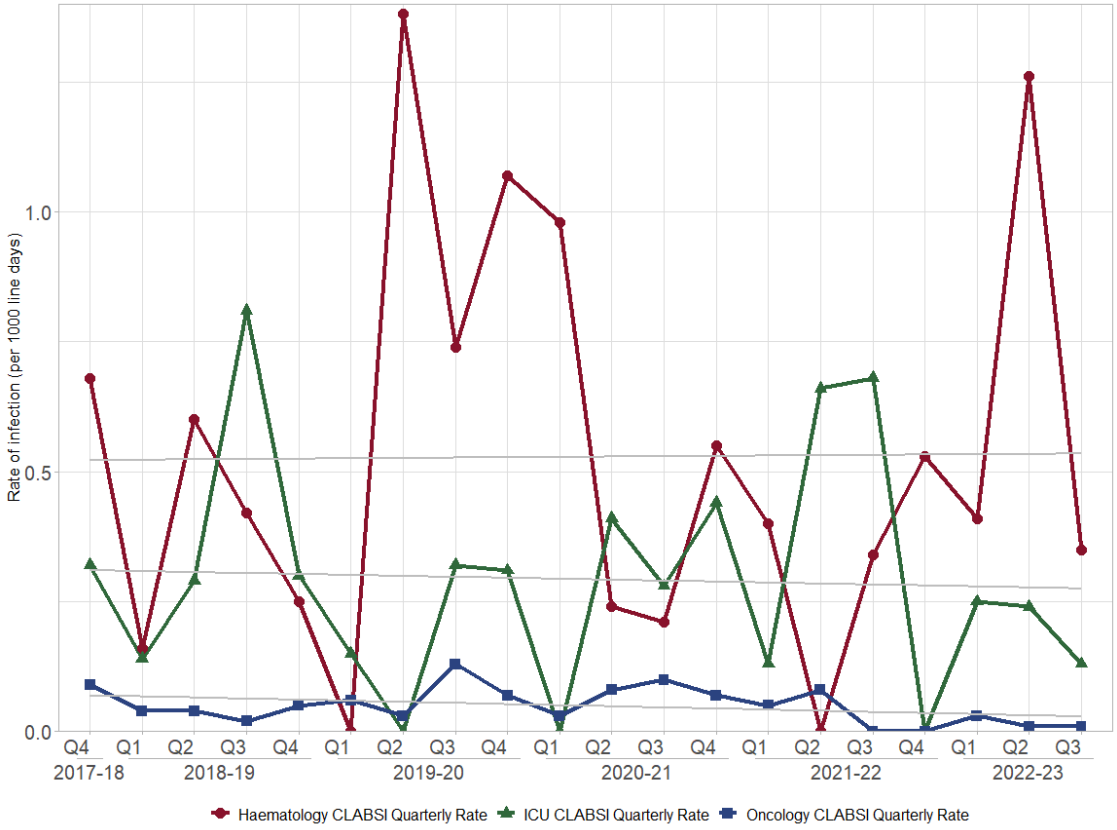
Central line type	Number of contributing hospitals	Number of line days	Number of CLABSI	Aggregate rate (95% CI)	Cumulative aggregate rate (95% CI)
Haematology peripherally inserted CLABSI	1	3,817	2	0.52 [0.29-0.75]	0.38 [0.33-0.43]
Haematology centrally inserted CLABSI	1	1,979	0	0 [0-0]	0.76 [0.67-0.85]
Total Haematology CLABSI	**1**	**5,796**	**2**	**0.35 [0.2-0.5]**	**0.52 [0.48-0.56]**

Table 10 Oncology unit CLABSI

Central line type	Number of contributing hospitals	Number of line days	Number of CLABSI	Aggregate rate (95% CI)	Cumulative aggregate rate (95% CI)
Oncology peripherally inserted CLABSI	4	16,655	1	0.06 [0.02-0.1]	0.2 [0.18-0.22]
Oncology centrally inserted CLABSI	4	52,039	0	0 [0-0]	0.03 [0.03-0.03]
Total Oncology CLABSI	**4**	**68,694**	**1**	**0.01 [0-0.02]**	**0.05 [0.05-0.05]**

All rates per 1,000 central line days

Figure 15 ICU, haematology, and oncology unit CLABSI rates



Methicillin-resistant *Staphylococcus aureus* healthcare associated infection

Key points

- ☐ There were 38 MRSA HAIs reported.
- ☐ The total MRSA HAI rate of 0.63 infections per 10,000 bed-days was higher than the rate of 0.46 reported in Q2 2022-2023, but remains below the comparator rate of 0.96.
- ☐ Thirty-four of the 38 MRSA HAIs reported were identified from the inpatient setting (12 ICU).
- ☐ Seven (18%) patients were known to be colonised prior to developing an infection.
- ☐ Of the 38 MRSA HAIs, eight (21%) were related to surgical wounds and seven (18%) were BSIs. A further thirteen (34%) were classified as 'wound-other'. The remaining infections were isolated from sputum, urine or pleural samples.
- ☐ The majority (61%) of MRSA HAIs were caused by micro B PVL negative strains.
- ☐ Twenty seven (71%) of all MRSA HAIs were reported from the tertiary hospitals, with 16% (n=6) attributed to one tertiary facility.

Table 11 MRSA HAI rate per 10,000 bed-days (inpatient and non-inpatient)

MRSA	Number of contributing hospitals	Number of MRSA HAI	Number of bed days	Aggregate rate (95% CI)	Cumulative aggregate (95% CI)
MRSA Non-ICU sterile site	48	7	443,948	0.16 [0.15-0.17]	0.07 [0-0]
MRSA Non-ICU non-sterile site	48	15	443,948	0.34 [0.32-0.36]	0.17 [0-0]
MRSA ICU sterile site	48	2	22,150	0.9 [0.78-1.02]	0.11 [0-0]
MRSA ICU non-sterile site	48	10	22,150	4.51 [4.24-4.78]	0.62 [0-0]
Total inpatient MRSA HAI	48	34	466,098	0.73 [0.71-0.75]	0.25 [0-0]
MRSA HAI non-inpatient	48	0			
Total MRSA healthcare associated infection	**48**	**38**	**604,104**	**0.63 [0.61-0.65]**	**0.21 [0.21-0.21]**

Rates per 10,000 multi and same-day bed-days

Table 12 MRSA HAI, by strain group, site, and place of acquisition

Setting	Micro-B PVL negative MRSA	Micro-B PVL positive MRSA	Micro-C MRSA	Not Typed	total
Non-ICU sterile	6	0	1	0	7
Non-ICU non-sterile	9	4	2	0	15
ICU sterile	0	1	1	0	2
ICU non-sterile	6	1	3	0	10
Non-inpatient sterile	1	0	0	0	1
Non-inpatient non-sterile	2	0	1	0	3
Proportion	63 %	16 %	21 %	0 %	38 %
Strain	Not characterised (24)	Qld Clone (5) / WA121 (1)	UK 15 PVL Pos (1) UK15 (7)		
Total	**24**	**6**	**8**	**0**	**38**

Figure 16 Total MRSA HAI rate per 10,000 multi and same day bed-days (inpatient and same-day patient)

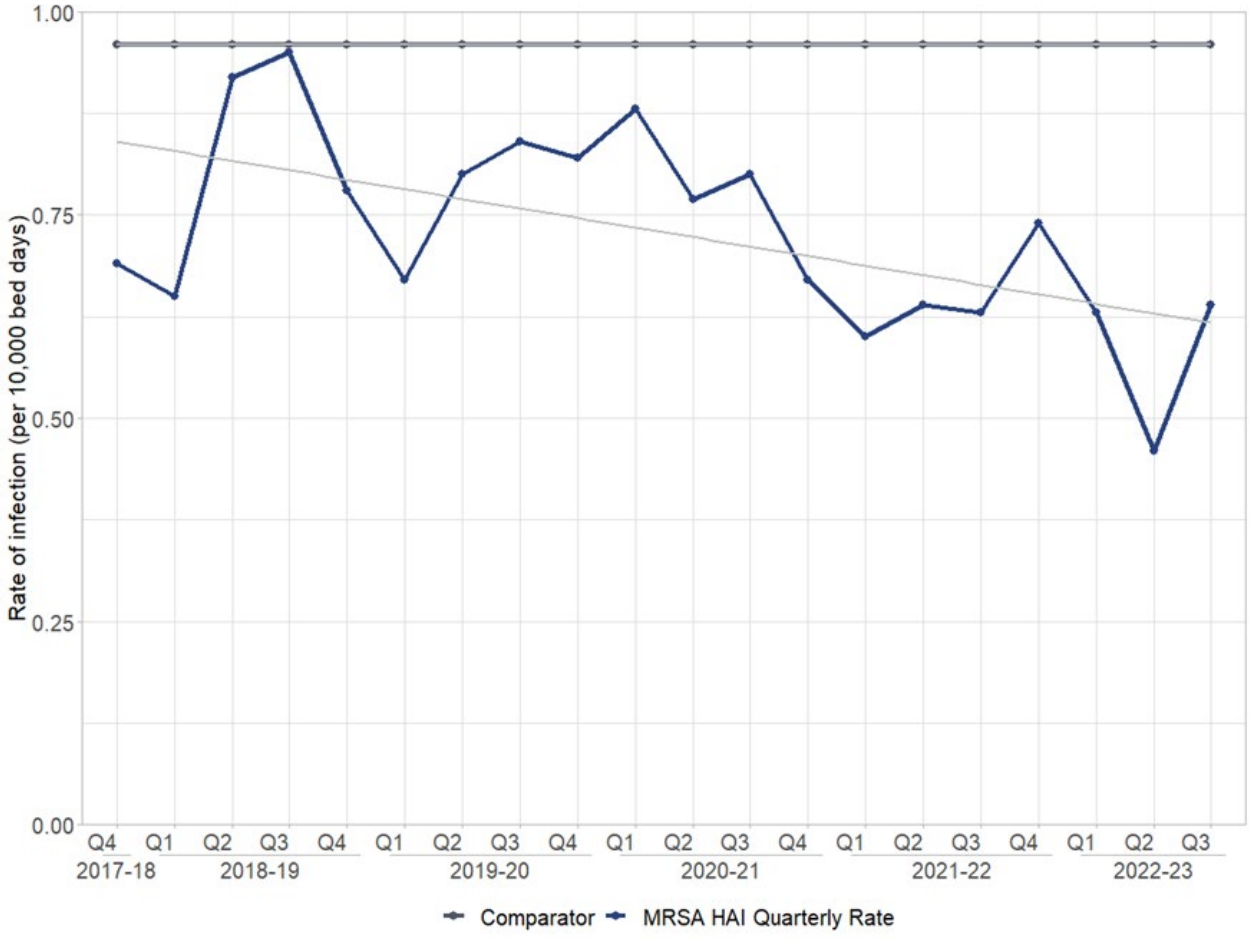


Figure 17 Percentage of MRSA HAIs, by specimen site

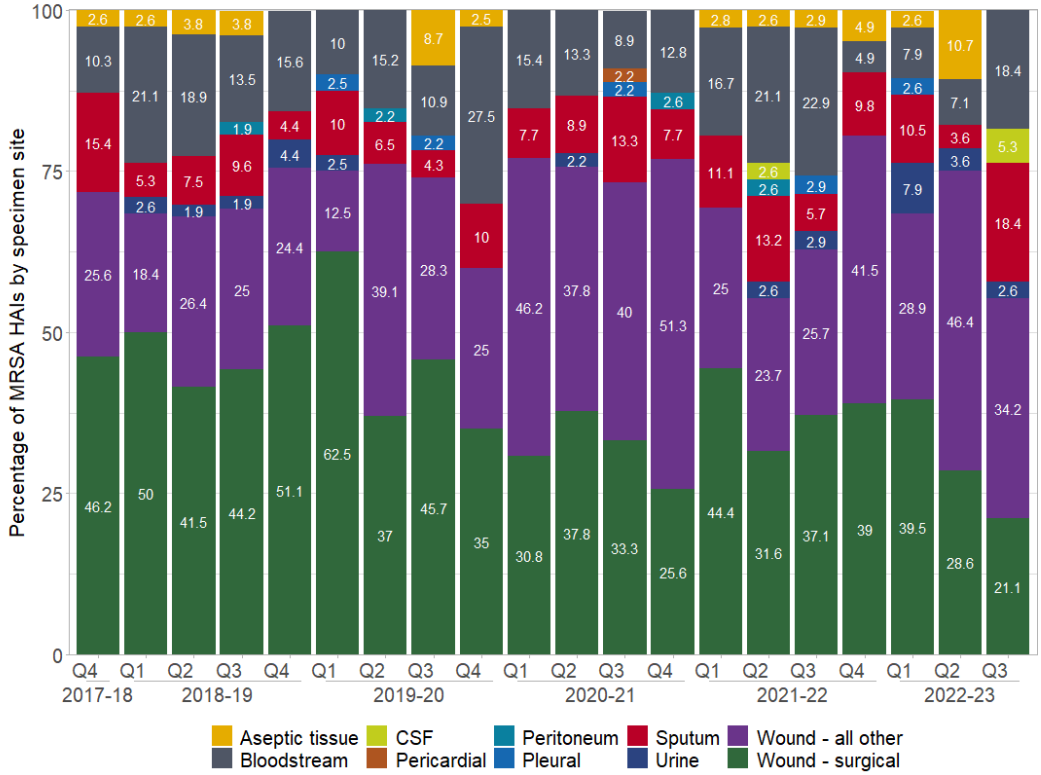


Figure 18 Rate of MRSA HAI, by strain group

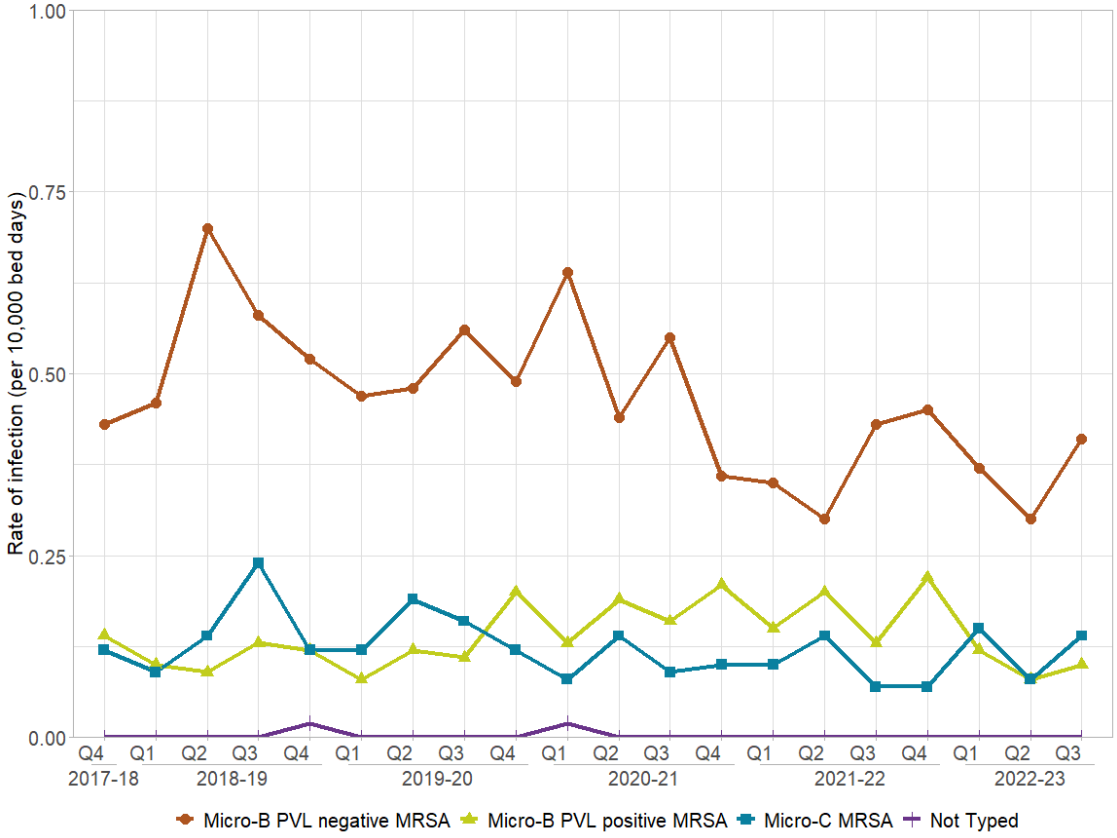


Figure 19 Percentage of MRSA HAI by strain group

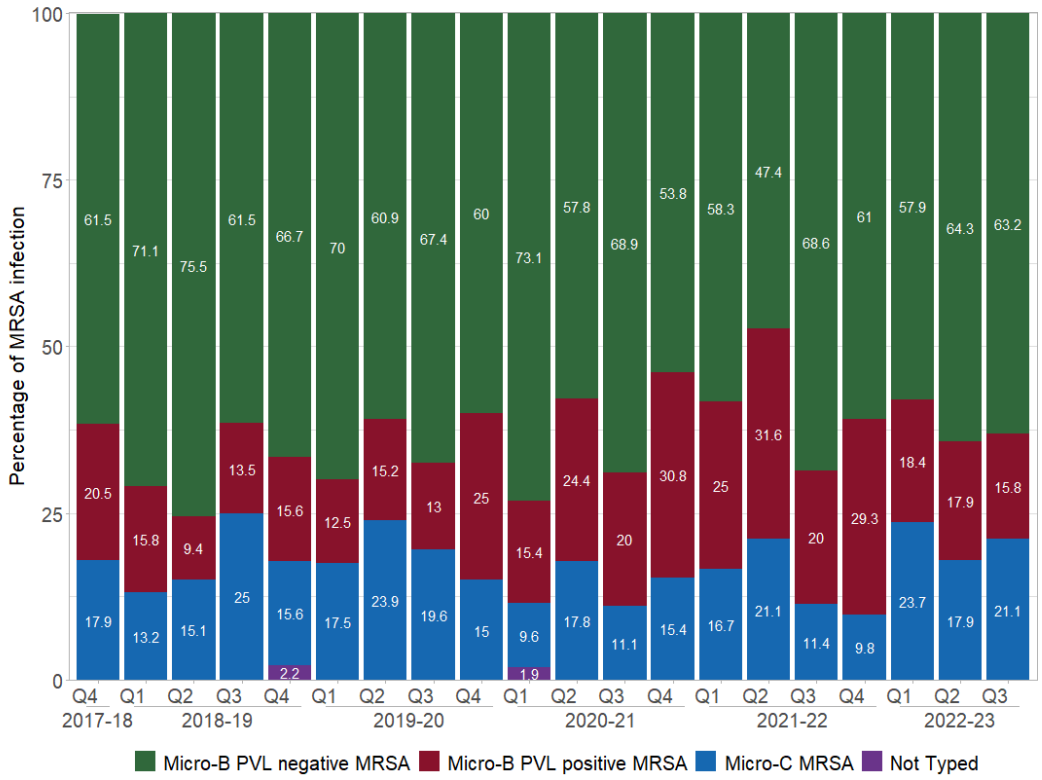
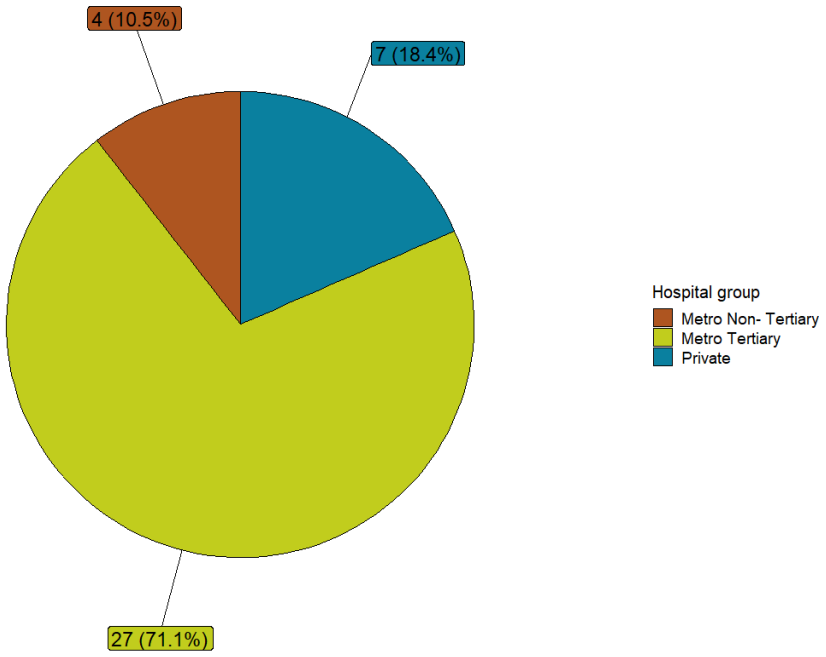


Figure 20 Proportion of MRSA HAI, by hospital group with tertiary hospital breakdown



Hospital-identified *clostridioides difficile* infection

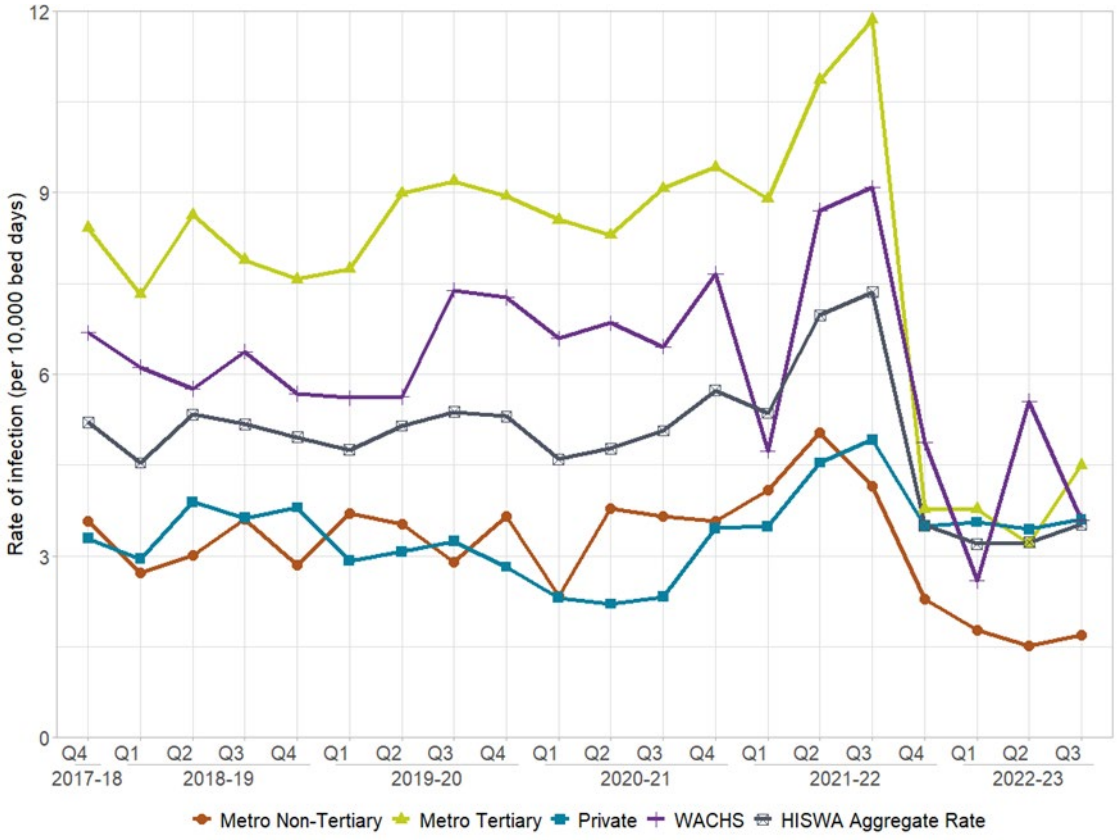
Key points

- ☐ The HISWA aggregate HI-CDI rate increased to 3.52 from 3.23 per 10,000 bed-days reported in Q2, 2022-23.
- ☐ All hospital groups experienced an increase in rate except for WACHS.
- ☐ WACHS, metro tertiary and private hospital group rates remained above the HISWA aggregate rate.
- ☐ 138 (59.5%) of all HI-CDI were reported from the tertiary hospitals, and 94 (40.5%) were reported from private hospitals.

Table 13 HI-CDI rates, by hospital group

Hospital Group	Number of contributing hospitals	n	Number of bed-days	Aggregate rate (95% CI)	Cumulative aggregate (95% CI)
Tertiary	5	92	204,306	4.5 [4.41-4.59]	2.3 [2.29-2.31]
Metropolitan non-tertiary	8	21	123,252	1.7 [1.63-1.77]	0.86 [0.85-0.87]
WACHS	21	25	69,580	3.59 [3.45-3.73]	1.92 [1.91-1.93]
Private	14	94	261,194	3.6 [3.53-3.67]	1.08 [1.08-1.08]
Total	**48**	**232**	**658,332**	**3.52 [3.48-3.56]**	**1.5 [1.5-1.5]**

Figure 21 HI-CDI rates, by hospital group



*Please note: Private hospitals are still reporting CDI-positive cases based on PCR, whilst public hospital groups report CDI-positive cases based on toxin-positive enzyme immunoassay (EIA) testing. The move to EIA testing began in Q4 2021-22.

Vancomycin-resistant *enterococci* sterile-site infections

Key points

- ☐ There were four sterile site infections reported, from two separate facilities.
- ☐ All infections were classified as healthcare associated.
- ☐ 1 of the 4 patients (25%) were known to be colonised prior to the onset of their infection and no patients identified were from a residential care facility.
- ☐ Two (50%) VRE HAIs were isolated from blood cultures.

Figure 22 Number of VRE infections by sterile body sites

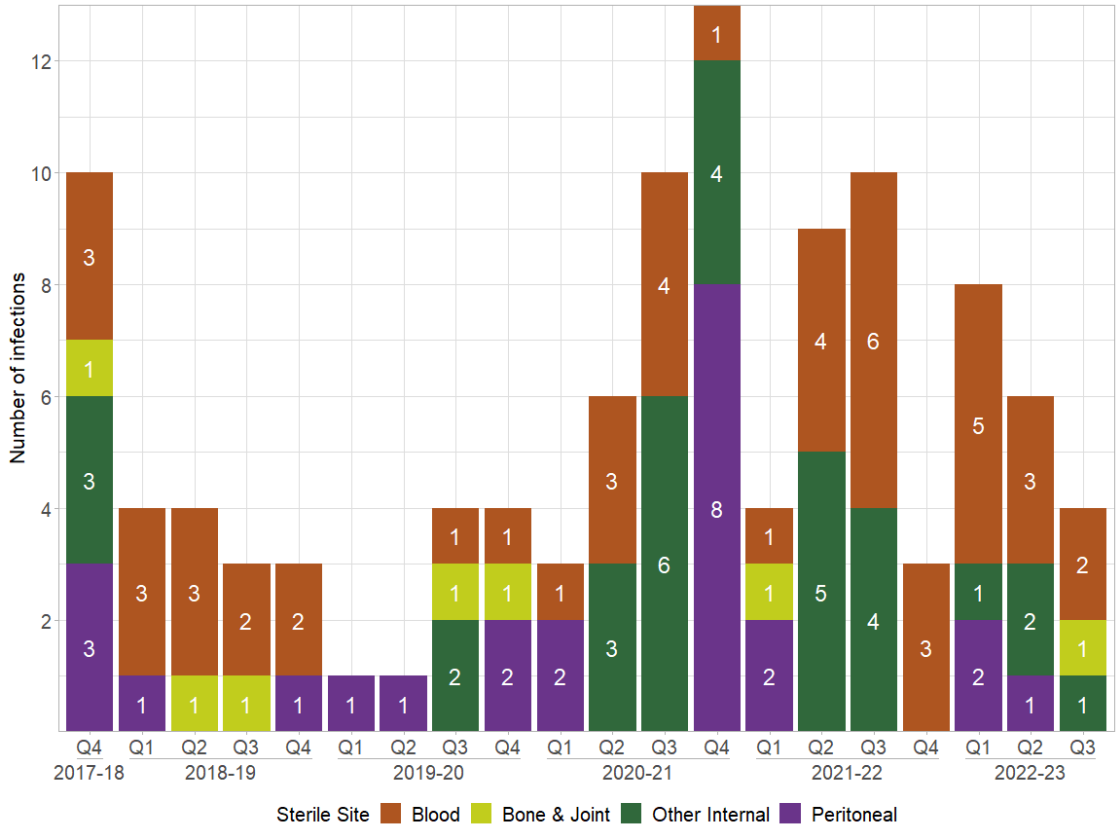
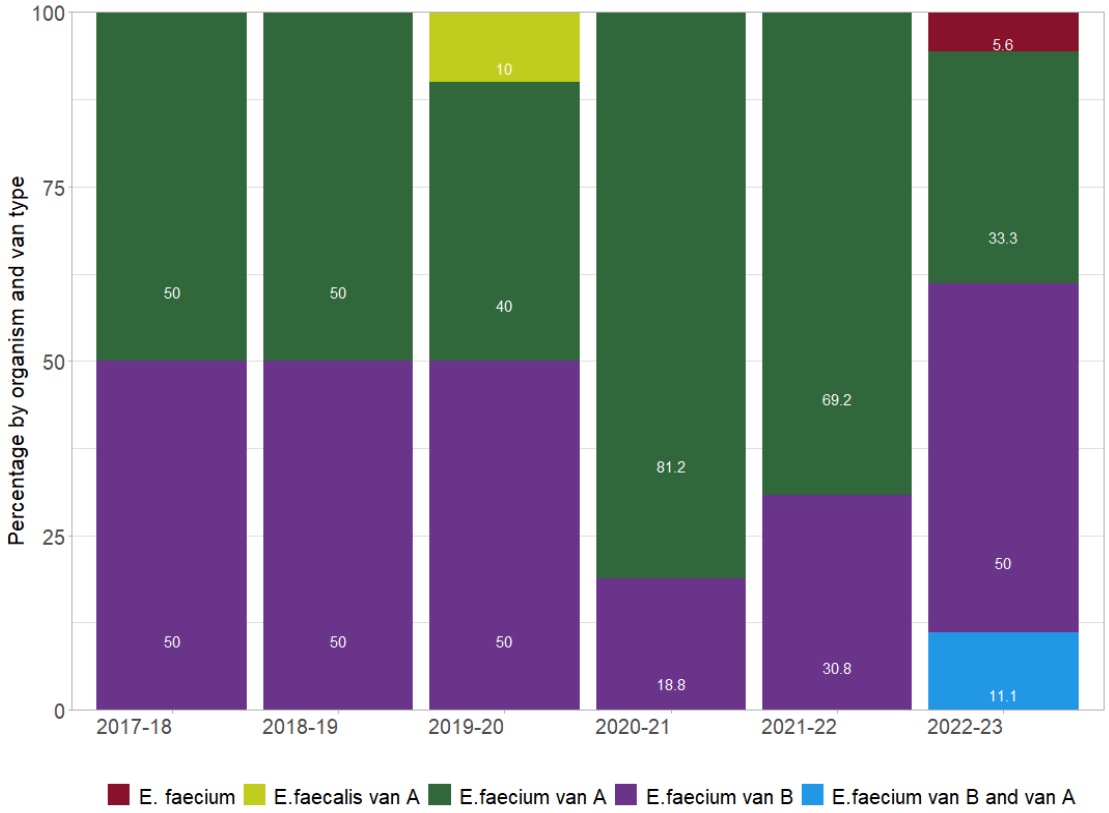


Figure 23 Proportion of VRE sterile site, healthcare and community acquired infections by organism and van type, 2017-18 to current financial year to date

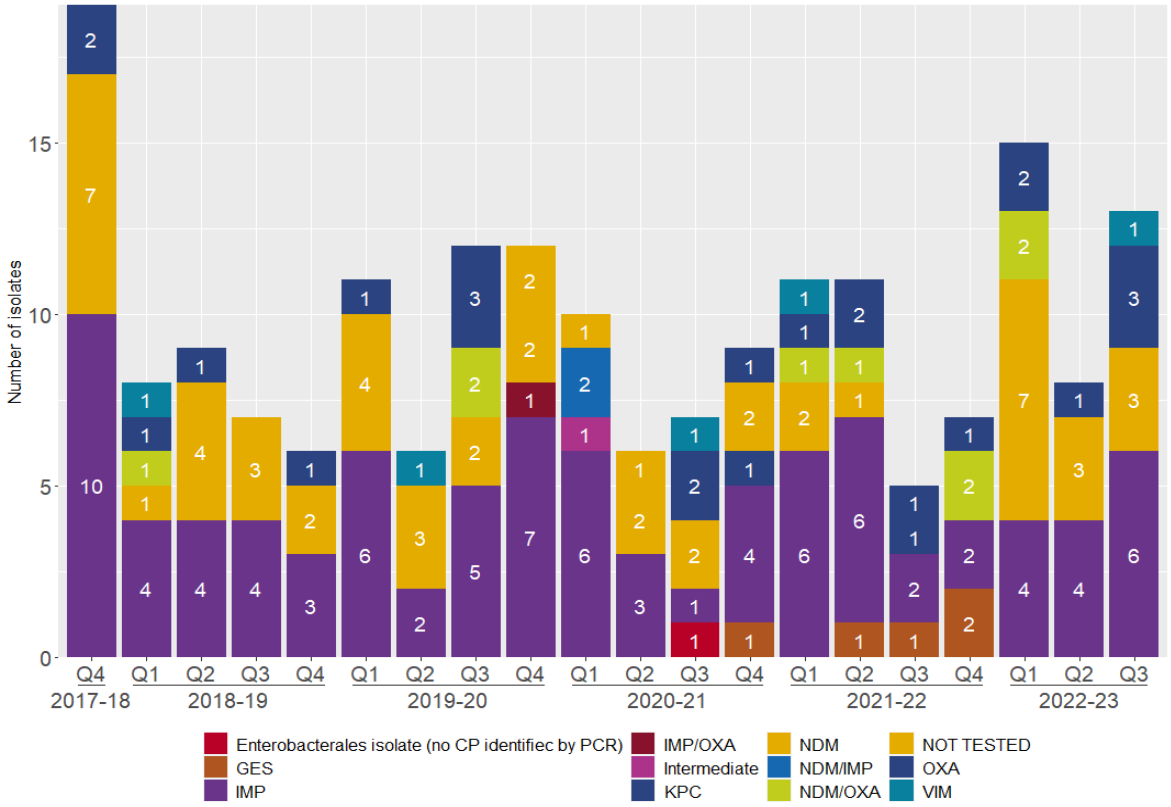


Carbapenemase-producing organisms

Key points

- ☐ Surveillance of CPO is performed by the IPPSU in liaison with the PathWest Gram-negative Reference Laboratory located at the QEII site.
- ☐ Fifteen of the 57 referred patient isolates were confirmed to be CPO (13 unique CPO isolates).
- ☐ Of this quarter's 13 confirmed unique CPO isolates, six of the patients were confirmed with IMP, three was NDM, three was OXA.

Figure 24 Number of unique CPO isolates by type



Occupational exposures

Key points

- A total of 318 occupational exposures were reported by healthcare workers this quarter.
- There was a decrease in the number of parenteral exposures but an increase in the number of non-parenteral exposures reported compared with Q2 2022-2023.
- The total occupational exposure rate increased to 4.69 exposures per 10,000 bed-days, from 4.65 reported in Q2, 2022-23.
- The parenteral occupational exposure rate decreased to 3.64 exposures per 10,000 bed-days from 3.82 reported in Q2, 2022-23.
- The non-parenteral occupational exposure rate increased to 1.05 exposures per 10,000 bed-days from 0.83 reported in Q2, 2022-23.
- Eighty-seven (35.2%) of all parenteral exposures were reported by nurses.
- The majority of non-parenteral exposures (73.2%; n=52) were reported by nurses.
- Twenty-two (8.9%) parenteral exposures were sustained by HCWs who were not the primary user of the sharp.

Table 14 Occupational exposures, by parenteral and non-parenteral

Exposure Type	Number of contributing hospitals	Number of Exposures this Quarter	Number of bed-days	Aggregate rate (95% CI)	Cumulative aggregate (95% CI)
Parenteral	49	247	677,753	3.64 [3.6-3.68]	1.18 [1.18-1.18]
Non-Parenteral	49	71	677,753	1.05 [1.03-1.07]	0.36 [0.36-0.36]
Total Exposures	**49**	**318**	**677,753**	**4.69 [4.64-4.74]**	**1.54 [1.54-1.54]**

Figure 25 Occupational exposure rate, by parenteral and non-parenteral

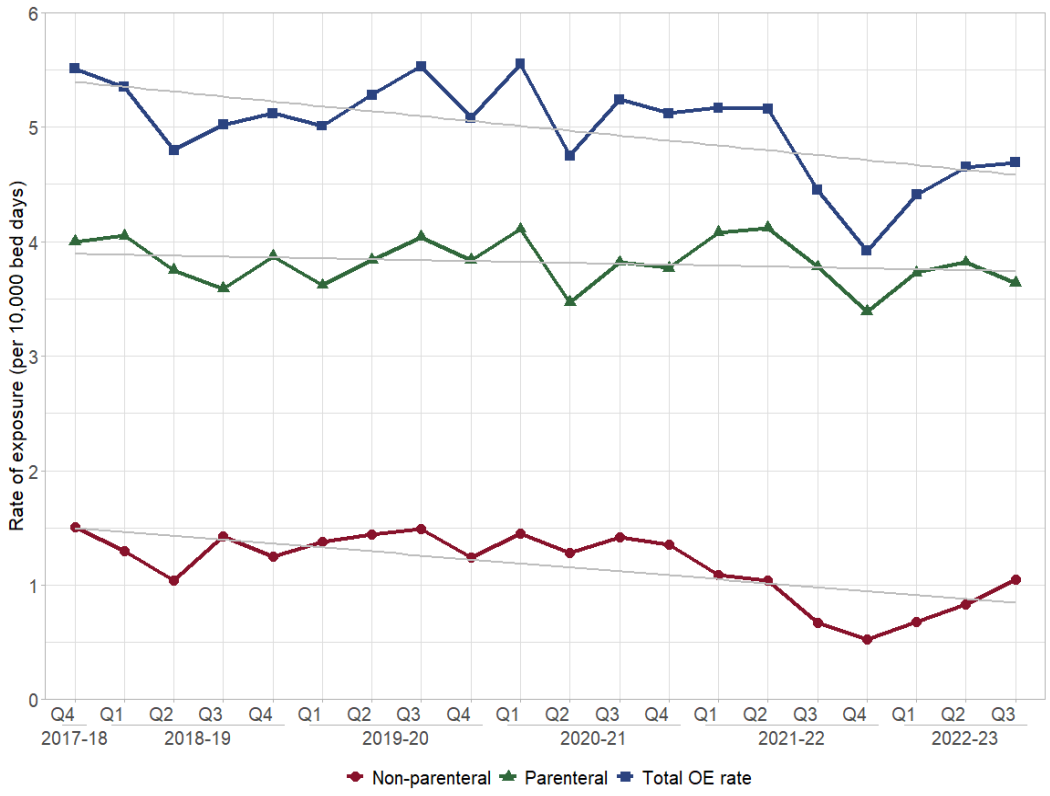


Figure 26 Parenteral occupational exposures, by HCW category

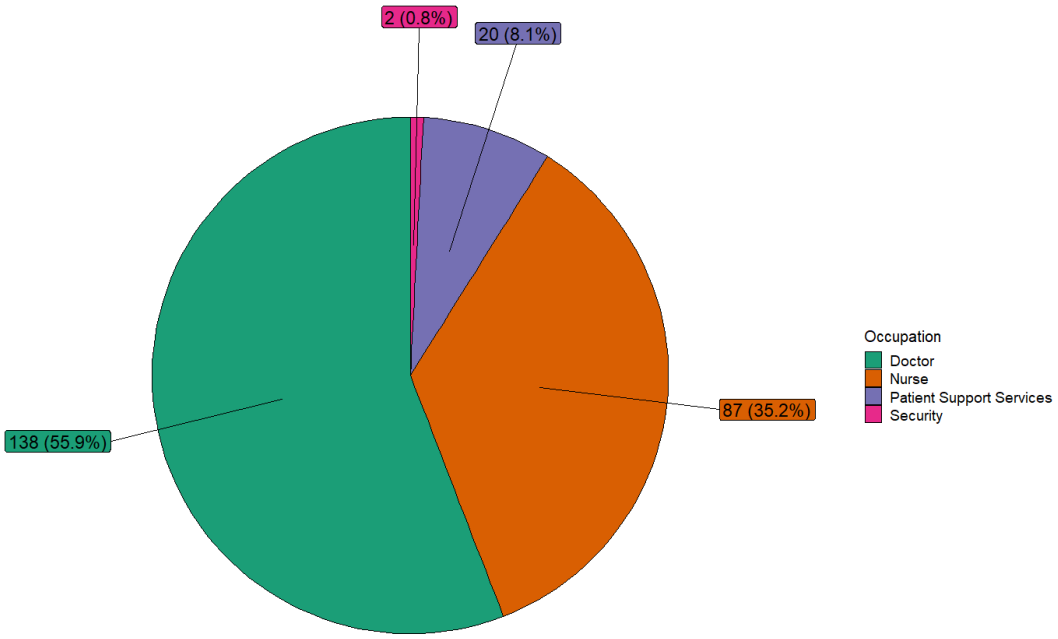
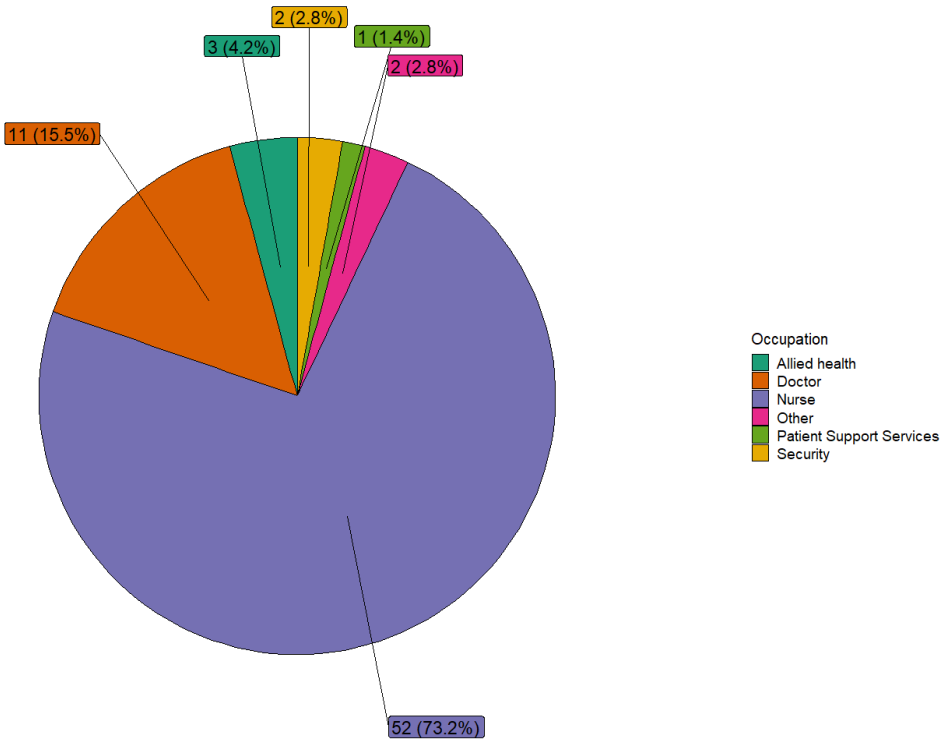


Figure 27 Non-parenteral occupational exposures, by HCW category



Data notes

Data refresh

All data changes requested by HISWA contributors or late submissions are refreshed each quarter when HISWA data are extracted for each reporting schedule and therefore data from previous reports may not reflect current data.

Data comparators

We continue to seek suitable up-to-date comparators for the surveillance indicators. Refer to specific indicator notes for information on available comparators.

Mandatory indicators

Mandatory indicators were introduced for public hospitals and those contracted health entities who provide contracted services to public patients in 2007. Mandatory Indicators are those marked with an asterisk*.

HISWA indicators

Surgical site infections

Arthroplasty*

- ☐ 23 hospitals (8 private; 15 public) submit data to HISWA. This represents 100% of all hospitals in WA that perform hip and knee arthroplasty procedures. One integrated district hospital commenced performing these procedures in July 2018.
- ☐ The comparator is Public Health England, *Surveillance of Surgical Site Infections in NHS hospitals in England, 2021-22 Report (Table 3).* (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1123846/SSI-annual-report-2021-to-2022.pdf)
- ☐ The follow up period for surveillance on implanted devices changed from 365 days to 90 days in July 2014.
- ☐ Risk stratification:
    - Risk stratification is based on the CDC-NHSN (USA) risk index.
    - Risk 'All' applies to HISWA hospitals that perform fewer than 100 procedures annually and are not required to assign a risk index score.
    - Procedure type: primary and revision procedures.
- ☐ The IPPSU commenced data submission to the WA Department of Health, Performance Reporting Branch in February 2019 for SSIs following primary hip and knee arthroplasty for inclusion in the Health Service Perfomance Report (HSPR).

Caesarean section

- ☐ 27 hospitals (4 private and 23 public) submit data to HISWA.
- ☐ Risk stratification:
    - Risk stratification is based on the CDC-NHSN (USA) risk index.
    - Risk 'All' applies to HISWA hospitals that perform fewer than 100 procedures annually and are not required to assign a risk index score.
    - Procedure type: elective and non elective procedures.
- ☐ Caesarean section SSI are frequently superficial infections that are treated outside the hospital setting. There is no standardised post-discharge surveillance methodology used in WA. SSI detected and treated post-discharge (i.e. as outpatients or by primary care provider) are likely

to be an under-estimation and are not included in HISWA rate calculations or used for benchmarking purposes.

Bloodstream infections

HA-SABSI*

- ☐ 48 hospitals (11 private, 37 public) submit data to HISWA. Data are included from North Metropolitan Mental Health Service since 2014-15.
- ☐ HA-SABSI data have been included as an indicator in National Healthcare Agreements since 2009 and are reported on the MyHospitals website. The HAIU also submits HA-SABSI data to the Department of Health, Performance Reporting Branch on behalf of public hospitals and Contracted Health Entities (CHEs) as they are included in the HSPR.
- ☐ Data collection is in accordance with the Australian national definition.
- ☐ From 1 July 2017, unqualified newborn bed-day data were excluded from denominator data to align with changes to National definitions. This was also retrospectively applied to reporting periods and therefore previously published data will not align.
- ☐ All public hospital HA-SABSI data are validated by the Infection Prevention, Policy, & Surveillance Unit.
- ☐ The national benchmark for HA-SABSI is set at 1.00 infection per 10,000 patient days, as per the Australian Commission on Safety and Quality in Health Care.
- ☐ The comparator for HA-SABSI is the Australian national public hospital aggregate 2019-20 rate (0.71 per 10,000 patient days). The MSSA rate is 0.59 and the MRSA rate is 0.12 per 10,000 bed days. Australian Institute of Health and Welfare. (2021). *Bloodstream infections associated with hospital care 2019–20.* Retrieved from https://www.aihw.gov.au/reports/health-care-quality-performance/bloodstream-infections-associated-with-hospital-care

Haemodialysis*

- ☐ 26 haemodyalisis units (15 private, 11 public) submit data to HISWA, including two home dialysis units.
- ☐ The rate per 100 patient months can be interpreted as: the average % of dialysis patients acquiring an access associated BSI per month.
- ☐ Arterio-venous grafts (AVG) - synthetic and native vessel grafts are combined in data.
- ☐ There is currently no suitable comparator.

Central line-associated BSI

- ☐ CLABSI definitions changed in July 2014. The new definitions identify BSI that are likely to be related to mucosal barrier injury as a result of neutropenia or graft versus host disease and exclude them from CLABSI data.
- ☐ Data are risk adjusted to peripherally and centrally inserted central lines.
- ☐ Adult ICU CLABSI - 13 adult ICUs (4 private, 9 public) submit data to HISWA
- ☐ Oncology CLABSI - 4 oncology units (2 private, 2 public) submit data to HISWA
- ☐ Haematology CLABSI - 1 haematology units (0 private, 1 public) submit data to HISWA.

Multi-resistant organism HAIs

Methicillin-resistant *Staphylococcus aureus* (MRSA)*

- ☐ MRSA (infection and colonisation) is a notifiable condition in WA under the Public Health Act 2016 via laboratory reporting
- ☐ 47 hospitals (11 private, 36 public) submit data to HISWA.
- ☐ Data are risk adjusted by ICU / non-ICU and inpatient / non-inpatient.
- ☐ Since 1 July 2014 there have been three MRSA strain reporting groups in WA:
    - Micro-alert B PVL negative (strain not characterised).
    - Micro-alert B PVL positive (strain characterised).
    - Micro-alert C (strain characterised).
- ☐ The comparator is SA Health, Infection Prevention and Control Service, 2018-19 (personal communication).

Vancomycin-resistant *enterococci* (VRE)*

- ☐ VRE (infection and colonisation) is a notifiable condition in WA under the Public Health Act 2016 via laboratory reporting.
- ☐ HISWA VRE data includes all VRE isolates, both community and healthcare associated.
- ☐ HISWA currently only reports sterile site infections.
- ☐ The IPPSU receives VRE data from
    - HISWA Surveillance – VRE sterile site infections submitted by ICPs
    - Notification of all VRE clinical isolates referred to the PathWest Gram-positive Reference Laboratory.
- ☐ Categories for sterile site specimens:
    - Blood
    - Peritoneal: fluid and tissue from peritoneal space / peritoneum (includes abdominal fluid and ascites)
    - Bone and joint: bone biopsy, synovial fluid
    - Other internal sites: specimens from body sites that are normally sterile where a specimen has been obtained surgically or by aspirate e.g., deep soft tissue (muscle and fascia), pleura, liver, pancreas, kidney, spleen, vascular tissue, heart, brain, lymph node, ovarian tissue.

Carbapenem-resistant *Enterobacteriaceae* (CRE)

- ☐ CRE (infection and colonisation) is a notifiable condition in WA under the Public Health Act 2016 via laboratory reporting.
- ☐ The IPPSU collates all CRE data submitted to the PathWest QEII Gram-negative Reference Laboratory.

Hospital-identified C*lostridioides difficile* infection (HI-CDI) *

- ☐ Data collection is in accordance with the Australian national definition.
- ☐ The purpose of this indicator is to describe the burden of disease presenting at hospitals and includes both community and healthcare associated infections.
- ☐ Laboratory testing moved to PCR during mid-2010 leading to a doubling of cases identified.
- ☐ A second increase in cases identified in the second half of 2011 corresponded to the appearance of several “new” strains of *C. difficile*, possibly imported from the USA.
- ☐ These data are not suitable for use as a perfomance measure or for benchmarking.
- ☐ *C. difficile* toxin A and B enzyme immunoassay (EIA) was implemented on the 6th March 2022.

- Metropolitan non-tertiary group includes North Metropolitan Mental Health Service data since July 2014 and Fremantle Hospital since January 2015.

Healthcare worker exposures

Occupational exposures*

- 47 hospitals (11 private, 36 public) voluntarily submit data on parenteral (percutaneous) and non-parenteral (mucous membrane or non-intact skin) exposures.
- Participation in this indicator includes mental health facilities in WA.
- Data are risk adjusted by healthcare worker classification and type of exposure.

This document can be made available in alternative formats on request for a person with disability.