



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

Healthcare Infection Surveillance Western Australia (HISWA)

Quarterly Report

Quarter 3 2019-20

Data for January to March 2020

Healthcare Associated Infection Unit
Communicable Disease Control Directorate
26 June 2020

Contents

HAIU News	2
Surgical site infection following hip arthroplasty	3
Surgical site infection following knee arthroplasty	4
Surgical site infection following caesarean section	6
Healthcare associated <i>Staphylococcus aureus</i> bloodstream infection	8
Haemodialysis access-associated bloodstream infections	12
Central line-associated bloodstream infection	13
Methicillin-resistant <i>Staphylococcus aureus</i> healthcare associated infection	15
Hospital-identified <i>Clostridioides difficile</i> infection	18
Vancomycin-resistant <i>Enterococci</i> sterile-site infections	19
Carbapenemase-producing <i>Enterobacteriaceae</i>	20
Occupational exposures	21
Data Notes	23

Data Quality Statement

Date Extracted: 22/05/2020

Publication Date: 26/06/2020

The following data was not received at time of data extraction for this report and may impact on aggregated rates:

2019-20

January 2020: Park Private Hospital - suspended all data submission until further notice

February 2020: Sir Charles Gairdner Hospital - No SSI numerator/ denominator data

St John of God Subiaco - Data submission for CLABSI suspended

March 2020: Sir Charles Gairdner Hospital - No SSI numerator/denominator data

Sir Charles Gairdner Hospital - No Haemodialysis patient month data

St John of God Subiaco - Data submission for CLABSI suspended

2018-19

No CLABSI denominator data submitted for Mount Hospital April 2019

Prior to 2018-19

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

All surveillance enquiries

✉ HISWA@health.wa.gov.au

☎ Mariyam +61 8 9222 2418

Michelle +61 8 9222 0231

Rebecca +61 8 9222 2043

Claire +61 8 9222 6455

ICNet

ICNet Project: rollout is due for completion at the end of July 2020. All sites are now live except for Merredin, Bentley and Busselton Hospitals, with the latter two sites pilot testing the new Laboratory Information System. The Super User training approach and roll out plan for Wave 2 was amended to meet the challenges of COVID-19. Baxter completed two-day online training sessions for a Super User from each site to ensure that there was at least one trained Infection Prevention and Control (IP&C) staff member for the go live date. In addition, the project team is creating videos covering the topics of the Baxter training as support material. User training for Wave 2 sites is now at the discretion of the Super Users at those sites.

Two sessions were conducted by Baxter for the Outbreak Management Module and the module has been rolled out for the majority of sites. Baxter has developed the pre-employment health assessment and vaccination component of ICNet Protect and this has been reviewed by the Protect Sub Group. The module is at the User Acceptance Testing stage.

HISWA Forum

The forum scheduled for 3rd June 2020, was held early on Friday 15th May in order to address the evolving COVID-19 situation. The next forum is scheduled for Wednesday 2nd September, 14:30 – 16:30. We are keen to hear about your experiences during COVID-19, so if anyone would like to present, please get in touch. Anyone wishing to participate via video-conference or if you have any issues you would like discussed, please email us at hiswa@health.wa.gov.au

HAIU Team

Danielle Engelbrecht, Claire Tinson and Alison Thrum have joined the IP&C team here at Royal St to provide much needed support to the PHEOC and SHICC teams in managing COVID-19. Our sincere thanks to their respective managers for allowing this secondment. Rebecca and Michelle continue to work across the HAIU and COVID-19 teams. Please ensure all HISWA enquiries go to the hiswa@health.wa.gov.au email. Claire P and Mariyam continue to provide full time support for HAIU and ICNET respectively.

Reminders

- **Data finalisation**

Please finalise your data as soon as possible to meet prescribed data submission deadlines. If a data deadline is on the horizon when you are going on leave, let us know and you can finalise data early.

Report Highlights

- The SSI rate following hip and knee arthroplasty both decreased this quarter and are below the benchmark
- The SSI rate following elective caesarean section decreased for the second consecutive quarter.
- The total HA-SABSI rate decreased this quarter and remains below the comparator for the fourth consecutive quarter.
- ZERO AVF-associated BSIs were reported from the 24 haemodialysis units.

Report Concerns

- The rate of access-associated haemodialysis BSI (cuffed catheters) increased for a third consecutive quarter.
- The rate of hospital-identified *C difficile* infection increased for the second consecutive quarter and this was across all hospital groups except for metropolitan non-tertiary sites.

Surgical site infection following hip arthroplasty

Key Points

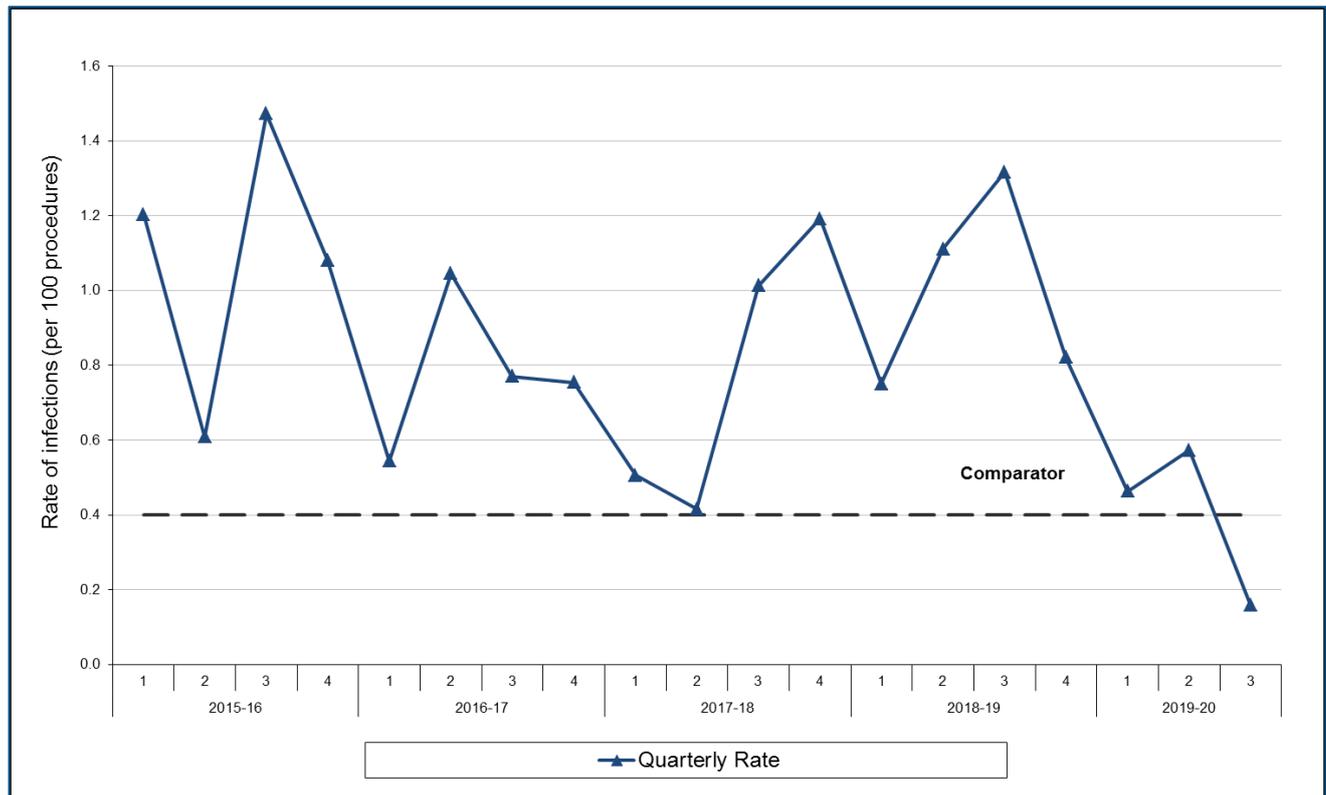
- ❑ There were 1,256 procedures reported (1,151 primary; 105 revision).
- ❑ A total of two SSI following primary arthroplasty were reported, both were deep / organ space infections and identified on readmission to hospital.
- ❑ The total SSI rate following hip arthroplasty decreased to 0.16 infections per 100 procedures from 0.57 reported in Qtr 2 2019-20.
- ❑ The deep SSI hip rate decreased to 0.16 infections per 100 procedures from 0.36 reported in Qtr 2 2019-20 (Table 3 and 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 All *	0	0	0	0.00 [0.00 – 0.00]	0.84 [0.57 – 1.25]
Risk index 0	22	761	0	0.00 [0.00 – 0.62]	0.69 [0.60 - 0.79]
Risk index 1	21	442	0	0.00 [0.00 – 1.07]	1.67 [1.49 – 1.88]
Risk index 2	9	53	2	3.77 [0.39 – 13.65]	3.62 [2.89 – 4.52]
Risk index 3	0	0	0	0.00 [0.00 – 0.00]	5.22 [2.40 – 10.64]
Total hip arthroplasty	22	1256	2	0.16 [0.01 – 0.63]	1.14 [1.05 – 1.23]

*Refer to Appendix 1- SSI Data Notes

Figure 1 Hip arthroplasty SSI rate



Surgical site infection following knee arthroplasty

Key Points

- There were 1,856 procedures reported (1,742 primary; 114 revision).
- A total of four SSI (3 deep) were reported, of which three were following revision procedures.
- All four SSI were detected on readmission to hospital.
- The total SSI rate following knee arthroplasty decreased to 0.22 infections per 100 procedures from 0.68 reported in Qtr 2 2019-20.
- The deep SSI knee rate decreased to 0.16 per 100 procedures from 0.54 per 100 procedures reported in Qtr 2 2019-20 (Table 3 and 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 *	0	0	0	0.00 [0.00 – 0.00]	1.42 [1.11 – 1.81]
Risk index 0	22	1102	0	0.00 [0.00 – 0.43]	0.63 [0.56 – 0.71]
Risk index 1	21	661	3	0.45 [0.10 – 1.41]	1.07 [0.95 – 1.20]
Risk index 2	9	93	1	1.08 [0.00 – 6.54]	2.70 [2.22 – 3.28]
Risk index 3	0	0	0	0.00 [0.00 – 0.00]	8.22 [4.68 – 13.99]
Total knee arthroplasty	22	1856	4	0.22 [0.06 – 0.58]	0.94 [0.87 – 1.01]

*Refer to Appendix 1- SSI Data Notes

Figure 2 Knee arthroplasty SSI rate

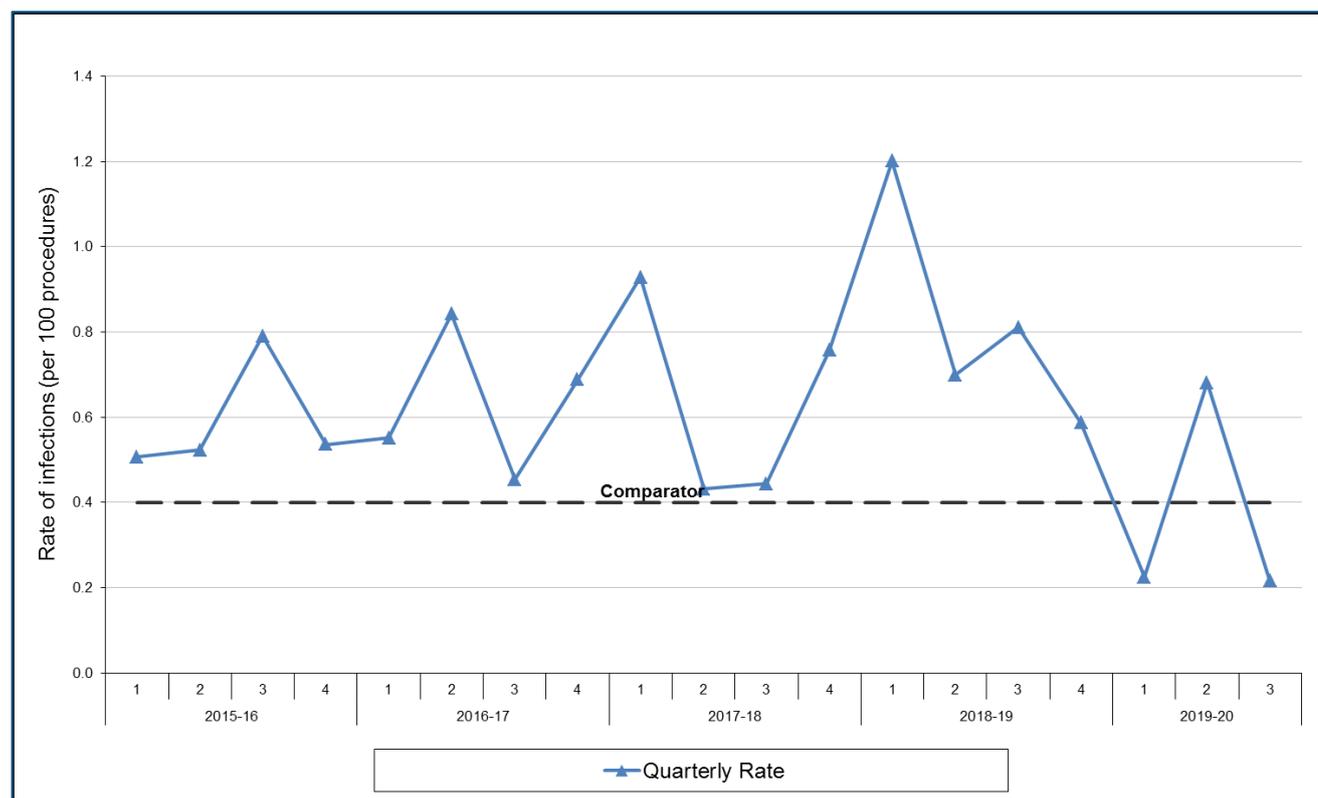


Table 3 SSI rates, by superficial and deep or organ/ space infections

	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)	Aggregate total SSI rate (95%CI)
Hip arthroplasty	0	2	2	1256	0.00 [0.00 – 0.38]	0.16 [0.01 – 0.63]	0.16 [0.01 – 0.63]
Knee arthroplasty	1	3	4	1856	0.05 [0.00 – 0.34]	0.16 [0.03 – 0.50]	0.22 [0.06 – 0.58]
Total arthroplasty	1	5	6	3112	NA	NA	NA

Figure 3 Hip arthroplasty SSI rate, by superficial and deep

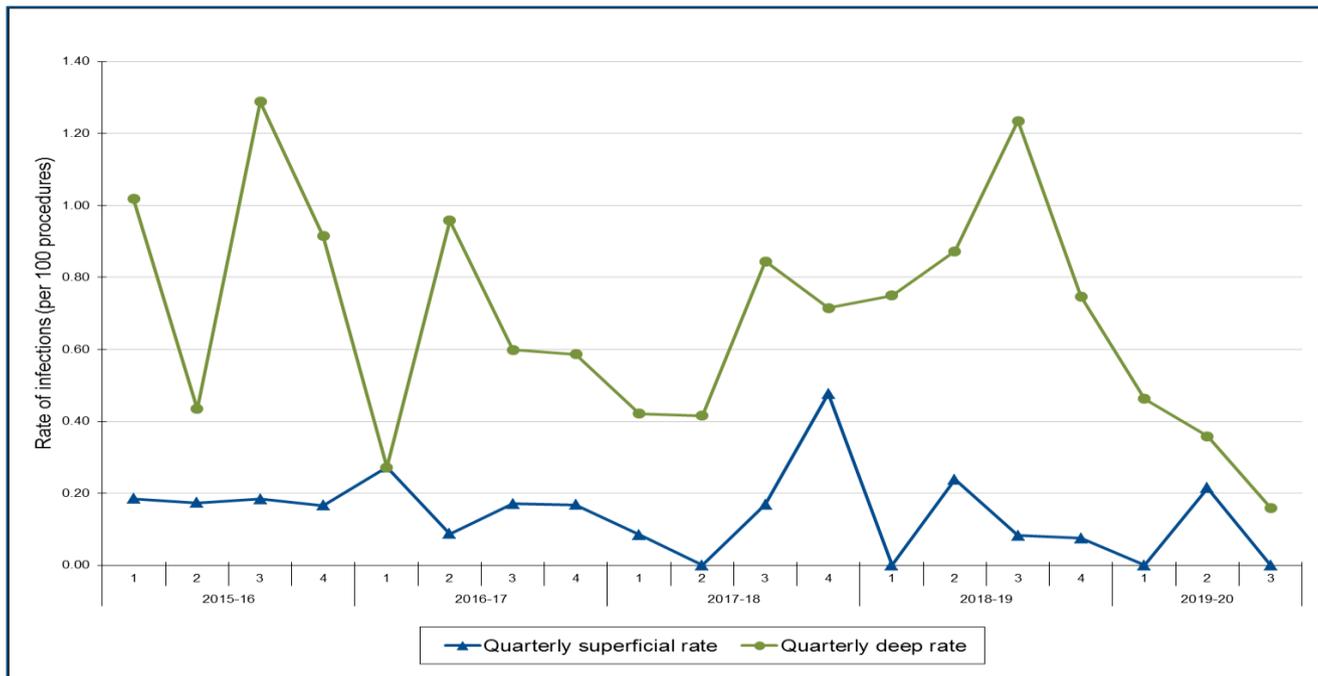
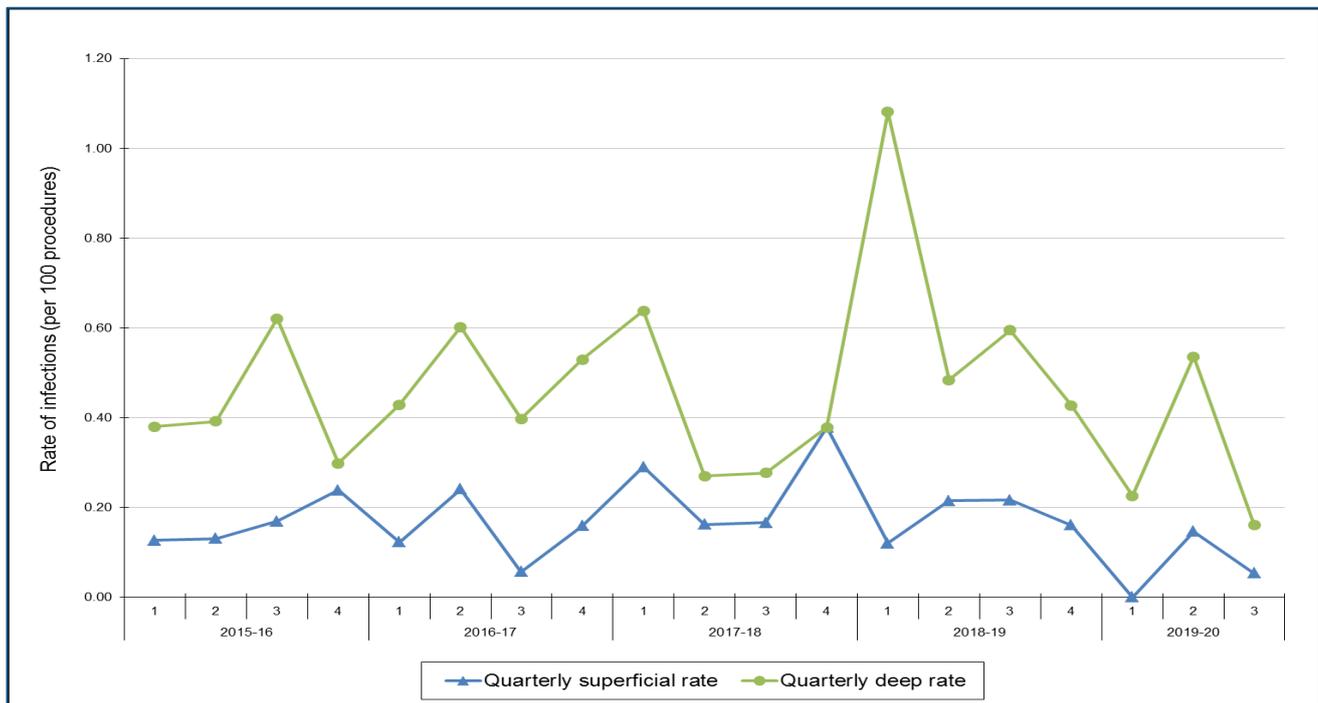


Figure 4 Knee arthroplasty SSI rate, by superficial and deep



Surgical site infection following caesarean section

Key Points

- 2,410 caesarean section procedures were reported, of which 1,332 (55%) were emergency and 1,078 (45%) were elective procedures.
- A total of 22 SSIs were reported, two identified during initial admission, 11 (50%) were detected on readmission to hospital. Six SSI (five superficial, one deep) were detected post-discharge and are not included in further data analysis or in HISWA calculated rates*.
- Seven (44%) of the 16 reportable SSIs were deep /organ space infections.
- Thirteen (81%) SSIs reported were following emergency procedures and included six deep / organ space SSIs.
- The total inpatient SSI rate (includes readmissions and excludes post-discharge) decreased to 0.66 infections per 100 procedures from 0.70 reported in Qtr 2 2019-20.
- The inpatient emergency procedure SSI rate increased to 0.98 infections per 100 procedures from 0.95 reported in Qtr 2 2019-20.

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

	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 (95% CI)
Risk All	7	55	0	0	0	0.00 [0.00 – 8.01]	0.73 [0.59 – 0.91]
Risk index 0	20	1265	1	1	2	0.16 [0.01 – 0.62]	0.33 [0.28 – 0.40]
Risk index 1	17	852	2	3	5	0.59 [0.21 – 1.42]	0.83 [0.72 – 0.97]
Risk index 2	12	213	4	3	7	3.29 [1.49 – 6.80]	1.99 [1.63 – 2.43]
Risk index 3	5	25	2	0	2	8.00 [1.24 – 26.34]	1.79 [0.74 – 3.98]
Total in-patient	25	2410	9	7	16	0.66 [0.40 – 1.09]	0.64 [0.59 – 0.70]
Post-discharge	NA	NA	5	1	6	NA	NA
Total SSI*	NA	2410	14	8	22	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)

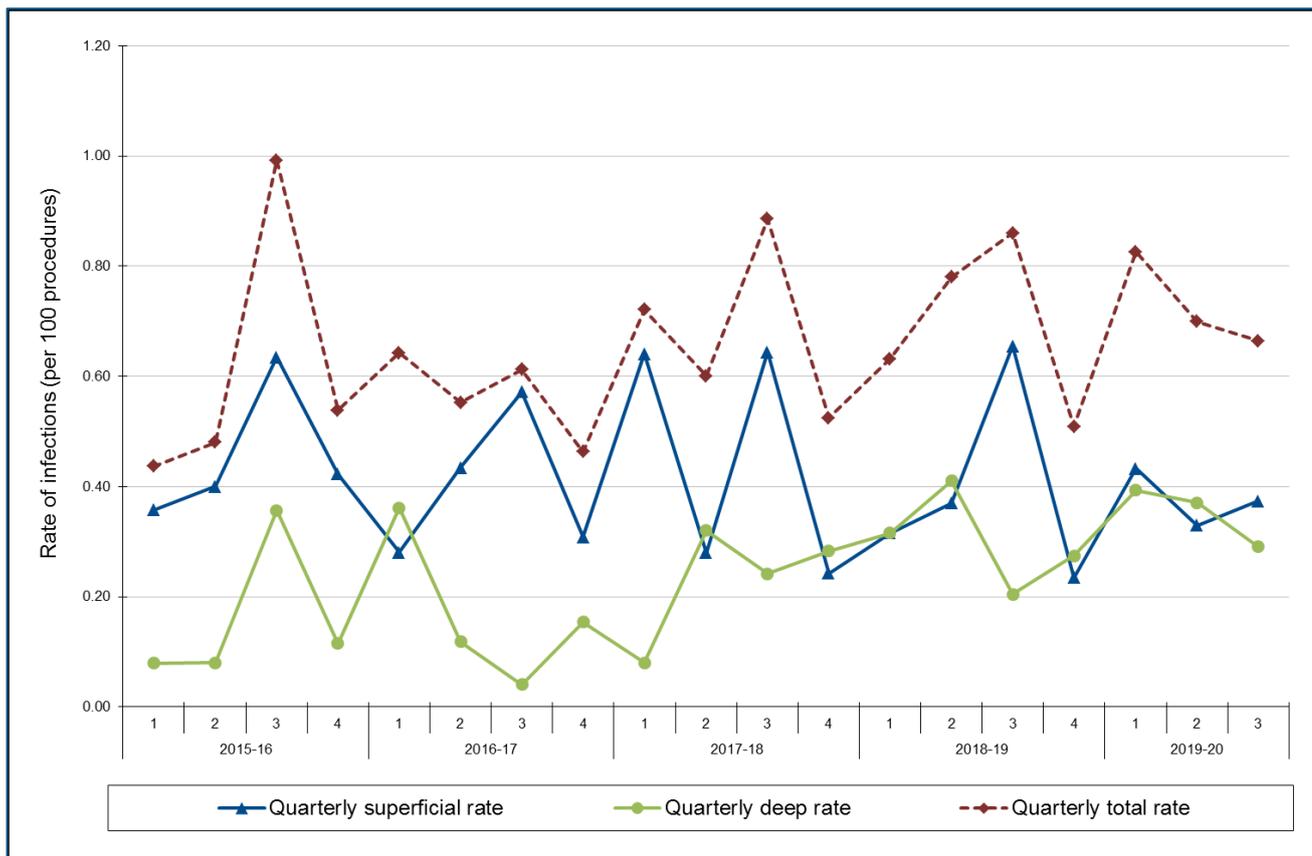
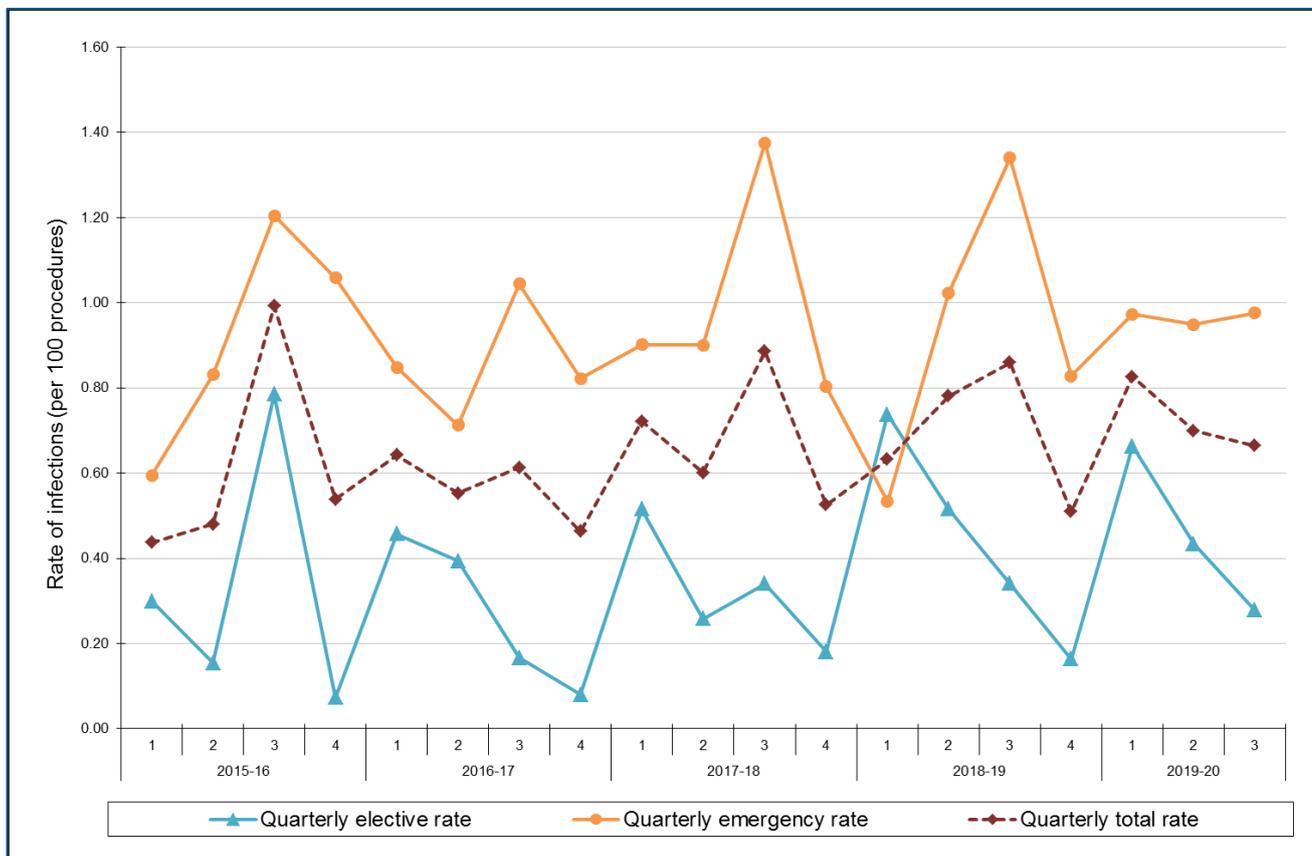


Figure 6 Caesarean section SSI rates by elective and emergency procedures (inpatient only)



Healthcare associated *Staphylococcus aureus* bloodstream infection

Key Points

- There were 41 HA-SABSI (MSSA 35; MRSA 6) reported
- The total HA-SABSI rate decreased to 0.65 infections per 10,000 bed-days from 0.71 reported in Qtr 2 2019-20, and is below the comparator rate of 0.73.
- The MSSA HA-SABSI rate decreased to 0.55 infections per 10,000 bed-days from 0.60 reported in Qtr 2 2019-20 and is below the comparator rate of 0.60.
- The MRSA HA-SABSI rate decreased to 0.09 infections per 10,000 bed-days from 0.11 reported in Qtr 2 2019-20 and is above the comparator rate of 0.03.
- Of the 41 HA-SABSI reported, 19 (46%) were attributable to IVDs. A further eight (20%) were related to procedures and three (7%) had an organ site focus. Of the 19 IVD related HA-SABSI, the majority (52%) were attributed to PIVC (5) and PICC (5) lines. A further 21% were associated with infusaports (4).
- The IVD SABSI rate decreased to 0.30 infections per 10,000 bed-days from 0.38 infections reported in Qtr 2 2019-20 (Figure 10).

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

	Number of contributing hospitals	Number of bed-days	Number of HA-SABSI	Aggregate rate (95% CI)	Cumulative aggregate (95% CI)
Total methicillin-sensitive <i>Staphylococcus aureus</i> (MSSA) bloodstream infection	49	634,910	35	0.55 [0.40 – 0.77]	0.56 [0.53 – 0.59]
Total methicillin-resistant <i>Staphylococcus aureus</i> (MRSA) bloodstream infection	49	634,910	6	0.09 [0.04 – 0.21]	0.12 [0.10 – 0.13]
Total <i>Staphylococcus aureus</i> bloodstream infection	49	634,910	41	0.65 [0.47- 0.88]	0.68 [0.65 – 0.71]

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

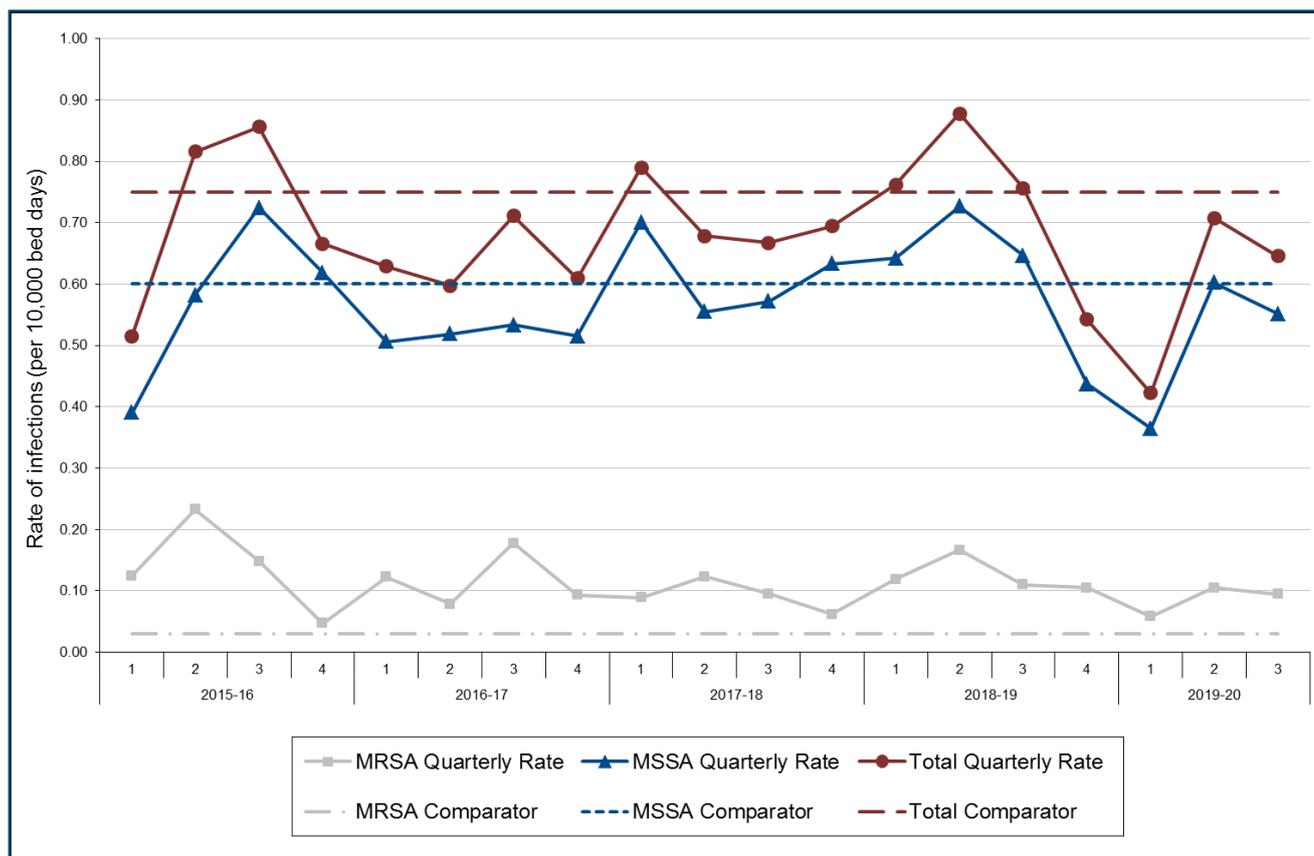


Figure 8 Number of HA-SABSI, by attributable source

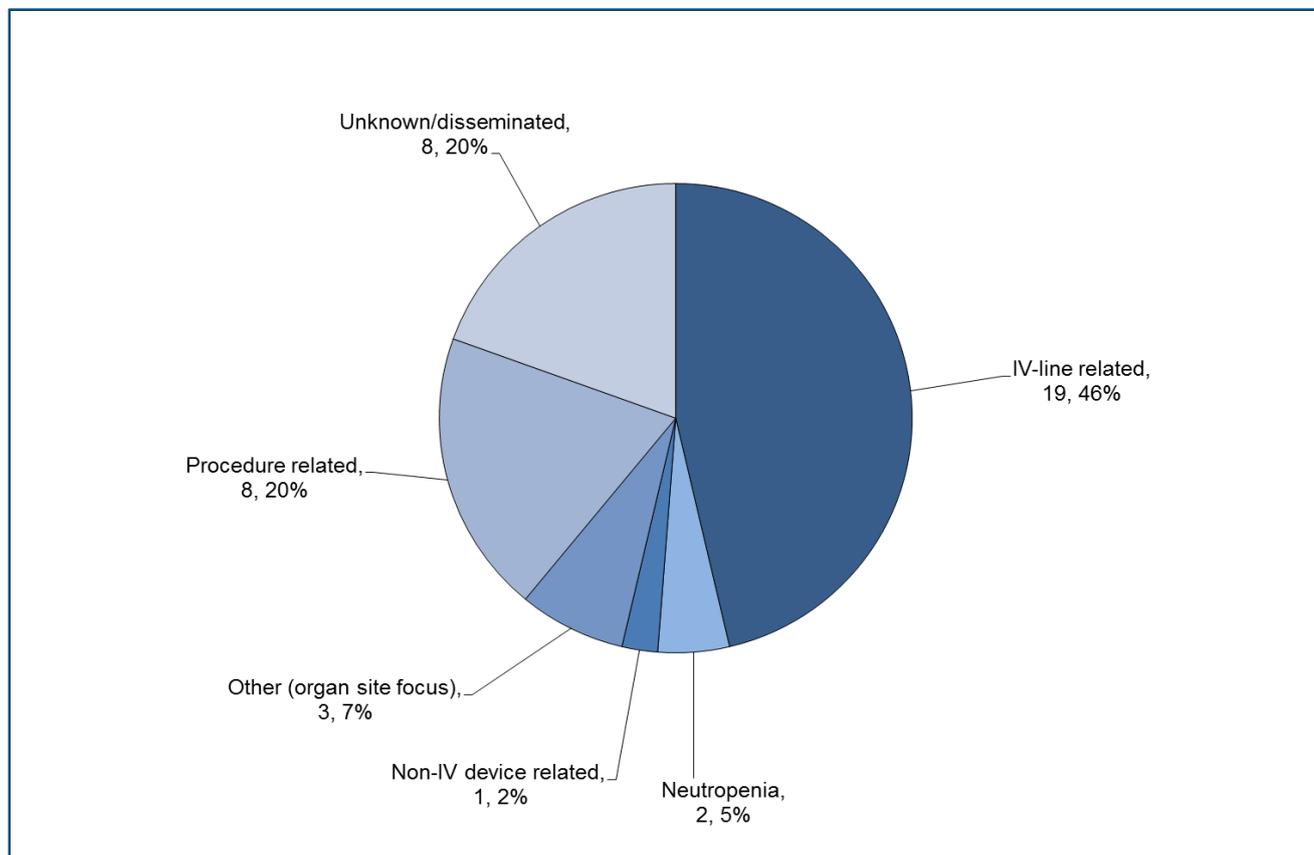


Figure 9 HA-SABSI rates, by hospital group

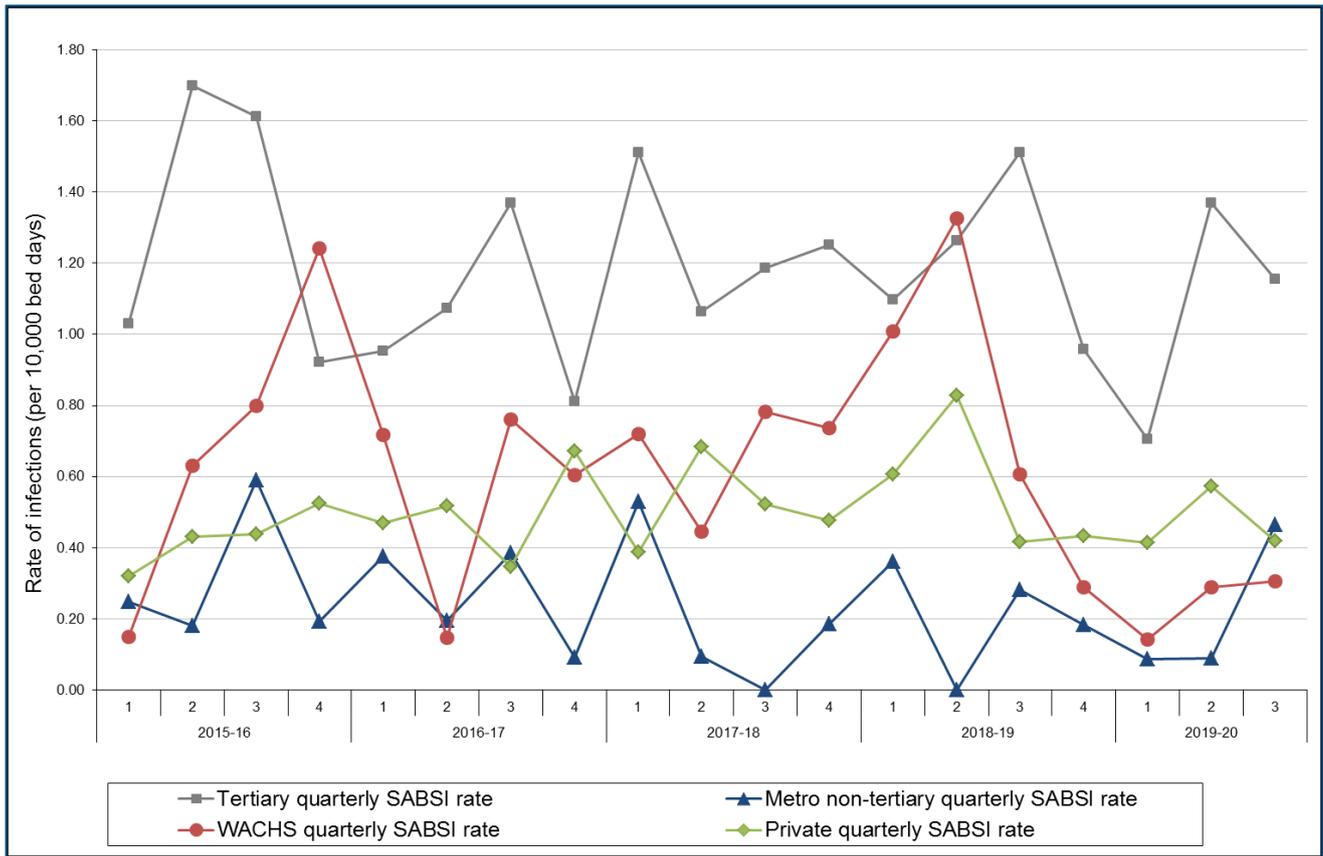


Figure 10 Proportion and rate of HA-SABSI attributed to intravascular devices

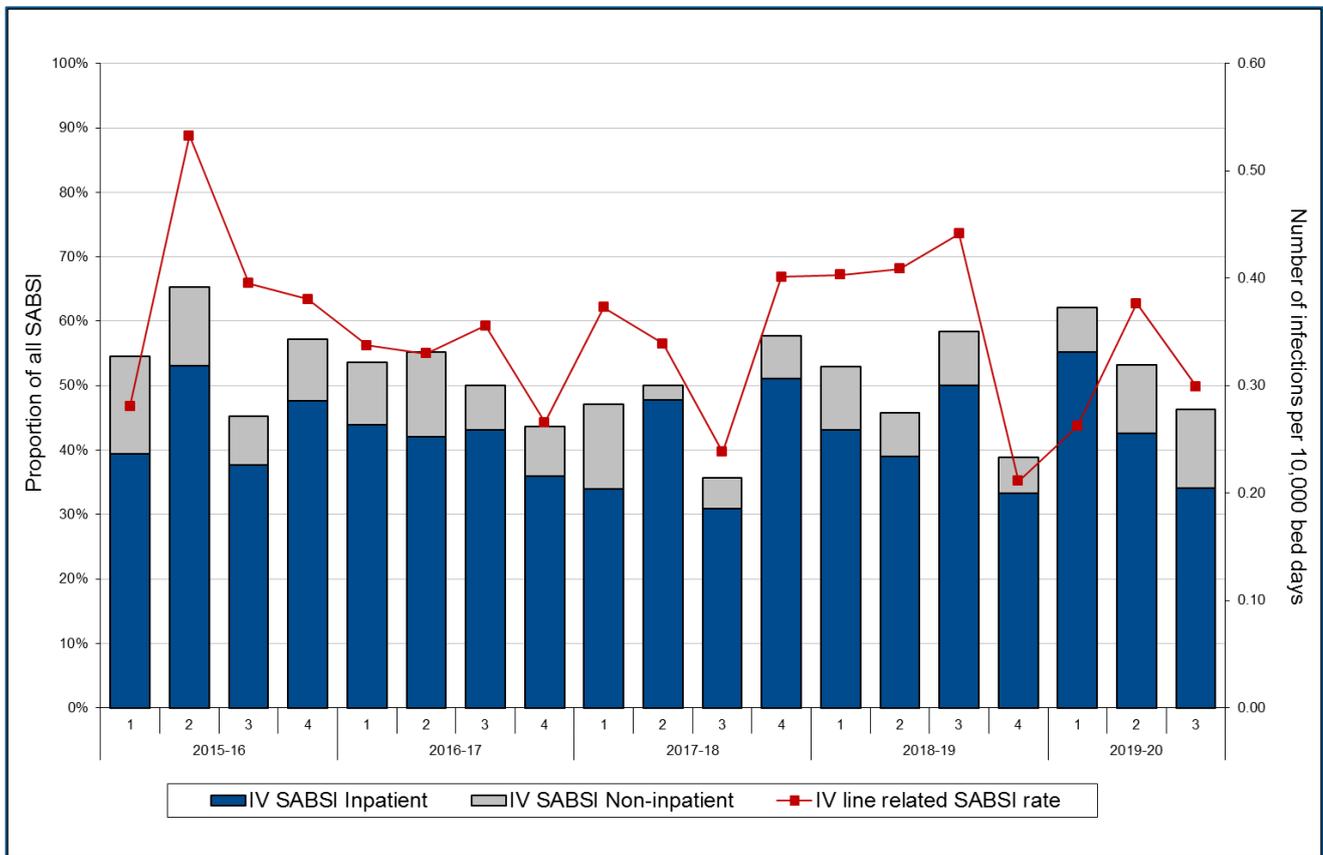
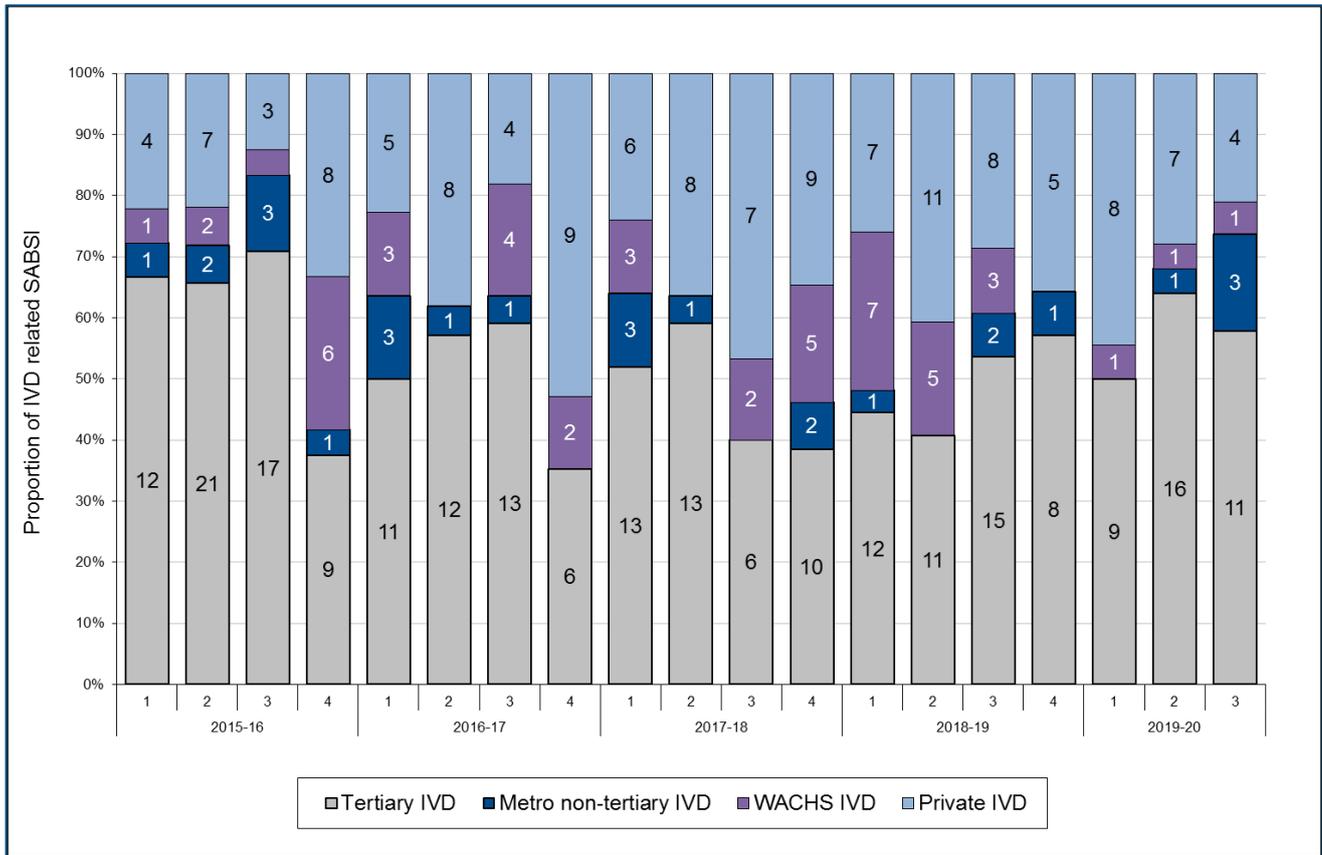


Figure 11 Proportion and number of HA-SABSI attributed to intravascular devices, by hospital group



Haemodialysis access-associated bloodstream infections

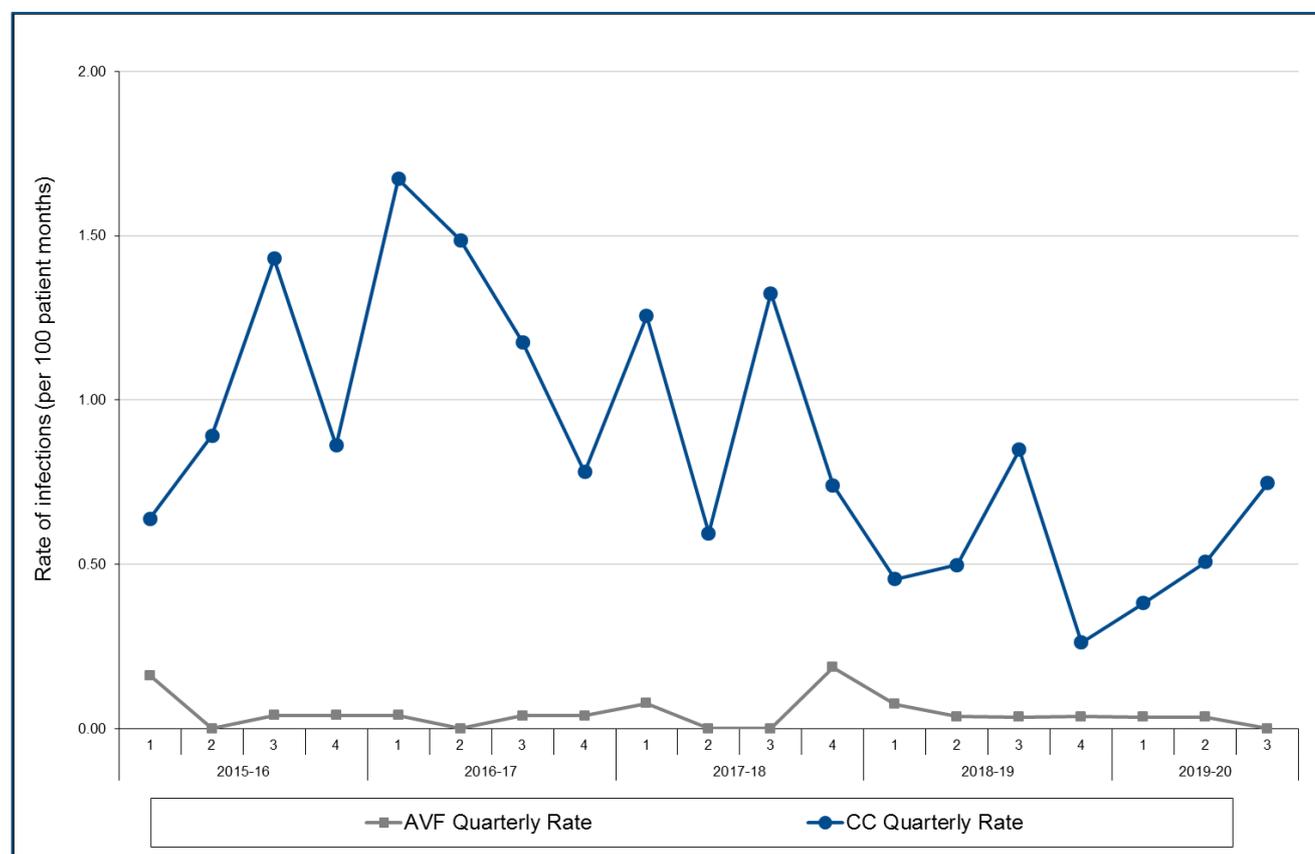
Key Points

- The majority (77%) of patients received haemodialysis via an AVF.
- ZERO AVF-associated BSIs were reported.
- There were six cuffed catheter access-associated BSIs reported.
- The cuffed catheter BSI rate increased to 0.76 infections per 100 patient-months from 0.51 reported in Qtr 2, 2019-20.
- The AVF BSI rate of 0.00 per 100 patient-months decreased from 0.03 reported in Qtr 2, 2019-20.

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	24	76.69	0	2,935	0.00 [0.00 – 0.16]	0.06 [0.05 – 0.08]
AVG	24	2.17	0	83	0.00 [0.00 – 5.45]	0.46 [0.30 – 0.71]
Cuffed catheter (CC)	24	20.67	6	791	0.76 [0.31 – 1.70]	1.39 [1.26 – 1.52]
Non-cuffed catheter	24	<1	0	18	0.00 [0.00 – 21.10]	0.93 [0.47 – 1.79]

Figure 12 AVF and cuffed catheter BSI rate



Central line-associated bloodstream infection

Key Points

- Two adult ICU CLABSI were reported and the rate increased to 0.35 infections per 1,000 line-days from 0.00 reported in Qtr 2, 2019-20.
- The majority (80%) of central lines utilised in adult ICUs were centrally-inserted.
- Four haematology CLABSI were reported this quarter and the rate decreased to 0.76 infections per 1,000 line days from 1.38 reported in Qtr 2, 2019-20.
- Eight oncology CLABSI were reported and the rate increased to 0.14 infections per 1,000 line days from 0.03 reported in Qtr 2, 2019-20.

Table 7 Adult ICU CLABSI

	Number of contributing hospitals	Number of line days	Number of CLABSI	Aggregate rate (95% CI)	Cumulative aggregate (95% CI)
ICU peripherally inserted CLABSI	12	1,230	0	0.00 [0.00 – 3.87]	0.55 [0.32 – 0.93]
ICU centrally inserted CLABSI	12	4,504	2	0.44 [0.02 – 1.76]	0.57 [0.48 – 0.68]
Total ICU CLABSI	12	5,734	2	0.35 [0.01 – 1.38]	0.57 [0.48 – 0.67]

Table 8 Adult ICU central line utilisation ratio (CLUR)

	Number of contributing hospitals	Number of line days	Number of bed-days	Tertiary Aggregate CLUR (%)	Total Aggregate CLUR (%)
Adult ICU peripherally inserted CLUR	12	1,230	11,239	17	10.94
Adult ICU centrally inserted CLUR	12	4,504	11,239	57	40.07

Table 9 Haematology Unit CLABSI

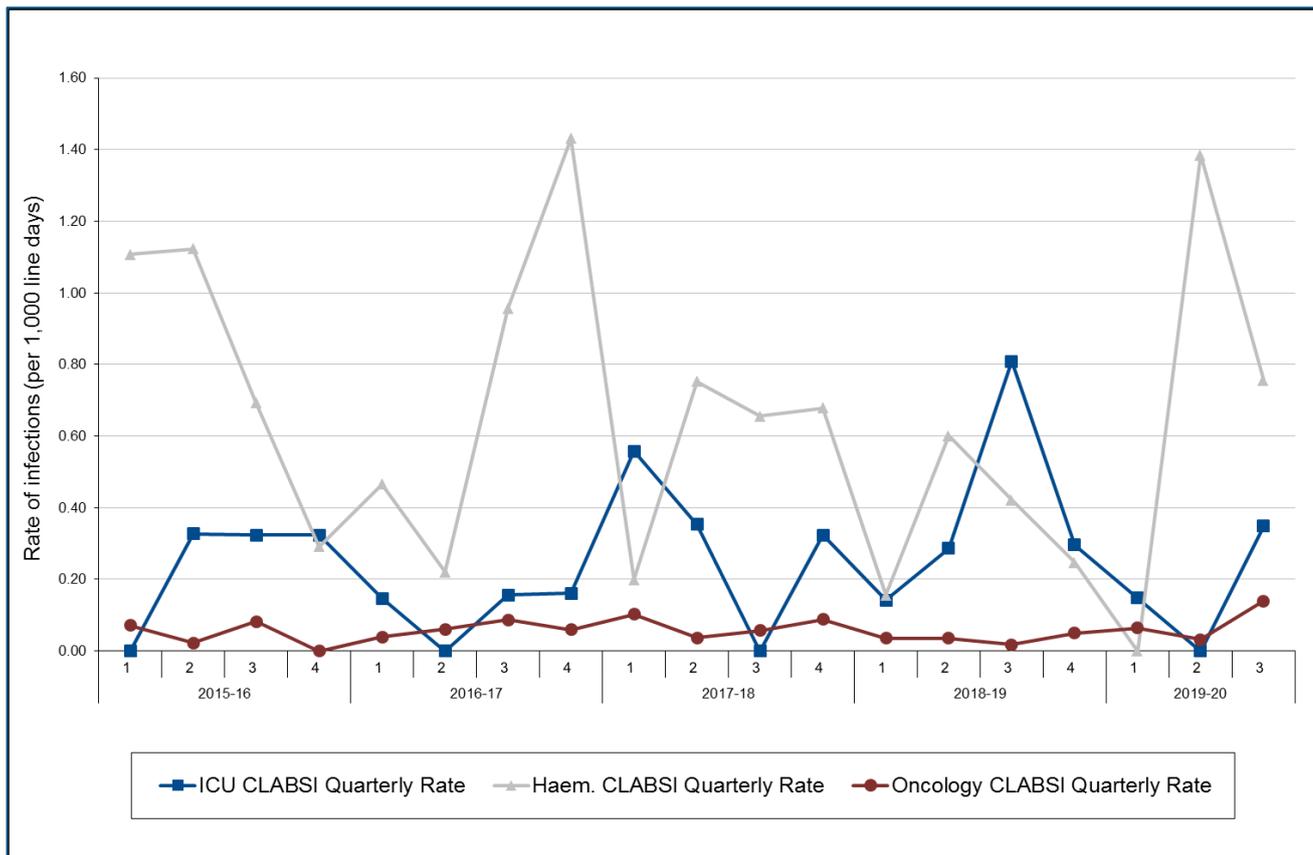
	Number of contributing hospitals	Number of line days	Number of CLABSI	Aggregate rate (95% CI)	Cumulative aggregate (95% CI)
Haematology peripherally inserted CLABSI	2	2,938	1	0.34 [0.00 – 2.17]	1.02 [0.87 – 1.21]
Haematology centrally inserted CLABSI	2	2,347	3	1.28 [0.26 – 3.99]	2.03 [1.72 – 2.40]
Total Haematology CLABSI	2	5,285	4	0.76 [0.23 – 2.04]	1.36 [1.21 – 1.52]

Table 10 Oncology Unit CLABSI

	Number of contributing hospitals	Number of line days	Number of CLABSI	Aggregate rate (95% CI)	Cumulative aggregate (95% CI)
Oncology peripherally inserted CLABSI	5	6,326	5	0.79 [0.29– 1.92]	0.13 [0.10 – 0.17]
Oncology centrally inserted CLABSI	5	50,907	3	0.06 [0.01 – 0.18]	0.02 [0.02 – 0.04]
Total Oncology CLABSI	5	57,233	8	0.14 [0.07 – 0.28]	0.05 [0.04 – 0.07]

All rates per 1,000 central line days

Figure 13 ICU, haematology, and oncology unit CLABSI rates



Methicillin-resistant *Staphylococcus aureus* healthcare associated infection

Key Points

- There were 45 MRSA HAIs reported.
- The total MRSA HAI rate increased to 0.80 infections per 10,000 bed-days from 0.76 reported in Qtr 2, 2019-20 and is below the comparator rate of 0.96.
- 44 of the 45 MRSA HAIs reported were identified from the inpatient setting (3 ICU and 41 non-ICU).
- Thirteen (29%) patients were known to have prior MRSA colonisation.
- Of the 45 MRSA HAIs, 20 (44%) were related to surgical wounds and five (11%) were BSIs.
- The majority (64%) of MRSA HAIs were caused by micro-B PVL negative strains.

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

	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	16	407,298	0.39 [0.24 – 0.65]	0.24 [0.22 – 0.26]
MRSA Non-ICU non-sterile site	48	25	407,298	0.56 [0.37 – 0.85]	0.65 [0.61 – 0.68]
MRSA ICU sterile site	12	0	20,629	0.00 [0.00 – 2.31]	0.35 [0.26 – 0.49]
MRSA ICU non-sterile site	12	3	20,629	1.45 [0.30 – 4.55]	1.53 [1.31 – 1.79]
Total inpatient MRSA HAI	48	44	427,927	1.03 [0.76 – 1.38]	0.93 [0.89 – 0.96]
MRSA HAI non-inpatient	48	1	NA	NA	NA
Total MRSA healthcare associated infection	48	45	564,104	0.80[†] [0.59 – 1.07]	0.81[†] [0.78 – 0.84]

[†] Rate per 10,000 multi and same-day bed-days

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

	Micro-B PVL negative MRSA	Micro-B PVL positive MRSA	Micro-C MRSA	No typing available	Total
Non ICU sterile	11	3	2	0	16
Non ICU non-sterile	14	4	7	0	25
ICU sterile	0	0	0	0	0
ICU non-sterile	3	0	0	0	3
Non-inpatient sterile	0	0	0	0	0
Non-inpatient non-sterile	1	0	0	0	1
Proportion	64%	16%	20%	0%	100%
Strain	Not characterised	Qld clone (5) WA 121 (2)	UK 15 (8) USA 300 (1)	NA	NA
TOTAL	29	7	9	0	45

Figure 14 Total MRSA HAI rate per 10,000 multi and same day bed-days (inpatient and same-day patient)

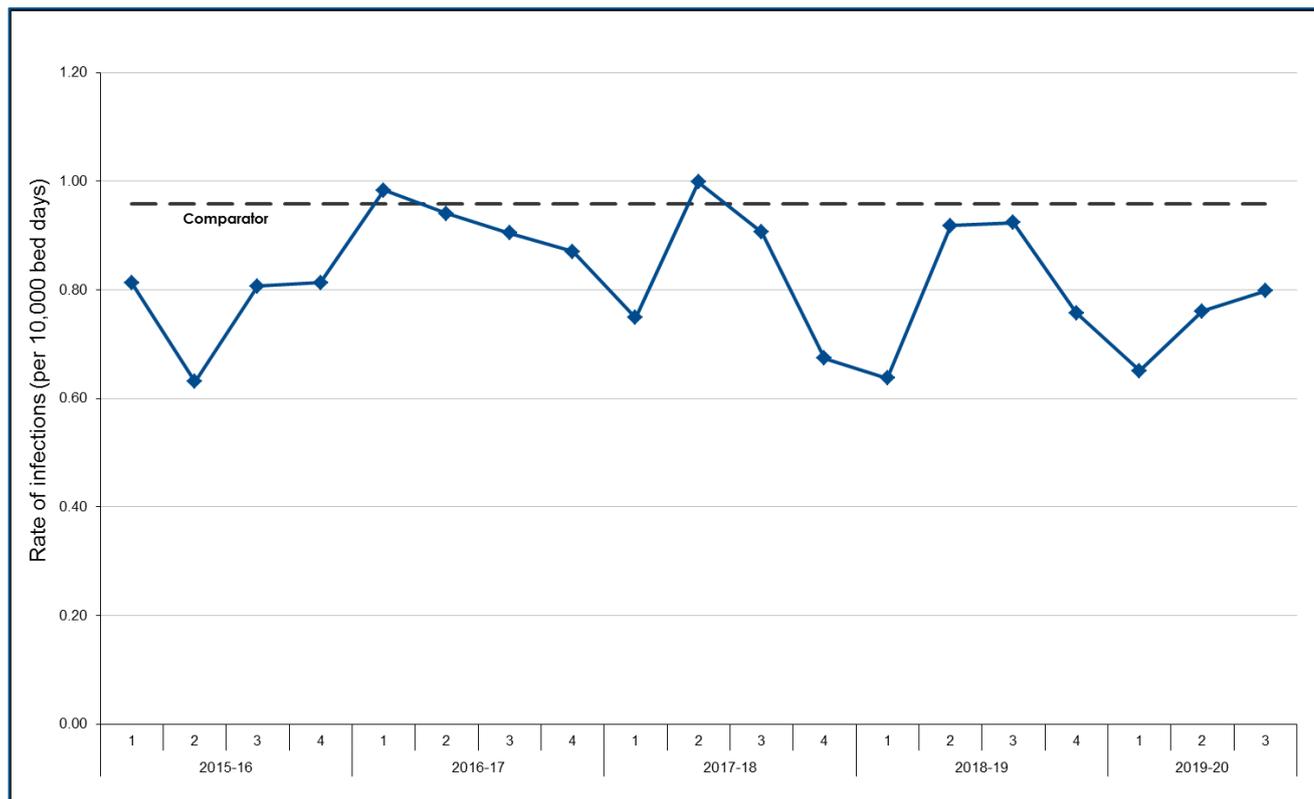


Figure 15 Proportion of MRSA HAIs, by specimen site

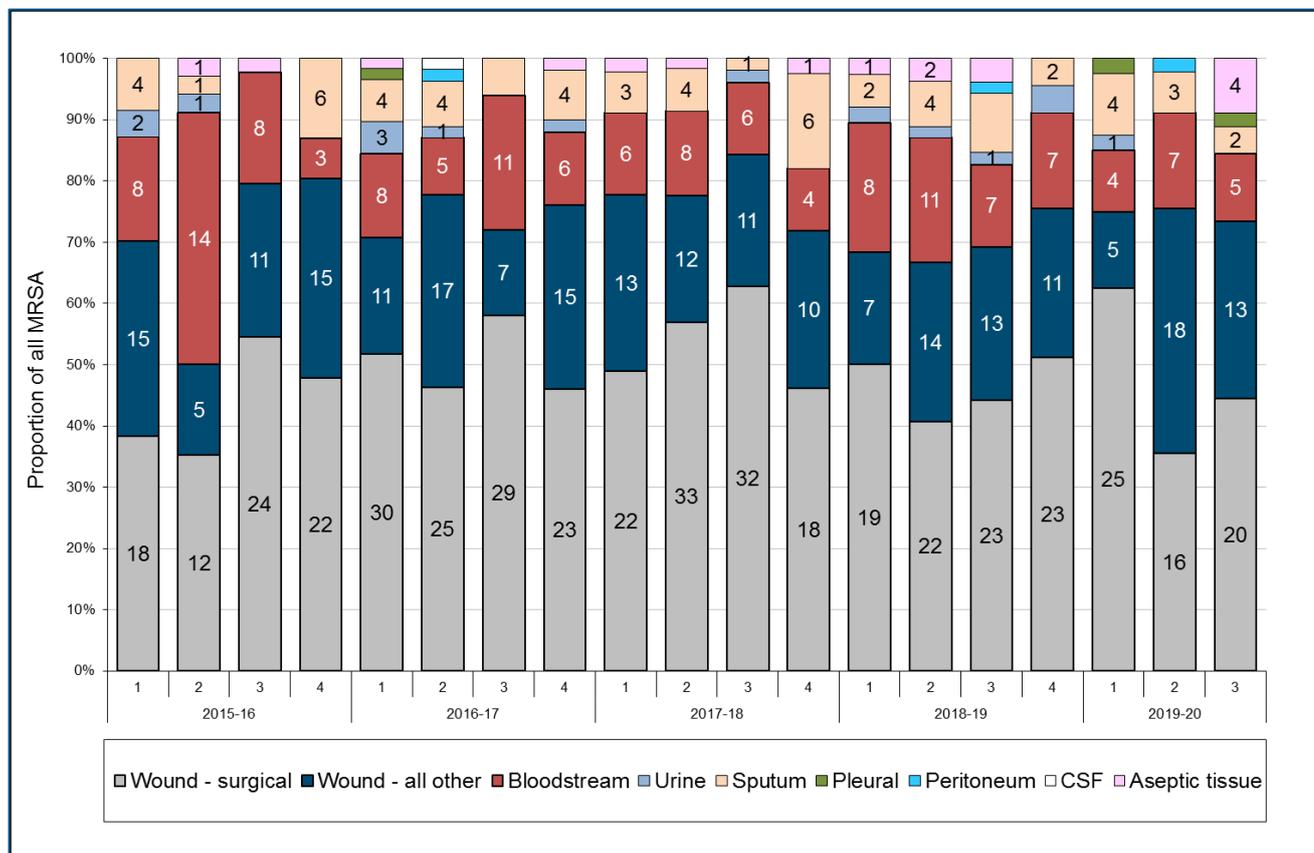


Figure 16 Rate of MRSA HAI, by strain group

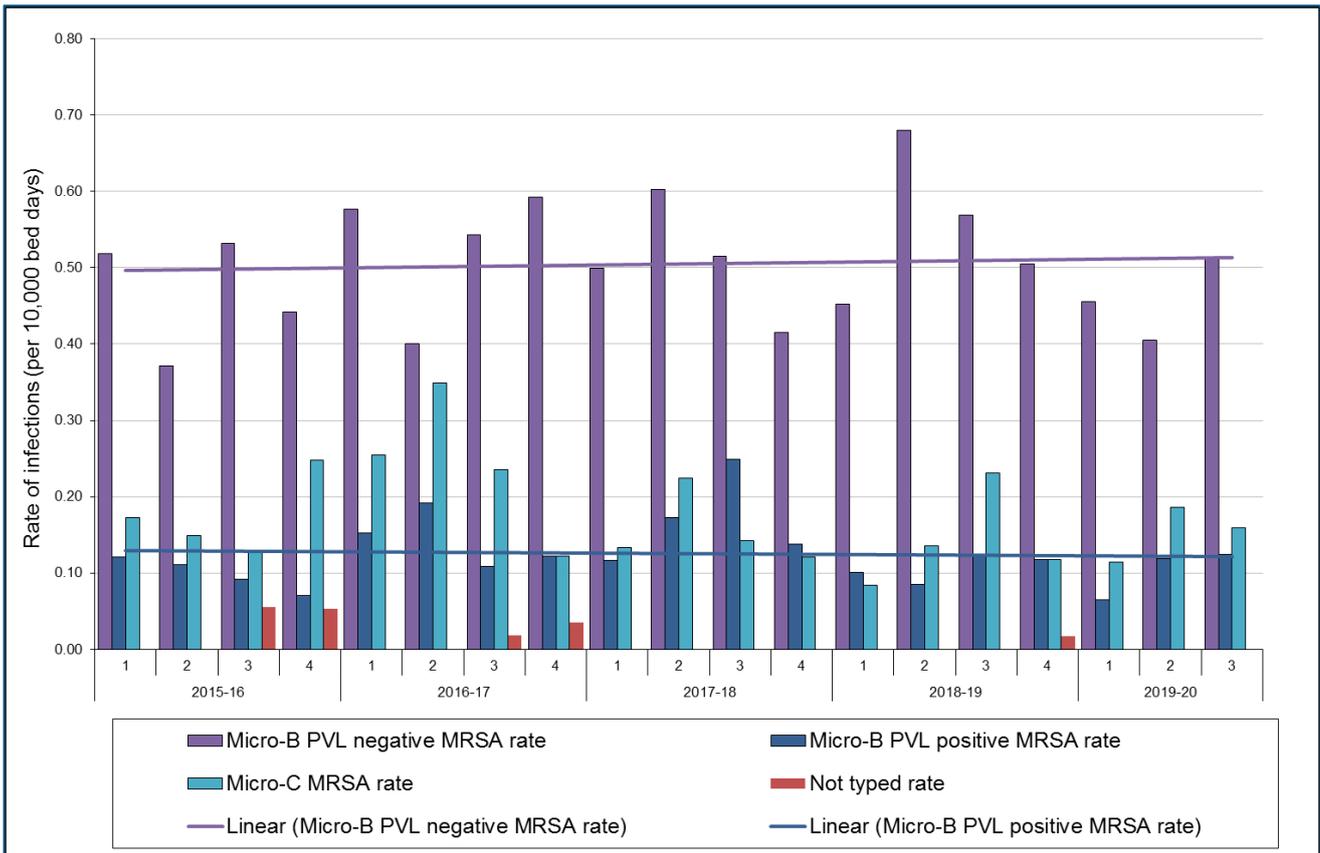
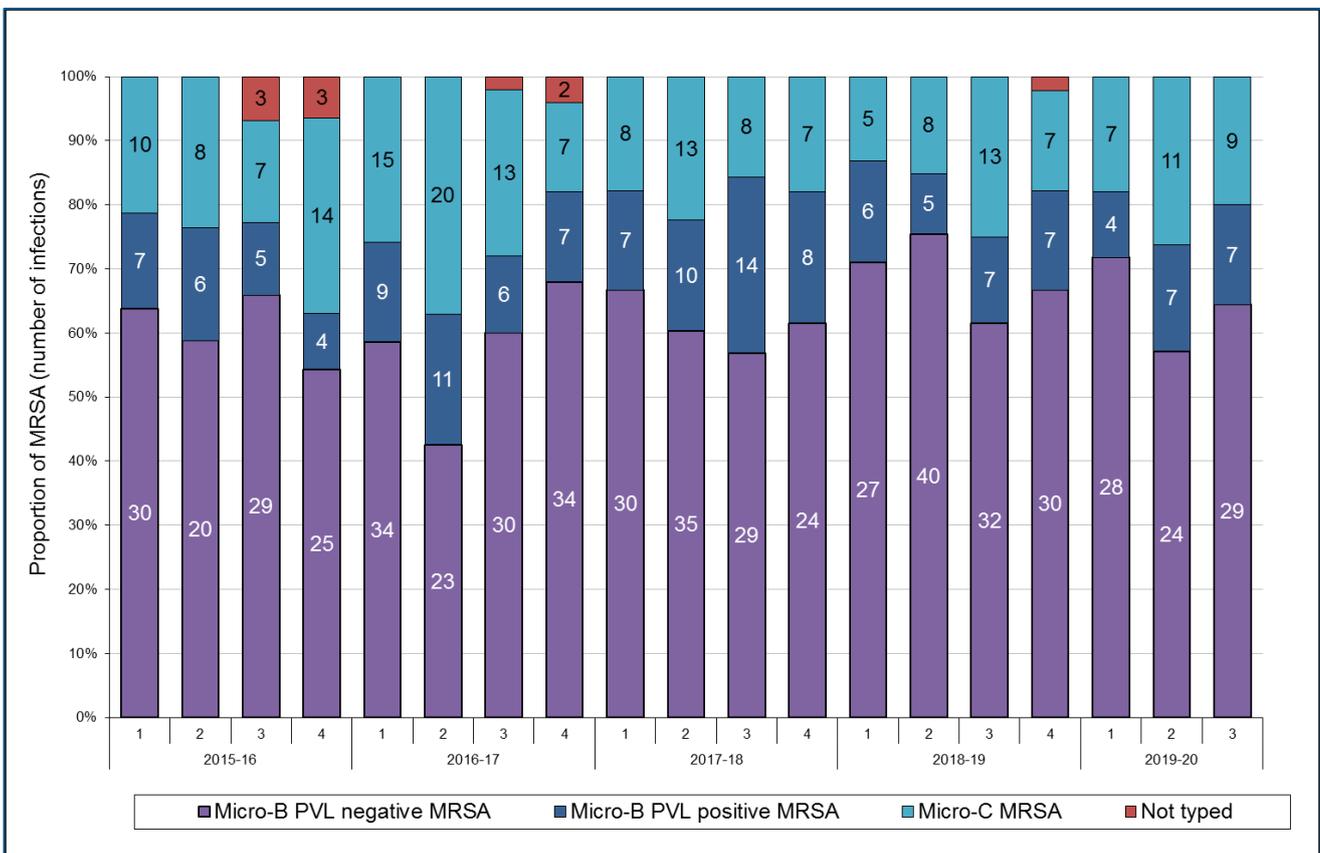


Figure 17 Proportion of MRSA HAI, by strain group



Hospital-identified *Clostridioides difficile* infection

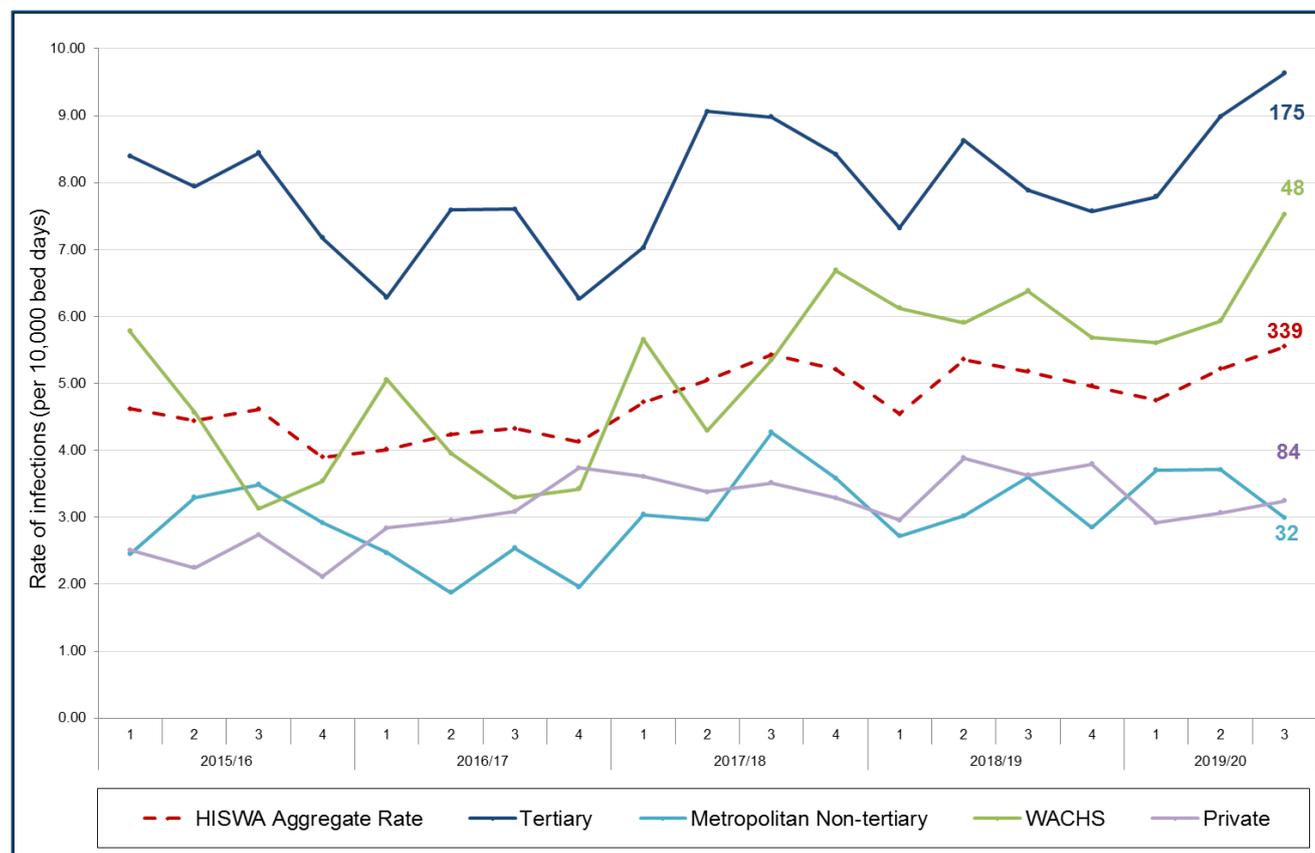
Key Points

- The HISWA aggregate HI-CDI rate increased to 5.55 per 10,000 bed-days from 5.21 reported in Qtr 2 2019-20.
- There was an increase in the rate reported from the tertiary, WACHS and private hospital groups and a decrease from metropolitan non-tertiary hospitals.
- The majority (52%) of all HI-CDI were reported from the tertiary hospitals.

Table 13 HI-CDI rates, by hospital group

Hospital Group	Number of contributing hospitals	Number of HI-CDI	Number of bed-days	Aggregate rate (95% CI)	Cumulative aggregate (95% CI)
Tertiary	5	175	181,659	9.63 [8.31 – 11.18]	6.56 [6.38 – 6.73]
Metropolitan non-tertiary	7	32	106,811	3.00 [2.11 – 4.25]	3.00 [2.11 – 4.25]
WACHS	21	48	63,719	7.53 [5.67 – 10.02]	3.76 [3.53 – 4.00]
Private	16	84	258,720	3.25 [2.62 – 4.03]	2.43 [2.33 – 2.53]
Total	49	339	610,909	5.55 [4.99 – 6.17]	4.10 [4.02 – 4.18]

Figure 18 HI-CDI rates, by hospital group



Vancomycin-resistant *Enterococci* sterile-site infections

Key Points

- There were two sterile site infections reported from a tertiary hospital and both infections were community associated. The patients both presented with an *E.faecium* van B infection; one from an ischial tuberosity pressure ulcer, the other from a psoas abscess. Neither patient had been identified with prior VRE colonisation.
- Refer to **Data Notes** for information on categorisation of sterile specimen sites.

Figure 19 Number of VRE, by sterile body sites

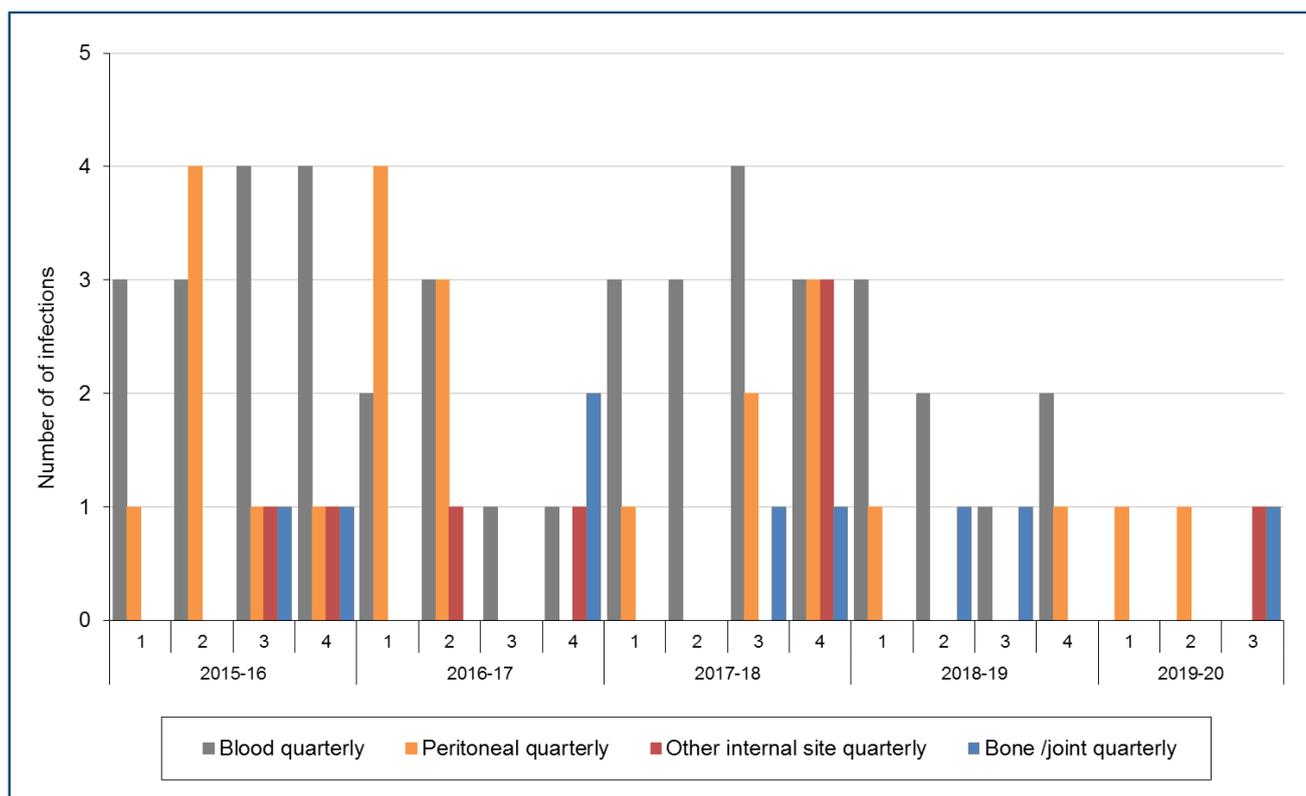
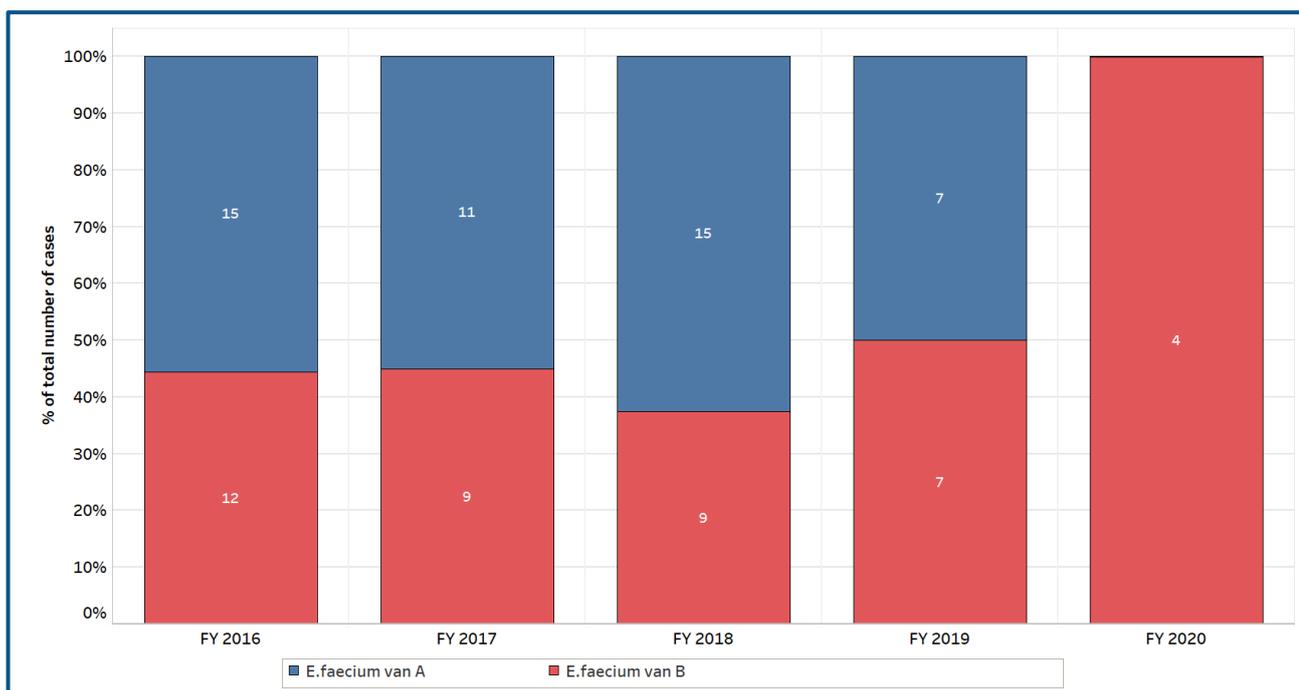


Figure 20: VRE HAI and CAI by organism and van type, 2014-15 to 30 Sep 2019

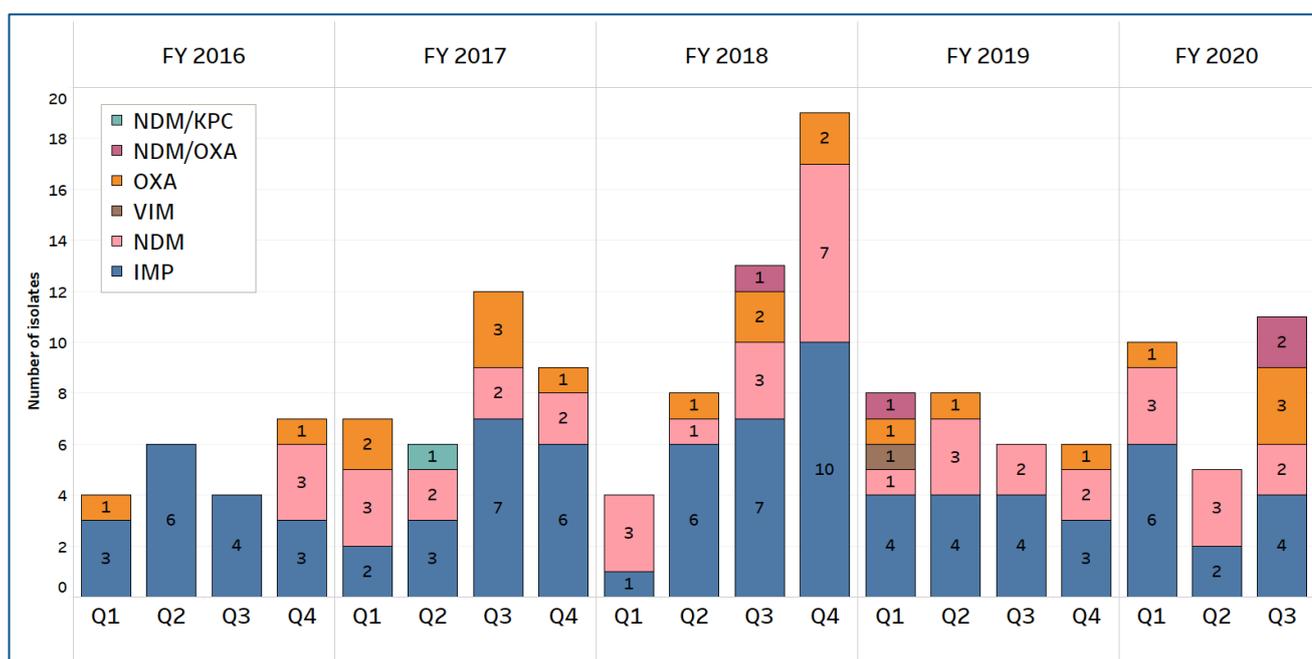


Carbapenemase-producing *Enterobacteriaceae*

Key Points

- Surveillance of CPE is performed by the HAIU in liaison with the PathWest Gram-negative Reference Laboratory located at the QE11 site.
- 11 of the 45 referred patient isolates this Qtr were confirmed CPE.
- Four patients were confirmed with an IMP-4, two carried an NDM-1, three carried an OXA-48 and two carried a combination of NDM-1 and OXA-48 (Figure 21).
- Of the seven patients identified with a non-IMP CPE, six had a history of recent overseas travel. Four of these patients were hospitalised overseas (India: 3; Vietnam: 1). One patient had no travel or hospitalisation history recorded.

Figure 21: Number of unique CPE isolates by type 2015-16 to 31 Mar 2020



Occupational exposures

Key Points

- The total occupational exposure rate increased to 5.52 exposures per 10,000 bed-days from 5.31 reported in Qtr 2, 2019-20.
- The parenteral rate increased to 4.03 exposures per 10,000 bed-days from 3.86 in Qtr 2, 2019-20.
- The non-parenteral rate increased to 1.49 exposures per 10,000 bed-days from 1.45 in Qtr 2, 2019-20.
- The majority of parenteral exposures (51%) were reported by doctors and the majority of non-parenteral exposures (59%) were reported by nurses.
- Seventeen HCWs who are not primary users of sharps sustained a parenteral exposure.

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	50	256	635,525	4.03 [3.56 – 4.55]	4.14 [4.07 – 4.21]
Non-Parenteral	50	95	635,525	1.49 [1.22– 1.83]	1.45 [1.41 – 1.50]
Total Exposures	50	351	635,525	5.52 [4.98 – 6.13]	5.59 [5.51 – 5.68]

Figure 22 Occupational exposure rate per 10,000 bed-days, by parenteral and non-parenteral

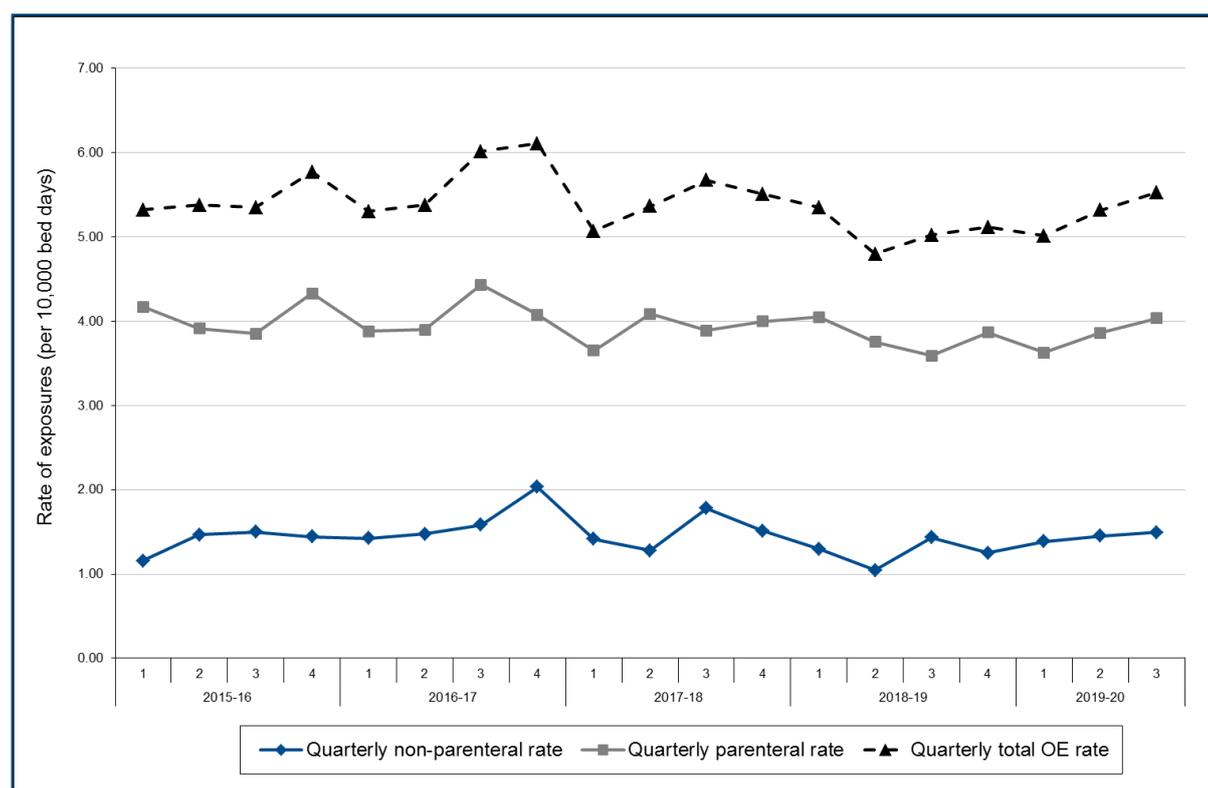


Figure 23 Parenteral occupational exposures, by HCW category

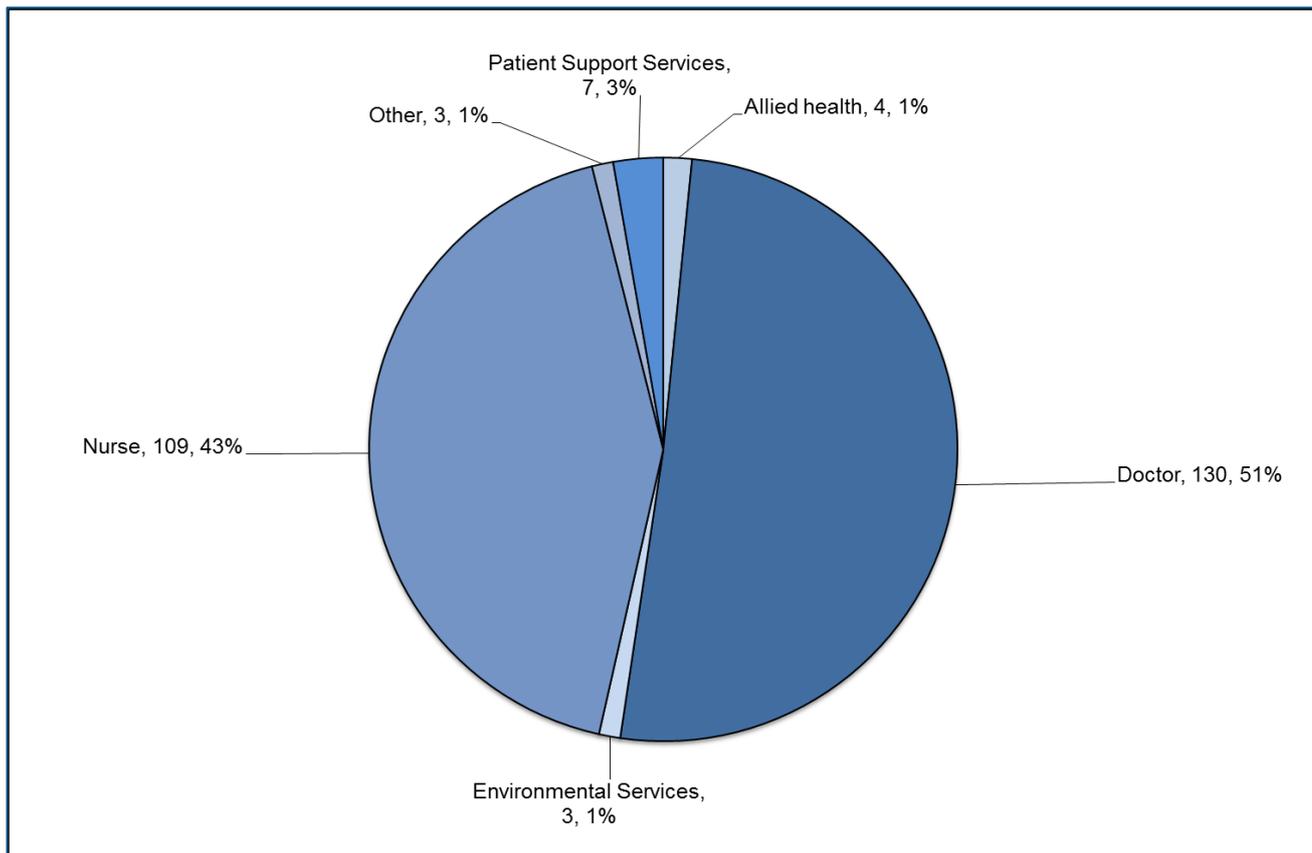
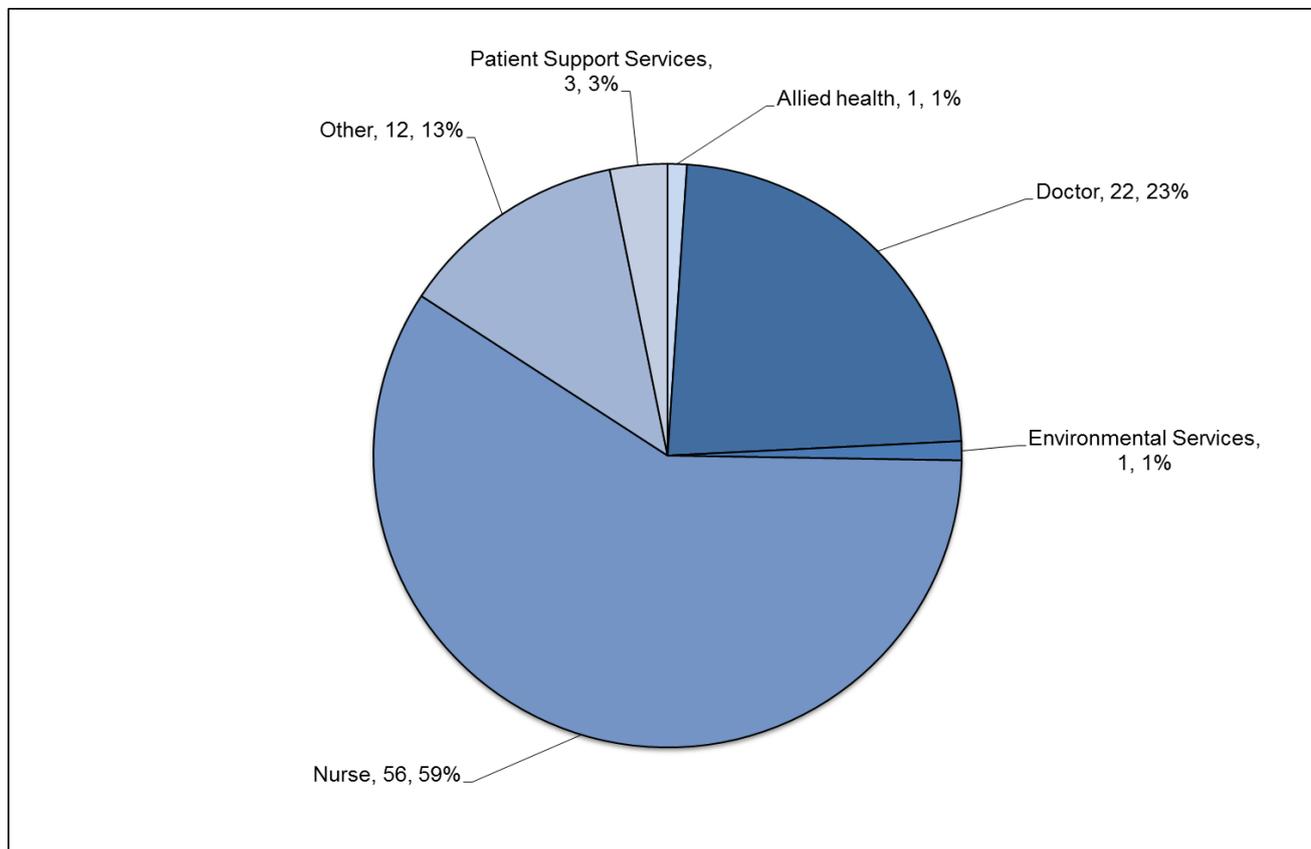


Figure 24 Non-parenteral occupational exposures, by HCW category



Data Notes

Data Refresh

All data changes requested by HISWA contributors or late submissions are refreshed each quarter when HISWA data is 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 (11 private; 12 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. One Regional Resource Centre is currently not performing procedures.
- The comparator is Public Health England, *Surveillance of Surgical Site Infections in NHS hospitals in England, 2018-19 Report (Table 3)*. (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/854182/SSI_Annual_Report_2018_19.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 HAIU 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 Performance Report (HSPR).

Caesarean section

- 27 hospitals (5 private and 22 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*

- 49 hospitals (14 private, 35 public) submit data to HISWA. Data is included from North Metropolitan Mental Health Service since 2014-15. One private hospital ceased reporting this data in January, 2020.
- HA-SABSI data has been included as an indicator in National Healthcare Agreements since 2009 and is 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 it is included in the HSPR.
- Data collection is in accordance with the Australian national definition.
- From 1 July 2017, unqualified newborn bed-day data was 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 is validated by the Healthcare Associated Infection Unit.
- The comparator is the Australian national public hospital aggregate 2018-19 rate. Australian Institute of Health and Welfare. (2020). *Bloodstream infections associated with hospital care 2018–19*. Retrieved from <https://www.aihw.gov.au/reports/health-care-quality-performance/bloodstream-infections-associated-with-hospital-care>

Haemodialysis*

- 24 haemodialysis units (15 private, 9 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 is risk adjusted to peripherally and centrally inserted central lines.
- Adult ICU CLABSI* - 12 adult ICUs (6 private, 6 public) submit data to HISWA
- Oncology CLABSI - Four oncology units (2[§] private, 2 public) submit data to HISWA
- Haematology CLABSI - One haematology unit (0[§] private, 1 public) submits data to HISWA.

[§]One private hospital ceased reporting Oncology and Haematology CLABSI as of 01/02/2020

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 (13[#] private, 34 public) submit data to HISWA. One private hospital ceased reporting this data in January, 2020.
- Data is 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, 2017-18 (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 HAIU 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 HAIU collates all CRE data submitted to the PathWest QEII Gram-negative Reference Laboratory.

Hospital-identified *Clostridioides 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.
- These data are not suitable for use as a performance measure or for benchmarking.
- 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*

- 49 hospitals (14 private, 35 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 is 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.

© Department of Health 2019

Copyright to this material is vested in the State of Western Australia unless otherwise indicated. Apart from any fair dealing for the purposes of private study, research, criticism or review, as permitted under the provisions of the *Copyright Act 1968*, no part may be reproduced or re-used for any purposes whatsoever without written permission of the State of Western Australia.