

**Borders NHS Board**



**HEALTHCARE ASSOCIATED INFECTION – PREVENTION AND CONTROL REPORT  
DECEMBER 2015**

**Aim**

The purpose of this paper is to update Board members of 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

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

**Approved by**

<b>Name</b>	<b>Designation</b>	<b>Name</b>	<b>Designation</b>
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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 December 2015

- Early indications suggest that NHS Borders is not on target to achieve the *Staphylococcus aureus* Bacteraemia (SAB) March 2016 HEAT target rate of 24.0 cases or less per 100,000 acute occupied bed days (AOBD).
- Early indications suggest that NHS Borders is on target to achieve the *Clostridium difficile* infection (CDI) 2016 HEAT target rate of 32.0 cases or less per 100,000 total occupied bed days (TOBD) for patients aged 15 and over.

### **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](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](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 bacteraemias. These are a serious form of infection and there is a national target to reduce them. The number of patients with MSSA and MRSA bacteraemias 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* bacteraemias can be found at:

<http://www.hps.scot.nhs.uk/haic/sshaid/publicationsdetail.aspx?id=30248>

As Figure 1 shows, from April to December 2015, there have been 23 SAB cases of which 4 (17%) were Healthcare acquired and these represent the greatest opportunity for intervention to reduce numbers.

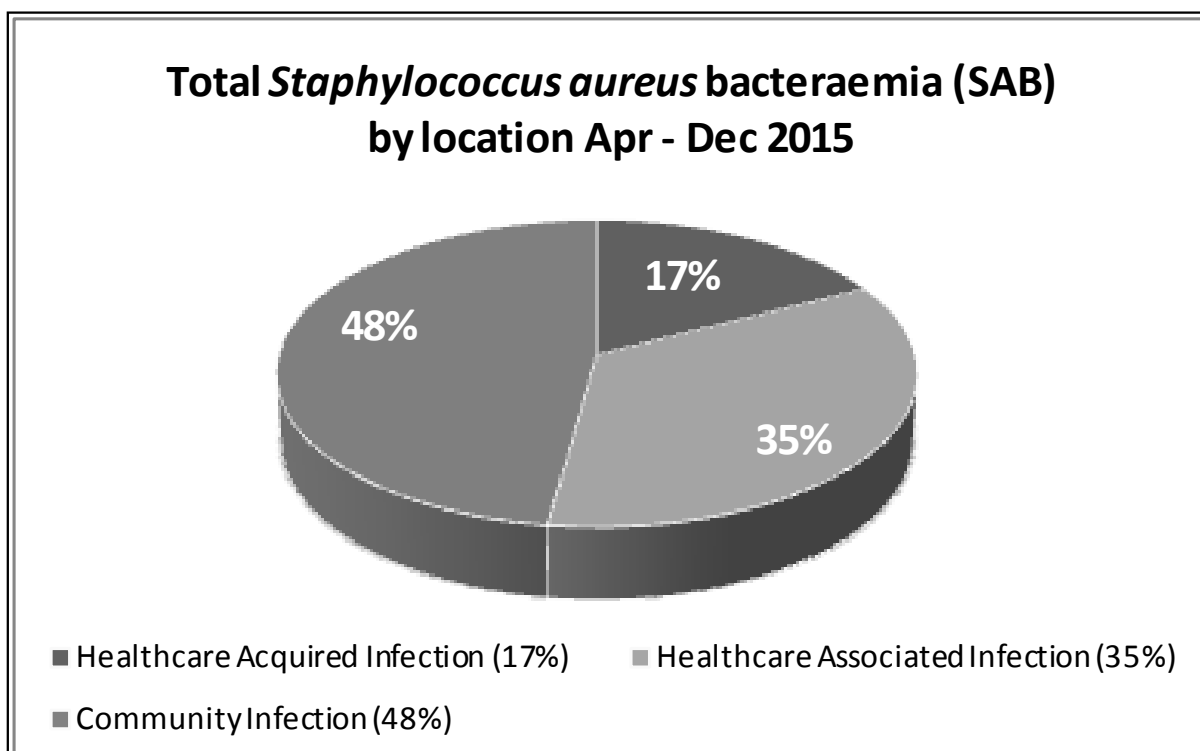


Figure 1: NHS Borders total *Staphylococcus aureus* bacteraemia (SAB) location April – December 2015

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.

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.

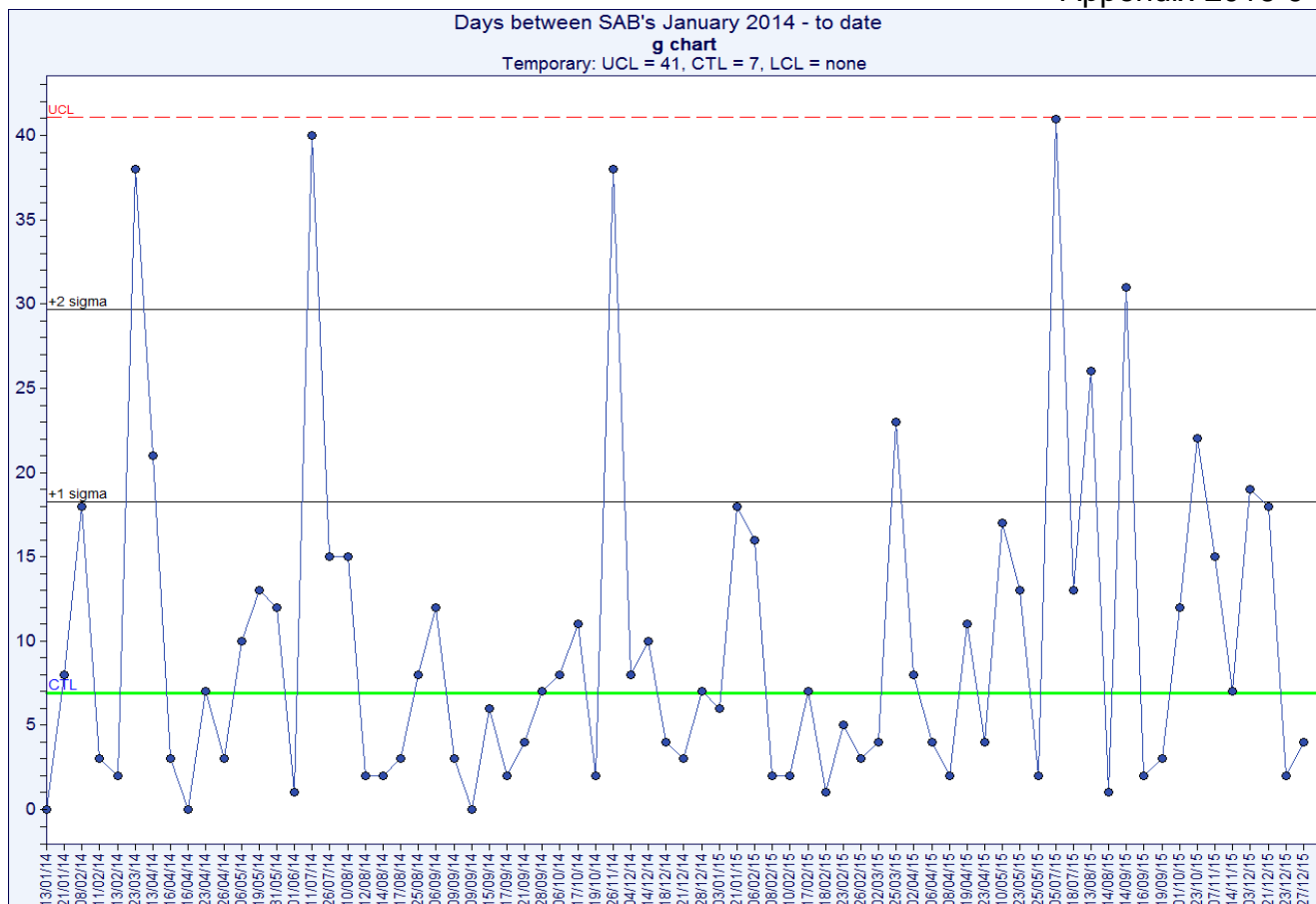


Figure 2: NHS Borders days between SAB cases (January 2014 – December 2015)

Since April 2015 the majority of SAB cases have been Methicillin-sensitive *Staphylococcus aureus* (MSSA) with only 1 Methicillin-resistant *Staphylococcus aureus* (MRSA) case.

Every SAB case and *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 with progress critically reviewed by the Infection Control Committee.

Health Protection Scotland produces quarterly reports showing infection rates for all Scottish Boards. Figure 3 shows the most recently published data as a funnel plot of SAB rates per 100,000 Acute Occupied Bed Days (AOBDs) for all NHS boards in Scotland in Quarter 3 (Jul to Sep 2015). During this period NHS Borders (BR) had a rate of 36.8 which was above the Scottish average although not statistically significant.

A funnel plot chart is designed to distinguish natural variation from statistically significant outliers. The funnel narrows on the right of the graph as the larger health Boards will have less fluctuation in their rates due to greater Acute Occupied Bed Days. Figure 3 shows that NHS Borders was within the blue funnel, which means that it is not a statistical outlier.

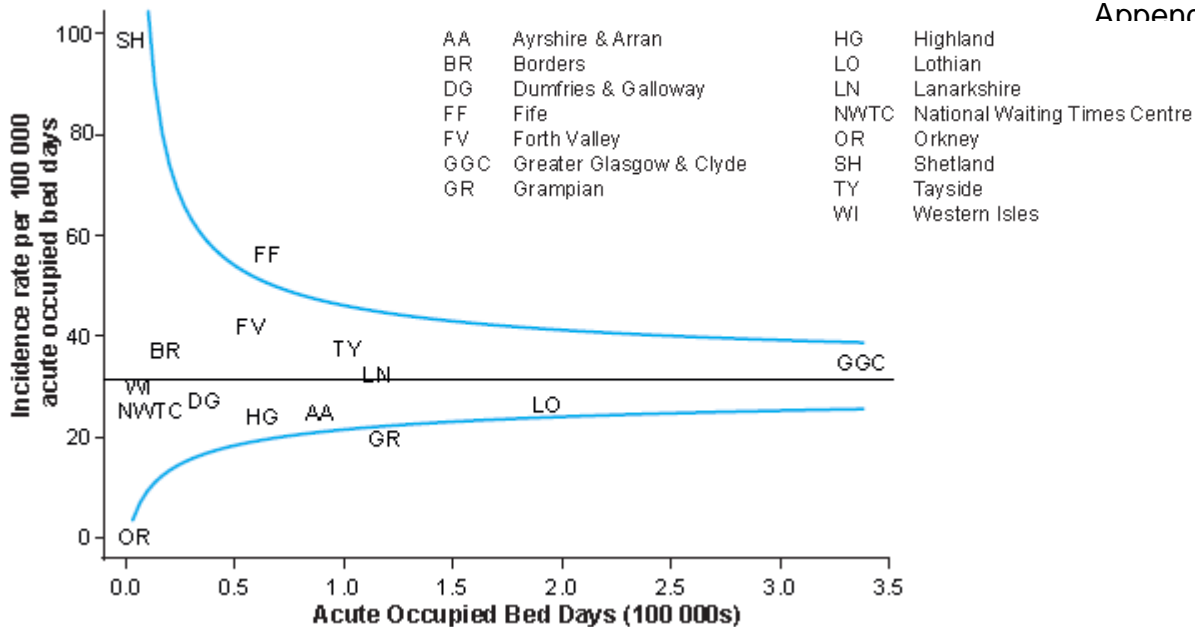


Figure 3: Funnel plot of SAB rates (per 100,000 AOBs) for all NHS boards in Scotland in Q3 2015)

### **Clostridium difficile infections (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/haic/sshaip/ssdetail.aspx?id=277>

Figure 4, 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.

From April to December 2015 there have been 16 cases of *Clostridium difficile* infection (CDI).

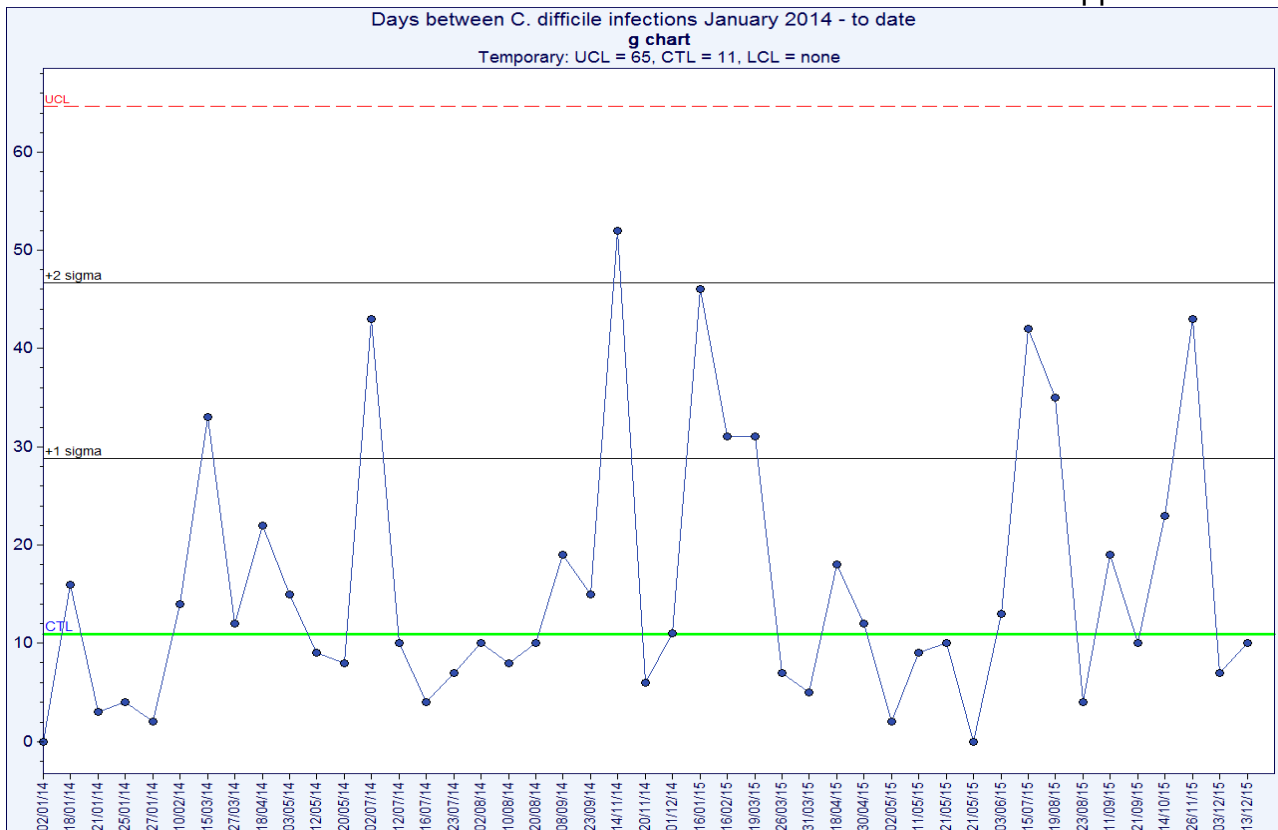


Figure 4: NHS Borders, days between CDI cases against indicative HEAT target (January 2014 – December 2015)

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.

Health Protection Scotland produces quarterly reports showing infection rates for all Scottish Boards. Figure 5 shows a funnel plot of CDI incidence rates per 100,000 Total Occupied Bed Days (TOBD) in patients aged 65 years and above for all NHS boards in Scotland in Quarter 3 (Jul to Sep 2015). The graph shows that NHS Borders (BR) had a rate of 17.9 which is below the Scottish average rate of 32.1.

Figure 6 shows a funnel plot of CDI incidence rates per 100,000 Total Occupied Bed Days (TOBD) in patients aged 15-64 years for all NHS boards in Scotland in Quarter 3 (Jul to Sep 2015). The graph shows that NHS Borders (BR) had a rate of 24.2 which is below the Scottish average rate of 44.8.

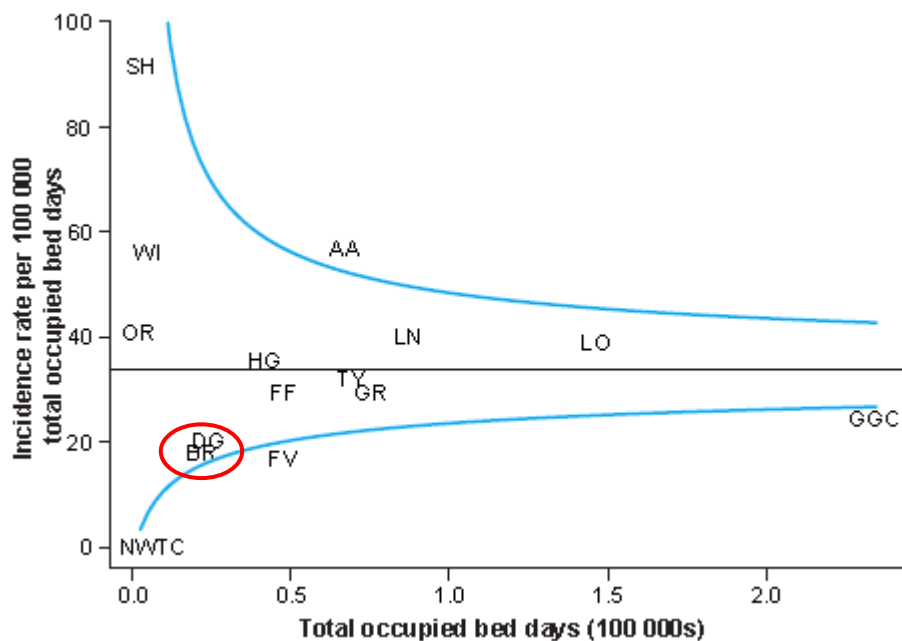


Figure 5: Funnel plot of CDI incidence rates (per 100 000 TOBDs) in patients aged 65 years and above for all NHS boards in Scotland in Q3 2015.

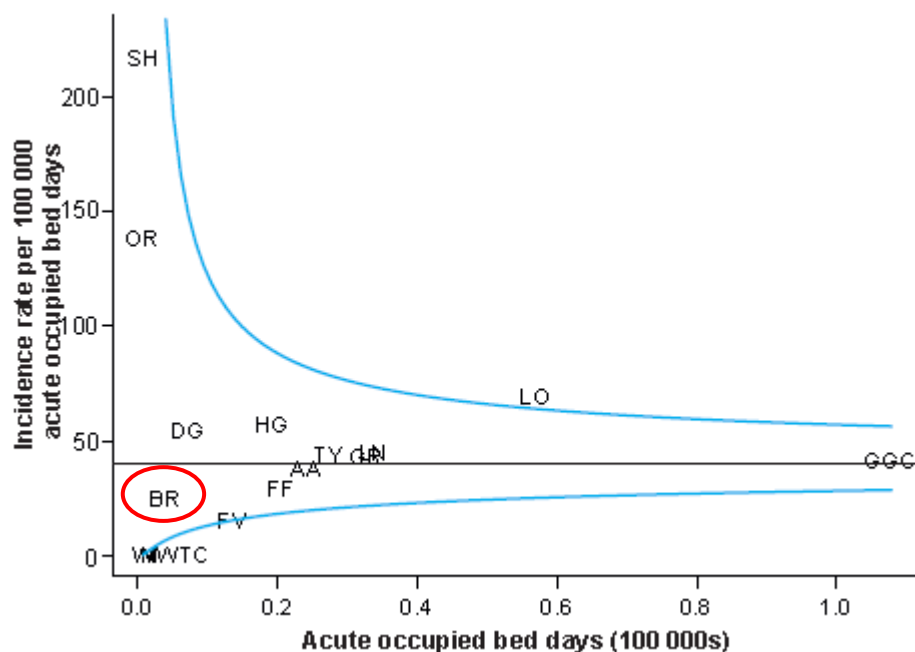


Figure 6: Funnel plot of CDI incidence rates (per 100 000 AOBDS) in patients aged 15-64 years for all NHS boards in Scotland in Q3 2015.

## 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/>

NHS Boards monitor hand hygiene and ensure a zero tolerance approach to non compliance. The hand hygiene compliance score for the Board can be found at the end of section 1 and for each hospital in section 2. Information on national hand hygiene monitoring can be found at:

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



The hand hygiene data tables contained within the NHS Borders Report Card (Section 2 p.14) 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

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>

NHS Borders cleaning compliance has remained higher than the national average over recent years (Figure 7 below). The data presented within the NHS Borders Report Card (Section 2 p.14) is an average figure across the sites using the national cleaning and estates monitoring tool that was implemented in April 2012.

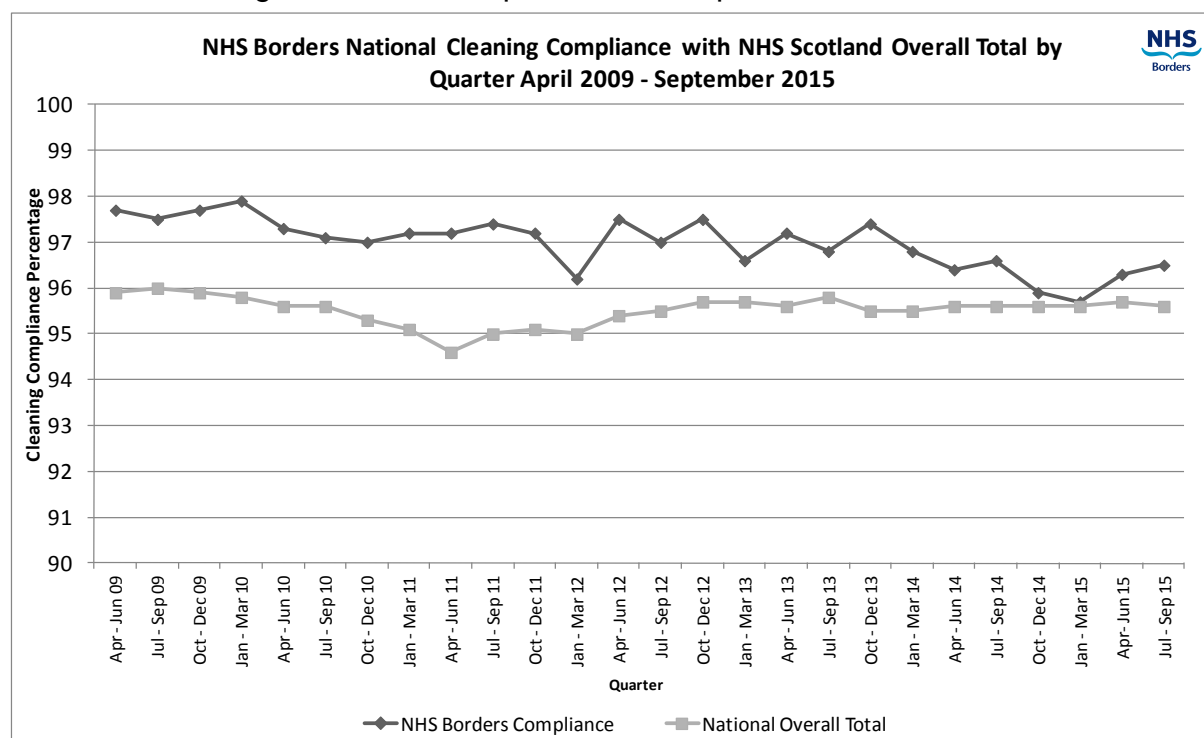


Figure 7: NHS Borders national cleaning compliance versus NHS Scotland's overall performance

The Domestic Services Manager and Infection Control Manager are working together to improve the rigour and consistency in cleanliness monitoring. This work contributed to the apparent reduced compliance during 2014 as shown on Figure 7. However, the most recent data shows an improvement for NHS Borders with cleaning compliance.

## **Other Healthcare Associated Infections (HAI) Related Activity**

### **2015/16 Infection Control Workplan**

As at 1<sup>st</sup> February 2016, 81% of actions due for completion in the 2015/16 work plan have been completed. Due to significant progress already made against the outstanding actions, the risk to the organisation of the delay in implementation is low.

### **Norovirus**

Health Protection Scotland (HPS) declared the start of Norovirus season in Scotland on the 20<sup>th</sup> November 2015.

Between the 18<sup>th</sup> November and the 1<sup>st</sup> February, the following locations have been affected by diarrhoea and vomiting:

- BGH Ward 4 (Bay closures for 4 days)
- BGH Ward 9 (Bay closure for 3 days)
- Borders Stroke Unit (Bay closure for 2 days)
- BGH Ward 12 (Bay closures for 4 days)
- BGH Ward 16 (Bay closure for 1 day)
- Kelso Community Hospital (Closed to admissions for one week)

The outbreaks were managed by NHS Borders Infection Prevention and Control Team with support from frontline colleagues. Daily Outbreak Control Meetings are convened. The focus of these meetings was to establish a continual up to date overview of the situation across NHS Borders, identify any issues relating to patient care, implementation of control measures, including enhanced cleaning, and any communications required to be delivered to staff, visitors and members of the public.

The Communications Team have taken a proactive approach to communication with patients, staff, visitors and members of the public, issuing regular press releases.

Key messages about Norovirus were circulated to staff to support compliance with correct practices to reduce the impact of Norovirus.

To date (1<sup>st</sup> February 2016), 2015/16 Norovirus season has had a low impact on NHS Borders. This reflects the wider picture across NHS Scotland with data produced by Health Protection Scotland showing the impact of this season in terms of ward closures being much lower than the previous 5-year average.

### **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 and uses national definitions and methodology which enable comparison with overall NHS Scotland infection rates with the exception of knee arthroplasty which uses local definitions.

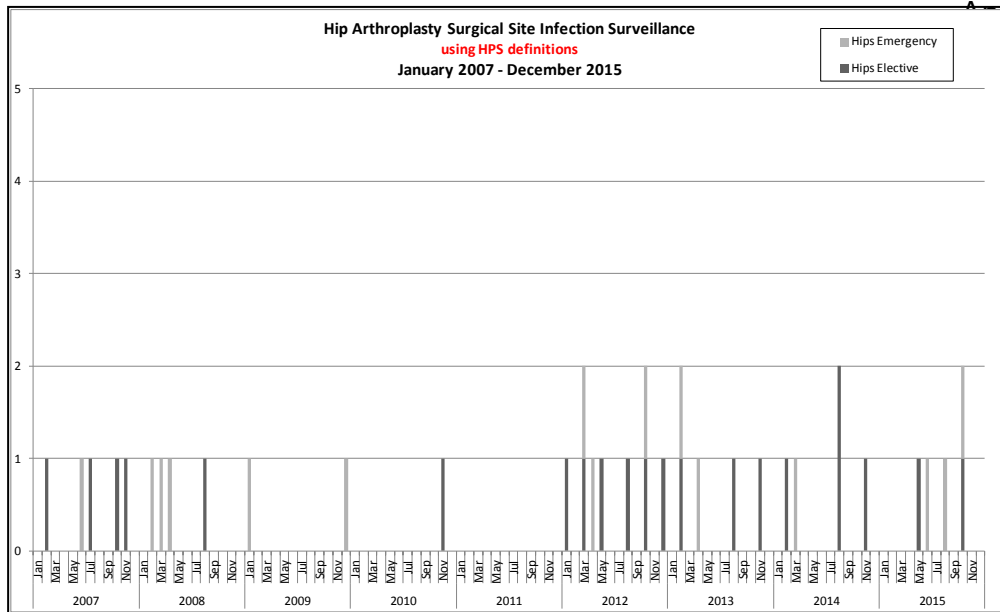


Figure 8: SSI for Hip Arthroplasty April 2012 – December 2015

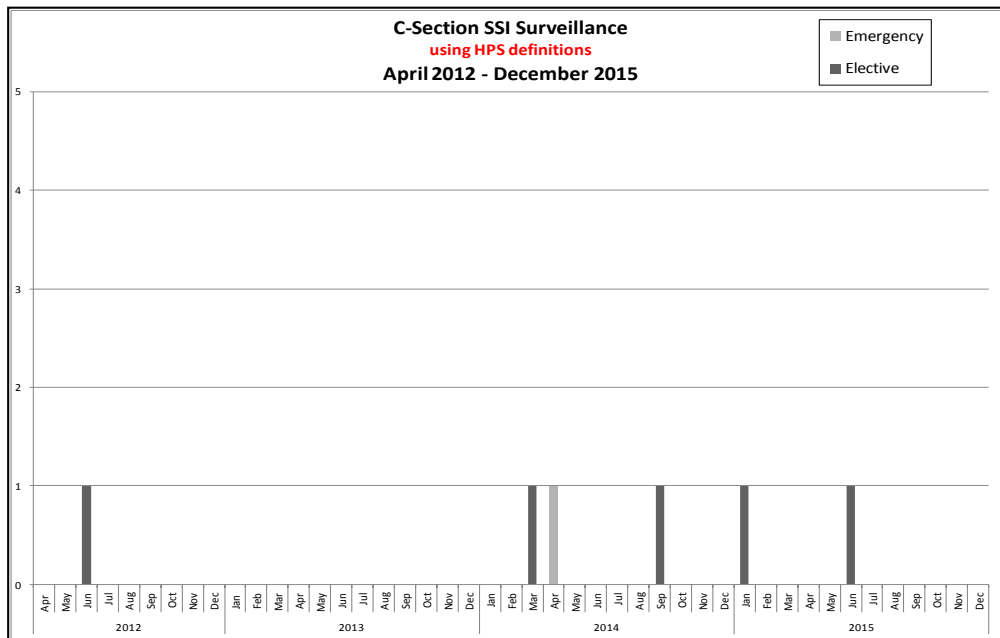


Figure 9: SSI for C-Sections April 2012 – December 2015

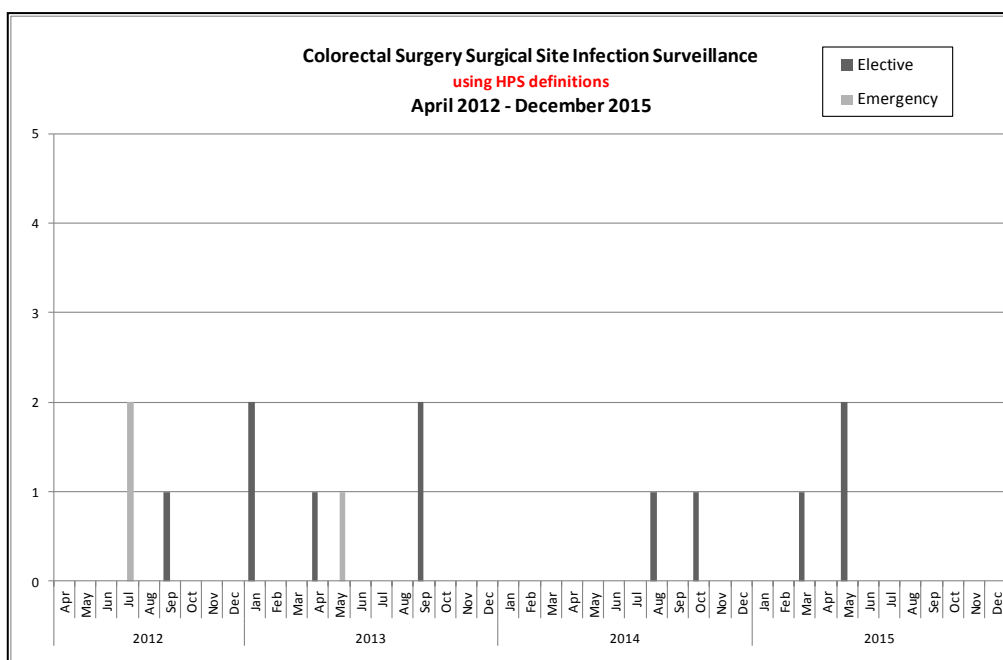


Figure 10: SSI for Colorectal Surgery April 2012 – December 2015

As Figure 8 shows, in 2014 and 2015 there were five Hip SSI cases each year. In 2014, four of these cases were elective compared with only two in 2015.

Figures 9 and 10 show the surgical site infections relating to Caesarean Section and Colorectal surgery respectively.

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 was in August 2014.

### Infection Control Audits

Since the last Board update, 3 areas (Haylodge, DME and Hawick) have been audited with Haylodge and Hawick achieving “Green” status of 85% or above and DME achieving an “Amber” status of 81%. The action plans were sent to the Senior Charge Nurse with completion required within 28 days of feedback.

Colour rating	% compliance	Re-monitoring timescale
RED	0% - 75%	3 months
AMBER	76% - 84%	6 months
GREEN	85% - 100%	12 months

Figure 11: Infection Control Re-Audit Schedule

## 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](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](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](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 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

	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
<b>MRSA</b>	1	2	0	1	0	0	0	0	0	0	0	0
<b>MSSA</b>	1	5	2	4	3	0	2	2	3	2	2	4
<b>Total SABS</b>	2	7	2	5	3	0	2	2	3	2	2	4

### Clostridium difficile infection monthly case numbers

	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
<b>Ages 15-64</b>	0	0	0	0	1	1	0	0	1	0	0	0
<b>Ages 65 plus</b>	1	1	3	2	3	0	1	2	1	1	1	2
<b>Ages 15 plus</b>	1	1	3	2	4	1	1	2	2	1	1	2

### Hand Hygiene Monitoring Compliance (%)

	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
<b>AHP</b>	100	93	100	91	98	100	100	100	100	100	98	99
<b>Ancillary</b>	97	89	88	94	96	96	97	95	98	96	94	97
<b>Medical</b>	96	92	95	93	98	97	96	95	97	97	94	98
<b>Nurse</b>	98	99	99	99	99	99	99	99	99	100	100	97
<b>Board Total</b>	97.8	96	97	97	99	98	98	98	99	99	98	98

### Cleaning Compliance (%)

	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
<b>Board Total</b>	94.8	95.8	95.8	93.8	97.4	96.9	97.4	96.2	97.9	96.8	91.5	97.4

### Estates Monitoring Compliance (%)

	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
<b>Board Total</b>	97.9	99.1	98.4	98.3	96.2	98.5	97.1	99.7	97.9	99.2	95.7	99.1

## BORDERS GENERAL HOSPITAL REPORT CARD

### *Staphylococcus aureus* bacteraemia monthly case numbers

	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
<b>MRSA</b>	0	2	0	0	0	0	0	0	0	0	0	0
<b>MSSA</b>	0	0	0	1	1	0	0	1	0	0	0	0
<b>Total SABS</b>	0	2	0	1	1	0	0	1	0	0	0	0

### *Clostridium difficile* infection monthly case numbers

	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
<b>Ages 15-64</b>	0	0	0	0	0	0	0	0	0	0	0	0
<b>Ages 65 plus</b>	0	1	0	1	0	0	1	2	1	0	0	0
<b>Ages 15 plus</b>	0	1	0	1	0	0	1	2	1	0	0	0

### Cleaning Compliance (%)

	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
<b>Board Total</b>	94.9	95.6	94.9	96.3	95.6	96.0	95.9	95.7	95.8	96.8	96.0	96.1

### Estates Monitoring Compliance (%)

	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
<b>Board Total</b>	98.2	98.4	98.7	98.3	99	99.3	99.4	99.8	99.7	99.2	99.3	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

	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
<b>MRSA</b>	0	0	0	0	0	0	0	0	0	0	0	0
<b>MSSA</b>	0	1	0	0	0	0	0	1	0	0	0	0
<b>Total SABS</b>	0	1	0	0	0	0	0	1	0	0	0	0

### *Clostridium difficile* infection monthly case numbers

	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
<b>Ages 15-64</b>	0	0	0	0	0	0	0	0	0	0	0	0
<b>Ages 65 plus</b>	0	0	1	0	1	0	0	0	0	1	0	1
<b>Ages 15 plus</b>	0	0	1	0	1	0	0	0	0	1	0	1

## NHS OUT OF HOSPITAL REPORT CARD

### *Staphylococcus aureus* bacteraemia monthly case numbers

	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
<b>MRSA</b>	1	0	0	1	0	0	0	0	0	0	0	0
<b>MSSA</b>	1	4	2	3	2	0	2	0	3	2	2	4
<b>Total SABS</b>	2	4	2	4	2	0	2	0	3	2	2	4

### *Clostridium difficile* infection monthly case numbers

	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015
<b>Ages 15-64</b>	0	0	0	0	1	1	0	0	1	0	0	0
<b>Ages 65 plus</b>	1	0	2	1	2	0	0	0	0	0	1	1
<b>Ages 15 plus</b>	1	0	2	1	3	1	0	0	1	0	1	1