

NHS Ayrshire & Arran



Meeting:	Ayrshire and Arran NHS Board
Meeting date:	Monday 30 January 2023
Title:	Healthcare Associated Infection Report
Responsible Director:	Jennifer Wilson, Nurse Director
Report Author:	Sharon Leitch, Interim Associate Nurse Director Infection Prevention and Control Alison Chandler, Business Manager Infection Prevention and Control

1. Purpose

This is presented to the Board for:

- Discussion

This paper relates to:

- Annual Operational Plan

This aligns to the following NHSScotland quality ambition(s):

- Safe

2. Report summary

2.1 Situation

This paper provides Board members with the current position against the national Healthcare Associated Infection (HCAI) Standards and update on three incidents that occurred between September and October 2022 and the subsequent management.

2.2 Background

The Scottish Government has established national healthcare associated (HCA) infection standards. These are:

- *Clostridioides difficile* infection (CDI) - a reduction of 10% in the national rate of HCA CDI for the year ending March 2023, with 2018-19 used as the baseline.
- *Staphylococcus aureus* bacteraemias (SABs) - a reduction of 10% in the national rate of HCA CDI for the year ending March 2023, with 2018-19 used as the baseline.
- *Escherichia coli* bacteraemias (ECBs) - a 50% reduction in HCA ECBs by 2023-24, with an initial reduction of 25% by March 23. The baseline is the 2018-19 rate.

2.3 Assessment

The Board's current verified position against each HCAI standard for the year ending June 2022 is:

Infection	NHSAA Annual Rate Year Ending June 2022 (number of cases per 100,000 Total Occupied Bed Days (TOBDs))	2022-23 Target (cases per 100,000 TOBDs)	2023-24 Target (cases per 100,000 TOBDs)
<i>Clostridium difficile</i> Infection	22.3	13.0	
<i>Staphylococcus aureus</i> Bacteraemia	15.9	12.4	
<i>Escherichia coli</i> Bacteraemia	44.9	34.3	22.8

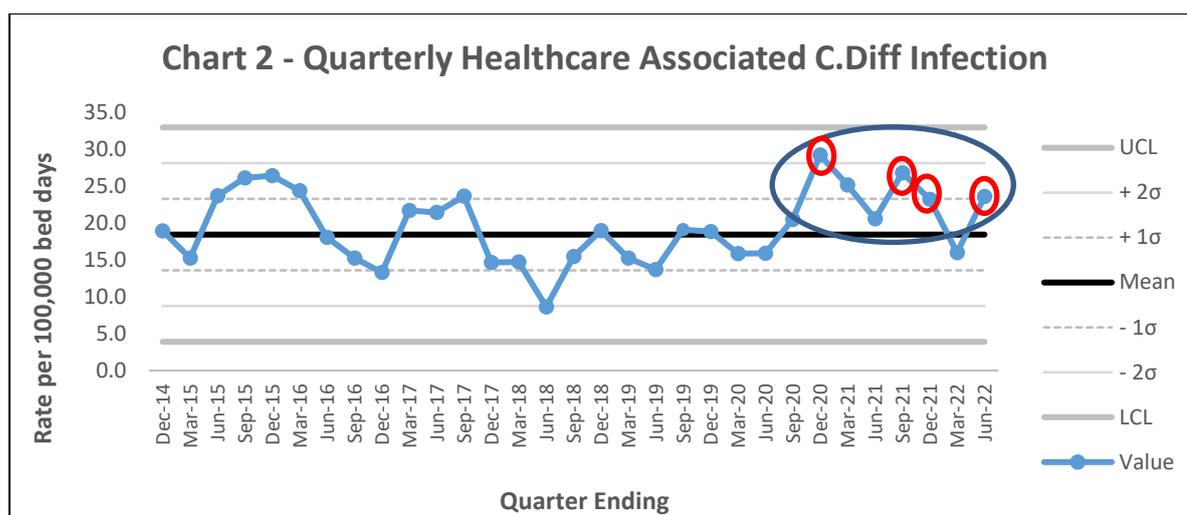
Table 1 – NHS Ayrshire & Arran verified position

2.3.1 CDI Standard

The CDI target is a reduction of 10% in the national rate of HCA CDI for the year ending March 2023, with 2018-19 used as the baseline.

NHS Ayrshire & Arran's (NHSAA) HCA rate for 2018-19 was 14.5 cases per 100,000 Total Occupied Bed Days (TOBD), therefore in order to deliver our contribution to the national standard we must achieve a rate of no more than 13.0 by the year ending March 2023.

The Board's verified HCA CDI rate for April - June 2022 is 23.6 (27 cases) (**Chart 2**). This is an increase from 16.0 (18 cases) the previous quarter. However, last quarter was not consistent with previous quarters. It is unknown what caused the sharp decline January – March 2022.



○ Exception reports

Chart 2 – Quarterly HCA CDI Rate (ARHAI data)

Unfortunately, the Board has received a further exception report this quarter from Antimicrobial Resistance Healthcare Associated Infection (ARHAI) Scotland. The exception reports received can be seen in **Chart 2** above. An action plan has been submitted to ARHAI Scotland.

A review was planned in 2021 but was unable to be completed due to the re-prioritisation of resources during the Covid-19 pandemic. A Short Life Working Group (SLWG) was established on 7 April 2022 to review areas for improvement and agree actions. Membership includes, Interim Associate Nurse Director Infection Prevention and Control (IPC), Infection Control Doctor (ICD), Consultant Microbiologist and an Antimicrobial pharmacist. The findings from the Antimicrobial pharmacist review of CDI cases April – June 2022, showed that most patients received an antibiotic prior to diagnosis and most received a proton pump inhibitor, both of which antagonise CDI. It is anticipated that the work of the SLWG in conjunction with the work of the Antimicrobial Management Team (AMT) will impact on the Board’s HCA CDI rates. It is too early for this work to have had an impact on this quarter’s data; however, figures for July – September 2022 have shown a decline and it is hoped that this will be maintained.

Of the 27 HCA cases identified locally, during the April - June 2022 quarter:

- 17 (63%) had their first positive specimen taken on or after day 3 of a hospital inpatient stay and were classed as Hospital Acquired (HAI) - 9 from University Hospital Crosshouse (UHC), 5 from University Hospital Ayr (UHA), 1 from Biggart Hospital, 1 from East Ayrshire Community Hospital (EACH) and 1 from Ayrshire Maternity Unit (AMU).
- 8 (30%) were not HAI but had been discharged from a healthcare facility within the previous 4 weeks. These cases are counted as Healthcare Associated (HCAI).
- 2 (7%) had their first positive specimen taken within 2 or less days of hospital admission and had been discharged from a hospital between 4 and 12 weeks before the positive specimen. These cases are counted as Unknown, which is included under the wider definition of healthcare associated CDI.

The 17 hospital acquired episodes were across 12 wards. There were no outbreaks identified during this quarter. Ward 5B had 3 episodes, 2 from the same patient. Samples were sent for typing. The types identified were 015 and 106. Therefore, was not an outbreak. Ward 4E had 2 episodes from 1 patient. Combined Assessment Unit (UHA) had 3 acquisitions. They were not linked in time.

The verified rolling annual rate for year ending June 2022 was 22.3. This compares with a year ending rate of 23.9 for June 2021 (**Chart 3**).



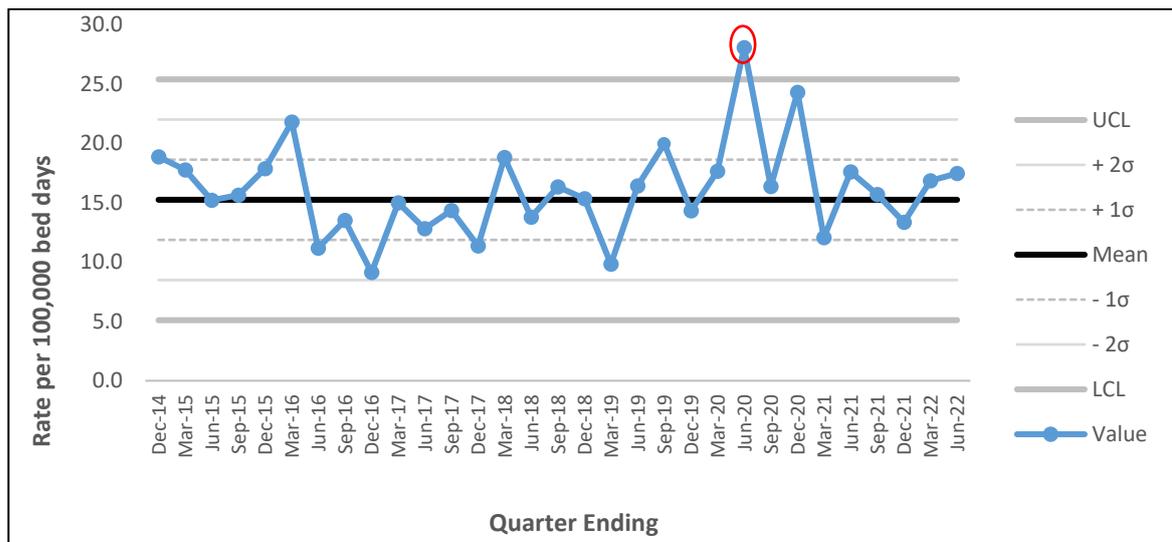
Chart 3 – Rolling Annual HCA C.Diff Rate vs National Standard

2.3.2 SAB Standard

The SAB standard is a reduction of 10% in the national rate of HCA SABs by year end March 2022 which has now been extended to year ending March 2023, with 2018-19 used as the baseline.

NHS Ayrshire & Arran’s HCA rate for 2018-19 was 13.8 cases per 100,000 TOBDs therefore in order to deliver our contribution to the national standard we must have achieved a rate of no more than 12.4 by March 2023.

The Board’s verified rate for the April – June 2022 quarter was 17.5, up from 16.9 the previous quarter (**Chart 4**). The number of individual cases increased from 19 to 20 (18 Hospital acquired and 2 healthcare associated).



● Exception reports

Chart 4 – SABs Quarterly HCA Rate

As reported previously in June 2020, there was a special cause in variation. This resulted in an exception report from ARHAI and a further special cause in variation can be seen between June 2020 and December 2020. This was between the first and second wave of the COVID-19 pandemic.

The Board’s verified rolling annual rate has decreased to 15.9 for the year ending June 2022 from 17.7 year ending June 2021 (**Chart 5**).

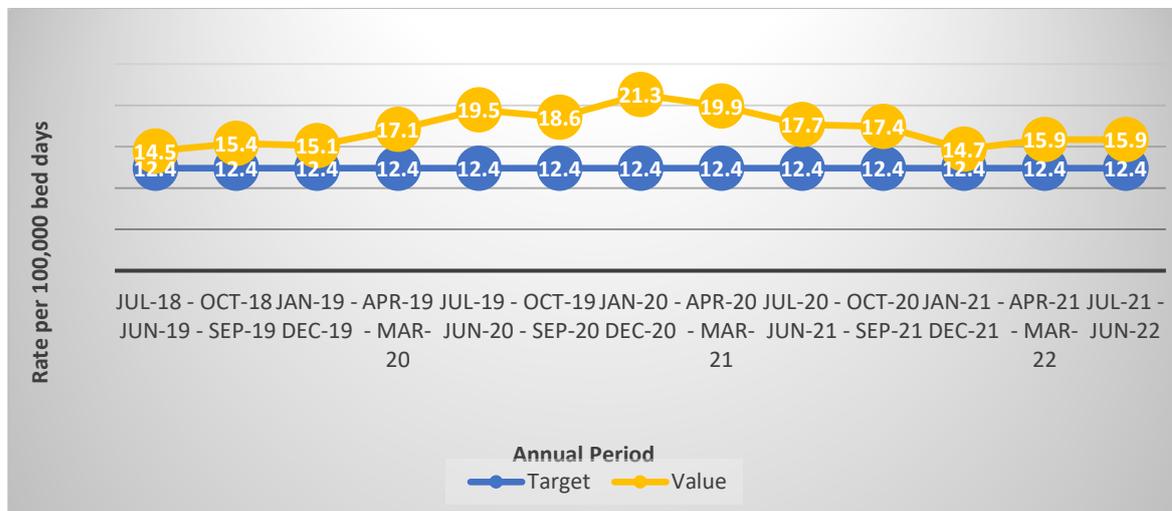


Chart 5 - Rolling Annual HCA SAB rate vs National Standard

There are 20 healthcare associated cases (18 hospital acquired and 2 healthcare associated) for quarter April - June 2022.

2.3.3 Hospital Acquired SABs

There have been 4 device related SABs, 1 peripheral vascular catheters (PVCs), 1 dialysis central line, 1 arterial line (other) and 1 urinary catheter (**Table 6**).

Point of Entry	April – June 2022
Contaminant	1
CVC tunnelled	3
PVC	4
PICC	1
Not known	6
Skin	1
Respiratory	1
Other	1
Grand Total	18

Table 6 - Hospital Acquired SABs Point of Entry April - June 2022

The Infection Prevention and Control Team (IPCT) will continue to carry out enhanced surveillance as per the national enhanced surveillance protocol. Twice monthly meetings are scheduled for the IPCT to discuss findings with a microbiology consultant. In addition, Microbiology are aiming to re-commence weekly SAB reviews of all cases at ward level.

2.3.4 ECB Standard

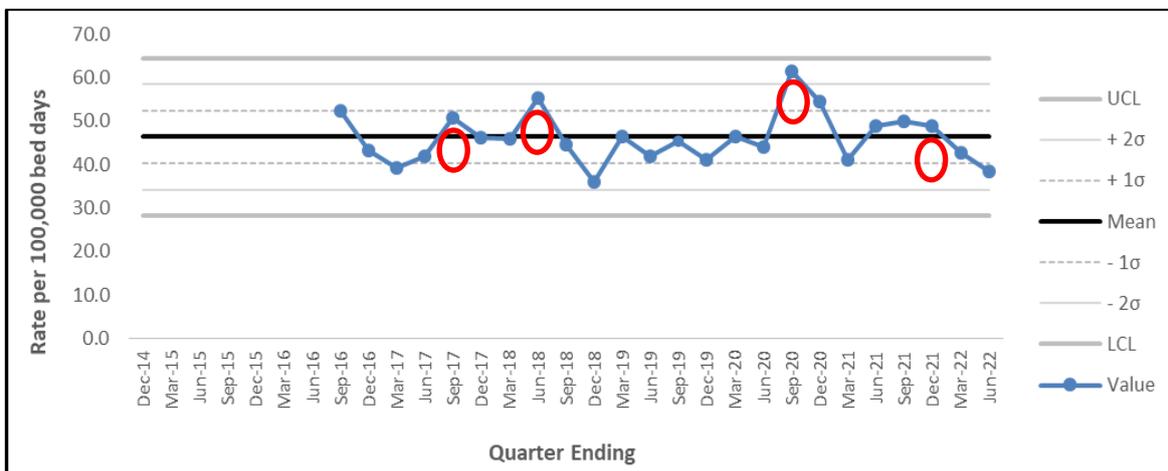
The ECB target is a 50% reduction in HCA ECBs by 2023-24, with an initial reduction of 25% by 2021-22. This has been extended to year ending March 2023, with 2018-19 used as the baseline.

NHS Ayrshire & Arran's HCA rate for 2018-19 was 45.7 cases per 100,000 TOBDs therefore in order to deliver our contribution to the national standard we must achieve a rate of no more than 34.3 cases per 100,00 TOBDs for the year 2022-23 and a rate of no more than 22.8 cases per 100,00 TOBDs by 2023-24. (**Table 7**)

Year	Percentage Reduction	Target rate	Target Case Numbers
Baseline	-	45.7	205
2022-23	10%	34.3	154
2023-24 (Final target)	50%	22.8	102

Table 7 –Targets for HCA ECBs

The Board's verified quarterly rate for the April - June 2022 quarter was 38.5 down from 42.6 (**Chart 8**). This is the second quarter that there has been a decline in the number of cases since the exception report in October – December 2021 quarter.



● Exception reports

Chart 8 – Quarterly Healthcare Associated ECB Rate

The Board’s verified **annual** HCA rate for the year ending June 2022 was 44.9 down from 51.5. This is well above the year 3 reduction target of 34.3 (**Chart 9**).

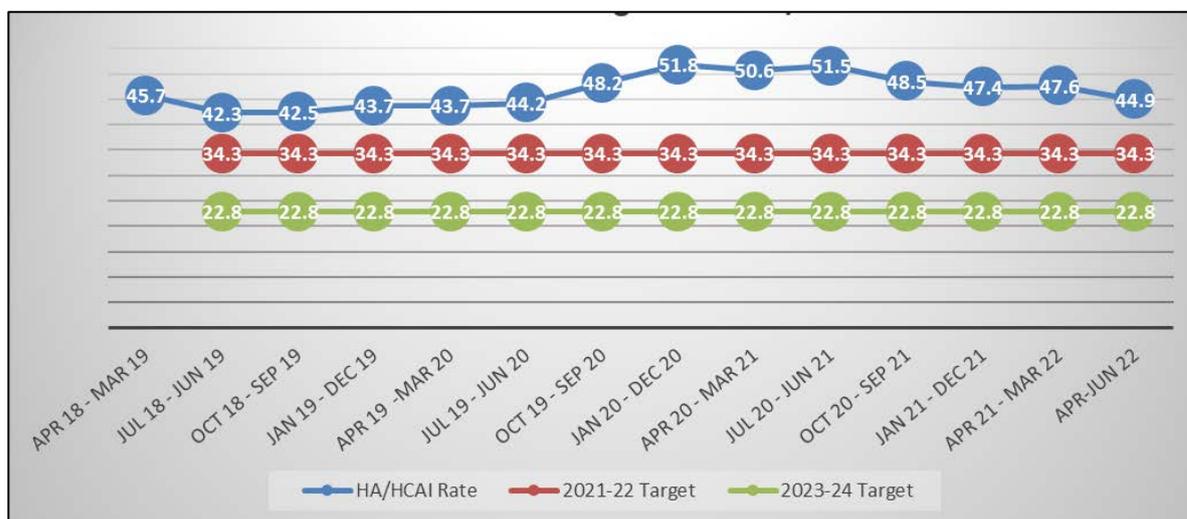


Chart 9 - Rolling Annual HCA ECB rate vs National Standard

The local ECB surveillance data is entered directly onto the national surveillance database with the results accessed via the Discovery platform.

As previously reported reducing urinary catheter related infections remains the Board’s primary strategy for lowering the overall bacteraemia rate. This work was compromised by the COVID 19 pandemic. The group has now been re-established and Quality Improvement work is being explored and established.

2.3.5 Community Acquired ECB Rate

The Board received another exception report for the quarter April – June 2022 from ARHAI Scotland. An action plan has been submitted to ARHAI Scotland. The exception report has been shared with our Health Protection Team colleagues who are liaising with Environmental Health to explore water supplies for higher than expected levels of E-Coli in public water systems.

The Board has received multiple exception reports for Community Acquired ECBs. As previously reported the previous Infection Control Manager and Infection Control Doctor have liaised with both ARHAI and The Scottish Government (SG). It has been recognised that the board rate remains steady whilst the Scottish rate fluctuates which results in the Board receiving an exception report. ARHAI have advised that should our exception reports continue they will provide SG with the wider epidemiology detail.

2.3.6 COVID-19 Pandemic

COVID outbreaks continue across acute and community hospitals. The most recent sequencing surveillance data shows that Omicron BA.5 continues to be the dominant strain, with a smaller amount of BA.4. Problem Assessment Groups (PAGs) had been reconvened this quarter but these were swiftly replaced by the COVID Outbreak Oversight Group (COOG) as the number of outbreaks have increased again. There have been 104 outbreaks between 1 April 2022 and 15 November 2022, this compares to 39 last year for the same time period.

On 14 September DL(2022)32 Advance Notice of Pause of Asymptomatic Staff Testing in Health and Social Care and Asymptomatic Testing in Hospitals was released which stated that there would be a pause in asymptomatic staff testing in health and social care settings and asymptomatic testing for inpatients in hospitals. This was required to be in place by end of September. The Testing Programme Board co-ordinated the recommendations in the DL and a paper was submitted to CMT. The board is currently compliant at this time.

The Director Led Oversight Group remains in place although its requirement to meet is not as frequent as it was during the height of the pandemic.

2.3.7 Hand Hygiene

16 wards were audited by IPCT April – June 2022. Wards were selected as per the rolling programme. **Table 10** below provides the breakdown of compliance by staff group and compares IPCT independent monitoring against ward routine monitoring.

Staff Groups Observed	IPCT Independent Monitoring Staff group % compliance	Ward Routine Monitoring Staff group % compliance
All registered & non registered nurses	89%	97%
All qualified and in-training medical	100%	97%
Allied Health Professionals	92%	98%
Ancillary / Other	89%	98%
Compliance (Quarter 1 2022/23)	91% (n=16)	98% (n=83)
Compliance (Quarter 4 2021/22)	91% (n=16)	98% (n=71)

Table 10 - Hand Hygiene Independent Monitoring by staff group Q1 (April - June) 2022/23

The Infection Control Environmental Audit and Standard Infection Control Precautions (SICPs) Monitoring Framework continues and findings are presented to the Prevention Control of Infection Committee.

2.3.8 NHS Scotland National Cleaning Compliance

Between 1 April 2022 and 30 June 2022, 473 scheduled audits were undertaken across NHS Ayrshire & Arran. There were 247 audits carried out in the East Sector, 73 in the North Sector and 153 in the South Sector.

The Board was 95.7% compliant against National Standards for Domestic Services and 97.5% compliant for Estates Services on any issues that affect cleaning. The average score for Scotland was 95.4% for Domestic Services and 96.7% for Estates Services.

A total of 6 re-audits were undertaken during this quarter for amber scores. No audit fell below 70%. There were no non-scheduled audits carried out.

	Domestic	Estates
Scottish average	95.4%	96.7%
NHSAA board total	95.7%	97.53%
East	96.17%	97.82%
North	95.33%	98.32%
South	95.11%	96.69%

Table 11 – Average Audit Scores

Staffing resource and impact of the Covid-19 pandemic continues to put pressure on domestic services.

2.3.9 Outbreaks/Incidents

A Vancomycin-Resistant Enterococci (VRE) outbreak occurred within University Hospital Crosshouse in September 2022 involving a small number of patients. A Problem Assessment Group was convened to review the situation and on further investigation one patient was discounted. The Infection Prevention and Control Team visited the affected ward. Actions were agreed by the PAG including SCIPs audits being completed again by the ICPT which showed a noticeable improvement in scores. Communication was maintained with the patients involved during the outbreak.

In October 2022 the laboratory identified a probable outbreak of Carbapenemase-producing Enterobacteriaceae (CPE) *Klebsiella Pneumoniae*. The toolkit for the early detection, management and control of CPE in Scottish acute settings was initiated, contact screening commenced and a timeline was constructed of positive cases which confirmed links to time and place. A terminal clean of the affected area took place and the IPCT have met with the Chief Nurse and Estates and agreed a programme of works to upgrade specific areas within the ward that were identified from the environmental audit. All patients affected were communicated with and all positive cases were informed of their results and advice given. The patients' GPs were also contacted. The Board were notified of the outbreak and a report was sent to Antimicrobial Resistance and Healthcare Associated Infection (ARHAI) Scotland who informed the Scottish Government. Areas for improvement have been identified and lessons learned will be shared with the teams involved.

A small number of decontamination incidents have occurred over an 8 month period within both University Hospital Ayr and University Hospital Crosshouse due to equipment not being decontaminated as per local and national guidance. A PAG

meeting was convened which included a representative from ARHAI as the incidents had the potential to expose patients to an infectious agent. The incidents were assessed as low risk however recommendations were made following a review of the incidents which are now being progressed, including updating of standard operating procedures and staff training.

2.3.10 Quality/patient care

Attainment of the national HCAI standards will result in fewer infections in patients and improve patient outcome.

2.3.11 Workforce

Reductions in HCAI will reduce the exposure risk to staff from harmful infections.

2.3.12 Financial

Reductions in HCAI will lead to reduced inpatient lengths of stay and associated treatment costs.

2.3.13 Risk assessment/management

The Infection Prevention and Control Team (IPCT) provide clinical teams and managers with risk assessed advice and guidance based on national policy and best practice.

Current activity required in order to respond to COVID-19 has significantly impacted on the capacity of the IPCT to continue with routine IPC activity. A risk template has been developed to articulate this with agreed mitigations and entered onto our operational risk register.

2.3.14 Equality and diversity, including health inequalities

An impact assessment has not been completed because this is an update report to Board members.

2.3.15 Other impacts

No other impacts to note.

2.3.16 Communication, involvement, engagement and consultation

This is standing report to the Board.

2.3.17 Route to the meeting

This has been previously considered by the following groups as part of its development. The groups have either supported the content, or their feedback has informed the development of the content presented in this report.

- Prevention and Control of Infection Committee on 17 November 2022
- Healthcare Governance Committee 09 January 2023

2.4 Recommendation

For discussion. Board are asked to receive the paper and note the Board's current position against the national HCAI standards and the incidents detailed.

The Infection Prevention and Control Team are currently reviewing the data that is presented and a more in-depth report detailing the Healthcare Associated Infection Reporting Template (HAIRT) will be submitted to the next NHS Board Meeting.