



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

Healthcare Infection Surveillance Western Australia (HISWA)

Quarterly Aggregate Report

Quarter 4 2019-20

Data for April to June 2020

Healthcare Associated Infection Unit

Communicable Disease Control Directorate

30 September 2020

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Data Quality Statement

Date Extracted: 27/08/2020

Publication Date: 30/09/2020

The following data was impacted by changes to management practices due to COVID-19:

2019-20

March: Peel HC bed days and separations for patients under two years of age are inflated from March 2020 due to implementation of a COVID-19 bed management plan

April: Bentley Hospital closed their maternity ward and ceased performing caesarean section procedures impacting multi-day bed days and separations for non-ICU, patients under 2 years old, and unqualified newborns.

April: Geraldton Regional Hospital co-located maternity services with SJG Geraldton.

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

2019-20

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

Apr-Jun 2020: Fitzroy Renal Health - No data submitted for this quarter

Prior to 2018-19

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

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HAIU News

ICNet

The ICNet Project closure date has been extended and the project team is working to hand over ICNet to the Application Support Team.

The ICNet Infection Prevention Module (IPM) roll out is now complete and all sites have at least one trained user. The sites that have gone live with the new Laboratory Information System are depending solely on ICNet for their infection control management and surveillance. This change in work practice is a challenge for many, and ICNet support has been working with the sites and has assisted in solving most of the issues. Five modules of the training support videos were released and have been positively received.

A new version of ICNet Outbreak Management Module has been released and rolled out to all sites. Baxter provided additional Super User training sessions for this module and all HSPs and WACHS regions now have trained Outbreak Super Users who will be able to train their users.

After the initial User Acceptance Testing (UAT) of ICNet Protect, Baxter made the requested changes and released a second version. Further UAT testing is being conducted by the Protect Sub Committee members.

A Microsoft Teams channel has been created as further support. Please use this forum to participate in discussions on issues and share knowledge on innovative ways of using ICNet to manage your workload. In addition, please keep sending your emails to DoH.ICNet@health.wa.gov.au for any ICNet related matters.

Mariyam is organising a ICNet Super User Forum for 6th October at 1400 – please keep an eye out for the invitation.

HISWA Forum

The next forum is scheduled for **Friday 9th October at 14:30** in the Theatrette at 189 Royal Street and via Microsoft Teams

Topics for the HISWA Forum will be COVID-19, Respiratory Protection Program and an update on PPE / PAPR use. Anyone wishing to participate via Microsoft Teams and would like further information on accessing this, please email us at hiswa@health.wa.gov.au

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 Notes - SARS-CoV-2 impacts

- 23rd March, 2020 - all non-essential surgery was temporarily ceased to free up hospital beds and to preserve stock of personal protective equipment
- 27th April, 2020 - non-essential surgery phase-in commenced, prioritised by category
- 18th June, 2020 - all non-essential surgery back to full capacity
- There was a 25% decrease in the number of hip arthroplasty procedures and a 33% decrease in the number of knee arthroplasty procedures performed this Qtr compared to Qtr 3 2019-20
- There was a decrease in the number of occupational exposures reported; with 15% fewer parenteral exposures and 25% fewer non-parenteral exposures reported this Qtr

Report Highlights

- The SSI rate for knees remains below the comparator for a second, consecutive quarter
- The deep/ organ space SSI rate for caesarean section has decreased for the fourth consecutive quarter
- The haemodialysis cuffed catheter access-associated BSI rate decreased this quarter
- The MRSA HAI rate remains below the comparator rate for the 10th consecutive Qtr
- Marked reduction in the number of both parenteral and non-parenteral occupational exposures reported

Report Concerns

- The SSI total rate following hip arthroplasty increased this quarter and the rate remains above the comparator
- The SSI rate following both elective and emergency caesarean section increased, this was driven by superficial SSIs, the majority of whom required readmission for management.
- The total HA-SABSI rate increased this quarter and is above the comparator for the first time since Qtr 2, 2018-19
- Intravascular devices (IVDs) accounted for 61% of all HA-SABSI and the majority of these were attributed to peripheral intravenous catheters
- The IVD HA-SABSI rate is the highest since Qtr 2, 2015-16
- The rate of haematology CLABSI increased this quarter, with five CLABSI reported from the two units submitting data

Surgical site infection following hip arthroplasty

Key Points

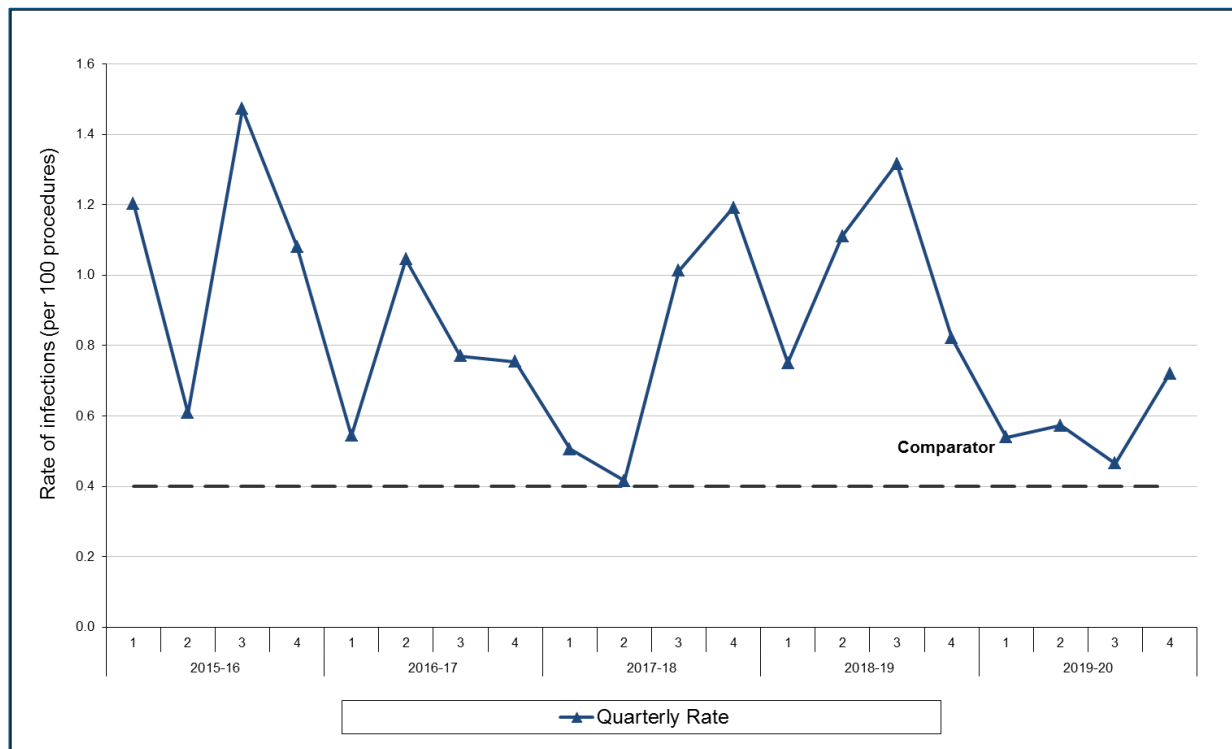
- There were 972 procedures reported (897 primary; 75 revision), which is a 25% decrease in the number of procedures reported compared to Q3 2019-20
- A total of seven SSI following primary hip arthroplasty were reported (4 deep/organ space, 3 superficial); five of which were identified on readmission to hospital (three deep /organ space and 2 superficial infections)
- The total SSI rate following hip arthroplasty increased to 0.72 infections per 100 procedures from 0.47 reported in Qtr 3 2019-20
- The deep SSI hip rate decreased to 0.41 infections per 100 procedures from 0.47 reported for Qtr 3 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	23	562	3	0.53 [0.11 – 1.65]	0.68 [0.60 - 0.78]
Risk index 1	23	354	3	0.85 [0.18 – 2.61]	1.67 [1.49 – 1.88]
Risk index 2	23	56	1	1.79 [0.00 – 10.51]	3.56 [2.85 – 4.45]
Risk index 3	0	0	0	0.00 [0.00 – 0.00]	5.97 [2.92 – 11.57]
Total hip arthroplasty	23	972	7	0.72 [0.32 – 1.52]	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 1,257 procedures reported (1,185 primary; 72 revision) which is 33% decrease in the number of procedures reported compared to Qtr 3 2019-20
- A total of three SSI were reported, all of which were deep/organ space SSIs in patients with a '0' risk index patients, detected on readmission to hospital.
- The total SSI rate following knee arthroplasty of 0.24 infections per 100 procedures was comparable with 0.21 per 100 procedures reported in Qtr 3 2019-20.
- The deep SSI knee rate increased to 0.24 per 100 procedures from 0.16 per 100 procedures reported in Qtr 3 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	23	783	3	0.38 [0.08 – 1.19]	0.62 [0.55 – 0.70]
Risk index 1	23	410	0	0.00 [0.00 – 1.15]	1.05 [0.93 – 1.18]
Risk index 2	23	60	0	0.00 [0.00 – 7.39]	2.65 [2.18 – 3.23]
Risk index 3	23	4	0	0.00 [0.00 – 55.01]	7.89 [4.49 – 13.46]
Total knee arthroplasty	23	1257	3	0.24 [0.05 – 0.74]	0.92 [0.86 – 0.99]

*Refer to Appendix 1- SSI Data Notes

Figure 2 Knee arthroplasty SSI rate

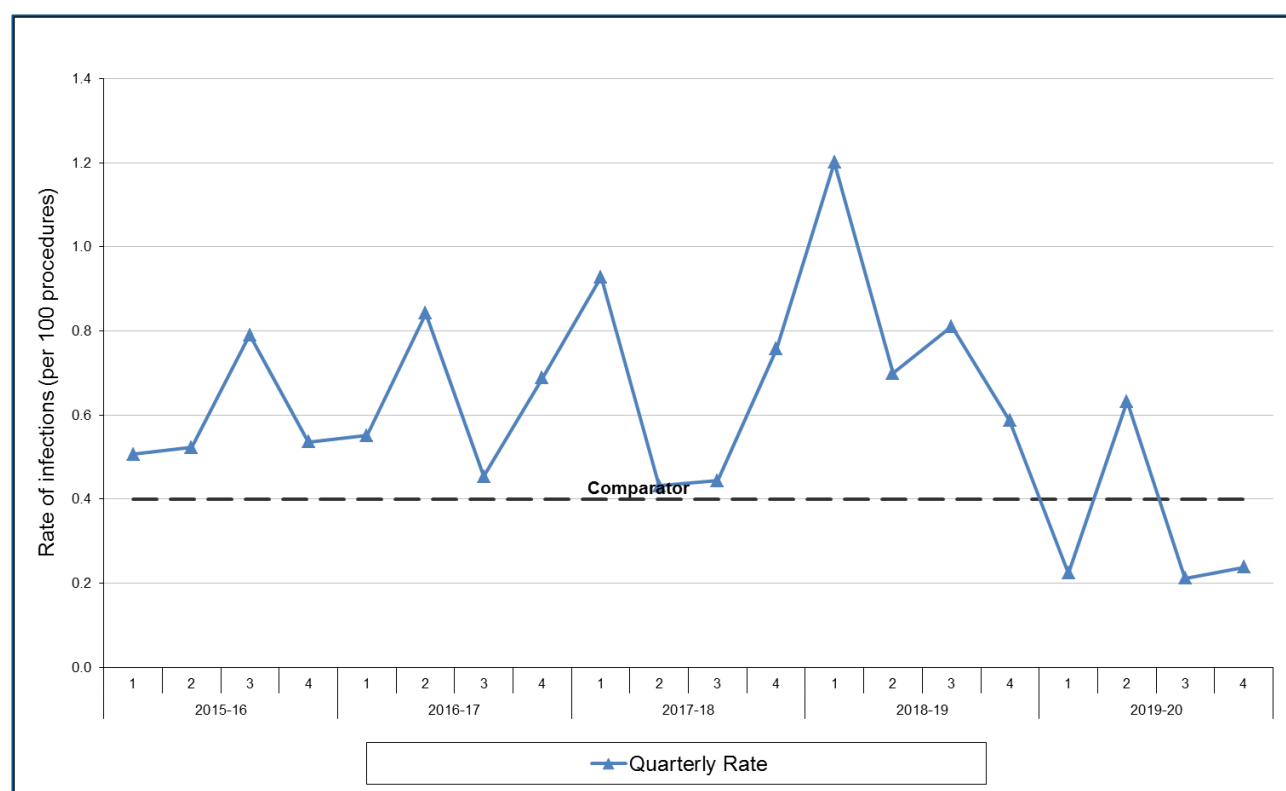


Table 3 SSI rates, by superficial and deep or organ/ space infections

	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	3	4	7	972	0.31 [0.06 – 0.96]	0.41 [0.12 – 1.11]	0.72 [0.12– 1.11]
Knee arthroplasty	0	3	3	1257	0.00 [0.00 – 0.38]	0.24 [0.05 – 0.74]	0.24 [0.05 – 0.74]
Total arthroplasty	3	7	10	2229	NA	NA	NA

Figure 3 Hip arthroplasty SSI rate, by superficial and deep

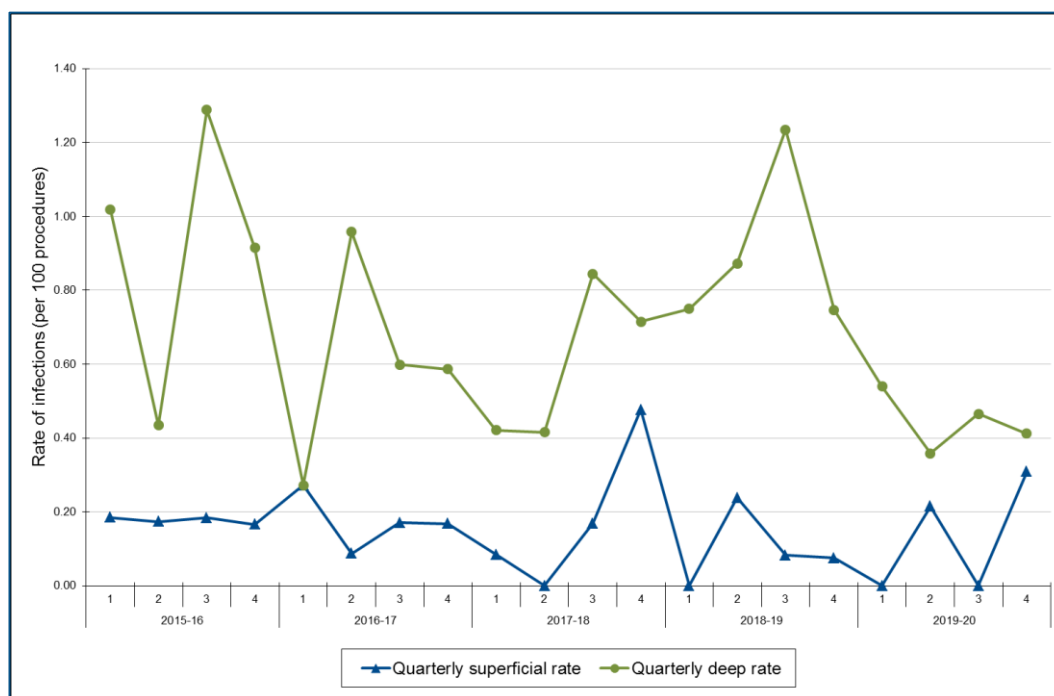
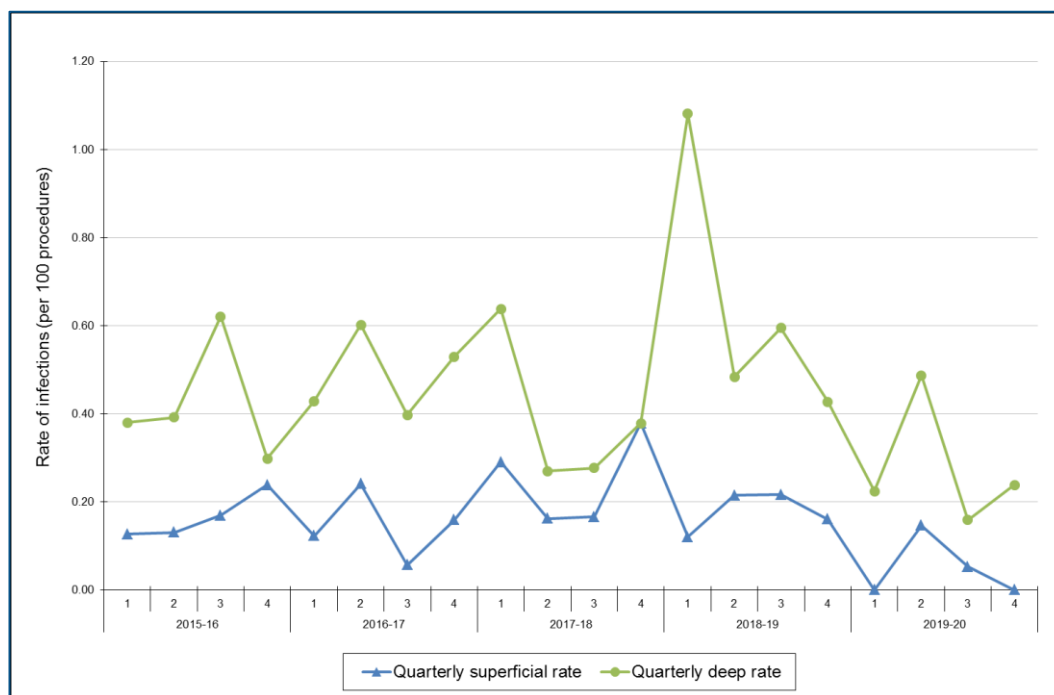


Figure 4 Knee arthroplasty SSI rate, by superficial and deep



Surgical site infection following caesarean section

Key Points

- 2,341 caesarean section procedures were reported, of which 1,207 (52%) were emergency and 1,134 (48%) were elective procedures. These figures are similar to last quarter.
- A total of 32 SSIs were identified, with 13 (12 superficial, one deep) identified post discharge, that are not included in further data analysis or in HISWA calculated rates*.
- All 19 inpatient SSI were identified when the patient required readmission to hospital for care.
- The majority (79%) of the 19 inpatient SSIs were superficial infections with four (21%) deep /organ space infections reported.
- 14 (74%) SSIs were following emergency procedures and included two deep SSIs.
- The total inpatient SSI rate (includes readmissions and excludes post-discharge) increased to 0.81 infections per 100 procedures from 0.66 reported in Qtr 3 2019-20.
- The inpatient elective procedure SSI rate increased to 0.44 infections per 100 procedures from 0.28 reported in Qtr 3 2019-20.
- The inpatient emergency procedure SSI rate increased to 1.16 infections per 100 procedures from 0.98 reported in Qtr 3 2019-20
- The deep SSI rate decreased to 0.17 infections per 100 procedures compared to 0.29 reported for Qtr 3 2019-20 (Figure 5)

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	63	1	1	2	3.17 [0.30 – 11.64]	0.74 [0.60 – 0.92]
Risk index 0	20	1128	3	2	5	0.44 [0.16 – 1.08]	0.34 [0.29 – 0.40]
Risk index 1	17	880	6	0	6	0.68 [0.28 – 1.53]	0.83 [0.72 – 0.96]
Risk index 2	12	250	5	1	6	2.40 [1.00 – 5.30]	2.01 [1.65 – 2.44]
Risk index 3	5	20	0	0	0	0.00 [0.00 – 19.39]	1.69 [0.70 – 3.76]
Total in-patient	25	2341	15	4	19	0.81 [0.51 – 1.28]	0.65 [0.59 – 0.71]
Post-discharge	NA	NA	12	1	13	NA	NA
Total SSI*	NA	2341	27	5	32	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)

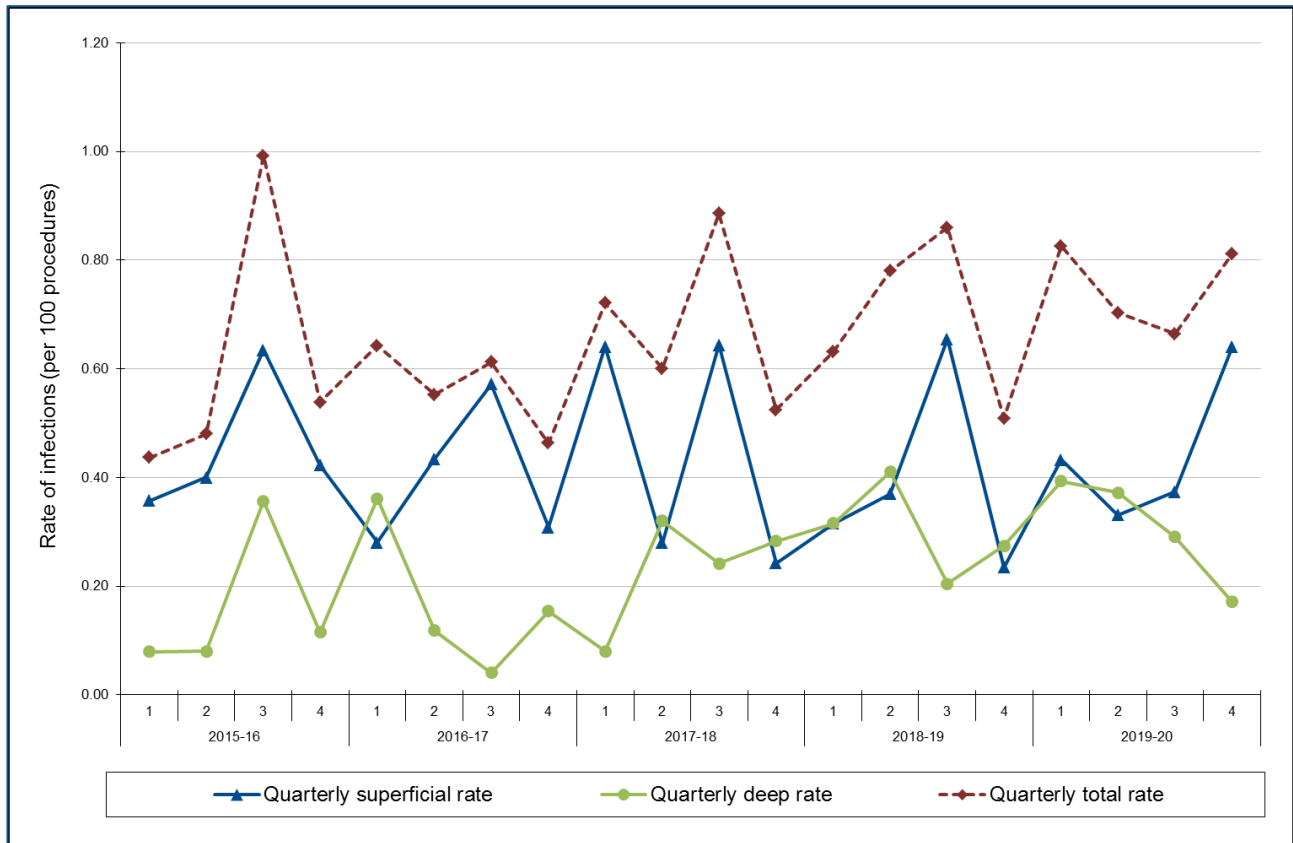
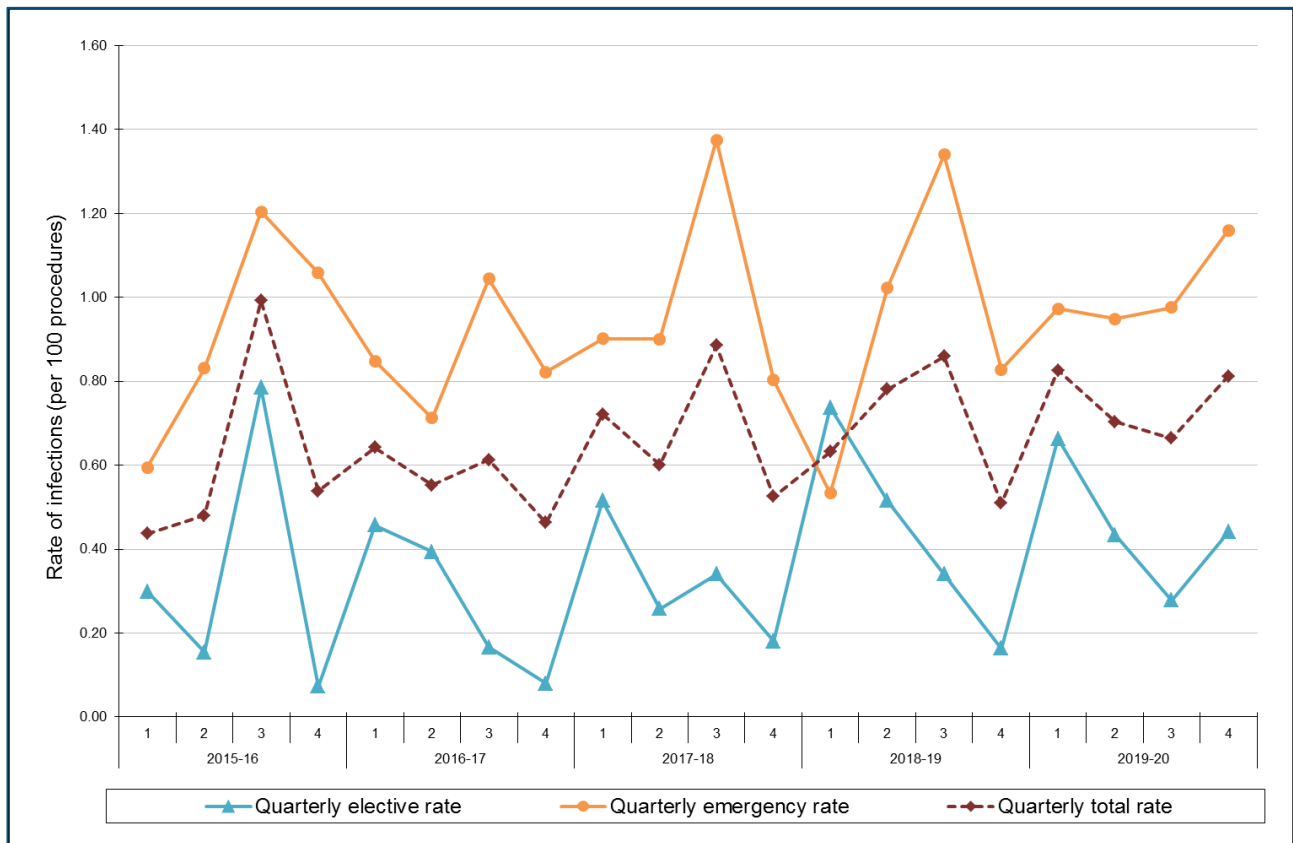


Figure 6 Caesarean section SSI rates by elective and emergency procedures (inpatient only)



Healthcare associated *Staphylococcus aureus* bloodstream infection

Key Points

- There were 46 HA-SABSI (MSSA 35; MRSA 11) reported
- The total HA-SABSI rate increased to 0.81 infections per 10,000 bed-days from 0.63 reported in Qtr 3 2019-20, and is above the comparator rate of 0.70
- The MSSA HA-SABSI rate increased to 0.61 infections per 10,000 bed-days from 0.55 reported in Qtr 3 2019-20 and is above the comparator rate of 0.60
- The MRSA HA-SABSI rate increased to 0.19 infections per 10,000 bed-days from 0.08 reported in Qtr 3 2019-20 and is above the comparator rate of 0.03
- Of the 46 HA-SABSI reported, 28 (61%) were attributable to IVDs. A further nine (20%) were related to procedures and three (7%) had an organ site focus (Figure 8)
- Of the 28 IVD related HA-SABSI, the majority (61%, n=17) were attributed to PIVC lines. A further 18% (n = 5) were associated with PICC lines (Figure 9)
- The IVD SABSI rate increased to 0.49 infections per 10,000 bed-days from 0.30 infections reported in Qtr 3 2019-20 (Figure 11)
- All hospital groups, except metropolitan non-tertiary hospitals, reported increases in their IVD related SABSI rates this Qtr (Figure 10).
- The WACHS hospital group demonstrated a significant rise in HA-SABSI this Qtr (Figure 10), which was driven by IVD-related HA-SABSI events.
- **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.**

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	569,904	35	0.61 [0.44 – 0.86]	0.56 [0.54 – 0.59]
Total methicillin- resistant <i>Staphylococcus aureus</i> (MRSA) bloodstream infection	49	569,904	11	0.19 [0.10 – 0.35]	0.12 [0.11 – 0.13]
Total <i>Staphylococcus aureus</i> bloodstream infection	49	569,904	46	0.81 [0.60- 1.08]	0.68 [0.65 – 0.71]

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

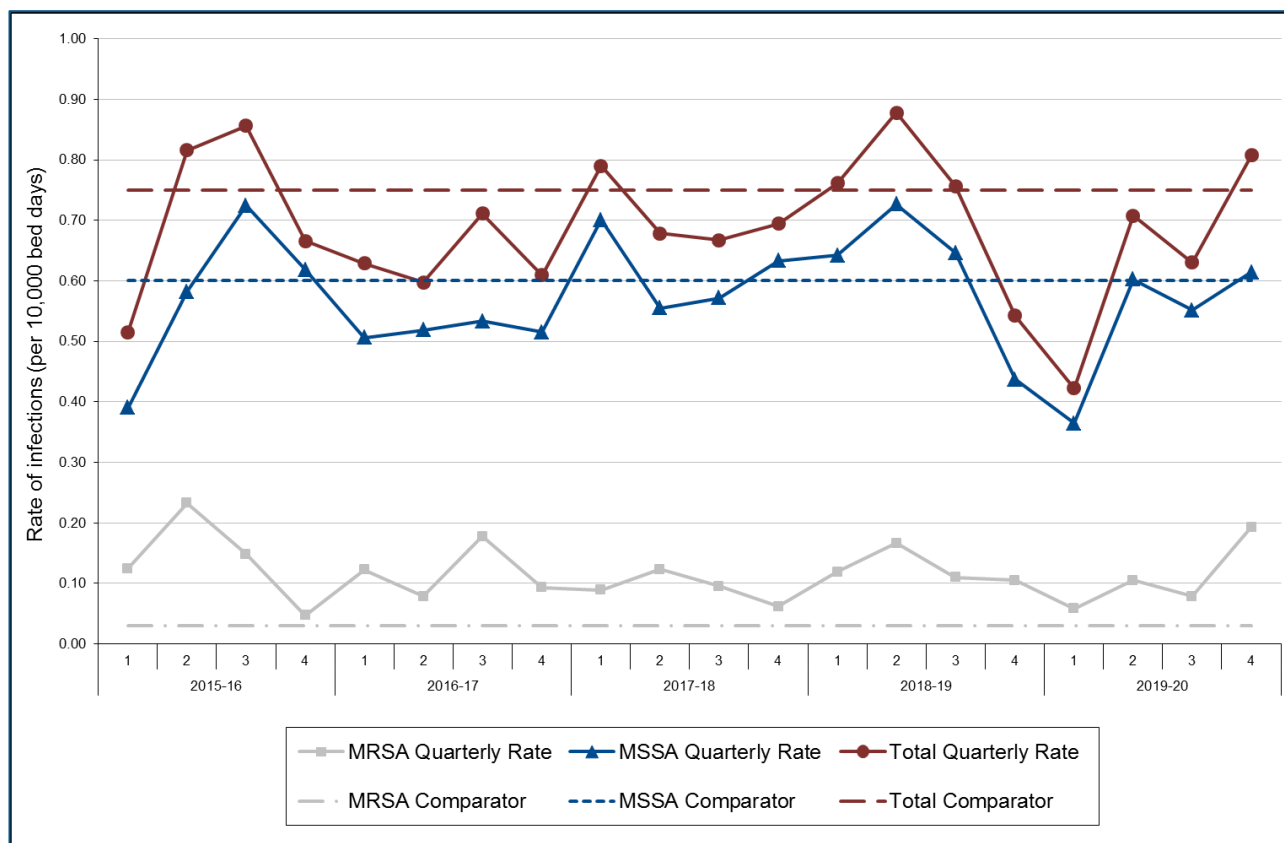


Figure 8 Number of HA-SABSI, by attributable source

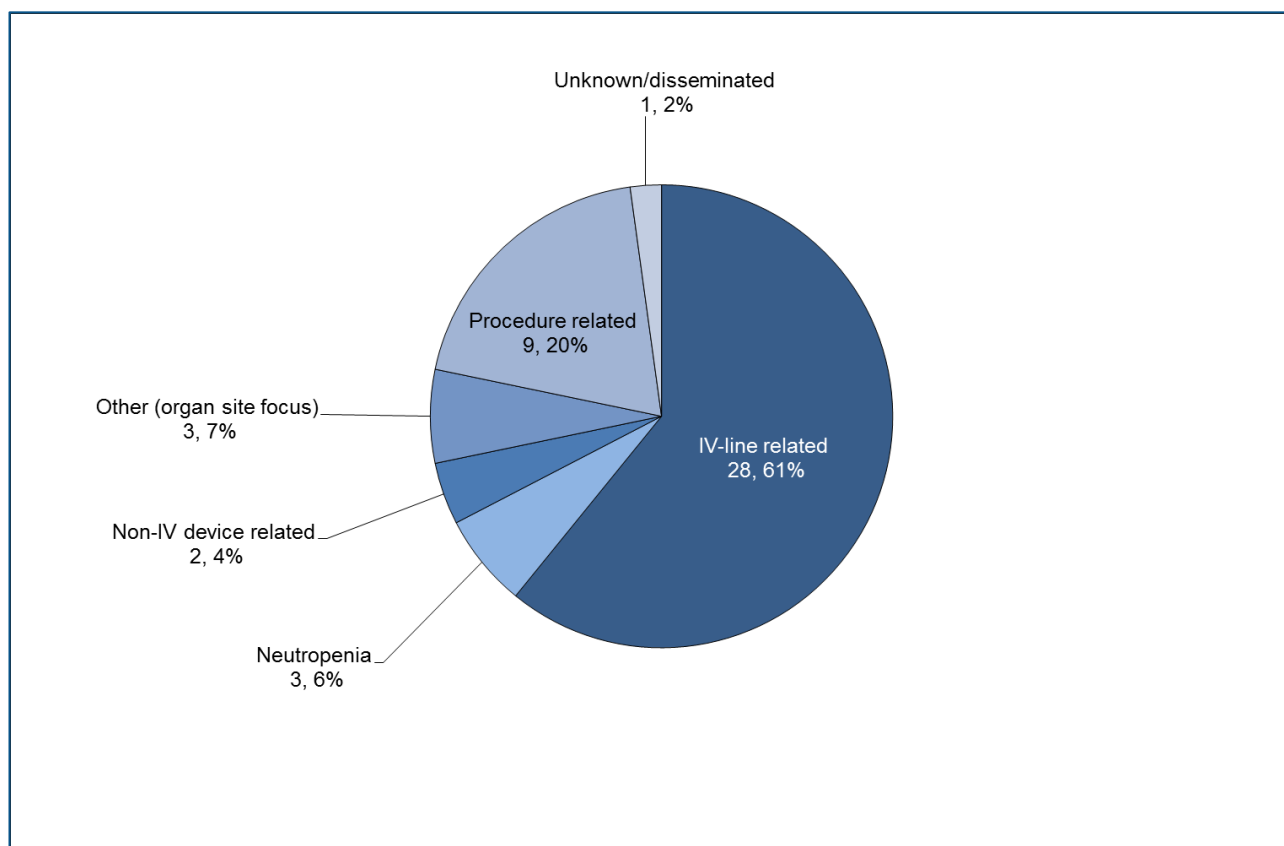


Figure 9 Number of HA-SABSI by IV-line related device

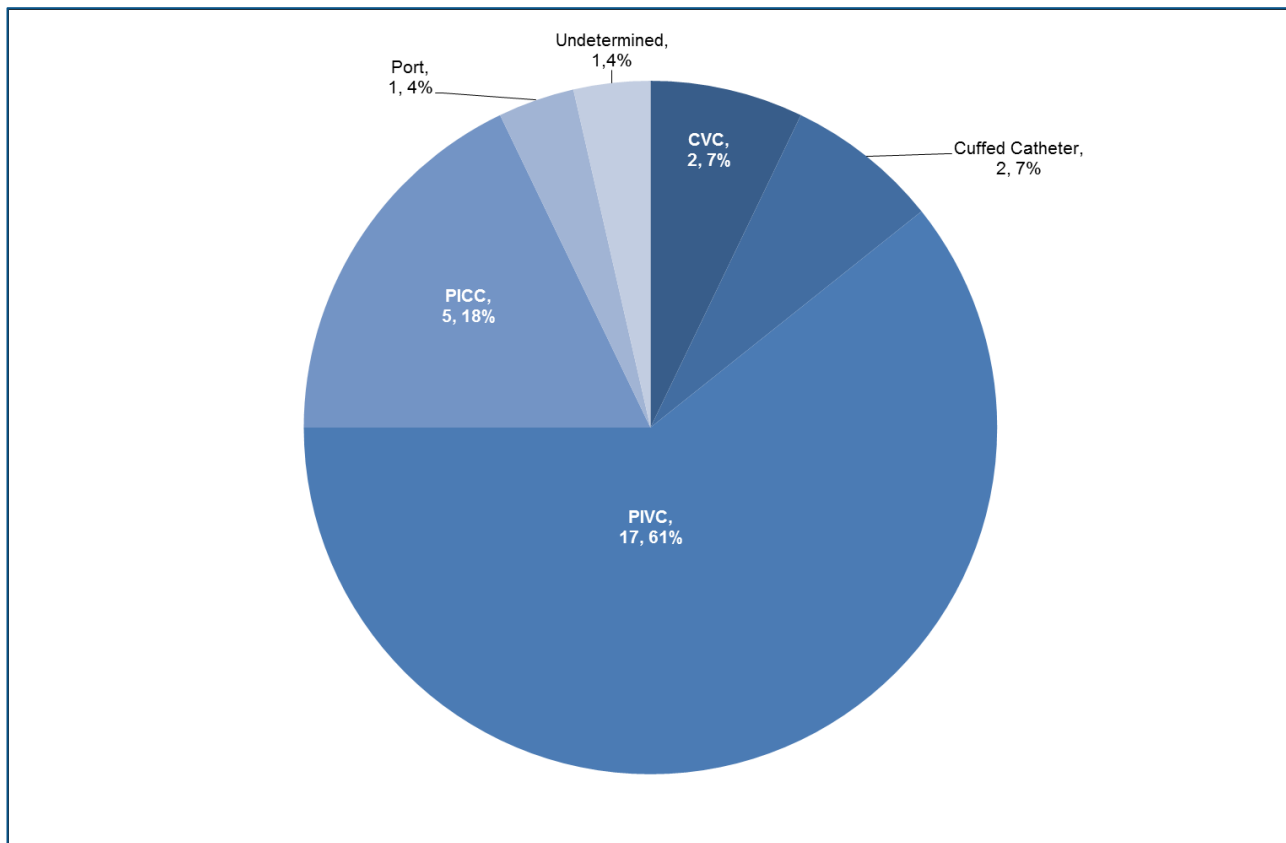


Figure 10 HA-SABSI rates, by hospital group

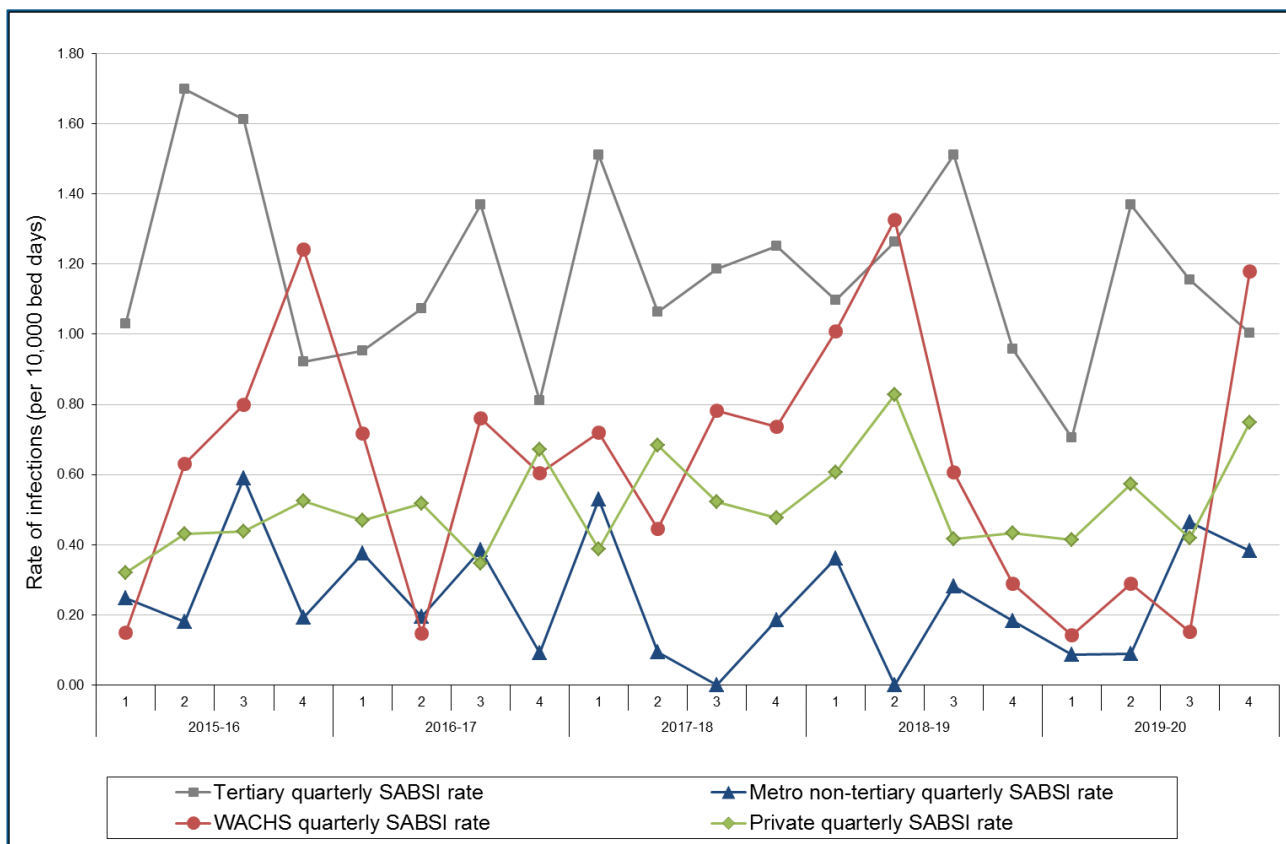


Figure 11 Proportion and rate of HA-SABSIs attributed to intravascular devices

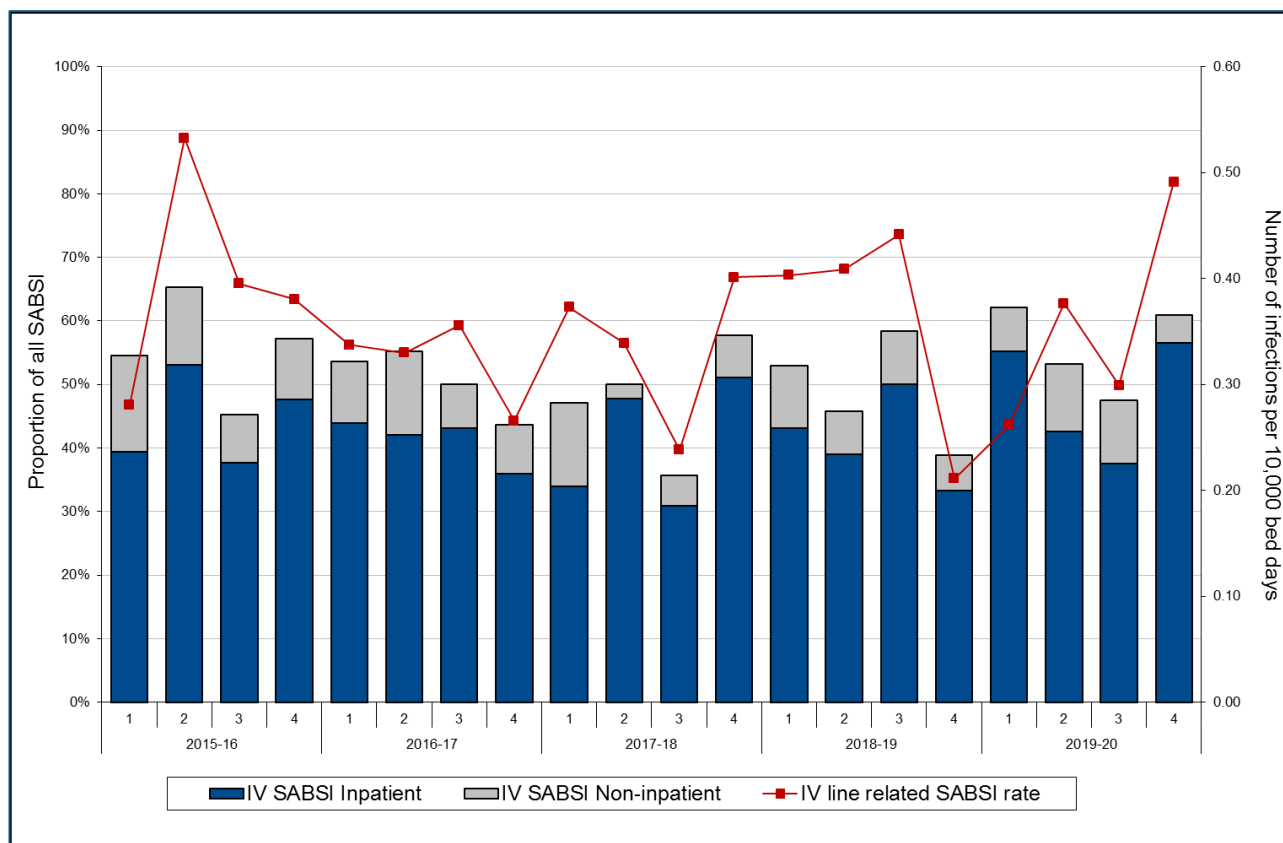
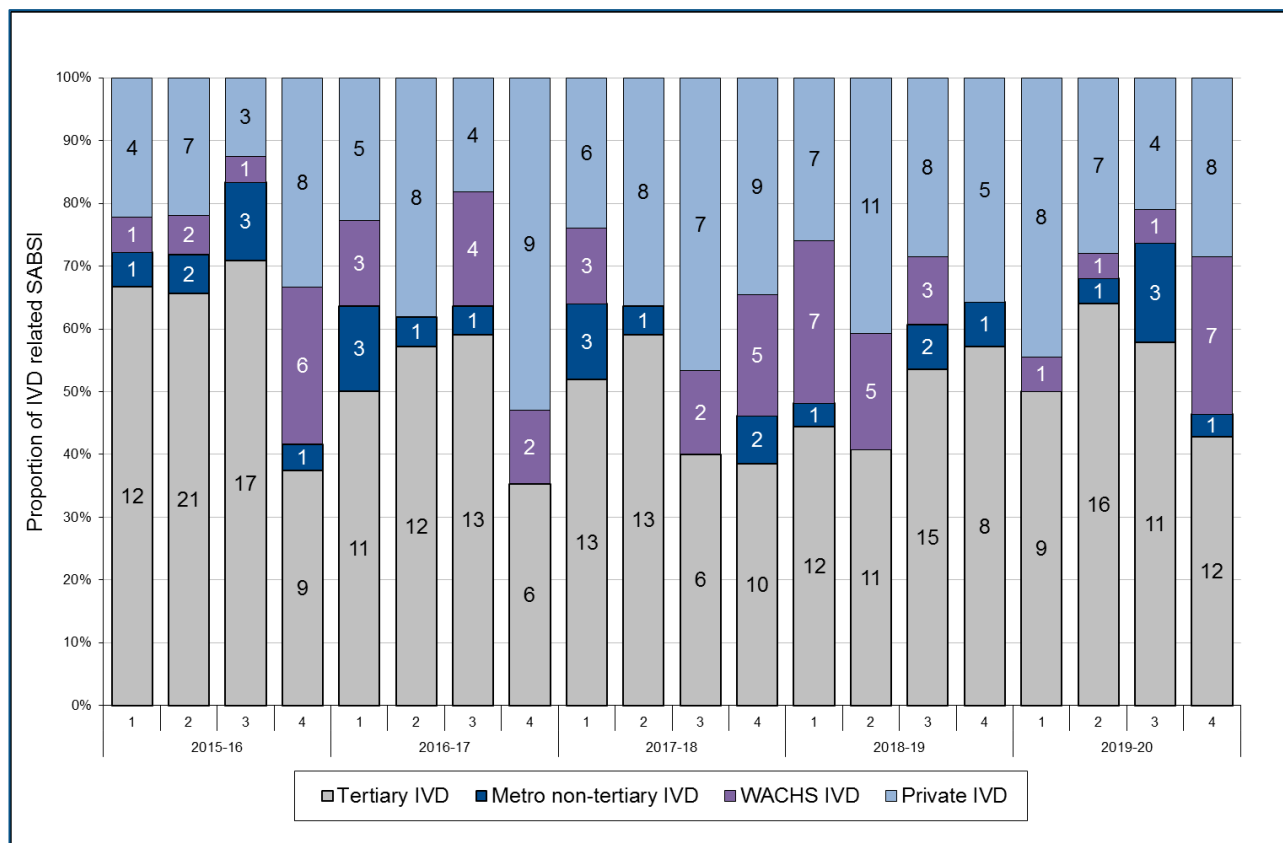


Figure 12 Proportion and number of HA-SABSIs attributed to intravascular devices, by hospital group



Haemodialysis access-associated bloodstream infections

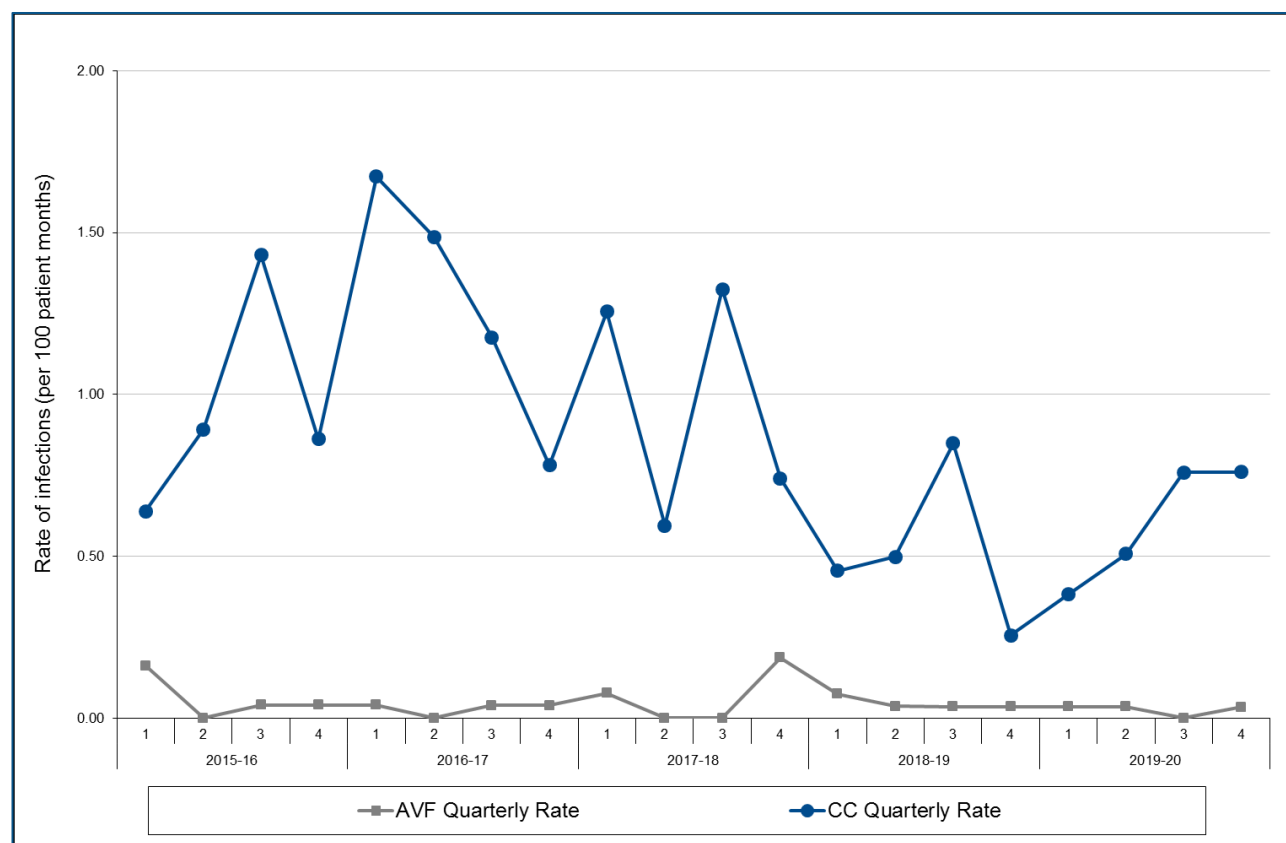
Key Points

- The majority (77%) of patients received haemodialysis via an AVF
- One AVF-associated BSI was reported
- The AVF BSI rate of 0.03 per 100 patient-months increased from 0.00 reported in Qtr 3, 2019-20
- There were six cuffed catheter access-associated BSIs reported
- The cuffed catheter BSI rate remained the same at 0.76 infections per 100 patient-months as reported in Qtr 3, 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	76.99	1	2,921	0.03 [0.00 – 0.22]	0.06 [0.05 – 0.08]
AVG	24	1.74	0	66	0.00 [0.00 – 6.76]	0.45 [0.29 – 0.70]
Cuffed catheter (CC)	24	20.80	6	789	0.76 [0.31 – 1.70]	1.37 [1.25 – 1.50]
Non-cuffed catheter	24	0.47	0	18	0.00 [0.00 – 21.10]	1.01 [0.53 – 1.89]

Figure 13 AVF and cuffed catheter BSI rate



Central line-associated bloodstream infection

Key Points

- Two adult ICU CLABSI were reported and the rate of 0.30 infections per 1,000 line-days was comparable with the rate of 0.32 reported in Qtr 3, 2019-20
- The majority (77%) of central lines utilised in adult ICUs were centrally-inserted
- Five haematology CLABSI were reported this quarter and the rate increased to 1.07 infections per 1,000 line days from 0.74 reported in Qtr 3, 2019-20
- Four oncology CLABSI were reported and the rate decreased to 0.07 infections per 1,000 line days from 0.14 reported in Qtr 3, 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	1,493	0	0.00 [0.00 – 3.19]	0.52 [0.30 – 0.88]
ICU centrally inserted CLABSI	12	5,142	2	0.39 [0.02 – 1.54]	0.57 [0.48 – 0.67]
Total ICU CLABSI	12	6,635	2	0.30 [0.01 – 1.19]	0.56 [0.48 – 0.66]

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	1,493	11,435	22.35	13.06
Adult ICU centrally inserted CLUR	12	5,142	11,435	71.04	44.97

Table 9 Haematology Unit CLABSI

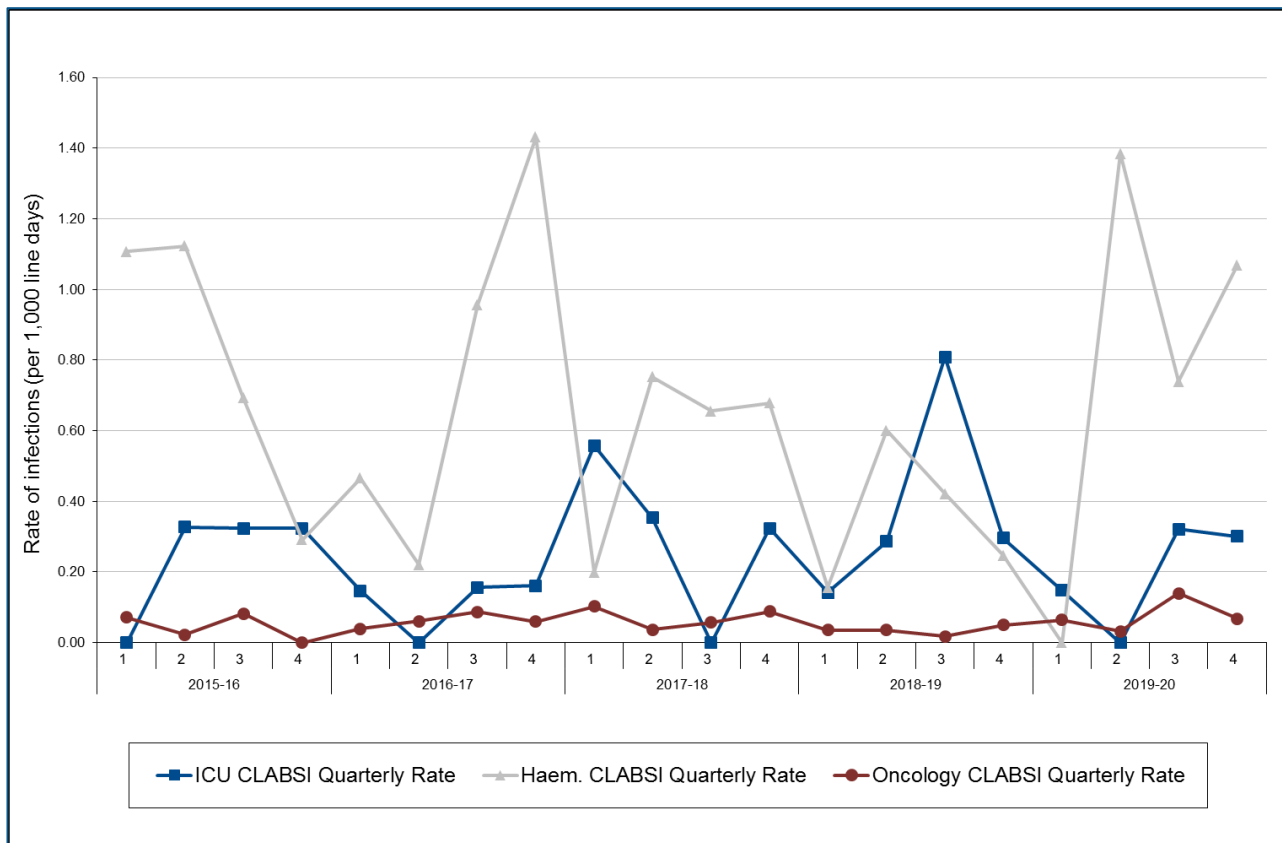
	Number of contributing hospitals	Number of line days	Number of CLABSI	Aggregate rate (95% CI)	Cumulative aggregate (95% CI)
Haematology peripherally inserted CLABSI	2	2,632	3	1.14 [0.24 – 3.56]	1.03 [0.87 – 1.21]
Haematology centrally inserted CLABSI	2	2,045	2	0.98 [0.04 – 3.86]	2.00 [1.69 – 2.36]
Total Haematology CLABSI	2	4,677	5	1.07 [0.39 – 2.60]	1.35 [1.20 – 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	9,733	3	0.31 [0.06– 0.96]	0.13 [0.10 – 0.17]
Oncology centrally inserted CLABSI	5	49,504	1	0.02 [0.00 – 0.13]	0.02 [0.02 – 0.04]
Total Oncology CLABSI	5	59,237	4	0.07 [0.02 – 0.18]	0.05 [0.04 – 0.07]

All rates per 1,000 central line days

Figure 14 ICU, haematology, and oncology unit CLABSI rates



Methicillin-resistant *Staphylococcus aureus* healthcare associated infection

Key Points

- There were 40 MRSA HAIs reported
- The total MRSA HAI rate decreased to 0.80 infections per 10,000 bed-days, is comparable to the rate of 0.82 reported in Qtr 3, 2019-20, and is below the comparator rate of 0.96
- 35 of the 40 MRSA HAIs reported were identified from the inpatient setting (5 ICU and 30 non-ICU)
- Sixteen (40%) patients were known to have prior MRSA colonisation
- Of the 40 MRSA HAIs, 14 (35%) were related to surgical wounds and 11 (28%) were BSIs
- The majority (60%) 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	12	368,069	0.33 [0.18 – 0.58]	0.24 [0.22 – 0.26]
MRSA Non-ICU non-sterile site	48	18	368,069	0.49 [0.31 – 0.78]	0.64 [0.61 – 0.68]
MRSA ICU sterile site	12	0	19,976	0.00 [0.00 – 2.39]	0.35 [0.25 – 0.48]
MRSA ICU non-sterile site	12	5	19,976	2.50 [0.91 – 6.10]	1.55 [1.32 – 1.81]
Total inpatient MRSA HAI	48	35	388,045	0.90 [0.65 – 1.26]	0.93 [0.89 – 0.97]
MRSA HAI non-inpatient	48	5	NA	NA	NA
Total MRSA healthcare associated infection	48	40	501,876	0.80[†] [0.58 – 1.09]	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	7	3	2	0	12
Non ICU non-sterile	10	5	2	1	18
ICU sterile	0	0	0	0	0
ICU non-sterile	4	1	0	0	5
Non-inpatient sterile	1	0	1	0	2
Non-inpatient non-sterile	2	1	0	0	3
Proportion	60%	25%	12.5%	2.5%	100%
Strain	Not characterised	Qld clone (4) WA 121 (4) WSSP (2)	UK 15 (5)	NA	NA
TOTAL	24	10	5	1	40

Figure 15 Total MRSA HAI rate per 10,000 multi and same day bed-days (inpatient and same-day patient)

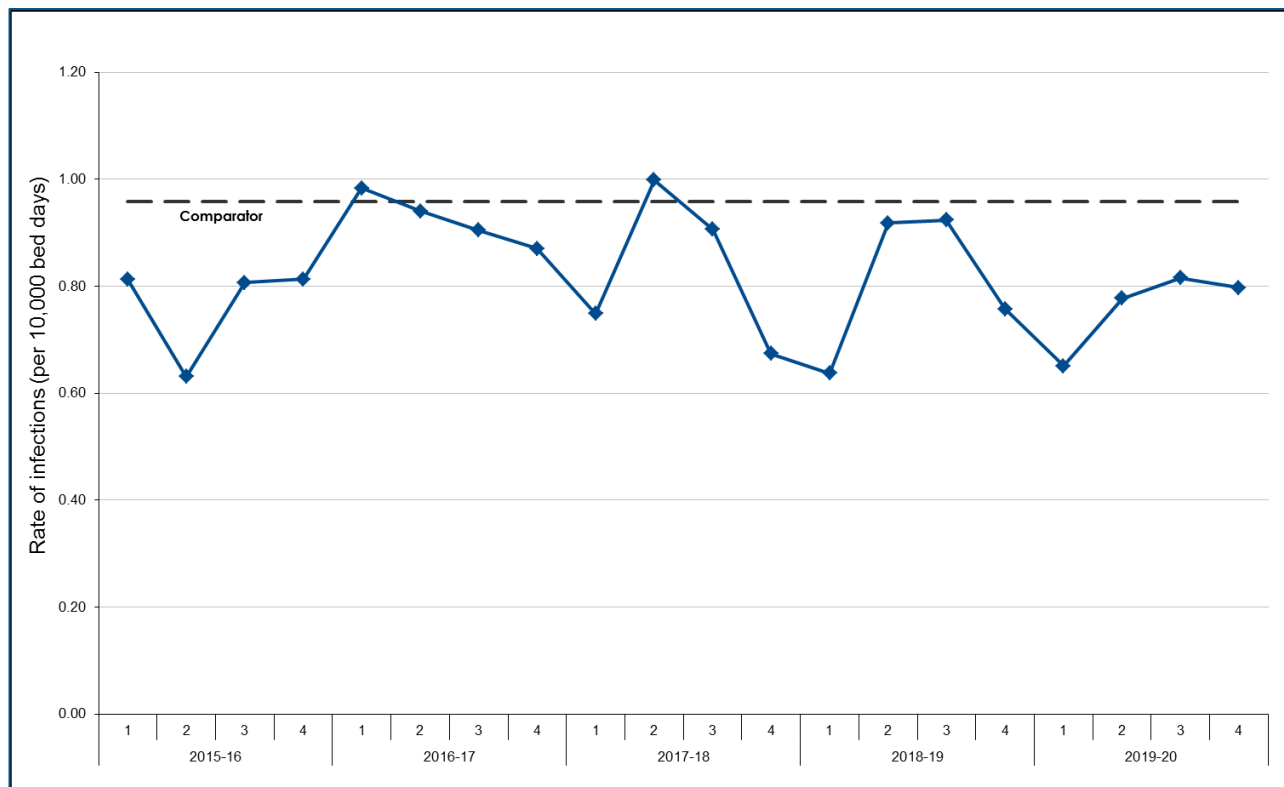


Figure 16 Proportion of MRSA HAIs, by specimen site

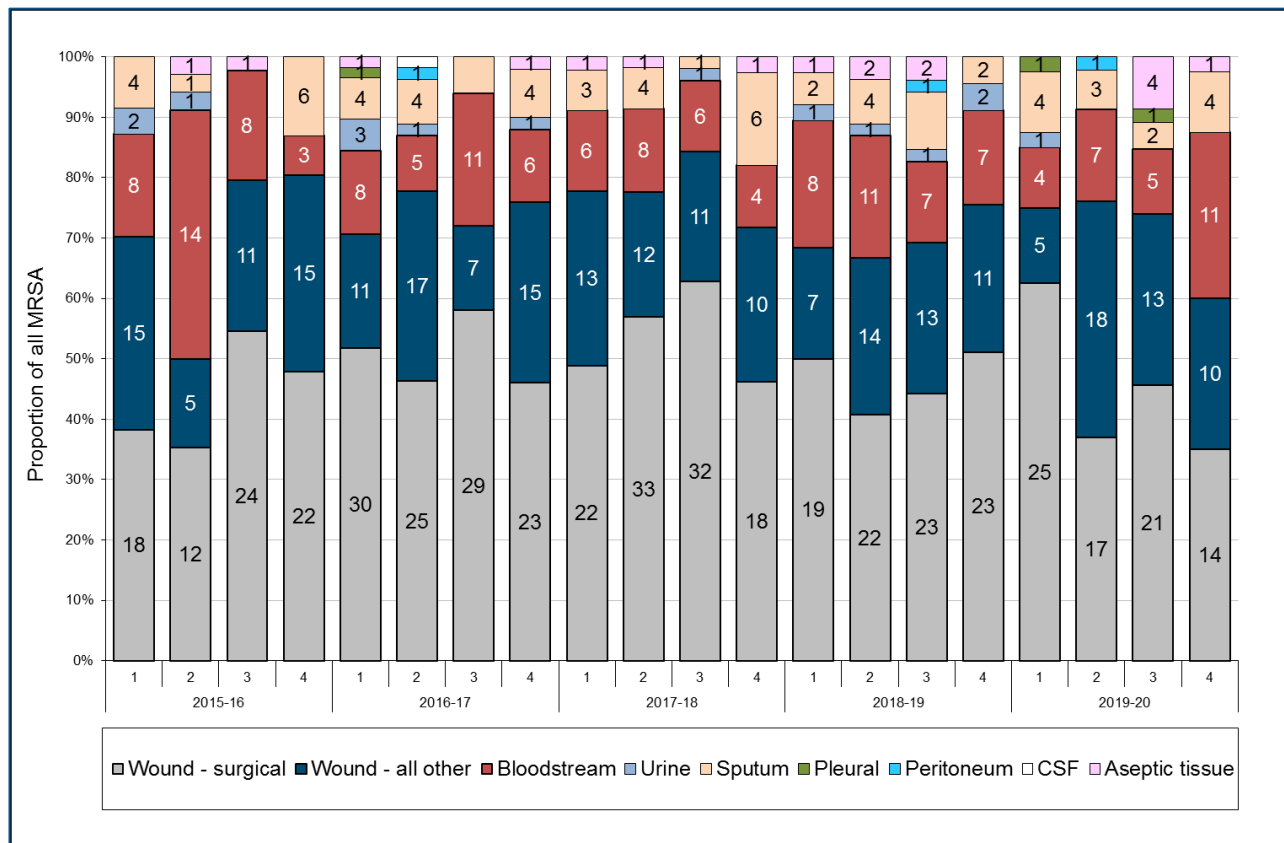


Figure 17 Rate of MRSA HAI, by strain group

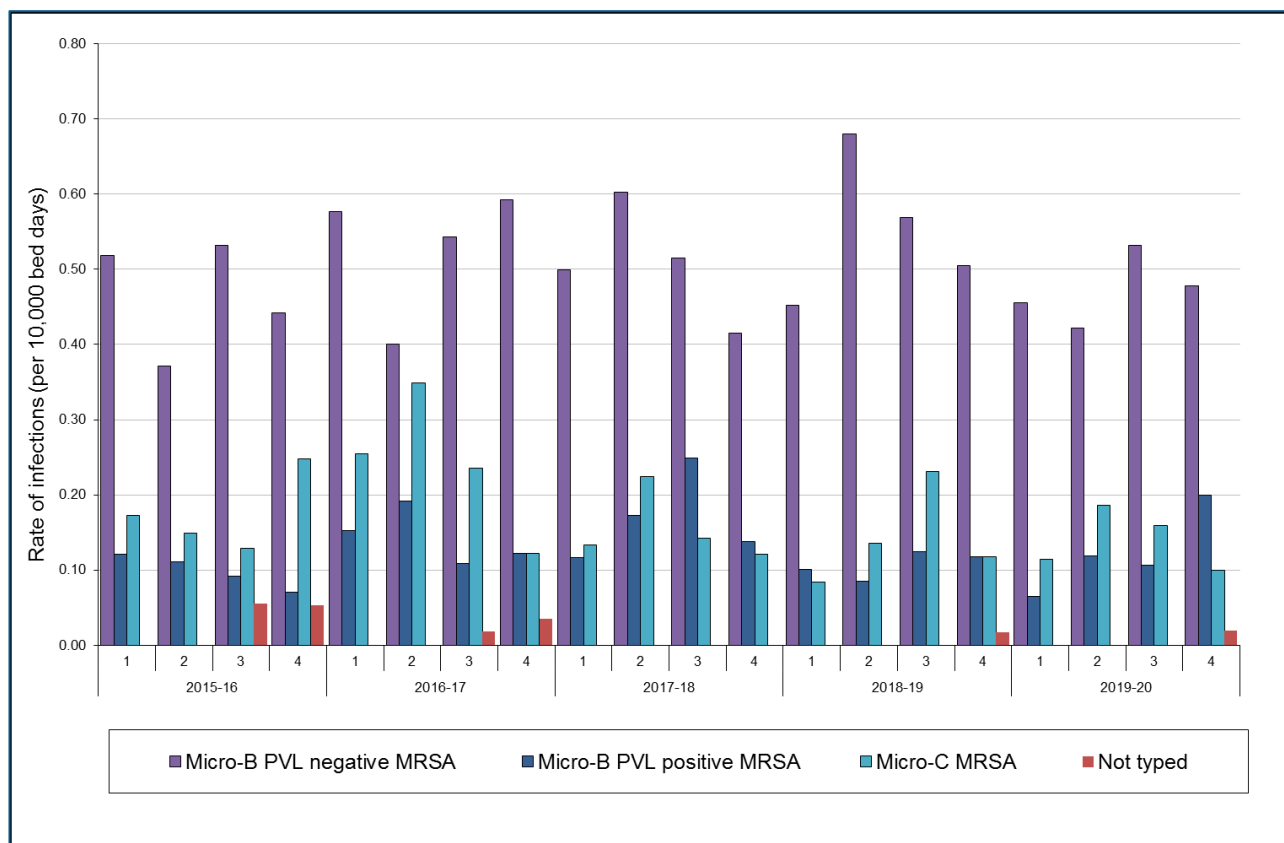
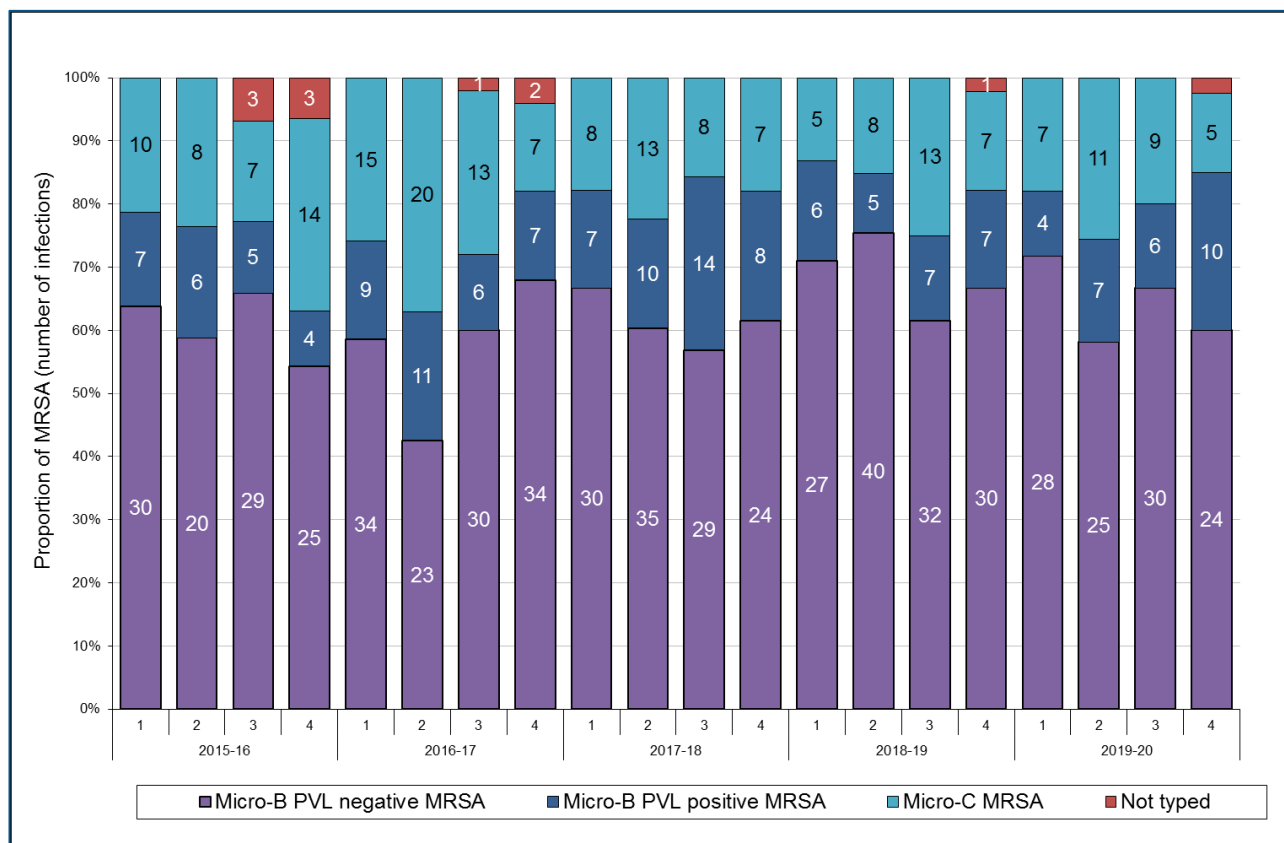


Figure 18 Proportion of MRSA HAI, by strain group



Hospital-identified *Clostridioides difficile* infection

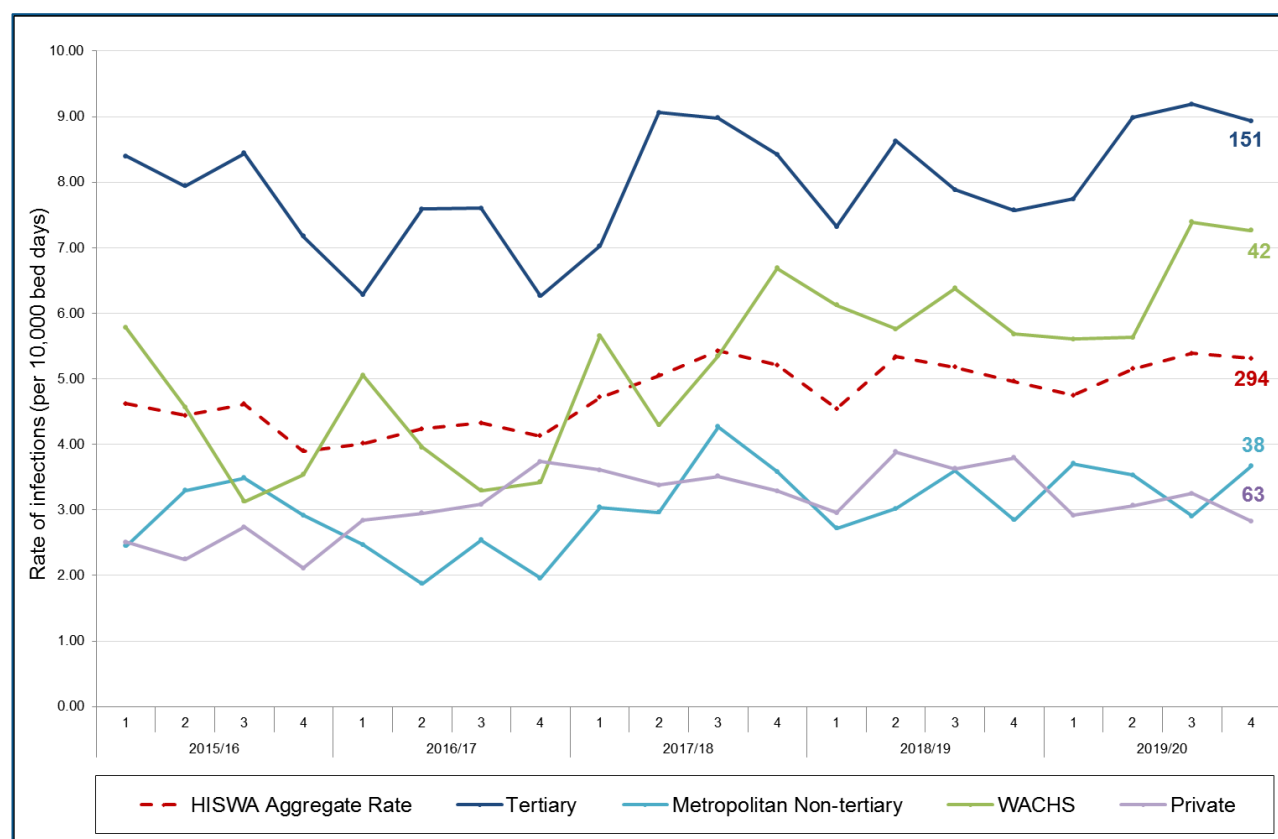
Key Points

- The HISWA aggregate HI-CDI rate decreased to 5.31 per 10,000 bed-days from 5.39 reported in Qtr 3 2019-20
- There were slight decreases in the rates at all hospital groups except from the metropolitan non-tertiary hospitals compared to Qtr 3 2019-20
- An upward trend is evident across all hospital groups for the five year period 2015-16 to 2019-20, however this is most evident for the the WACHS hospital group (Figure 19)
- The majority (51%) 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	151	168,991	8.94 [7.62 – 10.49]	6.59 [6.42 – 6.77]
Metropolitan non-tertiary	7	38	103,715	3.66 [2.66 – 5.05]	3.03 [2.86 – 3.21]
WACHS	21	42	57,798	7.27 [5.36 – 9.86]	3.82 [3.59 – 4.06]
Private	16	63	222,806	2.83 [2.21 – 3.63]	2.44 [2.34 – 2.54]
Total	49	294	553,310	5.31 [4.74 – 5.96]	4.12 [4.04 – 4.20]

Figure 19 HI-CDI rates, by hospital group



Vancomycin-resistant *Enterococci* sterile-site infections

Key Points

- There were four sterile site infections reported, all from two tertiary hospitals. One infection was community associated (CAI)
- Three infections were classified as HAIs
- One HAI was an *Enterococcus faecalis* bloodstream infection in a dialysis patient
- The other two VRE *Enterococcus faecium* HAIs were isolated from bone/joint and peritoneal specimens. All VRE isolates this Qtr were Van A
- Refer to **Data Notes** for information on categorisation of sterile specimen sites.

Figure 20 Number of VRE by sterile body sites, 2015-16 to 30 Jun 2020

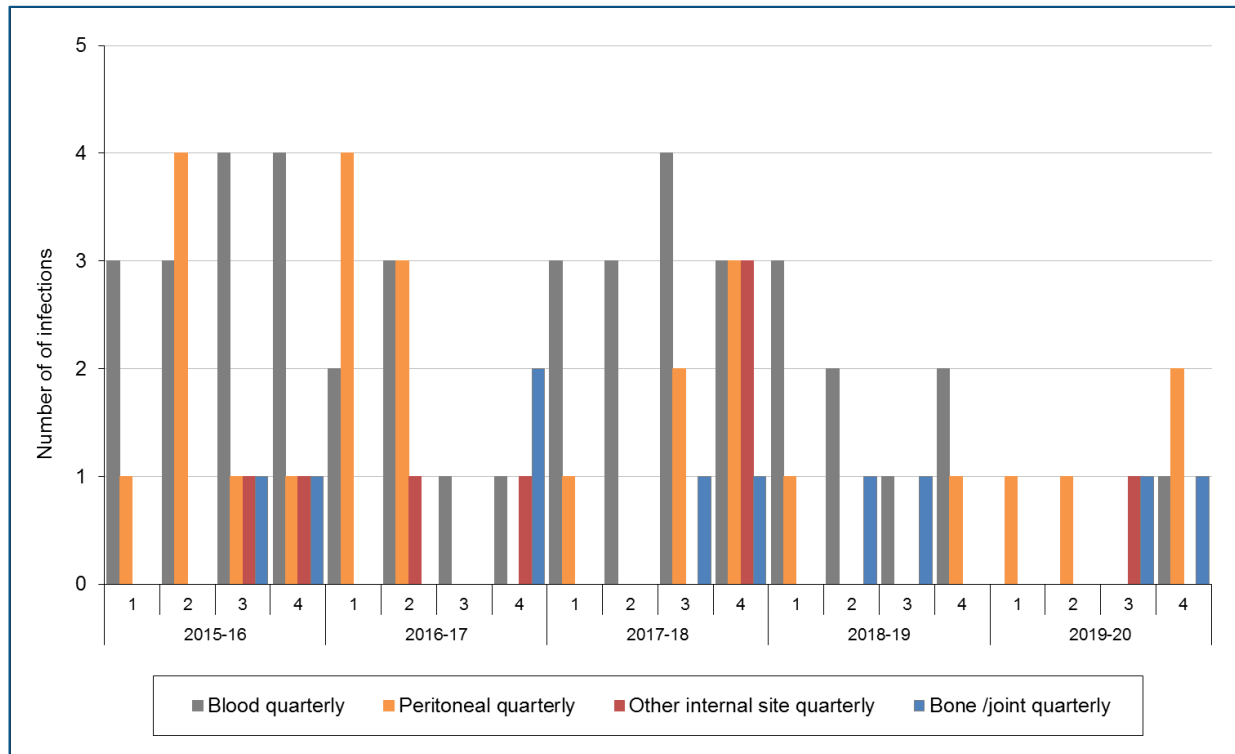
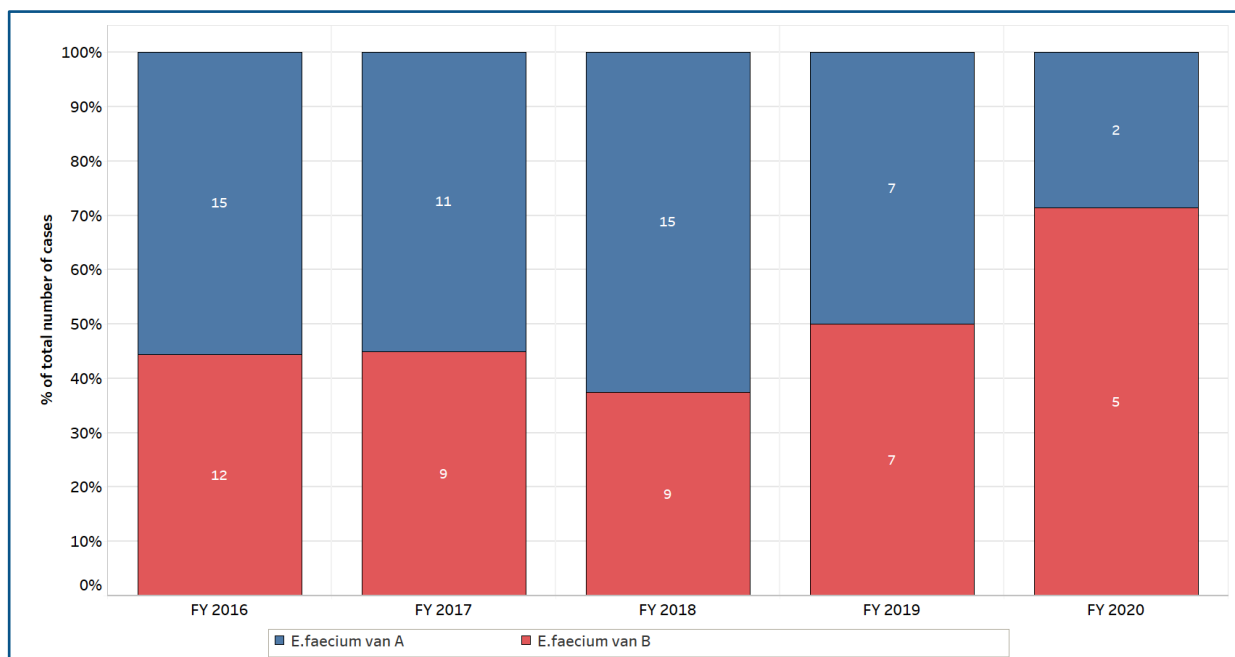


Figure 21 VRE HAI and CAI by organism and van type, 2015-16 to 30 Jun 2020

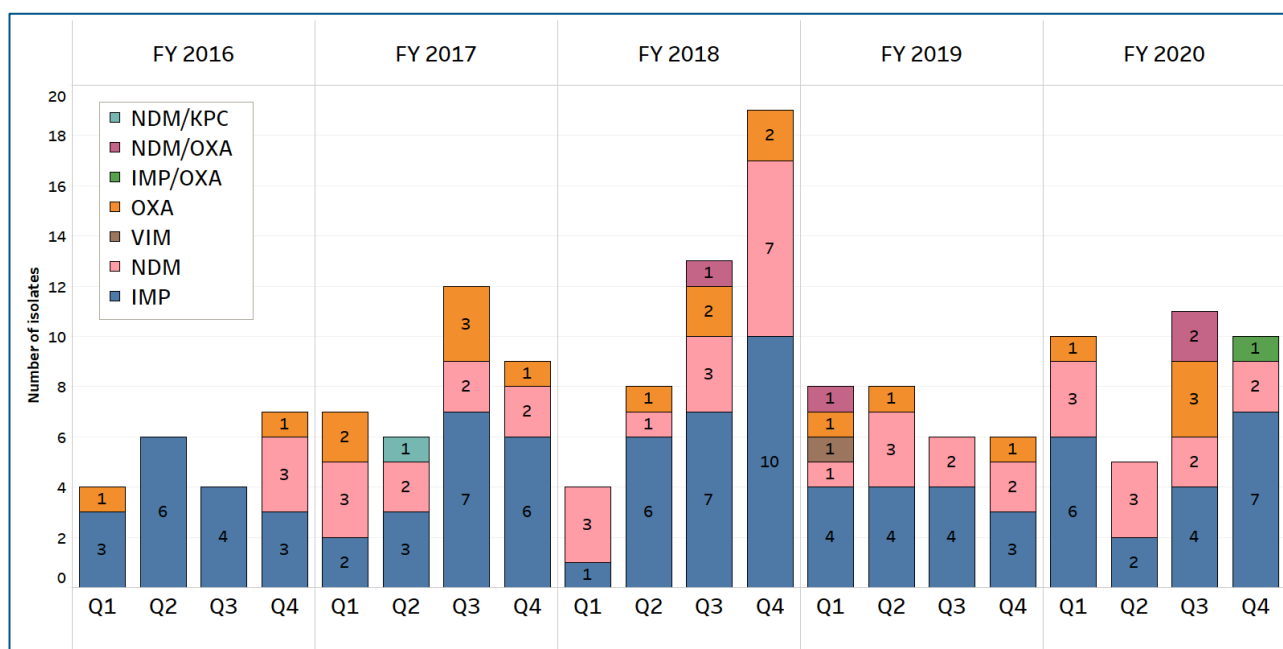


Carbapenemase-producing *Enterobacteriaceae*

Key Points

- Surveillance of CPE is performed by the HAIU in liaison with the PathWest Gram-negative Reference Laboratory located at the QEII site.
- 10 of the 67 referred patient isolates this quarter were confirmed CPE.
- Seven patients were confirmed with an IMP-4, two carried an NDM-1, and one carried a combination of IMP-4 and OXA-48 (Figure 21).
- Of the three patients with a non-IMP CPE (2 carried NDM-1, 1 had both IMP-4 and OXA-48), one had a history of recent overseas travel (NDM-1) with hospitalisation overseas (Pakistan). The other NDM-1 patient's travel history is unknown but there was no record of hospitalisation outside of Australia.
- The patient with the combination of IMP-4 and OXA-48 had no history of overseas travel or hospitalisation, however, does have a history of long term antibiotic use.

Figure 22 Number of unique CPE isolates by type 2015-16 to 31 Mar 2020



Occupational exposures

Key Points

- A total of 290 occupational exposures were reported by healthcare workers this Qtr.
- There was a decrease in both parenteral (15%) and non parenteral (25%) exposures reported compared to Qtr 3 2019-20. The total occupational exposure rate decreased to 5.08 exposures per 10,000 bed-days from 5.54 reported in Qtr 3, 2019-20.
- The parenteral rate decreased to 3.84 from 4.04 in Qtr 3, 2019-20.
- The non-parenteral rate decreased to 1.24 from 1.49 in Qtr 3, 2019-20.
- The majority of parenteral exposures (52%; n=113) were reported by doctors and the majority of non-parenteral exposures (75%; n=53) were reported by nurses.
- This is the first Qtr there have been no parenteral occupational exposures reported from the environmental services category.
- 20 (9%) parenteral exposures were sustained by HCWs who are not primary users of sharps.

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	219	570,502	3.84 [3.36 – 4.38]	4.14 [4.06 – 4.21]
Non-Parenteral	50	71	570,502	1.24 [0.99 – 1.57]	1.45 [1.41 – 1.49]
Total Exposures	50	290	570,502	5.08 [4.53 – 5.71]	5.58 [5.50 – 5.67]

Figure 23 Occupational exposure rate per 10,000 bed-days, by parenteral and non-parenteral

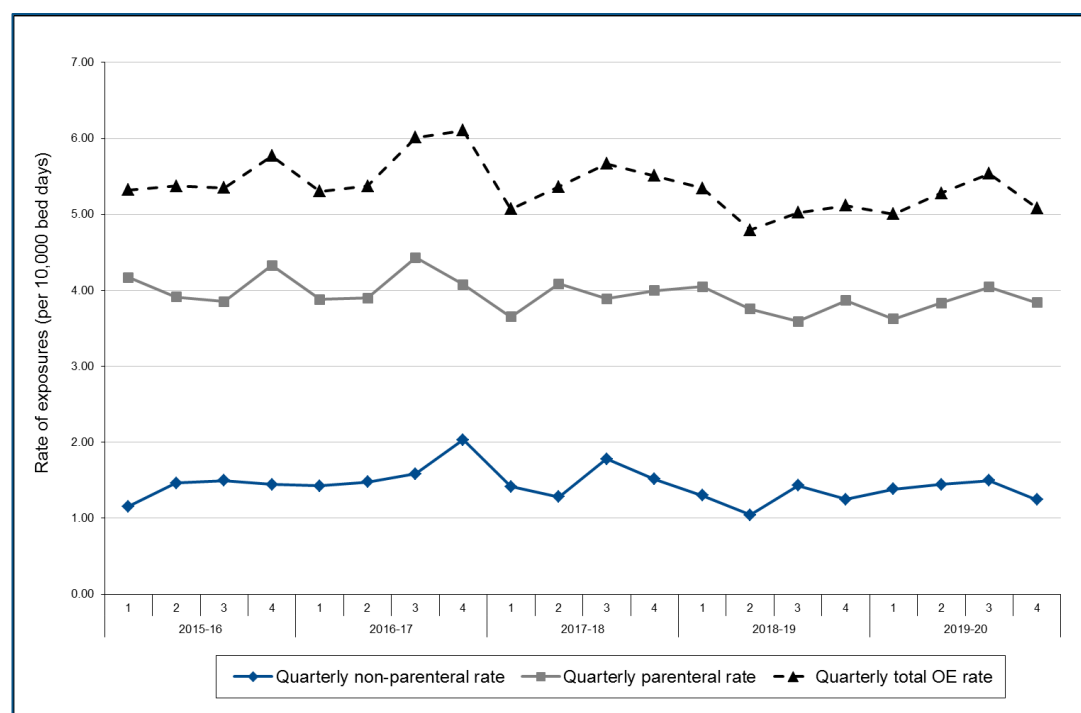


Figure 24 Parenteral occupational exposures, by HCW category

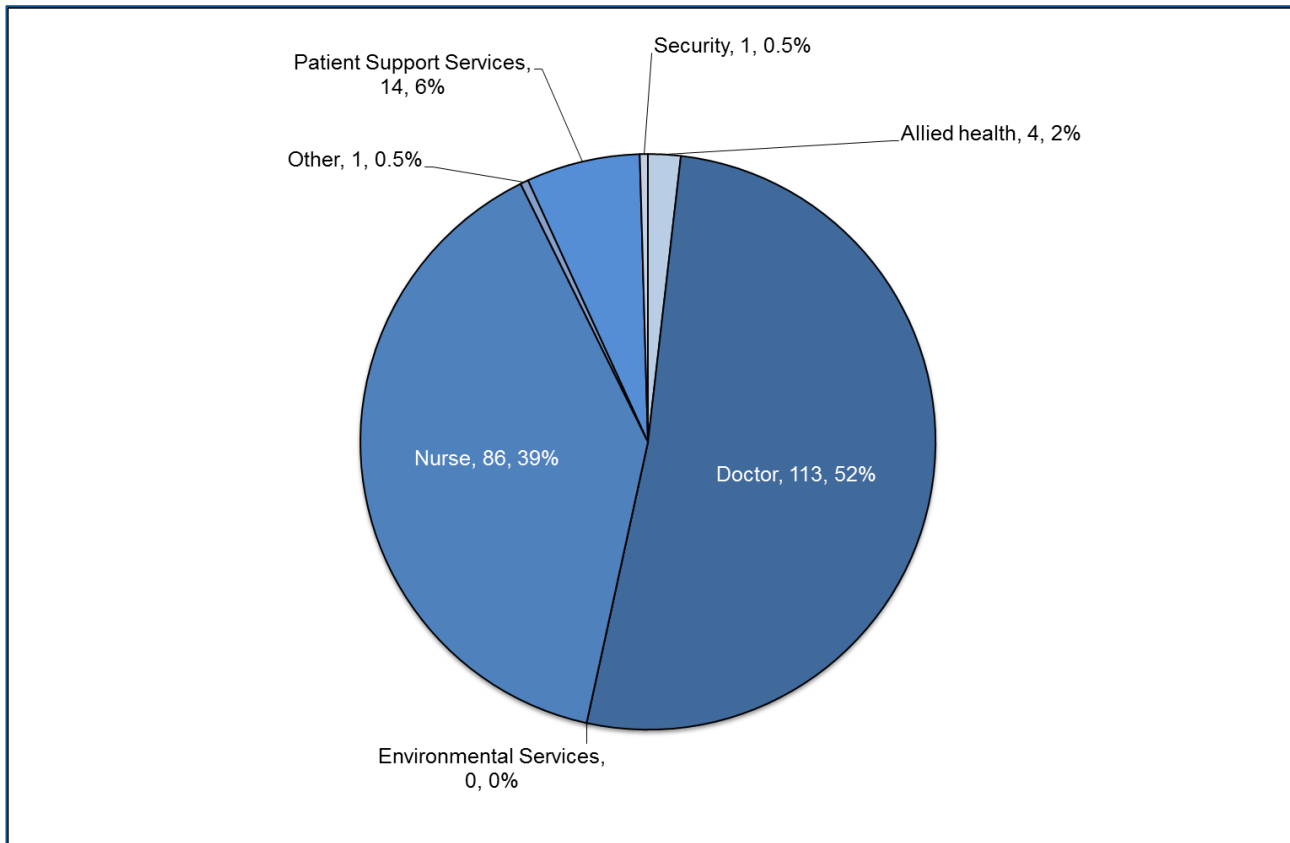
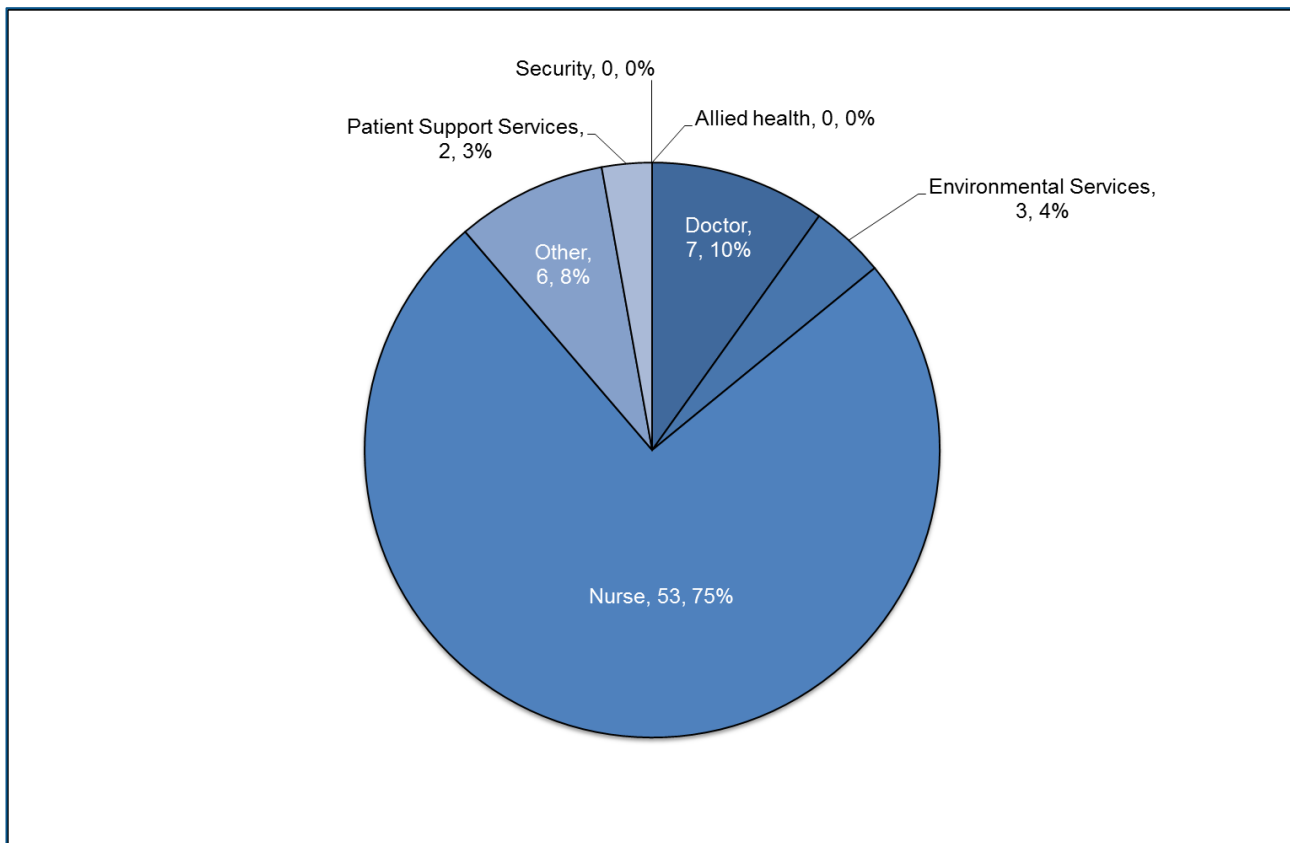


Figure 25 Non-parenteral occupational exposures, by HCW category



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 - Five oncology units (3 private, 2 public) submit data to HISWA
- Haematology CLABSI - Two haematology units (1 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 (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, 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 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.

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