Borders NHS Board

HEALTHCARE ASSOCIATED INFECTION – PREVENTION AND CONTROL REPORT FEBRUARY 2017

Aim

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.

Background

The NHS Scotland HAI Action Plan 2008 requires an HAI report to be presented to the Board on a two monthly basis.

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 HEAT targets, together with results from cleanliness monitoring and hand hygiene audit results.

Recommendation

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

Policy/Strategy Implications	This report is in line with the NHS Scotland HAI Action Plan.
Consultation	There is no requirement to consult as this is a bi-monthly update report as required by SGHD.
Consultation with Professional Committees	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.
Risk Assessment	All risks are highlighted within the paper.
Compliance with Board Policy requirements on Equality and Diversity	This is an update paper so a full impact assessment is not required.
Resource/Staffing Implications	This assessment has not identified any resource/staffing implications

Approved by

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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 2017

- NHS Borders had 27 *Staphylococcus aureus* Bacteraemia (SAB) cases between April 2016 and February 2017, and has not achieved the SAB HEAT rate of 24.0 cases or less per 100,000 acute occupied bed days (AOBD) by March 2017. During the same period in 2015/16 there were 25 SAB cases. To achieve the HEAT target NHS Borders should have no more than 19 cases per year.

- NHS Borders had 19 *Clostridium difficile* infection (CDI) cases between April 2016 and February 2017, and is on trajectory 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 2017. During the same period in 2015/16 there were 17 CDI cases. To achieve the HEAT target, NHS Borders should have no more than 33 cases per year.

Staphylococcus aureus Bacteraemia (SAB)

See Appendix A for definition.

Figure 1 shows SABs by location and cause. Community Infections account for the largest number of SAB cases.

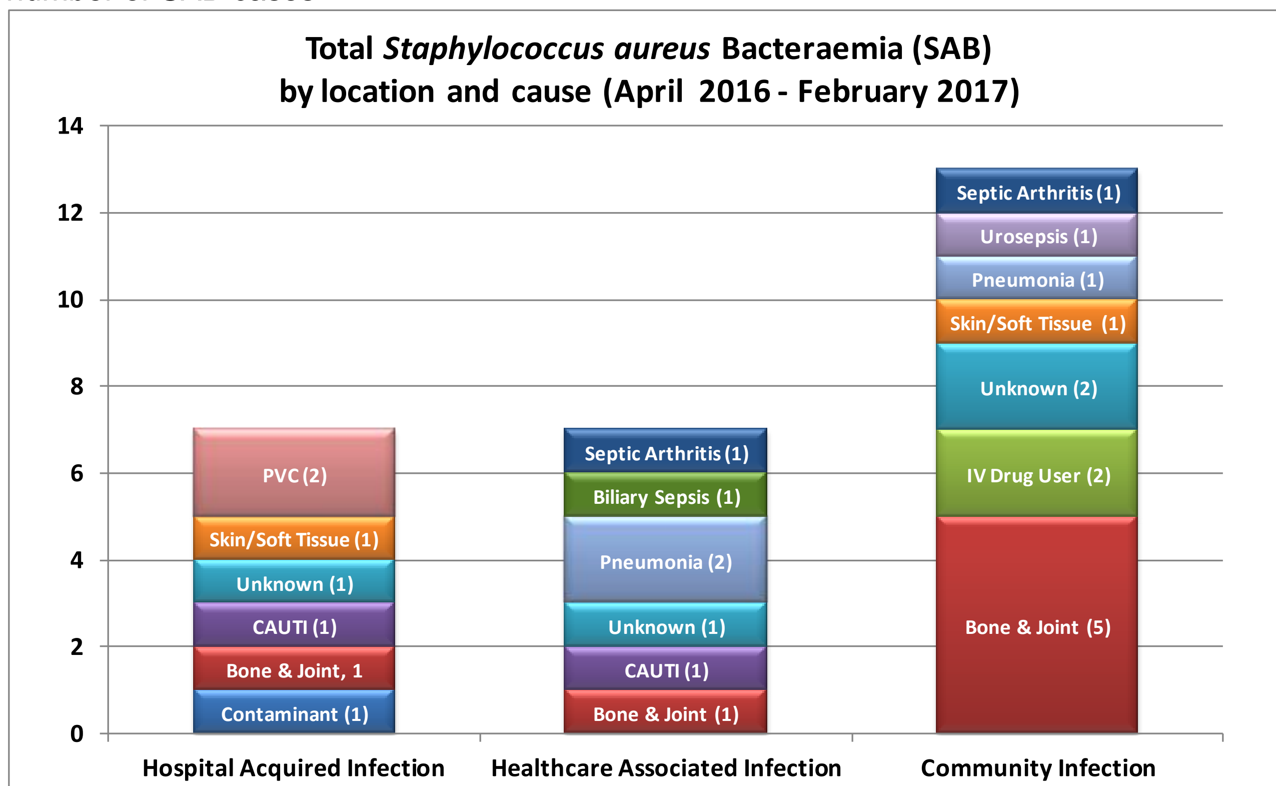

Figure 1: SAB cases by location and cause April 2016 – February 2017

Figure 1 shows that two of the hospital acquired SAB cases were caused by Peripheral Venous Cannula (PVC). Invasive devices such as peripheral venous cannula increase the risk of infection to patients. NHS Borders has implemented a safety bundle to reduce the risk of these devices to patients and is progressing improvement work to support frontline staff to follow best practice.

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. There have been no statistically significant events since the last Board update.

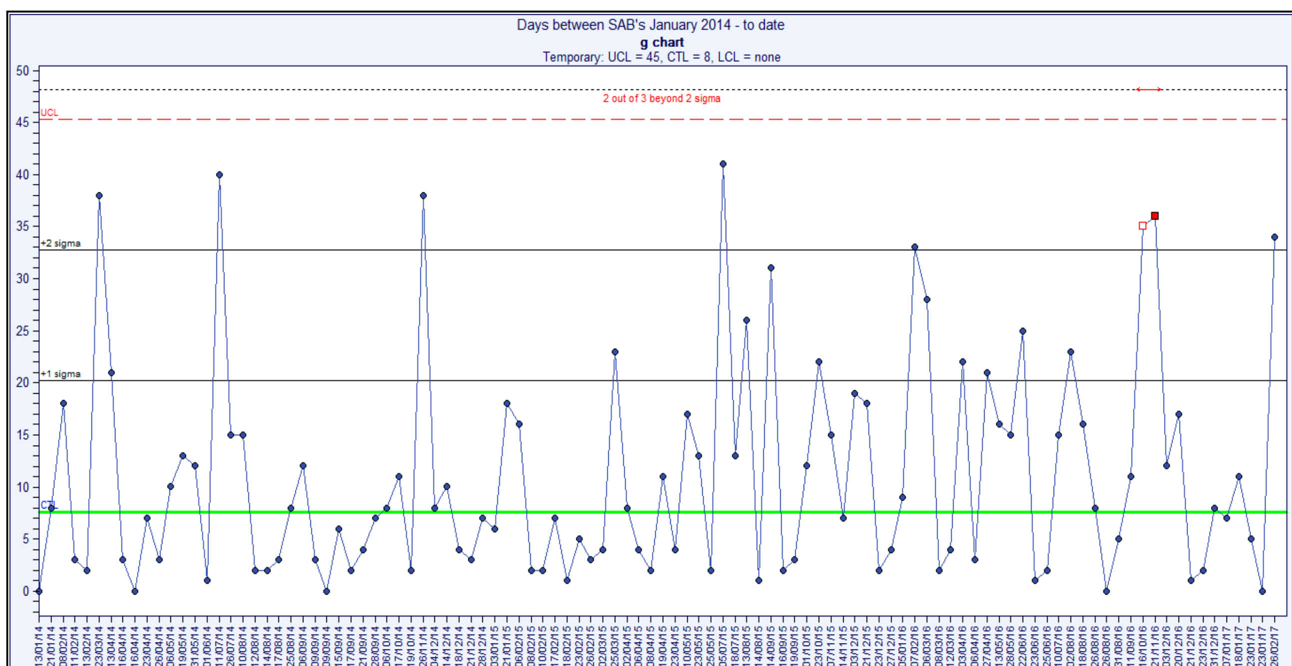

Figure 2: NHS Borders days between SAB cases (January 2014 – February 2017)

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.

Between April 2016 and February 2017 there was one case of Meticillin-resistant Staphylococcus aureus (MRSA).

Every SAB case is subject to a rigorous 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, 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 are 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.

Since April 2016 there have been 19 cases of *Clostridium difficile* infection (CDI).

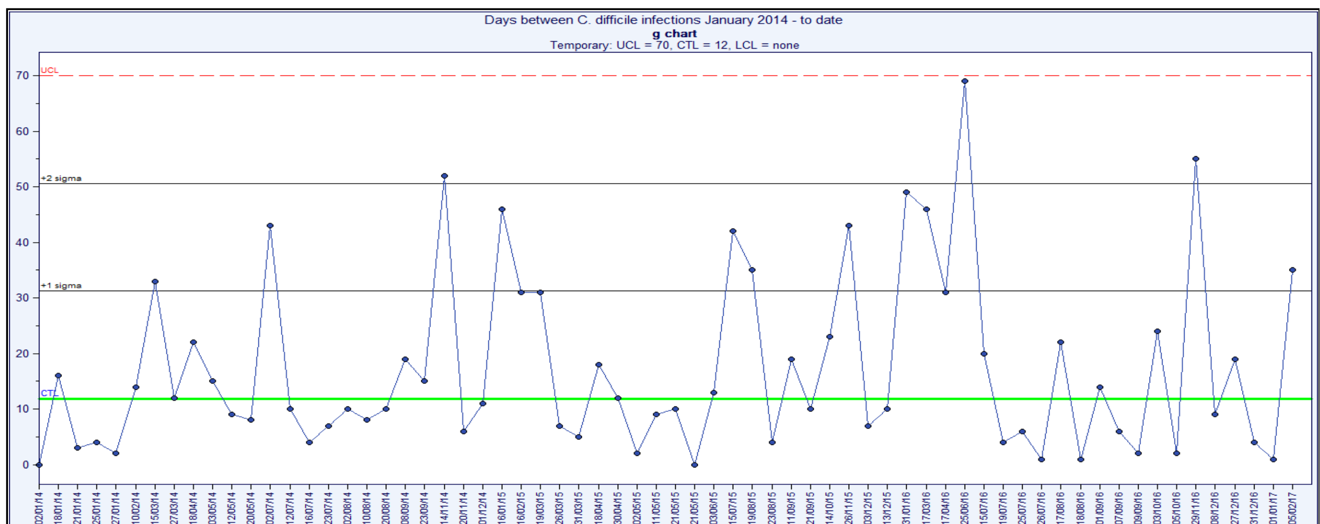

Figure 3: NHS Borders, days between CDI cases against indicative HEAT target (January 2014 – February 2017)

As with SAB cases, every *Clostridium difficile* infection (CDI) case is subject to a rigorous 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.

To date, there has been no evidence of cross transmission of *Clostridium difficile* infection (CDI) in NHS Borders.

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.

Hand hygiene continues to be monitored by each clinical area. The Infection Prevention and Control Team follow up with any area which either fail to submit audit results or which fall below 90% for two consecutive months. This information is reported in the Infection Control monthly report which is distributed to management, governance groups and Senior Charge Nurses.

Cleaning and the Healthcare Environment

For supplementary information see Appendix A

The data presented within the NHS Borders Report Card (Section 2 p.10) is an average figure across the sites using the national cleaning and estates monitoring tool that was implemented in April 2012.

2016/17 Infection Control Workplan

As at 14th March 2017, 89% of actions due for completion in the 2016/17 Workplan were completed. The risk to the organisation is low as work is progressing against the outstanding five actions.

Outbreaks

Norovirus

Since the last Board update paper, there has been one outbreak of confirmed Norovirus in Cauldshiels. This outbreak was managed by the Infection Prevention & Control Team (IPCT) with support from frontline colleagues. Outbreak Control Meetings were convened and enhanced cleaning was implemented.

Influenza

Over the last few months, there has been an increase in influenza circulating in the community. There were also cases in Borders General Hospital and community hospitals.

E.Coli

A cluster of four E. coli isolates with a distinctive multi-drug resistance pattern were identified in one BGH ward over a period of five weeks. Molecular typing on three of the isolates has suggested that they represent the same strain, typing is awaited on the fourth isolate.

A Problem Assessment Group was convened to review the cases and infection control measures in place.

Molecular typing was also performed on an isolate from a fifth patient with the same resistant pattern who was on a different ward. This was typed as being the same as the cluster of four patients which could indicate that this strain is circulating more widely in the community. The IPCT are considering what further action may be appropriate in discussion with the Health Protection Team.

At the time of writing this report (14th March 2017), there were no outbreaks or ward closures.

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.

As Figures 4 and 5 show, since January 2017, there has been one Hip and no Colorectal SSI cases. The last SSI case following caesarean section was in June 2015.

As previously reported, NHS Borders SSI rate is not, and has never been, a statistical outlier from the rest of Scotland.

The last knee Surgical Site Infection that met HPS definitions was in August 2014.

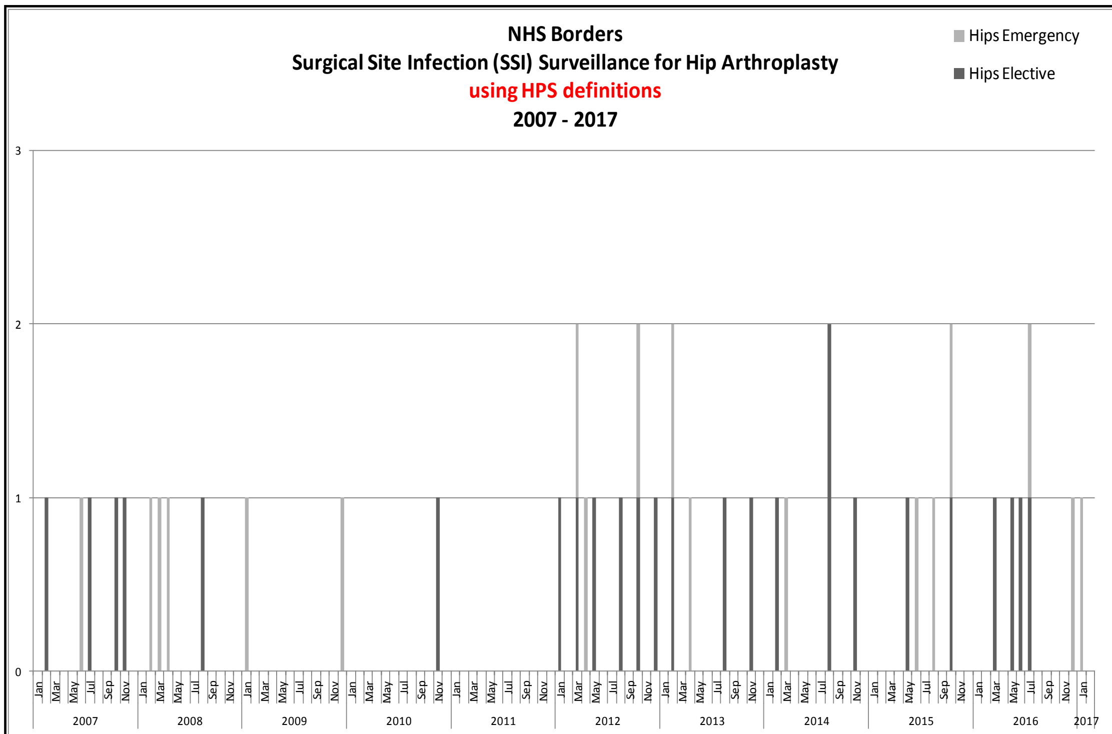

Figure 4: SSI for Hip Arthroplasty April 2012 – February 2017

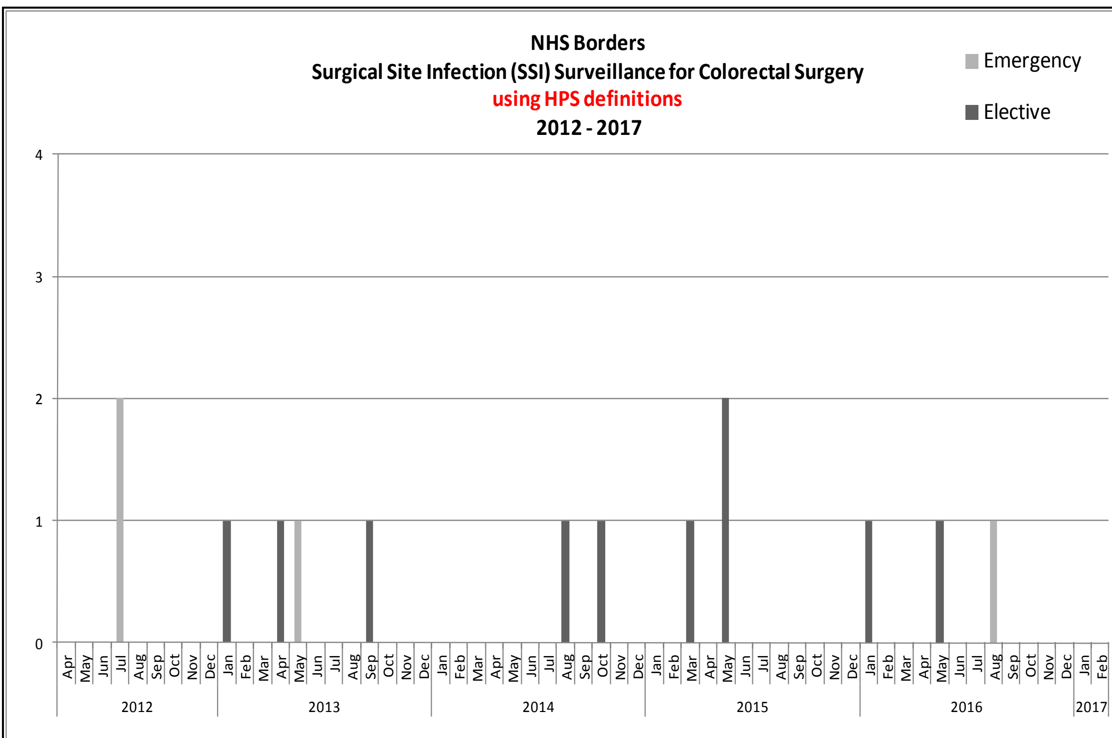

Figure 5: SSI for Colorectal Surgery April 2012 – February 2017

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§ionID=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§ionID=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 all 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 and. 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 2016	Apr 2016	May 2016	June 2016	July 2016	Aug 2016	Sept 2016	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017
MRSA	0	0	0	0	0	0	0	0	0	0	1	0
MSSA	3	3	2	3	1	5	1	1	1	5	3	1
Total SABS	3	3	2	3	1	5	1	1	1	5	4	1

Clostridium difficile infection monthly case numbers

	Mar 2016	Apr 2016	May 2016	June 2016	July 2016	Aug 2016	Sept 2016	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017
Ages 15-64	0	0	0	0	2	0	1	0	0	1	0	0
Ages 65 plus	1	1	0	1	2	2	2	2	1	2	1	1
Ages 15 plus	1	1	0	1	4	2	3	2	1	3	1	1

Hand Hygiene Monitoring Compliance (%)

	Mar 2016	Apr 2016	May 2016	June 2016	July 2016	Aug 2016	Sept 2016	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017
AHP	100	100	98	100	98	100	98	89	100	100	95	100
Ancillary	93	96	97	99	94	97	100	87	97	99	94	100
Medical	97	98	97	100	99	98	97	96	98	97	97	98
Nurse	97	99	99	100	100	99	99	98	99	99	99	99
Board Total	98	99	99	100	99	99	99	96	99	99	96	99

Cleaning Compliance (%)

	Mar 2016	Apr 2016	May 2016	June 2016	July 2016	Aug 2016	Sept 2016	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017
Board Total	95.3	94.5	93.6	95.9	95.3	93.9	95.1	92.3	95.5	97.3	95.4	95.0

Estates Monitoring Compliance (%)

	Mar 2016	Apr 2016	May 2016	June 2016	July 2016	Aug 2016	Sept 2016	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017
Board Total	98.3	97.1	96.2	98.5	96.8	99.2	97.7	97.7	97.5	98.4	96.2	96.3

BORDERS GENERAL HOSPITAL REPORT CARD

Staphylococcus aureus bacteraemia monthly case numbers

	Mar 2016	Apr 2016	May 2016	June 2016	July 2016	Aug 2016	Sept 2016	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017
MRSA	0	0	0	0	0	0	0	0	0	0	0	0
MSSA	2	1	0	0	0	2	0	0	1	1	1	0
Total SABS	2	1	0	0	0	2	0	0	1	1	1	0

Clostridium difficile infection monthly case numbers

	Mar 2016	Apr 2016	May 2016	June 2016	July 2016	Aug 2016	Sept 2016	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017
Ages 15-64	0	0	0	0	1	0	1	0	0	0	0	0
Ages 65 plus	1	1	0	1	1	2	2	1	0	1	1	0
Ages 15 plus	1	1	0	1	2	2	3	1	0	1	1	0

Cleaning Compliance (%)

	Mar 2016	Apr 2016	May 2016	June 2016	July 2016	Aug 2016	Sept 2016	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017
Board Total	95.8	96.8	96.6	96.4	96.6	95.8	95.8	96.3	96.7	95.9	96.1	95.3

Estates Monitoring Compliance (%)

	Mar 2016	Apr 2016	May 2016	June 2016	July 2016	Aug 2016	Sept 2016	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017
Board Total	99.7	99.5	99.3	99.8	99.5	99.8	99.9	99.9	99.7	100	99.5	99.6

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 2016	Apr 2016	May 2016	June 2016	July 2016	Aug 2016	Sept 2016	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017
MRSA	0	0	0	0	0	0	0	0	0	0	0	0
MSSA	0	1	0	0	0	0	0	1	0	0	0	0
Total SABS	0	1	0	0	0	0	0	1	0	0	0	0

Clostridium difficile **infection monthly case numbers**

	Mar 2016	Apr 2016	May 2016	June 2016	July 2016	Aug 2016	Sept 2016	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017
Ages 15-64	0	0	0	0	0	0	0	0	0	0	0	0
Ages 65 plus	0	0	0	0	1	0	0	0	1	0	0	0
Ages 15 plus	0	0	0	0	1	0	0	0	1	0	0	0

NHS OUT OF HOSPITAL REPORT CARD

Staphylococcus aureus **bacteraemia monthly case numbers**

	Mar 2016	Apr 2016	May 2016	June 2016	July 2016	Aug 2016	Sept 2016	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017
MRSA	0	0	0	0	0	0	0	0	0	0	1	0
MSSA	1	1	2	3	1	3	1	0	0	4	2	1
Total SABS	1	1	2	3	1	3	1	0	0	4	3	1

Clostridium difficile **infection monthly case numbers**

	Mar 2016	Apr 2016	May 2016	June 2016	July 2016	Aug 2016	Sept 2016	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017
Ages 15-64	0	0	0	0	1	0	0	0	0	1	0	0
Ages 65 plus	0	0	0	0	0	0	0	1	0	1	0	1
Ages 15 plus	0	0	0	0	1	0	0	1	0	2	0	1

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

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