Borders NHS Board

Meeting Date: 2 April 2020

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HEALTHCARE ASSOCIATED INFECTION PREVENTION AND CONTROL REPORT March 2020

Purpose of Report:

The purpose of this paper is to update Board members on the current status of Healthcare Associated Infections (HAI) and infection control measures in NHS Borders.

Recommendations:

The Board is asked to **note** this report.

Approval Pathways:

The format of this report is in accordance with Scottish Government requirements for reporting HAI to NHS Boards. This report has not been submitted to any prior groups or committees but much of the content is presented to the Clinical Governance Committee.

Executive Summary:

This report provides an overview for Borders NHS Board of infection prevention and control with particular reference to the incidence of Healthcare Associated Infections (HAI) against Scottish Government targets for infection control.
The report provides updates on:-

- NHS Borders infection surveillance against Scottish Government targets and in comparison with other Boards.
- Results from cleanliness monitoring, hand hygiene audit results as well as an update on the Infection Control compliance monitoring programme
- Infection Control Workplan update.
- An update on outbreaks of respiratory illnesses, gastrointestinal illnesses and Novel Coronavirus (COVID-19)
- Antimicrobial Management Team (AMT) update.

Impact of item/issues on:

Strategic Context	This report is in line with the NHS Scotland HAI Action Plan.
Patient Safety/Clinical Impact	Infection prevention and control is central to patient safety
Staffing/Workforce	This assessment has not identified any staffing implications.

Finance/Resources	This assessment has not identified any resource implications.
Risk Implications	All risks are highlighted within the paper.
Equality and Diversity	This is an update paper so a full impact assessment is not required.
Consultation	This is a regular bi-monthly update as required by SGHD. As with all Board papers, this update will be shared with the Area Clinical Forum for information.
Glossary	See Appendix A.

Healthcare Associated Infection Reporting Template (HAIRT)

Section 1– Board Wide Issues

This section of the HAIRT covers Board wide infection prevention and control activity and actions. For reports on individual hospitals, please refer to the 'Healthcare Associated Infection Report Cards' in Section 2.

A report card summarising Board wide statistics can be found at the end of section 1

Key Healthcare Associated Infection Headlines for February 2020

- NHS Borders had 16 *Staphylococcus aureus* Bacteraemia (SAB) cases between April 2019 and February 2020. To achieve the HEAT target rate of 24.0 cases or less per 100,000 acute occupied bed days (AOBD) by March 2020, NHS Borders should have no more than 19 cases per year. NHS Borders is on target to achieve this.

- NHS Borders had 17 *Clostridium difficile* infection (CDI) cases between April 2019 and February 2020. To achieve the CDI HEAT target rate of 32.0 cases or less per 100,000 total occupied bed days (TOBD) for patients aged 15 and over, by March 2020, NHS Borders should have no more than 33 cases per year. NHS Borders is on target to achieve this.

- NHS Borders has plans in place for testing and caring for suspected and confirmed Coronavirus patients.

- The Scottish Government updated the requirements for HAI surveillance on the 25th of March. In light of the prioritisation of COVID-19 surveillance, all mandatory and voluntary surgical site infection surveillance will pause from this date. Surveillance of *E.coli* bacteraemia, *Staphylococcus aureus* bacteraemia and *C. difficile* Infections will continue but this will be light surveillance only. See Appendix B for full detail.

Staphylococcus aureus Bacteraemia (SAB)

See Appendix A for definition.

Figure 1 below shows that Hospital Acquired Infection accounted for 25% of SAB cases between April and February 2020. The definition of hospital acquired infection is where a positive blood culture sample is obtained from a patient who has been in hospital for more than 48 hours or where the organism is considered to be a contaminant when the sample was taken in hospital.

There were 15 cases of Meticillin-sensitive *Staphylococcus aureus* (MSSA) and 1 case of Meticillin-resistant *Staphylococcus aureus* (MRSA).

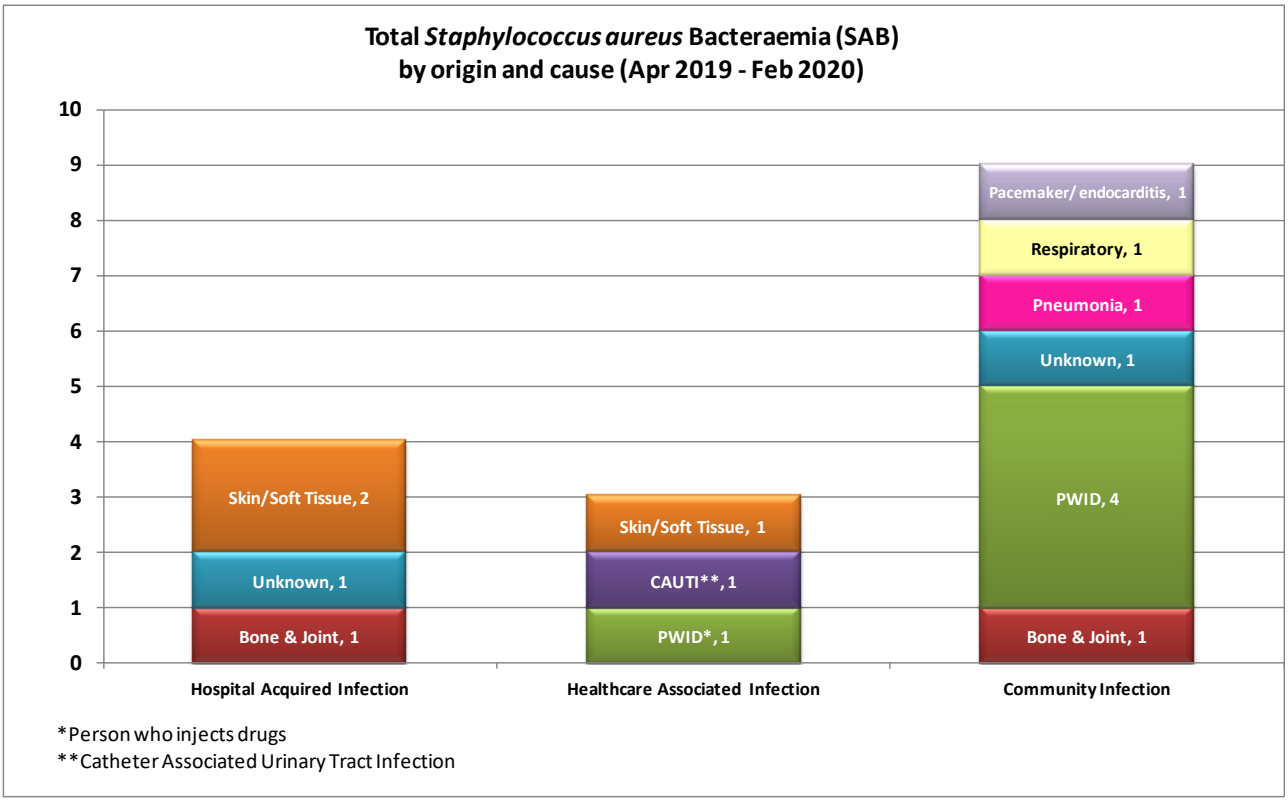

Figure 1: SAB cases by location and cause (April 2019 – February 2020)

Figure 2 shows a Statistical Process Control (SPC) chart showing the number of days between each SAB case. The reason for displaying the data in this type of chart is due to SAB cases being rare events with low numbers each month.

Traditional charts which show the number of cases per month can make it more difficult to spot either improvement or deterioration. These charts highlight any statistically significant events which are not part of the natural variation within our health system.

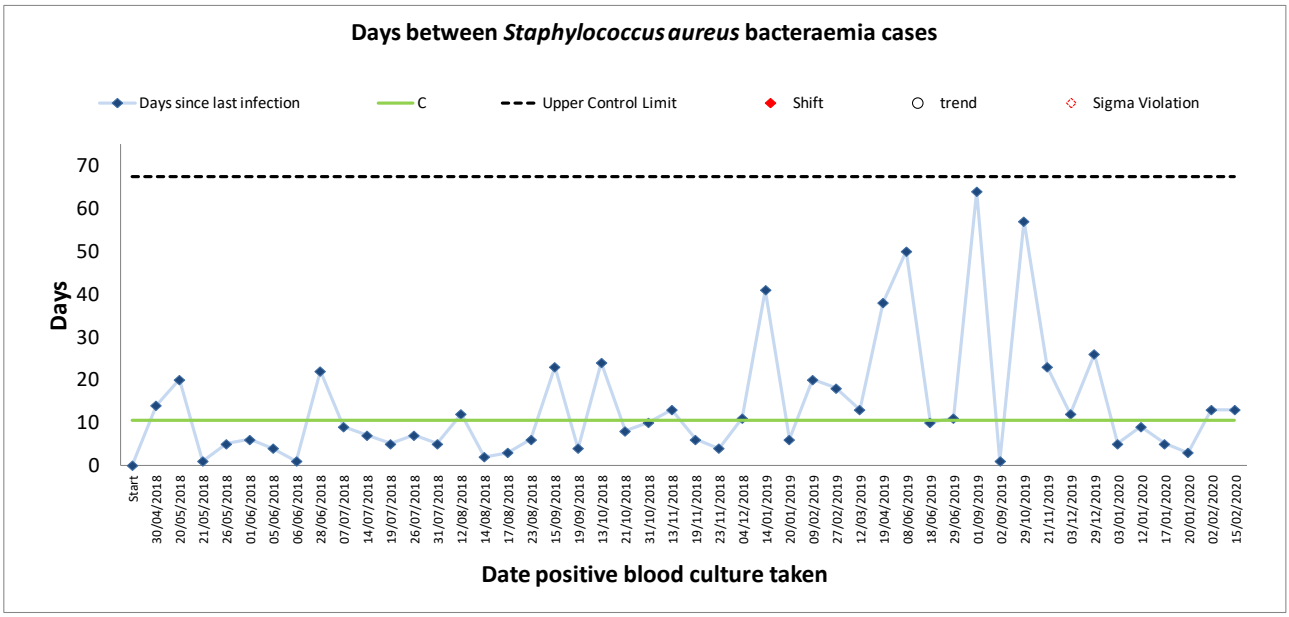

Figure 2: NHS Borders days between SAB cases (April 2018 – February 2020)

In interpreting Figure 2, it is important to remember that as this graph plots the number of days between infections, we are trying to achieve performance above the green average line.

Every SAB case is subject to a review which includes a feedback process to the clinicians caring for the patient. Any learning is translated into specific actions which are added to the Infection Control Work Plan with progress critically reviewed by the Infection Control Committee.

***Clostridium difficile* infections (CDI)**

See Appendix A for definition.

Figure 3 below shows a Statistical Process Control (SPC) chart showing the number of days between each CDI case. As with SAB cases, the reason for displaying the data in this type of chart is due to CDI cases being rare events with low numbers each month.

The graph shows that there have been no statistically significant events since the last Board update.

As with SAB cases, every *Clostridium difficile* infection (CDI) case is subject to a review which includes a feedback process to the clinicians caring for the patient. Any learning is translated into specific actions which are added to the Infection Control Work Plan.

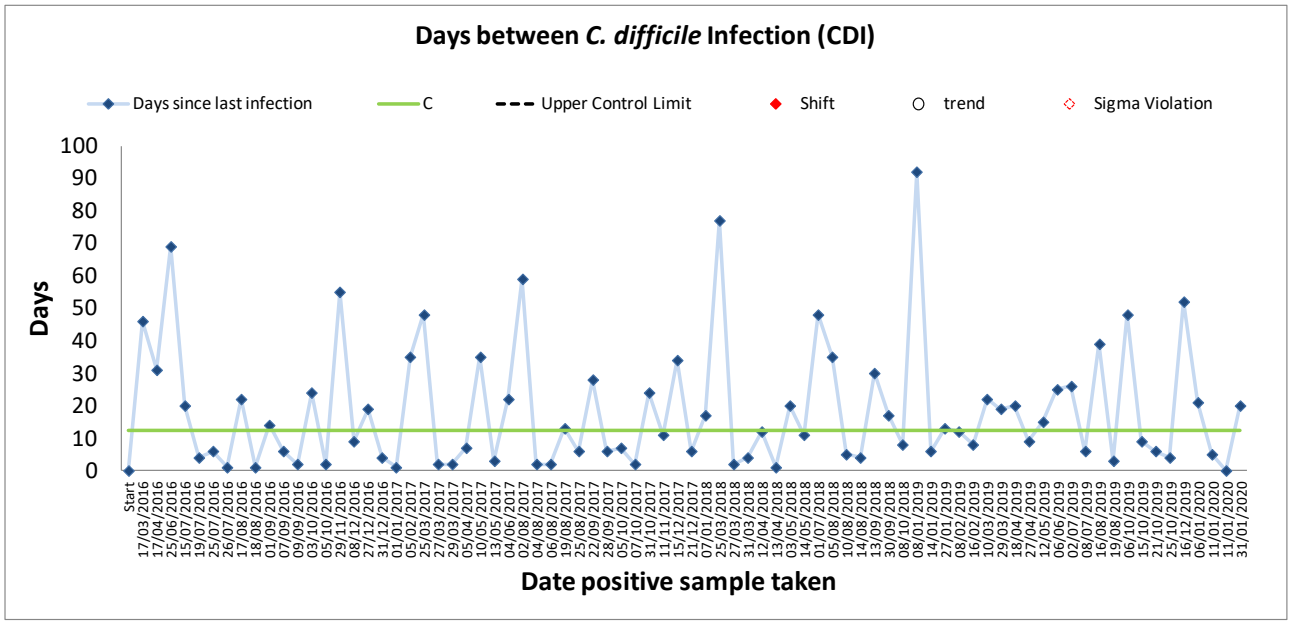

Figure 3: NHS Borders days between CDI cases (March 2016 – February 2020)

There were no CDI cases reported in February 2020.

Hand Hygiene

For supplementary information see Appendix A

The hand hygiene data tables contained within the NHS Borders Report Card (Section 2 p.12) are generated from wards conducting self-audits. Unfortunately there is no data available for February 2020; this is due to the prioritisation of COVID-19 work. However, the importance of strict hand hygiene is being promoted as part of the COVID-19 national campaign aimed at the public and staff.

Examples of improvement work since the last Board update include:

- Placement of end of bed gel dispensers has been completed in each ward. Roll out to Community Hospitals took place in March 2020
- Different communications methods will be explored later in the year with the support of Procurement to identify appropriate signage that will promote the use of good hand hygiene practice amongst patients, staff and visitors
- The Infection Control Nurses held hand hygiene awareness sessions in the BGH on the 10th and 11th of March, highlighting the importance of effective hand hygiene.

Infection Prevention and Control Compliance Monitoring Programme

In response to the requirement to prioritise activity associated with COVID-19, the Infection Prevention and Control Team (IPCT) have suspended the programme of Standard Infection Control Precautions (SICPs) audits which monitors compliance with the National Infection Prevention and Control Manual; each area is normally audited approximately every 18 months.

The IPCT also normally maintain a programme of monthly spot checks to monitor that systems and processes are operating as intended in the interim period between full SICPs audits; however this has also been suspended.

Additional resource from outside the Infection Control Team is being sourced to enable regular quality assurance checks to resume.

Cleaning and the Healthcare Environment

For supplementary information see Appendix A.

The data presented within the NHS Borders Report Card (Section 2 p.12) is an average figure across the sites using the national cleaning and estates monitoring.

Activity to validate audits for Cleanliness and Estates has been suspended due to prioritisation of COVID-19 work.

2019/20 Infection Control Workplan

As of 25th March 2020, 37% of actions are complete. The remaining actions are due for completion by 31st of March 2020, however it was agreed at the Infection Control Committee that these actions could be extended to September 2020 in light of the current pressures around COVID-19. A new workplan will also be drafted for 2020/21 at that time.

Outbreaks

- **Gastrointestinal illness**

In February 2020, there has been a bay closure in the BGH and one ward closure in Kelso Community Hospital; neither outbreaks were due to confirmed Norovirus.

- **Respiratory Illness**

There has been one bay closure in the BGH due to an outbreak of confirmed Influenza A.

- **Novel Coronavirus (COVID-19)**

NHS Borders has established a COVID-19 pandemic committee which meets on a daily basis and includes representation from each clinical board and the Health and Social Care partnership.

The infection Prevention and Control team and Occupational Health Team have been working together with support from PMAV to provide training for frontline staff to undertake full PPE training to ensure they are prepared to care for potential and confirmed cases of COVID-19.

Work is progressing to develop pathways across primary, community and secondary care involving all key stakeholders aligning with Health protection guidance on the safe management of patient groups.

NHS Borders Surgical Site Infection (SSI) Surveillance

NHS Borders participates in a national infection surveillance programme relating to specific surgical procedures. This is coordinated by Health Protection Scotland (HPS) and uses national definitions and methodology which enable comparison with overall NHS Scotland infection rates.

In the period January 2019 – December 2019, there have been 2 SSIs following colorectal surgery, 6 SSIs following hip arthroplasty, 2 SSIs following knee arthroplasty, 4 SSIs following breast surgery and one SSI following C-Section. There have been no SSIs identified in the period January – February 2020.

Each SSI case is subject to a full review to identify any learning.

Escherichia coli (*E. coli*) Bacteraemia (ECB)

E. coli is currently the most common cause of bacteraemia in Scotland. NHS Borders partake in the national mandatory surveillance programme co-ordinated by HPS and collect data from all *E. coli* blood stream infections to provide local and national intelligence.

Figure 4 below shows a statistical process chart of all *E.coli* bacteraemia cases per month; this includes Hospital Acquired Infections, Healthcare Associated infections and

Community Infections. The chart shows that there have been no statistically significant events since the last board update.

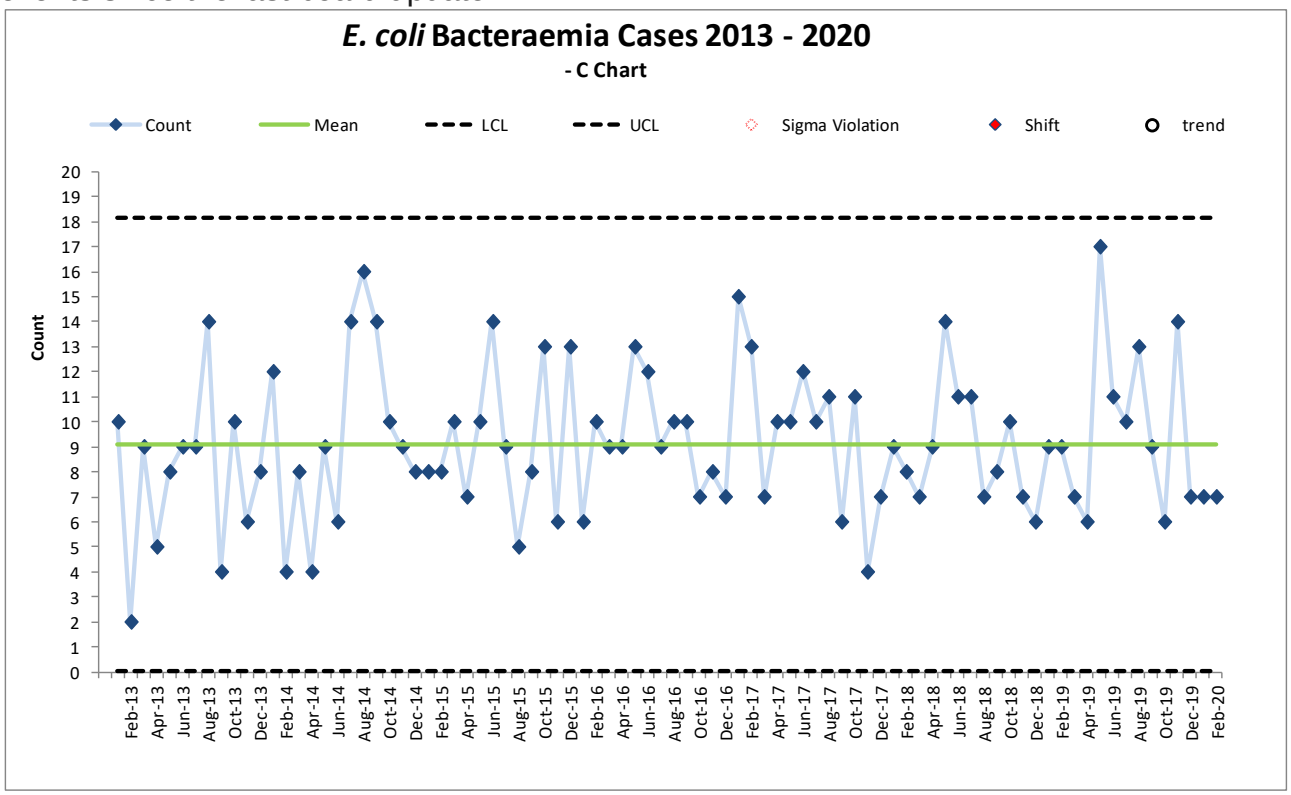

Figure 4: Statistical process chart of all E.coli bacteraemia cases per month (Jan 2013 - Feb 2020)

Antimicrobial Management Team (AMT) Update

The AMT is responsible for maintaining an antimicrobial stewardship programme across NHS Borders.

Antibiotic Use Indicators

New antibiotic use indicators were approved by Scottish Government in October 2019 (CNO Letter, 10th October 2019, Standards on Healthcare Associated Infections and Indicators on Antibiotic Use). They consist of:

1. *A 10% reduction of antibiotic use in Primary Care by 2022*

If the current trajectory continues, NHS Borders is on course to meet this indicator.

2. *Use of intravenous antibiotics in secondary care defined as DDD / 1000 population / day will be no higher in 2022 than it was in 2018.*

If the current trajectory continues, NHS Borders is on course to meet this indicator.

3. *Use of World Health Organisation (WHO) Access antibiotics (NHSE list) ≥60% of total antibiotic use in Acute hospitals by 2022*

WHO have categorized Antibiotics to emphasize the importance of their optimal uses and potential for antimicrobial resistance. Antibiotics classified on the “Access” list have

activity against a wide range of commonly encountered susceptible pathogens while also showing lower resistance potential than antibiotics in the other groups.

NHS Borders does not meet this indicator currently. Access antibiotics comprised 48.5% of total antibiotic use in acute NHS Borders hospitals during Jul-Sep 2019 (most recent data available). NHS Borders AMT will investigate the reasons behind this and how it should be addressed.

Healthcare Associated Infection Reporting Template (HAIRT)

Section 2 – Healthcare Associated Infection Report Cards

The following section is a series of 'Report Cards' that provide information, for each acute hospital and key community hospitals in the Board, on the number of cases of *Staphylococcus aureus* blood stream infections *(*also broken down into MSSA and MRSA) and *Clostridium difficile* infections, as well as hand hygiene and cleaning compliance. In addition, there is a single report card which covers all community hospitals [which do not have individual cards], and a report which covers infections identified as having been contracted from out with hospital. The information in the report cards is provisional local data, and may differ from the national surveillance reports carried out by Health Protection Scotland and Health Facilities Scotland. 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 HAI activities at local level than is possible to provide through the national statistics.

Understanding the Report Cards – Infection Case Numbers
Clostridium difficile infections *(CDI)* and *Staphylococcus aureus* bacteraemia *(SAB)* cases are presented for each hospital, broken down by month. *Staphylococcus aureus* bacteraemia (SAB) cases are further broken down into Meticillin Sensitive *Staphylococcus aureus* (MSSA) and Meticillin Resistant *Staphylococcus aureus* (MRSA). More information on these organisms can be found on the NHS24 website:

Clostridium difficile :**http://www.nhs24.com/content/default.asp?page=s5_4&articleID=2139&sectionID=1**

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&sectionID=1

For each hospital the total number of cases for each month are those which have been reported as positive from a laboratory report on samples taken more than 48 hours after admission. For the purposes of these reports, positive samples taken from patients within 48 hours of admission will be considered to be confirmation that the infection was contracted prior to hospital admission and will be shown in the "out of hospital" report card.

Targets
There are national targets associated with reductions in C.diff and SABs. More information on these can be found on the Scotland Performs website:

http://www.scotland.gov.uk/About/Performance/scotPerforms/partnerstories/NHSScotlandperformance

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. More information on how hospitals carry out these audits can be found on the Health Facilities Scotland website:
http://www.hfs.scot.nhs.uk/online-services/publications/hai/

Understanding the Report Cards – *'Out of Hospital Infections'*
Clostridium difficile infections and *Staphylococcus aureus (*including MRSA*)* bacteraemia cases are associated with being treated in hospitals. However, this is not the only place a patient may contract an infection. This total will also include infection from community sources such as GP surgeries and care homes. The final Report Card report in this section covers '*Out of Hospital Infections*' and reports on SAB and CDI cases reported to a Health Board which are not attributable to a hospital.

NHS BORDERS BOARD REPORT CARD

Staphylococcus aureus bacteraemia monthly case numbers

	Mar 2019	Apr 2019	May 2019	June 2019	July 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020
MRSA	0	0	0	0	0	0	0	0	1	0	0	0
MSSA	1	1	0	3	0	0	2	1	0	2	4	2
Total SABS	1	1	0	3	0	0	2	1	1	2	4	2

Clostridium difficile infection monthly case numbers

	Mar 2019	Apr 2019	May 2019	June 2019	July 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020
Ages 15-64	0	1	0	0	0	1	0	1	0	0	2	0
Ages 65 plus	2	1	1	1	2	1	0	3	0	1	2	0
Ages 15 plus	2	2	1	1	2	2	0	4	0	1	4	0

Hand Hygiene Monitoring Compliance (%)

	Mar 2019	Apr 2019	May 2019	June 2019	July 2019*	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2019	Feb 2020**
AHP	99	100	100	98	95	100	96	100	100	98	100	-
Ancillary	94	97	97	96	96	96	97	94	100	100	100	-
Medical	99	99	99	98	100	99	97	98	95	100	100	-
Nurse	100	95	98	98	98	99	98	99	98	99	100	-
Board Total	**98**	**98**	**99**	**98**	**97**	**99**	**97**	**98**	**98**	**99**	**100**	**-**

*LANQIP reporting system issues, not all areas were able to submit data within the timescale.
** Data not available due to ongoing COVID-19 work

Cleaning Compliance (%)

	Mar 2019	Apr 2019	May 2019	June 2019	July 2019	Aug 2019	Sep 2019	Oct 2019*	Nov 2019	Dec 2019	Jan 2020	Feb 2020
Board Total	95.9	97.4	96.7	95.9	96.1	97.1	94.5	97.8	94.1	95.8	94.7	96.1

*BGH only; Community, Mental Health and Non-clinical areas not audited in October 2019

Estates Monitoring Compliance (%)

	Mar 2019	Apr 2019	May 2019	June 2019	July 2019	Aug 2019	Sep 2019	Oct 2019*	Nov 2018	Dec 2018	Jan 2019	Feb 2020
Board Total	99	98.4	97.1	99.8	98.5	99.4	98.6	98.6	97.2	98.7	97.8	98.9

*BGH only; Community, Mental Health and Non-clinical areas not audited in October 2019

BORDERS GENERAL HOSPITAL REPORT CARD

Staphylococcus aureus bacteraemia monthly case numbers

	Mar 2019	Apr 2019	May 2019	June 2019	July 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020
MRSA	0	0	0	0	0	0	0	0	0	0	0	0
MSSA	0	0	0	2	0	0	0	0	0	0	2	0
Total SABS	0	0	0	2	0	0	0	0	0	0	2	0

Clostridium difficile infection monthly case numbers

	Mar 2019	Apr 2019	May 2019	June 2019	July 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020
Ages 15-64	0	0	0	0	0	0	0	0	0	0	0	0
Ages 65 plus	1	0	1	1	2	1	0	2	0	0	1	0
Ages 15 plus	1	0	1	1	2	1	0	2	0	0	1	0

Cleaning Compliance (%)

	Mar 2019	Apr 2019	May 2019	June 2019	July 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020
Board Total	96.9	97.5	97.3	97.6	97.7	97.5	97.2	97.8	96.1	95.8	96.8	96.0

Estates Monitoring Compliance (%)

	Mar 2019	Apr 2019	May 2019	June 2019	July 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020
Board Total	99.3	99.6	99.8	99.8	99.9	99.9	99.6	98.6	98.7	97.9	98.6	98.6

NHS COMMUNITY HOSPITALS REPORT CARD

The community hospitals covered in this report card include:

- **Haylodge Community Hospital**
- **Hawick Community Hospital**
- **Kelso Community Hospital**
- **Knoll Community Hospital**
- **Melburn Lodge**

***Staphylococcus aureus* bacteraemia monthly case numbers**

	Mar 2019	Apr 2019	May 2019	June 2019	July 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020
MRSA	0	0	0	0	0	0	0	0	0	0	0	0
MSSA	0	0	0	0	0	0	0	0	0	0	0	0
Total SABS	0	0	0	0	0	0	0	0	0	0	0	0

***Clostridium difficile* infection monthly case numbers**

	Mar 2019	Apr 2019	May 2019	June 2019	July 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020
Ages 15-64	0	0	0	0	0	0	0	0	0	0	0	0
Ages 65 plus	0	1	0	0	0	0	0	0	0	0	0	0
Ages 15 plus	0	1	0	0	0	0	0	0	0	0	0	0

NHS OUT OF HOSPITAL REPORT CARD

***Staphylococcus aureus* bacteraemia monthly case numbers**

	Mar 2019	Apr 2019	May 2019	June 2019	July 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020
MRSA	0	0	0	0	0	0	0	0	1	0	0	0
MSSA	1	1	0	1	0	0	0	1	0	2	2	2
Total SABS	1	1	0	1	0	0	0	1	1	2	2	2

***Clostridium difficile* infection monthly case numbers**

	Mar 2019	Apr 2019	May 2019	June 2019	July 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020
Ages 15-64	0	1	0	0	0	1	0	1	0	0	2	0
Ages 65 plus	1	0	0	0	0	0	0	1	0	1	1	0
Ages 15 plus	1	1	0	0	0	1	0	2	0	1	3	0

Appendix A

Definitions and Supplementary Information

Staphylococcus aureus Bacteraemia (SAB)

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

NHS Boards carry out surveillance of *Staphylococcus aureus* blood stream infections, known as bacteraemia. These are a serious form of infection and there is a national target to reduce them. The number of patients with MSSA and MRSA bacteraemia for the Board can be found at the end of section 1 and for each hospital in section 2. Information on the national surveillance programme for *Staphylococcus aureus* bacteraemia can be found at:

http://www.hps.scot.nhs.uk/haiic/sshaip/publicationsdetail.aspx?id=30248

Clostridium difficile infection (CDI)

Clostridium 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

NHS Boards carry out surveillance of *Clostridium difficile* infections (CDI), and there is a national target to reduce these. The number of patients with CDI for the Board can be found at the end of section 1 and for each hospital in section 2. Information on the national surveillance programme for *Clostridium difficile* infections can be found at:

http://www.hps.scot.nhs.uk/haiic/sshaip/ssdetail.aspx?id=277

Escherichia coli bacteraemia (ECB)

Escherichia coli (*E. coli*) is a bacterium that forms part of the normal gut flora that helps human digestion. Although most types of *E. coli* live harmlessly in your gut, some types can make you unwell. When it gets into your blood stream, *E. coli* can cause a bacteraemia. Further information is available here:

https://www.gov.uk/government/collections/escherichia-coli-e-coli-guidance-data-and-analysis

NHS Borders participate in the HPS mandatory surveillance programme for ECB. This surveillance supports local and national improvement strategies to reduce these infections and improve the outcomes for those affected. Further information on the surveillance programme can be found here:

https://www.hps.scot.nhs.uk/a-to-z-of-topics/escherichia-coli-bacteraemia-surveillance/

Hand Hygiene

Information on national hand hygiene monitoring can be found at:

http://www.hps.scot.nhs.uk/haiic/ic/nationalhandhygienecampaign.aspx

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/

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%.The cleaning compliance score for the Board can be found at the end of section 1 and for each hospital in section 2. Information on national cleanliness compliance monitoring can be found at:

http://www.hfs.scot.nhs.uk/online-services/publications/hai/

Healthcare environment standards are also independently inspected by the Healthcare Environment Inspectorate. More details can be found at:

http://www.nhshealthquality.org/nhsqis/6710.140.1366.html

Appendix B

CNO Letter to Boards regarding revi