NHS Ayrshire & Arran

Meeting:	**Ayrshire and Arran NHS Board**
Meeting date:	**Tuesday 23 May 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.

2.2 Background

On 28 February 2023, the DL (2023) 06 further Update on Standards on HCA Infections and Indicators on Antibiotic Use and changes to Hospital Onset COVID- 19 Reporting, was released. This further extended the previous targets by another year. It also established that the previous 50% reduction of ECBs was unrealistic and adopted a 25% reduction target based on an assessment of what can reasonable be achieved.

Targets for 2023-24:

- *Clostridiodes difficile* infection (CDI) - a reduction of 10% in the national rate of HCA CDI for the year ending March 2024, 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 2024, with 2018-19 used as the baseline.
- *Escherichia coli* bacteraemias (ECBs) - a reduction of 25% in the national rate of HCA ECBs for the year ending March 2024, with 2018-19 used as the baseline.

The Healthcare Associated Infection Reporting Template (HAIRT) is a mandatory reporting tool for the Board to have oversight of the Healthcare Associated targets, as detailed above, in addition to incidents and outbreaks and all other Healthcare Associated Infections' (HCAI) activity across NHS Ayrshire & Arran (NHSAA). The following data covers the time period October to December 2022.

2.3 Assessment

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

Infection	**NHS A&A Annual Rate Year Ending December 2022** (number of cases per 100,000 Total Occupied Bed Days (TOBDs))	**2022-23 Target** (cases per 100,000 TOBDs)
Clostridium difficile Infection	17.9	13.0
Staphylococcus aureus Bacteraemia	17.9	12.4
Escherichia coli Bacteraemia	36.8	34.3

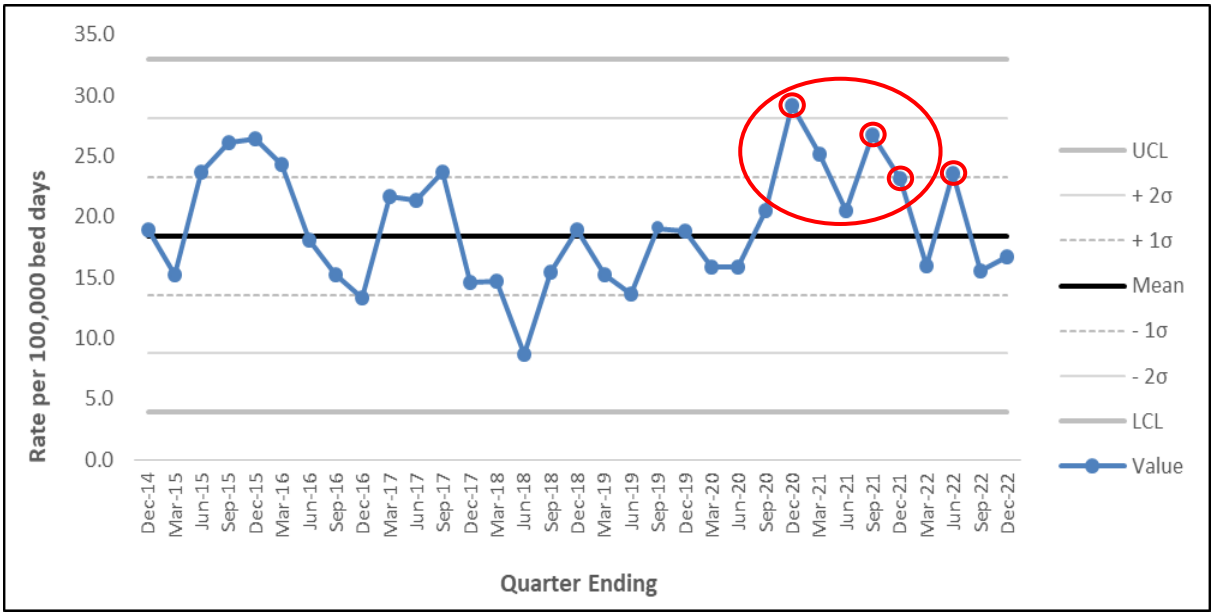
Figure 1 – NHS Ayrshire & Arran's verified position

CDI Standard

The CDI target is a reduction of 10% in the national rate of HCA CDI for the year ending March 2024, with 2018-19 used as the baseline.

NHS Ayrshire & Arran's HCA rate for 2018-19 was 14.5 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 13.0 by March 2024.

The Board's verified HCA CDI rate for October - December 2022 is 16.7 (20 cases) (**Figure 2**). This is a slight increase from 15.5 (18 cases) the previous quarter. Whilst this is a slight increase, this quarter remains below the mean.



Exception reports

Figure 2 – Quarterly HCA CDI Rate (ARHAI data)

Figure 3 provides the Board's position in comparison to the rest of Scotland. NHS AA's rate of 16.7 is well within the 95% confidence interval upper limit, however, is above the Scottish rate of 13.5.

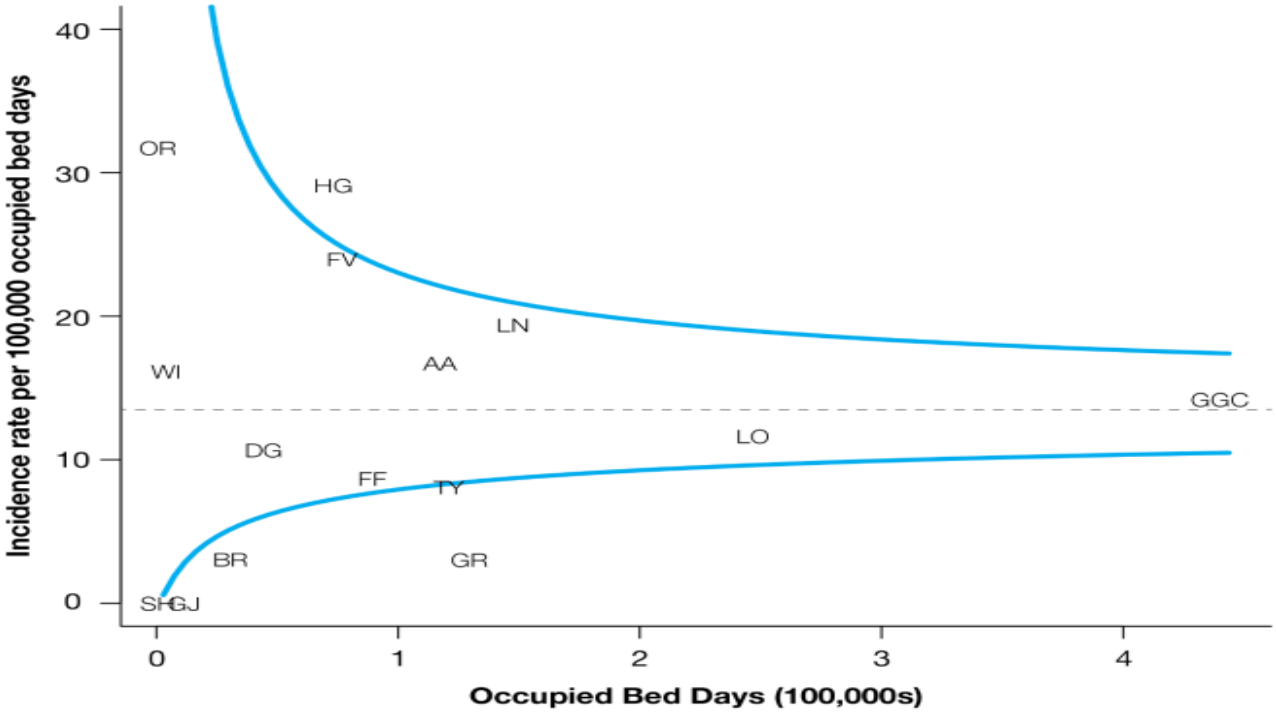


Figure 3 – Funnel plot of CDI incidence rates (per 100,000 TOCB) in healthcare associated infection cases for all NHS Boards in Scotland October – December 2022

Of the 20 HCA cases identified locally, during the October - December 2022 quarter:

- 11 (55%) had their first positive specimen taken on or after day 3 of a hospital inpatient stay and were classed as Hospital Acquired (HAI) - 7 from University Hospital Crosshouse (UHC), 4 from University Hospital Ayr (UHA)
- 7 (35%) 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 (10%) 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 11 hospital acquired episodes were across 9 wards. There were no outbreaks identified during this quarter. There were 2 cases in CAU UHA and CAU UHC, these are not thought to be linked as all samples were taken on day 3 of admission and it was noted in some patient cases there was ongoing history of diarrhoea.

The verified rolling annual rate for year ending December 2022 was 17.9. This compares with a year ending rate of 23.9 for December 2021 (**Figure 4**).

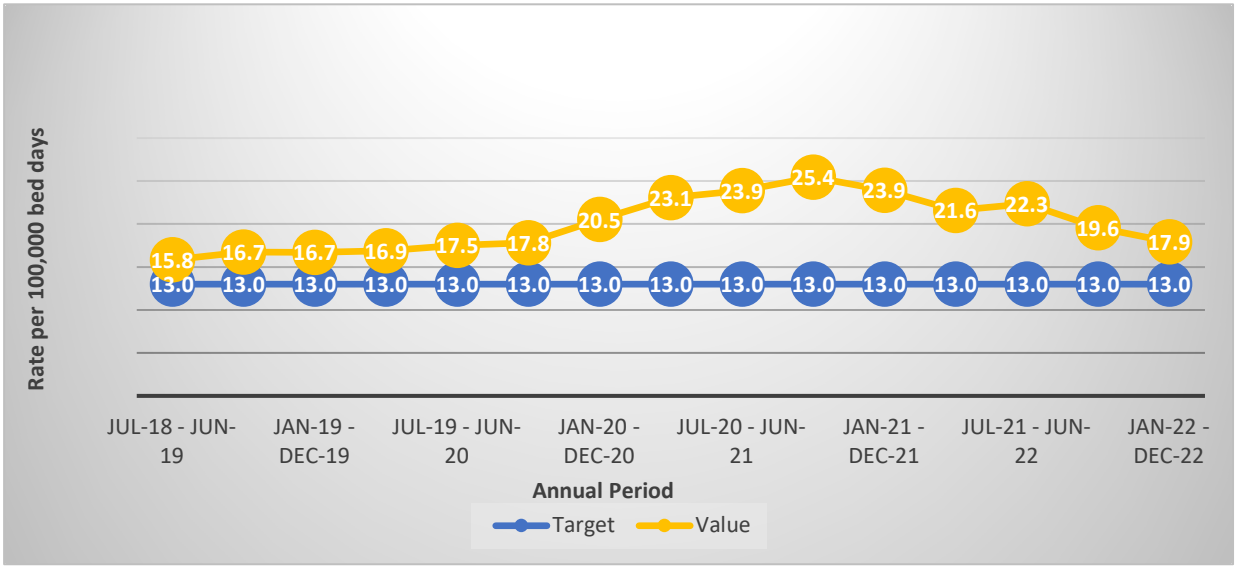


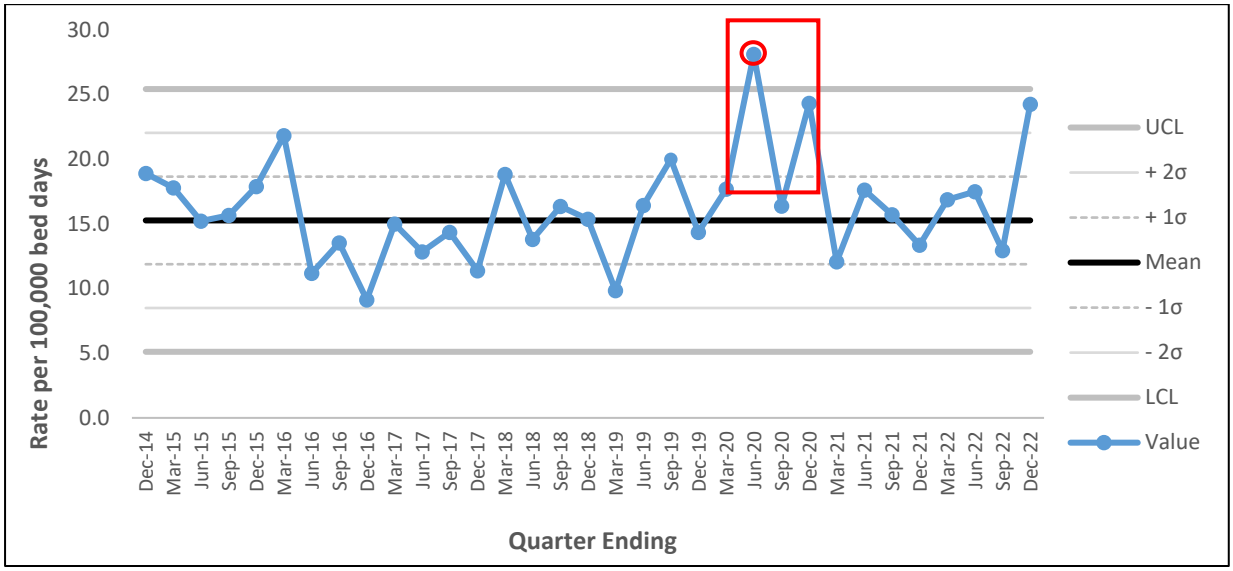
Figure 4 – Rolling Annual HCA Rate vs National Standard

SAB Standard

The SAB standard is a reduction of 10% in the national rate of HCA SABs by year end March 2024, 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 2024.

The Board's verified rate for the October - December 2022 quarter was 24.3. This was a significant increase from 12.9 the previous quarter (**Figure 5**). The number of individual cases increased from 15 to 29 (21 Hospital acquired and 8 healthcare associated). **Figure 8** provides a breakdown of entry points demonstrating an increase in preventable cases e.g. contaminants and SABs.



Exception report

Figure 5 – SABs Quarterly HCA Rate

Figure 6 provides the Board's position in comparison to the rest of Scotland. NHSAA's rate of 24.3 is within the 95% confidence interval upper limit, however, is above the Scottish rate of 19.2.

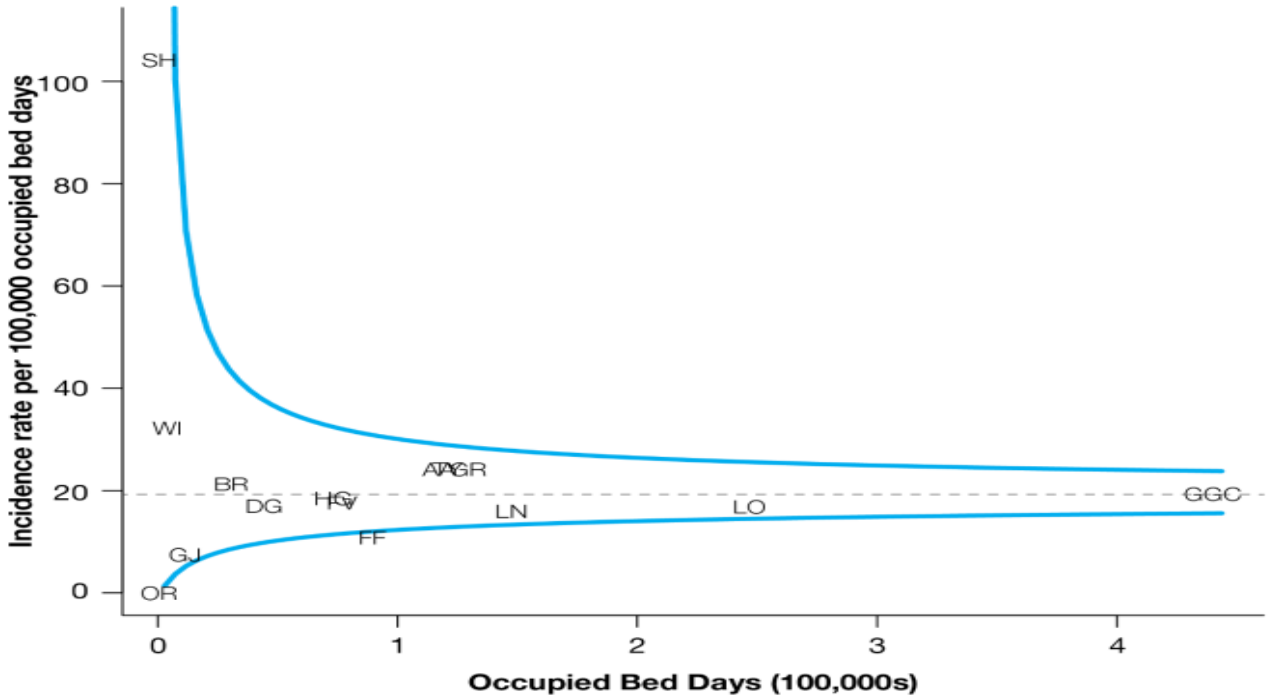


Figure 6 – Funnel plot of SAB incidence rates (per 100,000 TOBD) in healthcare associated infection cases for all NHS boards in Scotland in October – December 2022

The Board's verified rolling annual rate was 17.9 for year ending December 2022. This compares to a year ending rate of 14.7 December 2021 (**Figure 7**).

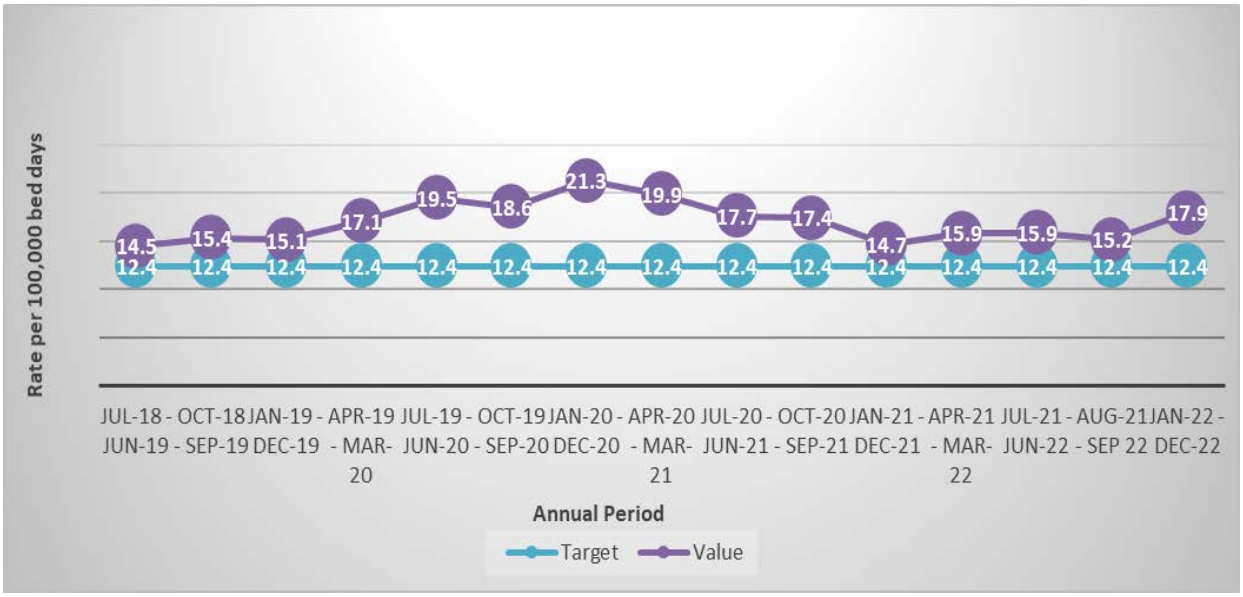


Figure 7 - Rolling Annual HCA SAB rate vs National Standard

Hospital Acquired SABs

There were a total of 21 hospital acquired cases October to December 2022 (**Figure 8**).

Point of Entry	October – December 2022
Contaminant	3
CVC tunnelled	1
CVC non-tunnelled	1
Fistula	1
PVC	5
Device Other	1
Not known	4
SSI	1
Respiratory tract	3
ENT	1
Grand Total	**21**

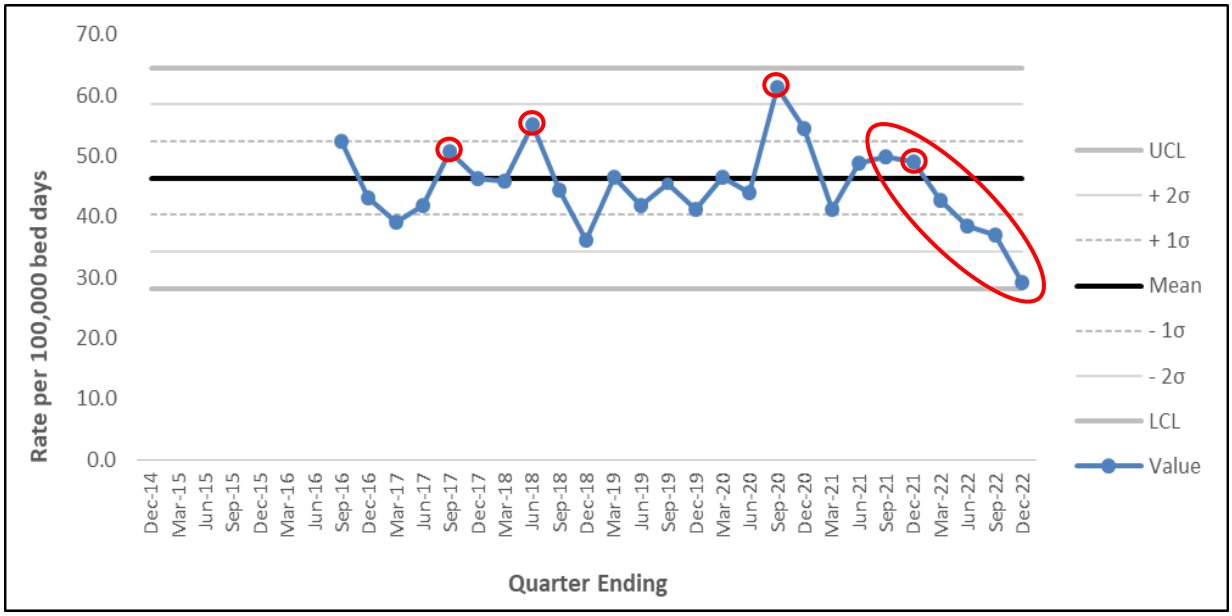
Figure 8 Hospital Acquired SABs Point of Entry October – December 2022

ECB Standard

The ECB target has been reviewed and a target has been set of 25% by March 2024, with 2018-19 used as the baseline.

NHSAA'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 2023-24.

The Board's verified **quarterly** rate for the October – December 2022 quarter was 29.3 (35 Cases) down from 37.1 (43 cases) (**Figure 9**). Since September 2021 there has been a downward trend, it is unknown what has contributed to the decline in number of cases.



Exception report

Figure 9 – Quarterly Healthcare Associated ECB Rate

Figure 10 provides the Board's position in comparison to the rest of Scotland. NHSAA's rate of 29.3 is well within the 95% confidence interval upper limit and is below the Scottish rate 34.5.

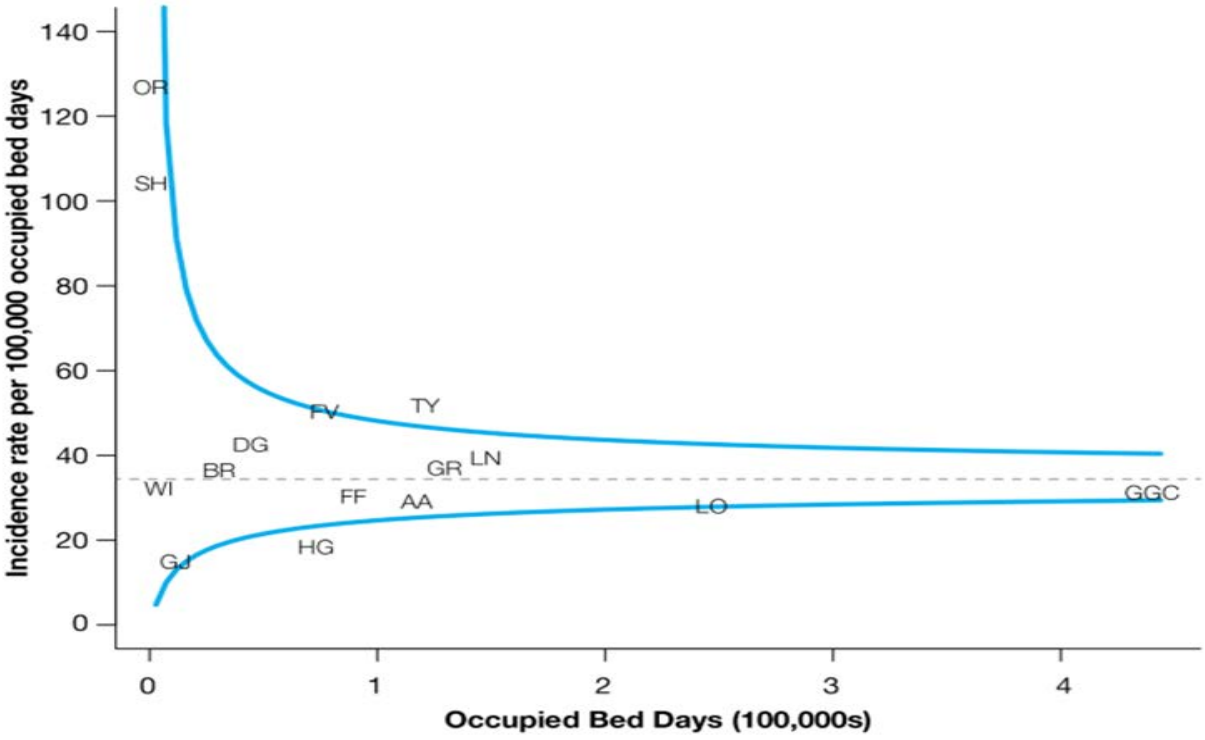


Figure 10 – Funnel plot of ECB incidence rates (per 100,000 TOBD) in healthcare associated infection cases for all NHS boards in Scotland in October - December 2022

The Board's verified **annual** HCA rate for the year ending December 2022 was 36.8 down from 47.4 (**Figure 11**).

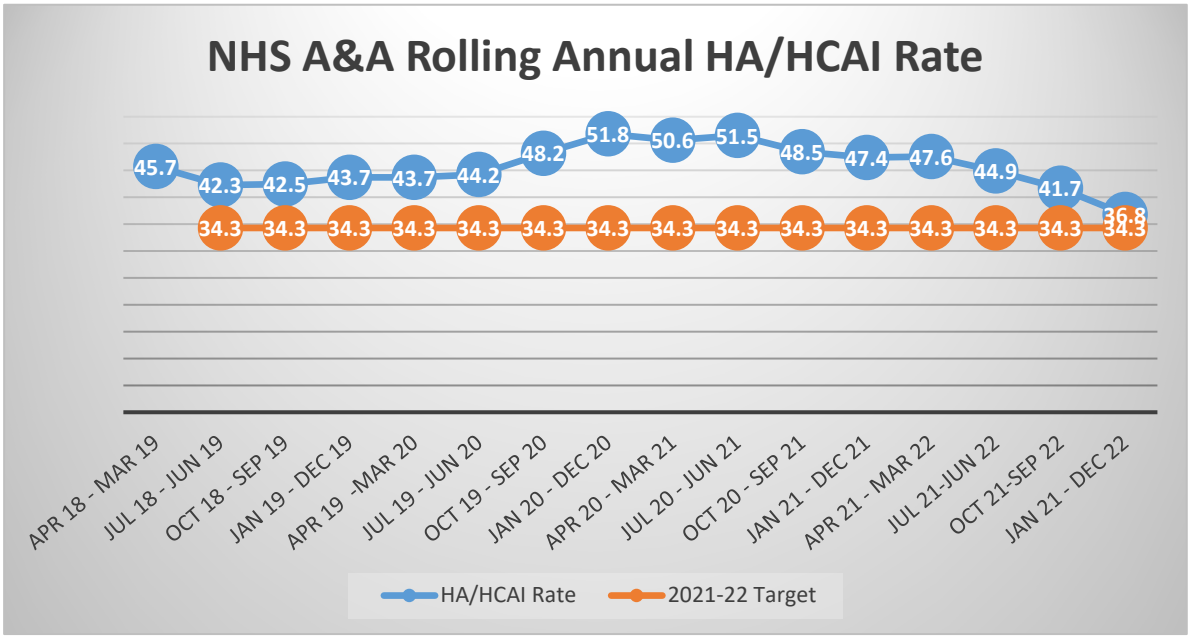


Figure 11 - Rolling Annual HCA ECB rate vs National Standard

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

There is no known intervention which has led to this significant reduction in HCA ECB. Comparing year ending December 2021 to year ending December 2022 (**Figure 12**), the largest reductions has been in cases of pneumonia and pyelonephritis. Further work is required to better understand this reduction to ensure these are maintained. However, this would require resource that is currently unavailable.

Point of Entry	Year end December 2021	Year end December 2022
Contaminant	1	0
CAPD	0	2
Urinary catheter	48	41
Device other	4	7
Suprapubic catheter	3	0
Hepatobiliary	31	28
Lower urinary tract infection	16	27
Nephrostomy	11	3
Not known	19	25↑
Other	14	15
Pneumonia	17	7↓
Pyelonephritis	31	11↓
SSI (Deep)	4	2
SSI (Organ)	1	0
Osteomyelitis	0	1
Abscess	0	1
Grand Total	**200**	**170**

Figure 12 - Hospital Acquired ECBs Point of Entry comparing Year end December 2021 and December 2022

Community Acquired ECB Rate

The Board has received a further exception report for community associated ECB for quarter October – December 2022. An action plan will be formulated and submitted within the appropriate time frame. The exception report has been shared once again with our Health Protection Team.

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 **(Figure 13)** whilst the Scottish rate fluctuates which results in the Board receiving an exception report. There are currently no targets for community associated ECB.

Quarter	Jan – Mar 21	Apr – Jun 21	Jul – Sep 21	Oct – Dec 21	Jan – Mar 22	Apr – Jun 22	Jul – Sep 22	Oct – Dec 22
No. ECB	46	49	57	60	45	54	40	51

Figure 13 - **Number of ECBs per quarter for the years 2021 and 2022**

Figure 14 provides the Board's position in comparison to the rest of Scotland. NHSAA's rate of 54.9 is more than the 95% confidence interval upper limit and is above the Scottish rate 36.4.

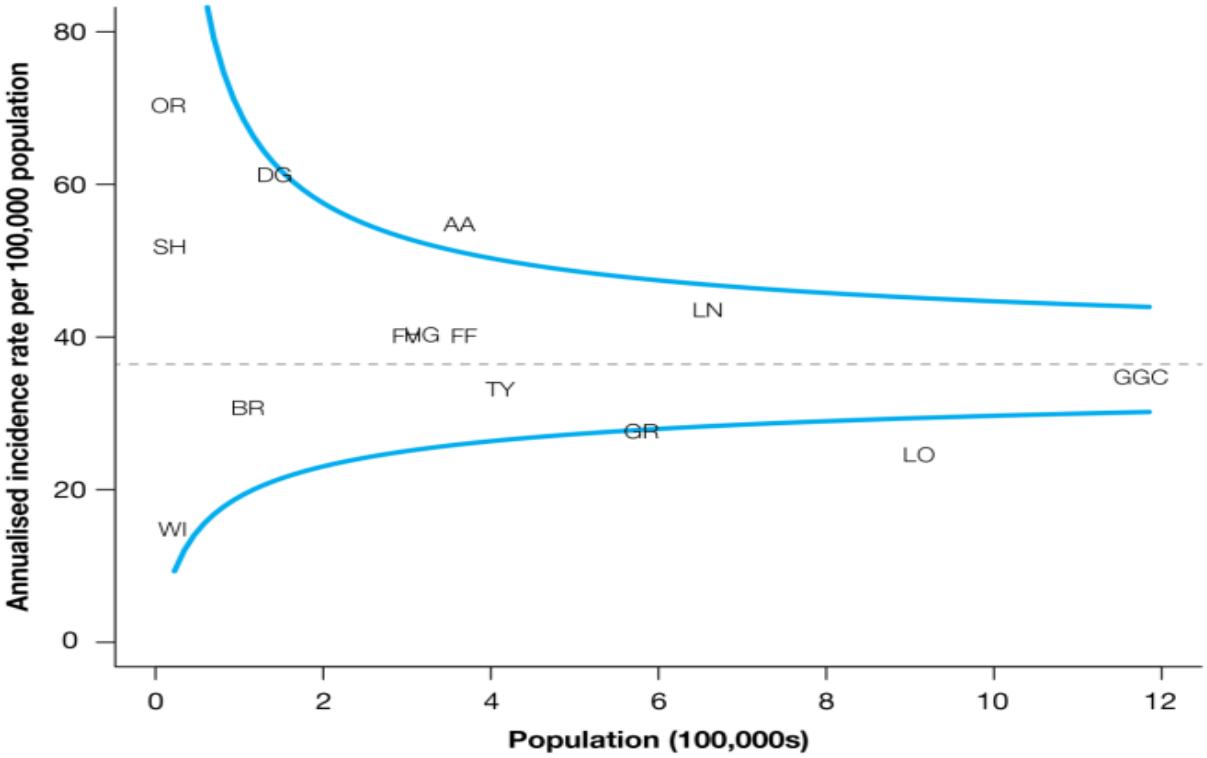


Figure 14 - Hospital Acquired ECBs Point of Entry comparing Year end December 2021 and December 2022

Hand Hygiene

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.

Month	Jan – Mar 22	Apr – Jun 22	Jul – Sep 22	Oct -– Dec 22
IPCT Independent Monitoring	91%	91%	95%	95%
Ward Routine Monitoring	98%	98%	98%	97%

Figure 15 – SCIPs Monitoring Framework

There are currently 140 areas activated on the Quality Improvement Portal to carry out hand hygiene audits, of which 90 areas have reported compliance.

Estates and Cleaning Compliance

Figure 16 presents data on compliance with the requirements set out in the NHS Scotland National Cleaning Services Specification (NCSS). The NCSS set out the requirements for the minimum frequency and methods of cleaning carried out by

Domestic staff. It sets out the same requirements for Estates staff when cleaning the Estates fabric. All healthcare facilities and component parts e.g., wards, treatment rooms, corridors, etc. are expected to be at least 90% compliant with the requirements set out in the NCSS.

The results show that NHSAA was 95.6% compliant against National Standards for Domestic Services and 96.9% compliant for Estates Services on any issues that affect cleaning. The average score for Scotland was 95.3% for Domestic Services and 96.5% for Estates Services.

	NHS Ayrshire & Arran	Scotland
Domestic Services	95.6%	95.3%
Estates Services	96.9%	96.5%

Figure 16 – Estates and Cleaning Compliance October to December 2022

464 domestic audits were carried out **(Figure 17)** carried out during the period October to December 2022 and any other issues which have affected the ability to undertake cleaning to the levels required.

The audit tool is built on wards and department categorisation, which determines the audit frequency, for example, higher risk area will be audited twice monthly, whereas lower risk areas are audited quarterly. The system selects the rooms with wards/departments, at random, that an audit is to be undertaken.

At the end of an audit, if the area falls below 90%, a re-audit is carried out. This is undertaken within 21 days if the score is between 70-90% and within 7 days if the score is below 70%.

Sector	Audits Undertaken	Re-audits	Non-scheduled audits	Any below 70%	Domestic	Estates
East	246	2	0	0	96.16%	97.7%
North	74	1	0	0	95.26%	97.96%
South	144	7	3	0	94.92%	94.86%
Total	**464**	**10**	**3**	**0**	**95.62%**	**96.86%**

Figure 17 – Domestic Audits

COVID-19

At time of reporting, in NHSAA there have been over **15,800** confirmed positive cases since the beginning of the pandemic. At the time of writing there are no active COVID-19 outbreaks within any of our Acute or Community Hospitals. This is a first since the start of the pandemic.

As well as the ICNs providing advice and expertise to the local clinical teams, the IPCT monitor all laboratory confirmed COVID-19 positive cases in hospital to assist with both national and local data collection.

Figure 18 displays the number of in-patients across all NHSAA hospitals who tested positive for COVID-19. This data is correct as of 16 April 2023.

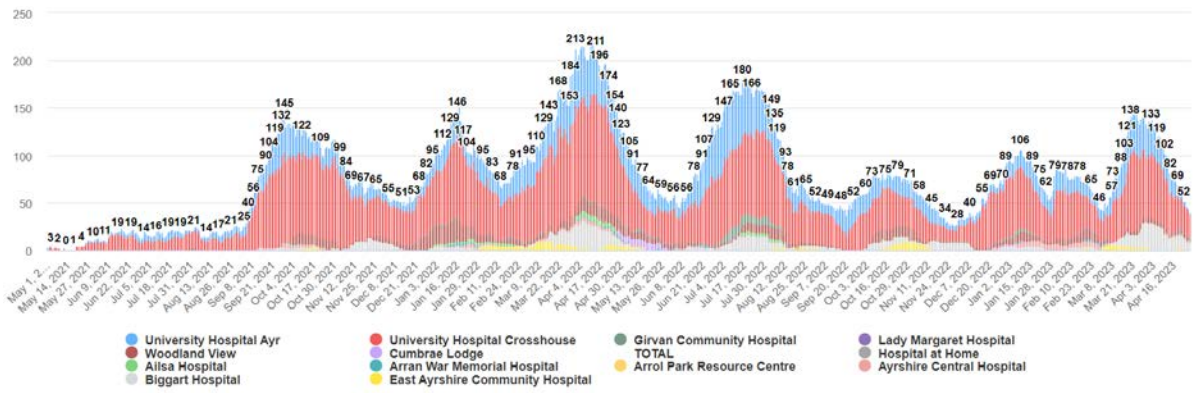


Figure 18 – Confirmed COVID-19 inpatients in hospital sites

Outbreaks

Respiratory outbreak management continues to impact on IPCT resource.

Month	Apr – Jun 22	Jul – Sept 22	Oct – Dec 22	Jan – Mar 23
COVID	46	38	37	52
Flu	0	0	5	2
RSV	0	0	2	1
Mixed	0	0	7	0

Figure 19 – Respiratory Outbreak activity April 22 – Mar 23

Healthcare Infection Incident Assessment Tool (HIIAT)

The ARHAI Healthcare Infection Incident Assessment Tool (HIIAT) is a tool used by NHS Boards to assess the impact of an outbreak or incident. The tool is a risk assessment allowing Boards to rate each outbreak/incident as RED, AMBER or GREEN. In the event of an outbreak or incident, a Problem Assessment Group (PAG) or Incident Management Team (IMT) meeting is convened and chaired by the Infection Control Doctor with staff from the area concerned, and actions are implemented to control further transmission of infection.

All outbreaks/incidents are reported to ARHAI who onward report to the Scottish Government Health and Social Care Directorate (SGHSCD).

Number of incidents reported to ARHAI (includes COVID) from January – March 2023:

HIIAT Green 12
HIIAT Amber 30
HIIAT Red 14

2.3.1 Quality/patient care

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

2.3.2 Workforce

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

2.3.3 Financial

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

2.3.4 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.

2.3.5 Equality and diversity, including health inequalities

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

2.3.6 Other impacts

No other impacts to note.

2.3.7 Communication, involvement, engagement and consultation

This is a standing report to the Board.

2.3.8 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, 16 March 2023
- Healthcare Governance Committee, 24 April 2023

2.4 Recommendation

This paper is for discussion and provides Board members with the Board's current position against the national HCAI standards.