

NHS Shetland

Meeting:	Shetland NHS Board
Meeting date:	25 April 2023
Title:	Healthcare Associated Infection (HAI) Report
Agenda reference:	Board Paper 2023/24/02
Responsible Executive/Non-Executive:	Kathleen Carolan, Director of Nursing & Acute Services
Report Author:	Carol Colligan, Infection Control Manager & Decontamination Lead

1 Purpose

This is presented to the Board/Committee for:

- Awareness

This report relates to:

- Government policy/directive
- Legal requirement
- Local policy

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

The HAI governance arrangements are most closely aligned to our corporate objectives to improve and protect the health of the people of Shetland and to provide high quality, effective and safe services.

2 Report summary

2.1 Situation

The Board is asked to – receive the attached HAI report and note the Board's position and performance in relation to:

- Clostridium Difficile
- Staphylococcus Aureus Bacteraemias
- E Coli Bacteraemias
- Hand Hygiene compliance
- Monitoring of cleaning services

2.2 Background

It is a statutory requirement that NHS Boards receive an update on HAI standards and performance at every Board meeting. This report includes the national, mandatory reporting requirements and an update on key programmes of work locally that are being taken forward.

2.3 Assessment

The summary below sets out the report headlines for August to October 2022 (our most recent reporting period).

There are no exceptions to report in respect of HAI and Infection Control compliance to the Board as highlighted in this performance report.

January to March 2023

- NHS Shetland had two cases of Staphylococcus Aureus Bacteraemia
- NHS Shetland had one case of Clostridioides Difficile Infection
- NHS Shetland had three cases of E Coli Bacteraemia
- NHS Shetland had no cases of Pseudomonas Bacteraemia
- NHS Shetland had no cases of Klebsiella Bacteraemia
- Hand Hygiene audit compliance figures for January to March 2023 was 99.5%
- Cleaning standards compliance for the Board for January to March 2023 was 96.2 %
- Estates standards compliance for the Board for January to March 2023 was 99.6 %

2.3.1 Quality/ Patient Care

The HAI agenda focuses on reducing avoidable patient harm. Reporting HAI performance is part of the clinical governance arrangements for the Board and the focus is on meeting quality standards.

2.3.2 Workforce

Training in infection control and outbreak management is a key priority in our HAI governance arrangements.

2.3.3 Financial

HAI governance arrangements are part of the standard budgeting process and are funded via our general financial allocation.

2.3.4 Risk Assessment/Management

The HAI agenda focuses on reducing risks associated with the spread of infection (in the environment and through Public Health measures). The adverse event policy also applies to HAI related events.

2.3.5 Equality and Diversity, including health inequalities

EQIA is not required.

2.3.6 Other impacts

The HAI governance arrangements are underpinned by the national Standard Infection Control Precautions (SICPS).

2.3.7 Communication, involvement, engagement and consultation

Not applicable

2.3.8 Route to the Meeting

This report would usually be considered by the Control of Infection Committee (CoIC) and/or the Infection Control Team (ICT) prior to submission to the Board.

Considered at ICT on 18/04/23

2.4 Recommendation

Awareness – for Board members

3 List of appendices

The following appendices are included with this report:

Appendix No1 HAIRT Report January to March 2023

NHS Shetland

Healthcare Associated Infection Reporting Template (HAIRT)

Improved collaboration with the other UK nations has made comparisons and standardisation across the UK a high priority for all four nations' governments/health departments. The changes introduced in the Scottish HAI surveillance, described within this report facilitate benchmarking of the Scottish data against those of the rest of the UK.

Revisions to the surveillance

Description of Revision	Report section(s) revision applies to	Rational for revision
Addition of healthcare/community case assignment	Clostridioides Difficile Infection/ Staphylococcus Aureus Bacteraemia (CDI/SAB)	An increasing awareness of those infections occurring in community settings has warranted measurement of incidence rates by healthcare setting (healthcare settings vs. community settings) to enable interventions to be targeted to the relevant settings.
Use of standardised denominator data for Clostridioides Difficile Infection/ Escherichia Coli Bacteraemia/ Staphylococcus Aureus Bacteraemia (CDI/ECB/SAB)	CDI/SAB	The 'total occupied bed days' data will be extracted from the ISD(S)1 data collection which contains aggregated information on acute and non-acute bed days including geriatric medicine and long-term stays in real-time. The standardisation of denominator data across the three surveillance programmes could result in slightly less accurate denominators due to inclusion of persons in the denominator who are at slightly less risk of infection. However, in surveillance programmes developed for the purpose of preventing infection and driving quality improvement in care, consistency of the denominators over time tend to be more important than getting a very precise estimate of the population at risk, as the primary aim is to reduce infection to a lower incidence relative to what it was at the initial time of benchmarking.
Reporting of CDI cases aged 15 years and above only	CDI	Current Scottish Government Local Delivery Plan Standards are based on the incidence rate in cases aged 15 years and above, therefore the report has been aligned to reflect this. HPS will continue to monitor CDI incidence rates in the separate age groups (15-64 years and 65 years and above) internally.
Reporting of total SAB cases only (i.e. Removal of MRSA sub-analysis)	SAB	MRSA numbers are becoming too small to carry out statistical analysis. HPS will continue to monitor internally.

Section 1 – Board Wide Issues

Key Healthcare Associated Infection Headlines

January to March 2023

- NHS Shetland had two cases of Staphylococcus Aureus Bacteraemia
- NHS Shetland had one case of Clostridioides Difficile Infection
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Staphylococcus Aureus (including MRSA)

Staphylococcus aureus is an organism which is responsible for a large number of healthcare associated infections, although it can also cause infections in people who have not had any recent contact with the healthcare system. The most common form of this is Meticillin Sensitive *Staphylococcus Aureus* (MSSA), but the more well known is MRSA (Meticillin Resistant *Staphylococcus Aureus*), which is a specific type of the organism which is resistant to certain antibiotics and is therefore more difficult to treat. More information on these organisms can be found at:

Staphylococcus aureus :

http://www.nhs24.com/content/default.asp?page=s5_4&articleID=346

MRSA: http://www.nhs24.com/content/default.asp?page=s5_4&articleID=252

Staphylococcus Aureus Bacteraemia (SAB) include bacteraemia (blood infections) caused by both Meticillin Resistant Staphylococcus Aureus (MRSA) and Meticillin Sensitive Staphylococcus Aureus (MSSA). NHS Boards will now report the total of SAB cases rather than reporting these as individual cases of MRSA and MSSA.

The denominator for Healthcare Associated Infections (HCAI) has been changed to cases per 100,000 Total Occupied Bed Days (TOBD) and for Community Associated (CA) cases per 100,000 of the population.

The table on Page 6 shows the incidence of SABs within NHS Shetland on a monthly basis. There was one case in January which was HCAI. This case had recently been in hospital at ARI, had a number of co-morbidities and had had numerous blood tests undertaken. There was one further HCAI case in March associated with a chronic osteomyelitis with numerous healthcare interventions. There have been eight cases in the last twelve months.

The latest quarterly update from ARHAI for the SAB rate is for **October to December 2022**. There were three cases which were HCAI giving a rate of 104.2/100,000 TOBD. In the last twelve months five cases were HCAI and two cases were CA.

Clostridioides difficile

Clostridioides difficile is an organism which is responsible for a large number of healthcare associated infections, although it can also cause infections in people who have not had any recent contact with the healthcare system. More information can be found at:

<http://www.nhs.uk/conditions/Clostridium-difficile/Pages/Introduction.aspx>

Clostridium difficile infection is now known as Clostridioides Difficile Infection (CDI)

The incidence of CDI is monitored at a national level through laboratory reporting and also at a local level through reporting of both clinically 'suspected' cases and laboratory reports.

The table on Page 6 shows the incidence of CDI in NHS Shetland. There was one HCAI case in February associated with antibiotic use. There was one further HCAI case in March but this case is not reportable as part of the national surveillance programme due to age. There have been five cases of CDI in the last 12 months. Continued surveillance, prevention and management of CDI are ongoing with **good antimicrobial stewardship** continuing to be a key factor.

The latest quarterly update from ARHAI is for **October to December 2022**. There were two cases which were CA giving a rate of 34.6/100,000 of the population. In the last twelve months there have been three HCAI cases and two CA cases.

Enhanced National Light Surveillance of *E. Coli* Bacteraemia

E. coli bacteraemia is an emerging threat. *E. coli* is one of the most frequently isolated organisms associated with Gram negative bacteraemia and these have increased continuously since 2009 in Scotland with a burden of infection now larger than that caused by CDI and SAB. The incidence rates are higher in Scotland than in the rest of the UK. Several researchers have suggested that *E. coli* bacteraemia is not adequately controlled using current infection prevention and control strategies. It is crucially important to address the risks associated with primary *E. coli* infections occurring in both hospital and community settings.

There were two cases in January, one was HCAI and one was CA. The HCAI was a re-infection in the case reported in December 2022 associated with an underlying bowel tumour. The CA case was due to an abdominal wound infection. There have been seventeen cases in the previous twelve months.

The latest quarterly update from ARHAI is for **October to December 2022**. For this quarter there were six cases, three were HCAI giving a rate of 104.2/100,000 TOBD and three were CA giving a rate of 51.9/100,000 of the population. In the last twelve months there have been eleven cases for HCAI and seven cases for CA Infections.

Surveillance for two additional groups of Bacteraemia have been added from June 2020 as part of a pilot project by ARHAI, these are for Klebsiella and Pseudomonas. There were no cases of either Klebsiella or Pseudomonas Bacteraemia.

Surgical Site Infections (SSIs)

Surgical site infection (SSI) is one of the most common healthcare associated infections (HAI), estimated to account for 18.6% of inpatient HAI within NHSScotland. Excess morbidity and mortality arise from these SSIs and are estimated on average to double the cost of treatment, mainly due to the resultant increase in length of stay. These infections have serious consequences for patients as they can result in pain, suffering and in some cases require additional surgical intervention. SSI rates are an important surgical outcome measure and the two key aims of SSI surveillance are to provide participating hospitals with robust SSI rates for comparison and to use this data to improve the quality of patient care. Evidence suggests that actively feeding back data to clinicians contributes to reductions in rates of infection and that SSI is the most preventable of all HAI. **Nationally Surgical Site Surveillance was stopped during the COVID pandemic and has not yet been restarted.**

Hand Hygiene

Good hand hygiene by staff, patients and visitors is a key way to prevent the spread of infections. More information on the importance of good hand hygiene can be found at:

<http://www.washyourhandsofthem.com/>

Audits are now undertaken on a quarterly basis to monitor compliance with hand hygiene opportunities. If however compliance levels for hand hygiene fall, monthly audits will be reinstated immediately. The table on Page 6 shows local compliance with hand hygiene opportunities as monitored through audits for different staff groups. Compliance levels were 99.5 % for **January to March 2023**. NHS Shetland has generally demonstrated good compliance over the last year. In line with the Cabinet Secretary's approach to hand hygiene, we have adopted zero tolerance to poor hand hygiene, so every occasion when a member of staff fails to comply is dealt with immediately and additional training continues to be offered as necessary.

Cleaning and the Healthcare Environment

Keeping the healthcare environment clean is essential to prevent the spread of infections. NHS Boards monitor the cleanliness of hospitals and there is a national target to maintain compliance with standards above 90%.

Compliance with the national cleaning services specification is monitored at a local level and reported nationally on a quarterly basis. The tables on Page 6 show compliance for the local audits for 2021-2023. The latest compliance data for the Board with the Cleaning Services Standards is for the quarter from **January to March 2023** and was 96.2 %. The latest compliance data for the Board for Estates Monitoring Standards is for **January to March 2023** and was 99.6 %.

Outbreaks

There was a COVID-19 Outbreak on W3 in January 2023 which affected 8 patients and potentially 3 staff members. The hypothesis was that the index case was probably infected by a visitor who subsequently tested positive. Another patient in that bay also tested positive on the same day. The third patient in that bay was also symptomatic but tested negative and was discharged the following day. This patient was readmitted with COVID-19.

Again due to bed pressures, a patient from W3 was boarded to the 6 bedded bay in W1. In total, 6 patients as well as five staff members tested positive. There was no direct link between these positive cases and the initial index case identified apart from having being placed in the same bay after deep cleaning had been completed. The ICT identified some issues in relation to how staff were wearing PPE. Additional training was provided by the ICT for the staff involved.

Outbreak reporting tools were submitted to ARHAI by the ICT. The Outbreak was closed on W3 on the 30.01.23 and on W1 on the 31.01.23.

Other HAI Related Activity

In this reporting period we have:

- Continued to safely and effectively manage the provision of healthcare services
- Continued to monitor performance against current HAI standards on the wards
- Continued to provide educational sessions for all NHS Shetland staff especially about Covid/ Respiratory Infection
- Provided sessions on frailty and the importance of good hydration in reducing the incidence of E coli bacteraemia
- Provided educational sessions on Personal Protective Equipment for the management of HCID
- Continued screening and reporting on the audit programme for MRSA and Carbapenemase-Producing Enterobacteriaceae (CPE)
- Continued to update Infection Prevention and Control policies, procedures and guidelines especially in the reduction of measures for the COVID pandemic
- Continued to monitor compliance with the Catheter Associated Urinary Tract Infections (CAUTI) bundle across the Gilbert Bain Hospital and to work on the improvement project related to this
- Continued to monitor and assure compliance to national cleaning specifications
- Continued to raise awareness of other seasonal illnesses such as RSV, Norovirus and Influenza
- Provided advice and support to all Care Homes, Health centres and other Support Units for outbreak management
- Provided continuing support for all departments to aid remobilization of services

Section 2 – Healthcare Associated Infection Report Cards

The following section is a series of 'Report Cards' that provide information on the number of cases of *Staphylococcus aureus* blood stream infections, *Clostridioides difficile* infections and *E. Coli Bacteraemias* as well as hand hygiene and cleaning compliance broken down by month. The information in the report cards is provisional local data, and may differ from the national surveillance reports carried out by ARHAI/NSS.

The national reports are official statistics which undergo rigorous validation, which means final national figures may differ from those reported here. However, these reports aim to provide more detailed and up to date information on activity at local level than is possible to provide through the national statistics.

Understanding the Report Cards – Hand Hygiene Compliance

Hospitals carry out regular audits of how well their staff are complying with hand hygiene. Each hospital report card presents the combined percentage of hand hygiene compliance with both opportunity taken and technique used broken down by staff group.

Understanding the Report Cards – Cleaning Compliance

Hospitals strive to keep the care environment as clean as possible. This is monitored through Cleaning and Estates compliance audits.

Staphylococcus aureus bacteraemia monthly case numbers

	Apr 2022	May 2022	Jun 2022	Jul 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023
HCAI	0	1	0	0	0	0	0	2	1	1	0	1
CA	1	0	0	1	0	0	0	0	0	0	0	0
Total	1	1	0	1	0	0	0	2	1	1	0	1

Clostridioides difficile infection monthly case numbers

	Apr 2022	May 2022	Jun 2022	Jul 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023
HCAI	0	1	0	0	0	0	0	0	0	0	1	0
CA	0	0	0	0	0	0	1	1	1	0	0	0
Total	0	1	0	0	0	0	1	1	1	0	1	0

E Coli bacteraemia monthly case numbers

	Apr 2022	May 2022	Jun 2022	Jul 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023
HCAI	2	0	2	2	0	1	0	0	2	1	0	1
CA	1	1	0	1	0	0	1	0	1	1	0	0
Total	3	1	2	3	0	1	1	0	3	2	0	1

Hand Hygiene Monitoring Compliance (%)

	Apr – Jun 21	Jul – Sept 21	Oct – Dec 21	Jan – Mar 22	Apr – Jun 22	Jul – Sep 22	Oct- Dec 22	Jan- Mar 23
AHP	100.0	100.0	100.0	100.0	100.0	100.0	97.7	100
Ancillary	100.0	100.0	100.0	100.0	97.7	100.0	100	100
Medical	96.8	100.0	97.8	96.6	92.9	100.0	96.7	100
Nurse	99.1	100.0	99.1	100.0	98.9	100.0	98.1	99.0
+Board Total	99.1	100.0	99.2	99.5	98.0	100.0	98.2	99.5

Board Cleaning Compliance (%)

	Apr – Jun 21	Jul – Sept 21	Oct – Dec 21	Jan – Mar 22	Apr – Jun 22	Jul – Sep 22	Oct- Dec 22	Jan- Mar 23
Board Total	98.5	97.1	98.0	98.1	96.3	96.8	97.6	96.2

Estates Monitoring Compliance (%)

	Apr – Jun 21	Jul – Sept 21	Oct – Dec 21	Jan – Mar 22	Apr – Jun 22	Jul – Sep 22	Oct- Dec 2022	Jan- Mar 23

Board Total	100.0	100.0	99.8	99.7	99.9	99.8	99.8	99.8	99.6
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GBH Cleaning Compliance (%)

	Mar 2022	Apr 2022	May 2022	Jun 2022	Jul 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023
GBH Total	98.7	95.7	96.6	96.4	97.6	95.3	97.1	98.6	95.5	97.8	97.1	97.3	95.9

GBH Estates Monitoring Compliance (%)

	Mar 2022	Apr 2022	May 2022	Jun 2022	Jul 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023
GBH Total	99.8	99.8	N/A	N/A	99.9	99.3	99.9	99.8	100	99.6	99.7	100	99.4

Note: N/A = No rectifications reported.