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Data Quality Statement
Date Extracted: 18/02/2019 Publication Date: 25/02/2019

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

2018-19
Qtr 2 Karratha bed days incomplete due to issues with online pivots
Qtr 1 No data issues for this Qtr.

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

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       Rebecca +61 8 9222 2043 Simone +61 8 9222 6455
HAIU News

IPACS

The IPACS project is on track for schedule and budget. Our new HAIU Senior Project Officer (Mariyam Athifa) for the IPACS project commenced with us in December. The IPACS project team and Baxter (Vendor) are busy working on the technical aspects of the system, with input from the IP&C staff from IPACS Working Group on work flows, micro-alerts and surveillance requirements. The user testing platform will be ready by early March. The requirements for the staff health module are being collated and this module will also be ready for the pilot launch. Royal Perth and Bunbury hospitals have been selected as the pilot sites. The pilot is scheduled to go live in August 2019.

HISWA Forum

The next forum is scheduled for 6 March, 1500 – 1630 and will be at our new venue at 189 Royal St, East Perth, 3C Function Room. Afternoon tea and beverages will be available from 1430. Anyone wishing to participate via video-conference, please contact Simone Tempone. If you have any issues you would like discussed, please email us at hiswa@health.wa.gov.au.

HISWA Education Workshop

A full day education workshop is planned for Tuesday 30th April 2019. This workshop will be of interest to those new to HISWA reporting and those wishing to increase their surveillance skills.

Reminders

- Email communications

Please can all email communications relating to HISWA be directed to hiswa@health.wa.gov.au. This ensures one of us will always be available to respond to your query in a timely manner.

Report Highlights

- The total SSI rate following knee arthroplasty decreased this Qtr, as did the deep SSI rate for both hip and knee arthroplasty.
- The proportion of HA-SABSI attributable to IVDs decreased for the 2nd consecutive Qtr, although the rate has been comparable for the past 3 Qtrts (0.40 to 0.41).
- The total occupational exposure rate decreased for the 3rd consecutive Qtr and this decrease is mainly driven by consecutive decreases in the non-parenteral occupational exposure rate.

Report Concerns

- SSI rates following hip arthroplasty increased this Qtr. There were 11 SSI reported, and the majority (9) were deep / organ space infections.
- SSI rates following caesarean section increased for the 2nd consecutive Qtr and this was driven by SSIs following emergency procedures.
- The total HA-SABSI rate increased for the 3rd consecutive Qtr and is driven by increases in procedural related HA-SABSI. The increase in HA-SABSI rates was across all hospital groups except metropolitan non-tertiary facilities.
Surgical site infection following hip arthroplasty

Key Points

- There were 1,294 procedures reported (1,157 primary; 137 revision).
- A total of 11 SSI (six following primary procedure) were reported and nine were deep / organ space infections.
- Nine SSI were detected on readmission to hospital and two during the initial admission.
- The total SSI rate following hip arthroplasty increased to 0.85 infections per 100 procedures from 0.75 reported in Qtr 1 2018-19.
- The deep SSI hip rate decreased to 0.70 infections per 100 procedures from 0.75 reported in Qtr 1 2018-17 (table 1 and figure 1).

Table 1 Hip arthroplasty SSI rate, by risk index

<table>
<thead>
<tr>
<th>Risk Index</th>
<th>Number of contributing hospitals</th>
<th>Number of procedures</th>
<th>Number of SSI</th>
<th>Aggregate rate (95% CI)</th>
<th>Cumulative aggregate rate (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk not available</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.00 [0.00 – 0.00]</td>
<td>0.00 [0.00 – 28.71]</td>
</tr>
<tr>
<td>Risk All *</td>
<td>1</td>
<td>16</td>
<td>0</td>
<td>0.00 [0.00 – 23.15]</td>
<td>0.84 [0.57 – 1.25]</td>
</tr>
<tr>
<td>Risk index 0</td>
<td>21</td>
<td>756</td>
<td>2</td>
<td>0.26 [0.01 – 1.04]</td>
<td>0.75 [0.66 - 0.87]</td>
</tr>
<tr>
<td>Risk index 1</td>
<td>21</td>
<td>455</td>
<td>6</td>
<td>1.32 [0.55 – 2.94]</td>
<td>1.77 [1.56 – 2.00]</td>
</tr>
<tr>
<td>Risk index 2</td>
<td>12</td>
<td>59</td>
<td>1</td>
<td>1.69 [0.00 – 10.02]</td>
<td>3.48 [2.72 – 4.46]</td>
</tr>
<tr>
<td>Risk index 3</td>
<td>3</td>
<td>8</td>
<td>2</td>
<td>25.00 [6.66 – 60.01]</td>
<td>6.09 [2.81 – 12.31]</td>
</tr>
<tr>
<td>Total hip arthroplasty</td>
<td>22</td>
<td>1,294</td>
<td>11</td>
<td>0.85 [0.46 – 1.54]</td>
<td>1.20 [1.10 – 1.30]</td>
</tr>
</tbody>
</table>

*Refer to Appendix 1- SSI Data Notes

Figure 1 Hip arthroplasty SSI rate
Surgical site infection following knee arthroplasty

Key Points

- There were 1,841 procedures reported (1,699 primary; 142 revision).
- A total of 11 SSI (10 following primary arthroplasty) were reported and seven were deep or organ space infections.
- All 11 SSI were detected on readmission to hospital.
- The total SSI rate following knee arthroplasty decreased to 0.60 infections per 100 procedures from 1.20 reported in Qtr 1 2018-19.
- The deep SSI knee rate decreased to 0.38 per 100 procedures from 1.08 infections (table 2 and figure 2).

Table 2 Knee arthroplasty SSI rate, by risk index

<table>
<thead>
<tr>
<th>Risk Index</th>
<th>Number of contributing hospitals</th>
<th>Number of procedures</th>
<th>Number of SSI</th>
<th>Aggregate rate (95% CI)</th>
<th>Cumulative aggregate rate (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Not Available</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.00 [0.00 – 0.00]</td>
<td>0.00 [0.00 – 37.5]</td>
</tr>
<tr>
<td>Risk All *</td>
<td>1</td>
<td>17</td>
<td>0</td>
<td>0.00 [0.00 – 22.08]</td>
<td>1.42 [1.11 – 1.81]</td>
</tr>
<tr>
<td>Risk index 0</td>
<td>21</td>
<td>1,071</td>
<td>4</td>
<td>0.37 [0.11 – 1.00]</td>
<td>0.67 [0.59 – 0.76]</td>
</tr>
<tr>
<td>Risk index 1</td>
<td>20</td>
<td>616</td>
<td>4</td>
<td>0.65 [0.20 – 1.74]</td>
<td>1.14 [1.01 – 1.29]</td>
</tr>
<tr>
<td>Risk index 2</td>
<td>18</td>
<td>132</td>
<td>3</td>
<td>2.27 [0.51 – 6.84]</td>
<td>2.91 [2.37 – 3.57]</td>
</tr>
<tr>
<td>Risk index 3</td>
<td>2</td>
<td>5</td>
<td>0</td>
<td>0.00 [0.00 – 49.38]</td>
<td>7.52 [4.03 – 13.49]</td>
</tr>
<tr>
<td>Total knee arthroplasty</td>
<td>22</td>
<td>1841</td>
<td>11</td>
<td>0.60 [0.32 – 1.09]</td>
<td>0.99 [0.92 – 1.07]</td>
</tr>
</tbody>
</table>

*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

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Number of superficial SSI</th>
<th>Number of deep SSI</th>
<th>Total number of SSI</th>
<th>Number of procedures</th>
<th>Aggregate superficial SSI rate (95%CI)</th>
<th>Aggregate deep SSI rate (95%CI)</th>
<th>Aggregate total SSI rate (95%CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hip arthroplasty</td>
<td>2</td>
<td>9</td>
<td>11</td>
<td>1,294</td>
<td>0.15 [0.01 – 0.61]</td>
<td>0.70 [0.35 – 1.35]</td>
<td>0.85 [0.46 – 1.54]</td>
</tr>
<tr>
<td>Knee arthroplasty</td>
<td>4</td>
<td>7</td>
<td>11</td>
<td>1,841</td>
<td>0.22 [0.07 – 0.58]</td>
<td>0.38 [0.17 – 0.81]</td>
<td>0.60 [0.32 – 1.09]</td>
</tr>
<tr>
<td>Total arthroplasty</td>
<td>6</td>
<td>16</td>
<td>22</td>
<td>3,135</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

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

- 2,435 caesarean section procedures were reported, of which 1,271 (52%) were emergency and 1,164 (48%) were elective procedures.
- A total of 24 SSIs were reported, four (17%) during initial admission, 15 (62%) were detected on readmission to hospital, and five (21%) were detected post-discharge.
- 14 (58%) of all SSI reported were superficial infections.
- 17 (71%) of all SSI reported were following emergency procedures and included nine deep SSIs.
- The inpatient SSI rate (includes readmissions and excludes post-discharge) increased to 0.78 infections per 100 procedures from 0.63 reported in Qrt 1 2018-19.

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

<table>
<thead>
<tr>
<th>Risk Index</th>
<th>Number of contributing hospitals</th>
<th>Number of procedure</th>
<th>Number of superficial SSI</th>
<th>Number of deep SSI</th>
<th>Total number of SSI</th>
<th>Total aggregate rate (95% CI)</th>
<th>Cumulative aggregate (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All *</td>
<td>6</td>
<td>63</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1.59 [0.00 – 9.43]</td>
<td>0.74 [0.60 – 0.92]</td>
</tr>
<tr>
<td>Risk index 0</td>
<td>19</td>
<td>1,402</td>
<td>5</td>
<td>2</td>
<td>7</td>
<td>0.50 [0.22 – 1.06]</td>
<td>0.33 [0.28 – 0.41]</td>
</tr>
<tr>
<td>Risk index 1</td>
<td>17</td>
<td>736</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>1.09 [0.52 – 2.18]</td>
<td>0.64 [0.72 – 0.99]</td>
</tr>
<tr>
<td>Risk index 2</td>
<td>13</td>
<td>219</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>1.37 [0.30 – 4.19]</td>
<td>1.83 [1.43 – 2.34]</td>
</tr>
<tr>
<td>Risk index 3</td>
<td>3</td>
<td>15</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.00 [0.00 – 24.33]</td>
<td>1.74 [0.54 – 4.59]</td>
</tr>
<tr>
<td>Inpatient total</td>
<td>25</td>
<td>2,435</td>
<td>9</td>
<td>10</td>
<td>19</td>
<td>0.78 [0.49 – 1.23]</td>
<td>0.63 [0.57 – 0.69]</td>
</tr>
<tr>
<td>Post-discharge</td>
<td>NA</td>
<td>2,435</td>
<td>5</td>
<td>0</td>
<td>5</td>
<td>0.21* [0.07 – 0.50]</td>
<td>0.28* [0.24 - 0.32]</td>
</tr>
<tr>
<td>Total SSI*</td>
<td>25</td>
<td>2,435</td>
<td>14</td>
<td>10</td>
<td>24</td>
<td>0.99* [0.66 – 1.47]</td>
<td>0.91* [0.84 – 0.99]</td>
</tr>
</tbody>
</table>

* These rates are not to be used for benchmarking purposes.
Figure 5 Caesarean section SSI rates by deep and superficial (inpatient only)

![Graph showing Caesarean section SSI rates by deep and superficial (inpatient only)]

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

![Graph showing Caesarean section SSI rates (inpatient only) by elective and emergency procedures]
Healthcare associated *Staphylococcus aureus* bloodstream infection

**Key Points**

- The total HA-SABSI rate increased to 0.89 infections per 10,000 bed-days from 0.76 reported in Qtr 1 2018-19, and is above the comparator rate of 0.73.
- The MSSA HA-SABSI rate increased to 0.73 infections per 10,000 bed-days from 0.64 reported in Qtr 1 2018-19 and is above the comparator rate of 0.60.
- The MRSA HA-SABSI rate increased to 0.17 infections per 10,000 bed-days from 0.12 reported in Qtr 1 2018-19 and is above the comparator rate of 0.03.
- Of the 59 HA-SABSI reported, 27 (46%) were attributable to IVDs. A further 20 (34%) were related to procedures. The IVD SABSI rate of 0.41 infections per 10,000 bed-days is comparable to that reported in Qtr 1 2018-19 (figure 10).
- HA-SABSI rates increased for all hospital groups this Qtr, except for the metro non-tertiary hospital group (figure 9).

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

<table>
<thead>
<tr>
<th></th>
<th>Number of contributing hospitals</th>
<th>Number of bed-days</th>
<th>Number of HA-SABSI</th>
<th>Aggregate rate (95% CI)</th>
<th>Cumulative aggregate (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total methicillin-sensitive <em>Staphylococcus aureus</em> (MSSA) bloodstream infection</strong></td>
<td>49</td>
<td>660,794</td>
<td>48</td>
<td>0.73 [0.55 – 0.97]</td>
<td>0.57 [0.54 – 0.59]</td>
</tr>
<tr>
<td><strong>Total methicillin-resistant <em>Staphylococcus aureus</em> (MRSA) bloodstream infection</strong></td>
<td>49</td>
<td>660,794</td>
<td>11*</td>
<td>0.17 [0.09 – 0.30]</td>
<td>0.12 [0.11 – 0.13]</td>
</tr>
<tr>
<td><strong>Total <em>Staphylococcus aureus</em> bloodstream infection</strong></td>
<td>49</td>
<td>660,794</td>
<td>59</td>
<td>0.89 [0.69- 1.15]</td>
<td>0.68 [0.65 – 0.71]</td>
</tr>
</tbody>
</table>

* includes 1 SAB where MSSA and MRSA both isolated from the same blood culture sets.

**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

![Proportion and rate of HA-SABSI attributed to intravascular devices](image)

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

![Proportion and number of HA-SABSI attributed to intravascular devices, by hospital group](image)
Haemodialysis access-associated bloodstream infections

Key Points

- The majority (74%) of patients received haemodialysis via an AVF.
- There were four cuffed catheter and one AVF access-associated BSIs reported.
- The cuffed catheter (CC) BSI rate increased to 0.51 infections per 100 patient-months from 0.46 in Qtr 1, 2018-19.
- The AVF BSI rate decreased to 0.04 infections per 100 patient-months from 0.08 in Qtr 1, 2018-19.

Table 6 HD-BSI rate, by type of access updated

<table>
<thead>
<tr>
<th>Type of access</th>
<th>Number of contributing units</th>
<th>Aggregate utilisation ratio (%)</th>
<th>Number of BSI</th>
<th>Number of patient months</th>
<th>Aggregate rate. (95% CI)</th>
<th>Cumulative aggregate (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVF</td>
<td>24</td>
<td>74.45</td>
<td>1</td>
<td>2,631</td>
<td>0.04 [0.00 – 0.24]</td>
<td>0.07 [0.05 – 0.09]</td>
</tr>
<tr>
<td>AVG</td>
<td>24</td>
<td>2.89</td>
<td>0</td>
<td>102</td>
<td>0.00 [0.00 – 4.48]</td>
<td>0.51 [0.33 – 0.78]</td>
</tr>
<tr>
<td>Cuffed catheter (CC)</td>
<td>24</td>
<td>22.24</td>
<td>4</td>
<td>786</td>
<td>0.51 [0.15 – 1.36]</td>
<td>1.50 [1.37 – 1.65]</td>
</tr>
<tr>
<td>Non-cuffed catheter</td>
<td>24</td>
<td>&lt;1</td>
<td>0</td>
<td>15</td>
<td>0.00 [0.00 – 24.33]</td>
<td>1.02 [0.51 – 1.98]</td>
</tr>
</tbody>
</table>

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 0.29 infections per 1,000 line days from 0.14 reported in Qtr 1, 2018-19.
- The majority (77%) of central lines utilised in adult ICUs were centrally-inserted.
- Four haematology CLABSI were reported and the rate increased to 0.80 infections per 1,000 line days from 0.16 reported in Qtr 1, 2018-19.
- Two oncology CLABSI were reported and the rate of 0.04 infections per 1,000 line days was comparable to that reported in Qtr 1, 2018-19.

Table 7 Adult ICU CLABSI

<table>
<thead>
<tr>
<th></th>
<th>Number of contributing hospitals</th>
<th>Number of line days</th>
<th>Number of CLABSI</th>
<th>Aggregate rate (95% CI)</th>
<th>Cumulative aggregate (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICU peripherally inserted CLABSI</td>
<td>12</td>
<td>1,578</td>
<td>1</td>
<td>0.63 [0.00 – 4.04]</td>
<td>0.58 [0.31 – 1.05]</td>
</tr>
<tr>
<td>ICU centrally inserted CLABSI</td>
<td>12</td>
<td>5,405</td>
<td>1</td>
<td>0.19 [0.00 – 1.18]</td>
<td>0.61 [0.51 – 0.73]</td>
</tr>
<tr>
<td>Total ICU CLABSI</td>
<td>12</td>
<td>6,983</td>
<td>2</td>
<td>0.29 [0.01 – 1.13]</td>
<td>0.61 [0.51 – 0.72]</td>
</tr>
</tbody>
</table>

Table 8 Adult ICU central line utilisation ratio (CLUR)

<table>
<thead>
<tr>
<th></th>
<th>Number of contributing hospitals</th>
<th>Number of line days</th>
<th>Number of bed-days</th>
<th>Tertiary Aggregate CLUR (%)</th>
<th>Total Aggregate CLUR (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult ICU peripherally inserted CLUR</td>
<td>12</td>
<td>1,578</td>
<td>12,374</td>
<td>21</td>
<td>12.75</td>
</tr>
<tr>
<td>Adult ICU centrally inserted CLUR</td>
<td>12</td>
<td>5,405</td>
<td>12,374</td>
<td>67</td>
<td>43.68</td>
</tr>
</tbody>
</table>

Table 9 Haematology Unit CLABSI

<table>
<thead>
<tr>
<th></th>
<th>Number of contributing hospitals</th>
<th>Number of line days</th>
<th>Number of CLABSI</th>
<th>Aggregate rate (95% CI)</th>
<th>Cumulative aggregate (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haematology peripherally inserted CLABSI</td>
<td>2</td>
<td>3,355</td>
<td>3</td>
<td>0.89 [0.18 – 2.79]</td>
<td>1.13 [0.96 – 1.34]</td>
</tr>
<tr>
<td>Haematology centrally inserted CLABSI</td>
<td>2</td>
<td>1,638</td>
<td>1</td>
<td>0.61 [0.00 – 3.89]</td>
<td>2.15 [1.81 – 2.57]</td>
</tr>
<tr>
<td>Total haematology CLABSI</td>
<td>2</td>
<td>4,993</td>
<td>4</td>
<td>0.80 [0.24 – 2.16]</td>
<td>1.46 [1.29 – 1.65]</td>
</tr>
</tbody>
</table>

Table 10 Oncology Unit CLABSI

<table>
<thead>
<tr>
<th></th>
<th>Number of contributing hospitals</th>
<th>Number of line days</th>
<th>Number of CLABSI</th>
<th>Aggregate rate (95% CI)</th>
<th>Cumulative aggregate (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oncology peripherally inserted CLABSI</td>
<td>5</td>
<td>9,997</td>
<td>1</td>
<td>0.10 [0.00 – 0.64]</td>
<td>0.11 [0.08 – 0.15]</td>
</tr>
<tr>
<td>Oncology centrally inserted CLABSI</td>
<td>5</td>
<td>46,657</td>
<td>1</td>
<td>0.02 [0.00 – 0.14]</td>
<td>0.02 [0.01 – 0.04]</td>
</tr>
<tr>
<td>Total oncology CLABSI</td>
<td>5</td>
<td>56,654</td>
<td>2</td>
<td>0.04 [0.00 – 0.14]</td>
<td>0.05 [0.04 – 0.07]</td>
</tr>
</tbody>
</table>

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**
- The total MRSA HAI rate of 0.92 infections per 10,000 bed-days increased from 0.62 reported in Qtr 1, 2018-19 and is above the comparator rate of 0.88.
- 52 of the 54 MRSA HAIs reported were identified from the inpatient setting (1 ICU and 51 non-ICU).
- 19 (35%) patients were known to have prior MRSA colonisation.
- Of the 54 MRSA HAIs, 22 (41%) were related to surgical wounds and a further 10 (19%) were BSIs.
- The majority (72%) 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)**

<table>
<thead>
<tr>
<th></th>
<th>Number of contributing hospitals</th>
<th>Number of MRSA HAI</th>
<th>Number of bed-days</th>
<th>Aggregate rate (95% CI)</th>
<th>Cumulative aggregate (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRSA ICU sterile site</td>
<td>12</td>
<td>0</td>
<td>20,366</td>
<td>0.00 [0.00 – 2.34]</td>
<td>0.35 [0.25 – 0.50]</td>
</tr>
<tr>
<td>MRSA ICU non-sterile site</td>
<td>12</td>
<td>1</td>
<td>20,366</td>
<td>0.49 [0.00 – 3.14]</td>
<td>1.43 [1.20 – 1.70]</td>
</tr>
<tr>
<td>MRSA Non-ICU sterile site</td>
<td>48</td>
<td>17</td>
<td>430,851</td>
<td>0.39 [0.24 – 0.64]</td>
<td>0.24 [0.22 – 0.26]</td>
</tr>
<tr>
<td>MRSA Non-ICU non-sterile site</td>
<td>48</td>
<td>34</td>
<td>430,851</td>
<td>0.79 [0.56 – 1.11]</td>
<td>0.65 [0.62 – 0.68]</td>
</tr>
<tr>
<td>Total inpatient MRSA HAI</td>
<td>48</td>
<td>52</td>
<td>451,217</td>
<td>1.15 [0.88 – 1.52]</td>
<td>0.92 [0.88 – 0.96]</td>
</tr>
<tr>
<td>MRSA HAI non-inpatient</td>
<td>48</td>
<td>2</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Total MRSA healthcare associated infection</td>
<td>48</td>
<td>54</td>
<td>589,194</td>
<td>0.92† [0.70 – 1.20]</td>
<td>0.81 [0.78 – 0.85]</td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th></th>
<th>Micro-B PVL negative MRSA</th>
<th>Micro-B PVL positive MRSA</th>
<th>Micro-C MRSA</th>
<th>Not typed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICU sterile</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ICU non-sterile</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Non ICU Sterile</td>
<td>12</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>17</td>
</tr>
<tr>
<td>Non ICU non-sterile</td>
<td>24</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td>34</td>
</tr>
<tr>
<td>Non-inpatient sterile</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Non-inpatient non-sterile</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Proportion</td>
<td>72%</td>
<td>9%</td>
<td>17%</td>
<td>2%</td>
<td>100%</td>
</tr>
<tr>
<td>Strain</td>
<td>Not characterised</td>
<td>Qld clone (4), WSPP (1)</td>
<td>UK 15 (7)</td>
<td>USA300 (2)</td>
<td>NA</td>
</tr>
<tr>
<td>TOTAL</td>
<td>39</td>
<td>5</td>
<td>9</td>
<td>1</td>
<td>54</td>
</tr>
</tbody>
</table>
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 *Clostridium difficile* infection

**Key Points**

- The HISWA aggregate HI-CDI rate increased to 5.34 infections per 10,000 bed-days from 4.54 reported in Qtr 1 2018-19.
- There was an increase in the rate reported from all hospital groups except for the WACHS hospital group which decreased.
- The majority (48%) of HI-CDI were reported from the tertiary hospitals.

**Table 13 HI-CDI rates, by hospital group**

<table>
<thead>
<tr>
<th>Hospital Group</th>
<th>Number of contributing hospitals</th>
<th>Number of HI-CDI</th>
<th>Number of bed-days</th>
<th>Aggregate rate (95% CI)</th>
<th>Cumulative aggregate (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td>15</td>
<td>106</td>
<td>272,708</td>
<td>3.89 [3.21 – 4.71]</td>
<td>2.27 [2.17 – 2.38]</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>49</strong></td>
<td><strong>340</strong></td>
<td><strong>636,812</strong></td>
<td><strong>5.34 [4.80 – 5.94]</strong></td>
<td><strong>3.76 [3.68 – 3.84]</strong></td>
</tr>
</tbody>
</table>

**Figure 18 HI-CDI rates, by hospital group**
Vancomycin-resistant enterococci sterile-site infections

Key Points

- Three VRE sterile site infections were reported this quarter. Two of these were isolated from blood culture samples, and the other was a bone/joint infection. Both bloodstream infections were classified as HAIs, and the other was CAI.
- The CAI associated isolate was *Enterococcus faecium Van B* and the two HAIs were one of each *Enterococcus faecium Van A* and *Van B*.
- One patient had known VRE colonisation prior to onset of infection.
- Refer to Data Notes for information on categorisation of sterile specimen sites.

Figure 19 Number of VRE HAIs, by sterile body sites

![Graph showing the number of VRE HAIs, by sterile body sites](image)

Carbapenemase-producing *Enterobacteriacea*

Key Points

- Surveillance of CPE is performed by the HAIU in liaison with the PathWest Gram-negative Reference Laboratory located at the QE11 site.
- For this Qtr, eight patients were confirmed with a CPE, of which three carried an IMP-4, four NDM-1, and one OXA-48.
- One non-IMP CPE (NDM-1) had no history of overseas travel or hospitalisation in the previous four years, country of birth was Scotland (immigration date unknown).
Occupational exposures

Key Points

- The total occupational exposure rate decreased to 4.80 exposures per 10,000 bed-days from 5.34 reported in Qtr 1, 2018-19.
- The parenteral rate decreased to 3.75 exposures per 10,000 bed-days from 4.04 in Qtr 1, 2018-19.
- The non-parenteral rate decreased to 1.04 exposures per 10,000 bed-days from 1.30 in Qtr 1, 2018-19.
- The majority of parenteral exposures were reported by doctors (53%) and the majority of non-parenteral exposures were reported by nurses (68%).

Table 14 Occupational exposures, by parenteral and non-parenteral

<table>
<thead>
<tr>
<th>Exposure Type</th>
<th>Number of contributing hospitals</th>
<th>Number of Exposures this Qtr</th>
<th>Number of bed-days</th>
<th>Aggregate rate (95% CI)</th>
<th>Cumulative aggregate (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Parenteral</td>
<td>49</td>
<td>69</td>
<td>660,794</td>
<td>1.04 [0.82 – 1.32]</td>
<td>1.46 [1.41 – 1.51]</td>
</tr>
<tr>
<td>Total Exposures</td>
<td>49</td>
<td>317</td>
<td>660,794</td>
<td>4.80 [4.30 – 5.36]</td>
<td>5.64 [5.55 – 5.73]</td>
</tr>
</tbody>
</table>

Figure 20 Occupational exposure rate per 10,000 bed-days, by parenteral and non-parenteral
Figure 21 Parenteral occupational exposures, by HCW category

Figure 22 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*

☐ 22 hospitals (11 private; 11 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. NB one Regional Resource Centre is currently not performing procedures.


☐ The follow up period for surveillance on implanted devices changed from 365 days to 90 days in July 2014.

☐ Risk stratification:
  o Risk stratification is based on the CDC-NHSN (USA) risk index.
  o Risk ‘All’ applies to HISWA hospitals that perform less than 100 procedures annually and are not required to assign a risk index score
  o Procedure type: primary and revision

☐ The HAIU commenced data submission to the 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) that perform caesarean section procedures submit data to HISWA.

☐ Risk stratification:
  o Risk stratification is based on the CDC-NHSN (USA) risk index.
  o Risk ‘All’ applies to HISWA hospitals that perform less than 100 procedures annually and are not required to assign a risk index score.
  o 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.
- HA-SABSI data has been included as an indicator in National Healthcare Agreements since 2009 and reported on the MyHospitals website. The HAIU also submits HA-SABSI data to the Performance Reporting Branch on behalf of public hospitals 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.

**Haemodialysis**

- 23 haemodyalisis units (15 private, 8 public) submit data to HISWA, including two home dialysis units.
- The rate per 100 pt-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
  - Data from five oncology units (3 private, 2 public) submit data to HISWA
- Haematology CLABSI
  - Data from 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.
- 48 hospitals (14 private, 34 public) submit data to HISWA.
- 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, 2016-17 (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 *Clostridium 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.