#### **Borders NHS Board**



## <u>HEALTHCARE ASSOCIATED INFECTION – PREVENTION AND CONTROL REPORT NOVEMBER 2014</u>

#### 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 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	Not applicable.
Consultation with Professional	Not applicable.
Committees	
Risk Assessment	Not applicable.
Compliance with Board Policy	Yes.
requirements on Equality and Diversity	
Resource/Staffing Implications	None identified.

#### Approved by

Name	Designation	Name	Designation
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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 November 2014

- NHS Borders is not currently on target to achieve the Staphylococcus aureus Bacteraemia (SAB) March 2015 HEAT target rate of 24.0 cases or less per 100,000 acute occupied bed days.
- NHS Borders is on target to achieve the Clostridium difficile infection (CDI) 2015
  HEAT target rate of 32.0 cases or less per 100,000 total occupied bed days
  (patients aged 15 and over).
- On the 24<sup>th</sup> November 2014, the public inquiry report will be published of the investigation into the occurrence of C. difficile infection at the Vale of Leven Hospital from 1 January 2007 onwards. The Inquiry also investigated the deaths associated with C. difficile which occurred between 1 December 2007 and 1 June 2008.
- European Antibiotic Awareness Day that takes place annually on 18<sup>th</sup> November.
   NHS Borders has been promoting the Antibiotic Guardian UK-wide pledge campaign, which asks people to become "Antibiotic Guardians" by agreeing to do one thing which will help make better use of these vital medicines and safeguard them for future generations. A range of different pledges for everyone from parents, pet owners and farmers to doctors, nurses, vets, pharmacists and a host of other groups can be found at www.antibioticguardian.com.

#### 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

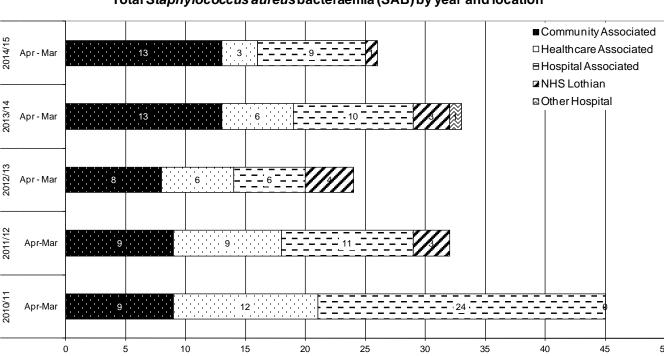
MRSA:http://www.nhs24.com/content/default.asp?page=s5 4&articleID=252

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/haiic/sshaip/publicationsdetail.aspx?id=30248

#### Staphylococcus aureus Bacteraemia (SAB)

As Figure 1 shows, since April 2014, there have been 26 SAB cases of which 46% were either Hospital or Healthcare associated and these represent the greatest opportunity for intervention to reduce numbers.



## NHS Borders Total Staphylococcus aureus bacteraemia (SAB) by year and location

Figure 1: NHS Borders total staphylococcus aureus bacteraemia (SAB) by year and location

NHS Borders is not currently on target to achieve the *Staphylococcus aureus* Bacteraemia (SAB) March 2015 HEAT target rate of 24.0 cases or less per 100,000 acute occupied bed days (AOCB).

Number of SAB cases

Achieving the HEAT target remains a significant challenge due to the combination of a significant reduction in NHS Borders bed days (denominator) and 54% of SAB cases developing in the community (with no recent healthcare interaction) or following treatment outwith NHS Borders.

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. The graph does not show any statistically significant events since January 2013.

Figure 2 includes an estimate of the HEAT target expressed as days between infections. It is important to note that the HEAT target is estimated to provide an indication of performance but this should be interpreted with caution. This is because NHS Borders case numbers are small and the occupied bed days denominator fluctuates. These factors will be significant in the final assessment of how NHS Borders has performed against this target.

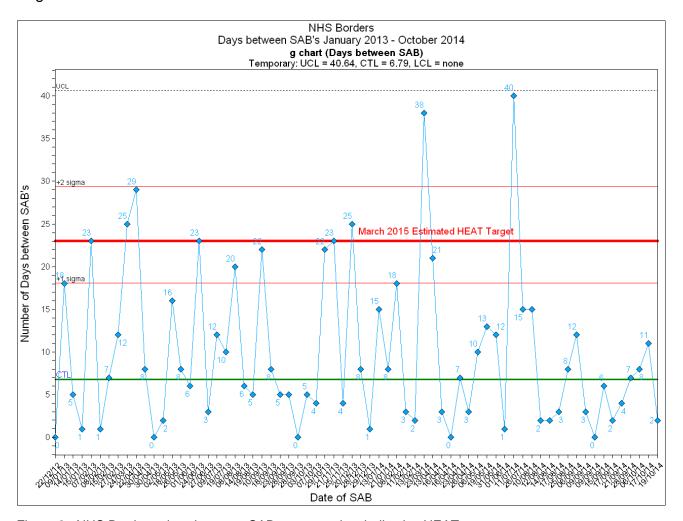


Figure 2: NHS Borders, days between SAB cases against indicative HEAT target

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

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. Progress is critically reviewed by the Healthcare Associated Infection Strategic Oversight Group (HAI SOG) chaired by the HAI Executive Lead (Director of Nursing & Midwifery). This group also provides support and guidance to instil a Borders wide collaborative approach to achieve the HEAT targets.

Figure 3 shows the split between MRSA and MSSA bacteraemia cases in NHS Borders over the last 4 years and shows a reduction in the number of MRSA cases since 2010.

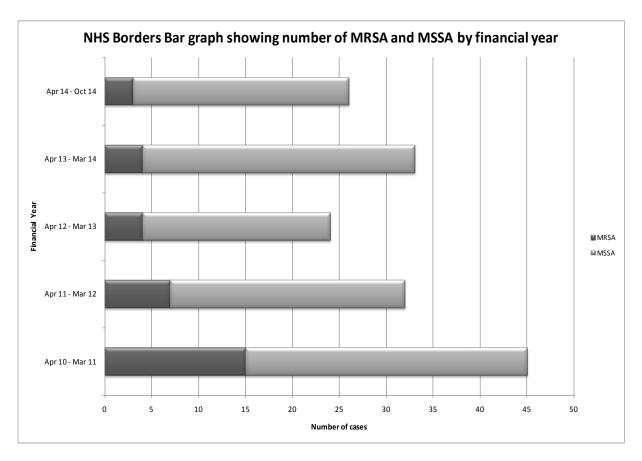


Figure 3: NHS Borders total staphylococcus aureus bacteraemia (SAB) by year and type

#### 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/haiic/sshaip/ssdetail.aspx?id=277

NHS Borders is on target to achieve the *Clostridium difficile* infection (CDI) 2015 HEAT target rate of 32.0 cases or less per 100,000 total occupied bed days.

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.

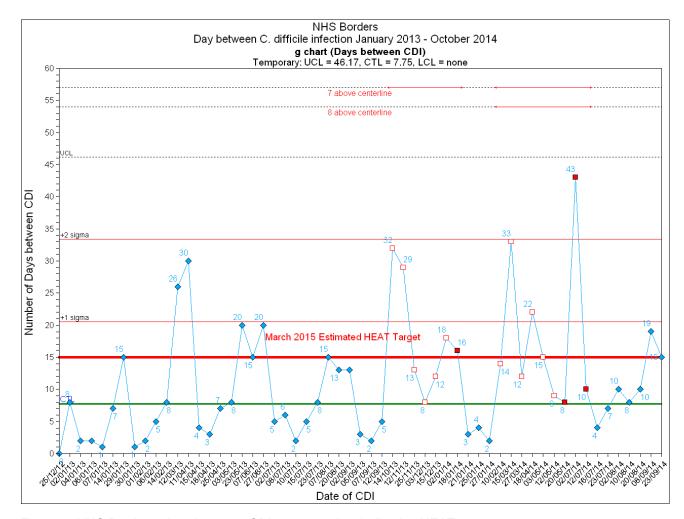


Figure 4: NHS Borders, days between CDI cases against indicative HEAT target

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

The Antimicrobial Management Team continues to monitor antimicrobial prescribing rates in both acute and community Clinical Boards, and includes a renewed focus on prescribing in primary care.

#### **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.12) are generated from wards conducting self-audits.

The Infection Prevention and Control Team conduct additional audits in any area which either fail to submit their own audit results or which fall below 90% for two consecutive months. Hand hygiene is also incorporated into the annual infection control audit plan of compliance with the Standard Infection Control Precautions (SICPs) for 2014/15.

#### **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 consistently higher than the national average over recent years (Figure 5 below). 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 tool that was implemented in April 2012.

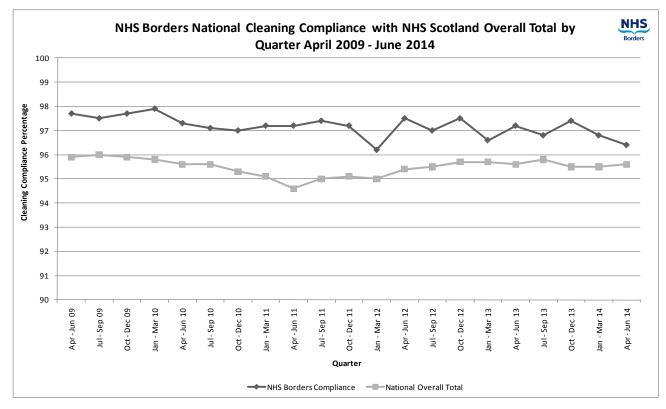


Figure 5: NHS Borders national cleaning compliance versus NHS Scotland's overall performance

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

#### 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.

The Surgical Site Infection (SSI) surveillance is conducted on the following range of procedures:-

- o Caesarean section
- Hip Arthroplasty
- Colorectal Surgery

In addition, local infection surveillance is conducted on Knee Arthroplasty procedures.

Table 1 (page 9) displays the results of the surgical site infection (SSI) surveillance data for each procedure since surveillance started. Please note that the data from June 2014 onwards is provisional as surveillance is maintained for 30 days post operatively and there is a subsequent data validation process coordinated by Health Protection Scotland.

### Surgical Site Infection (SSI) Surveillance Data

Data	using Health Protection Scotland (HPS) SSI definitions	No. of Procedures	No. of SSI's	SSI Rate %	95% C.I.	National SSI Rate %	National SSI Rate 95% C.I.
	2009 Jan-Dec	222	1	0.45	0.1 to 2.5	2.6	2.3 to 2.8
ے	2010 Jan-Dec	255	3	1.18	0.4 to 3.4	2.6	2.4 to 2.9
cti	2011Jan-Dec	222	1	0.45	0.1 to 2.5	1.4	1.1 to 1.8
C-Section	2012 Jan-Dec	224	1	0.45	0.1 to 2.5	2.0	1.8 to 2.2
0	2013 Jan - Dec	258	0	0.00	0.0 to 5.7	1.7	0.9 to 1.8
	2014 Jan - October	220	3	1.36	0.2 to 7.1	1.4	1.1 to 1.9
>	2009 Jan-Dec	230	2	0.87	0.2 to 3.1	1.2	1.0 to 1.4
Arthroplasty	2010 Jan-Dec	235	1	0.43	0 to 1.8	0.8	0.7 to 1.1
rop	2011 Jan-Dec	222	0	0.00	0 to 3.3	1.4	1.1 to 1.8
Art	2012 Jan-Dec	281	8	2.85	1.4 to 5.5	0.8	0.6 to 0.9
ğ.	2013 Jan - Dec	295	5	1.69	0.6 to 7.7	1.0	0.6 to 1.7
	2014 Jan - October	220	4	1.82	1.1 to 13.2	0.6	0.4 to 1.1
چ	2012 large bowel April - Dec	80	2	2.50	0.7 to 8.7	15.0	11.4 to 19.5
Surgery	2012 small bowel April - Dec	4	0	0.00	0 to 49.0	0	0 to 49.0
ร	2013 large bowel Jan - Dec	109	4	3.67	1.4 to 9.1	14.7	11.8 to 18.0
) ecta	2013 small bowel Jan - Dec	7	0	0.00	0 to 35.4	11.5	4.0 to 29.0
Colorectal	2014 large bowel Jan - October	87	2	2.30	0.0 to 10.7	5.1	2.6 to 9.8
ပိ	2014 small bowel Jan - October	14	0	0.00	0.0 to 49.0	16.7	3.0 to 56.4

Da	ta using local SSI Surveillance definitions	No. of Procedures	No. of SSI's	SSI Rate %
sty	2011 Jan-Dec	154	1	0.65
Knee	2012 Jan-Dec	136	1	0.74
조 함	2013 Jan - Dec	194	4	2.06
Ą	2014 Jan - October	160	5	3.13

Table 1: results of the SSI surveillance for each procedure since surveillance started

NHS Borders participates in the national knee arthroplasty SSI surveillance coordinated by Health Protection Scotland (HPS). The HPS definition for a knee SSI does not include hospital readmission data.

The Infection Prevention and Control Team consider that a more helpful definition to apply to knee SSI surveillance is the same criteria used for the national hip SSI surveillance which includes hospital readmission data within 30 days of the operation. This local definition has therefore been used in the data table opposite and for this reason the data is not comparable to NHS Scotland.

#### **Infection Control Audits**

- Compliance with best practice for Peripheral Venous Cannulae (PVCs) is important
  as these devices are commonly used and are a risk factor for patients developing a
  staphylococcus aureus infection. The Infection Prevention and Control Team are
  using principles of improvement methodology for PVC insertion to spread best
  practice within BGH. A new tool combining best practice for both insertion and
  maintenance has been developed and is currently being tested in BGH.
- Since June 2014, NHS Borders has been testing a revised national Patient Safety definition for Catheter Associated Urinary Tract Infection (CAUTI). In December 2014, testing of an electronic CAUTI alert process will commence in Ward 12, BGH. This will provide an outcome measure to establish the effectiveness of measures being taken to reduce the risk of CAUTI to patients.
- An Infection Control monitoring programme for 2014/2015 has been developed with a focus on the Standard Infection Control Precautions (SICP). Baseline audits are currently being undertaken in every area. The level of compliance achieved will determine the re-audit timescale for each specific area. Following each audit, an action plan will be developed to progress and report through appropriate structures.

#### 2014/15 Infection Control Work Plan

At the time of writing this report, the Infection Control 2014/15 Work Plan had nine
actions that were not completed within the specified timeframe. Work towards
completing these actions has been progressing so the associated risk with the delay
in completing these actions is low.

## **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 <u>each hospital</u> the total number of cases for each month are those which have been reported as positive from a laboratory report on samples taken <u>more than</u> 48 hours after admission. For the purposes of these reports, positive samples taken from patients <u>within</u> 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:

 $\underline{http://www.scotland.gov.uk/About/Performance/scotPerforms/partnerstories/NHSScotlandperformance}$ 

#### **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

	Nov 2013	Dec 2013	Jan 2014	Feb 2014	Mar 2014	Apr 2014	May 2014	June 2014	July 2014	Aug 2014	Sep 2014	Oct 2014
MRSA	1	0	0	1	0	0	0	0	0	1	1	1
MSSA	1	3	2	2	1	5	3	1	2	4	6	2
Total SABS	2	3	2	3	1	5	3	1	2	5	7	3

## Clostridium difficile infection monthly case numbers

	Nov 2013	Dec 2013	Jan 2014	Feb 2014	Mar 2014	Apr 2014	May 2014	June 2014	July 2014	Aug 2014	Sep 2014	Oct 2014
Ages 15-64	0	2	1	0	1	1	0	0	1	2	0	0
Ages 65 plus	2	1	4	1	1	0	3	0	3	1	2	0
Ages 15 plus	2	3	5	1	2	1	3	0	4	3	2	0

## **Hand Hygiene Monitoring Compliance (%)**

	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct
	2013	2013	2014	2014	2014	2014	2014	2014	2014	2014	2014	2014
AHP	98.4	98.4	96.4	96.4	96.7	100	97.0	100	100	98.4	98.6	100
Ancillary	100	99.0	99.0	93.2	93.0	100	90.3	89.5	97.1	98.0	92.9	87.5
Medical	99.1	98.8	100	95.9	95.4	98.0	95.5	98.2	96.4	98.0	94.3	94.3
Nurse	100	100	100	99.4	98.3	99.7	98.4	99.2	98.9	99.4	97.4	98.5
<b>Board Total</b>	99.7	99.5	99.4	97.5	96.9	99.5	97.0	98.4	98.4	98.9	96.6	97.0

## Cleaning Compliance (%)

	Nov 2013	Dec 2013	Jan 2014	Feb 2014		Apr 2014	-		_	_	-	
<b>Board Total</b>	97.6	97.4	97.1	96.5	96.7	97.2	96.2	96.0	96.8	96.6	96.5	98.0

## **Estates Monitoring Compliance (%)**

	Nov 2013	Dec 2013	Jan 2014				_	June 2014	-	_	-	
<b>Board Total</b>	98.6	99.2	98.9	99.2	99.0	99.1	98.1	98.7	97.6	98.5	95.7	98.1

## **BORDERS GENERAL HOSPITAL REPORT CARD**

## Staphylococcus aureus bacteraemia monthly case numbers

	Nov 2013	Dec 2013	Jan 2014	Feb 2014	Mar 2014	Apr 2014	May 2014	June 2014	July 2014	Aug 2014	Sep 2014	Oct 2014
MRSA	0	0	0	1	0	0	0	0	0	1	0	1
MSSA	0	2	0	0	0	1	0	1	0	1	1	1
Total SABS	0	2	0	1	0	1	0	1	0	2	1	2

## Clostridium difficile infection monthly case numbers

	Nov 2013	Dec 2013	Jan 2014	Feb 2014	Mar 2014	Apr 2014	May 2014	June 2014	July 2014	Aug 2014	Sep 2014	Oct 2014
Ages 15-64	0	1	1	0	1	0	0	0	0	1	0	0
Ages 65 plus	2	1	2	1	1	0	1	0	0	1	1	0
Ages 15 plus	2	2	3	1	2	0	1	0	0	2	1	0

## Cleaning Compliance (%)

	Nov 2013	Dec 2013	Jan 2014					June 2014				
<b>Board Total</b>	97.6	97.1	96.9	97.0	96.7	97.3	97.3	95.8	96.9	96.6	96.1	98.3

## **Estates Monitoring Compliance (%)**

	Nov 2013	Dec 2013	Jan 2014			-	•	June 2014	•	_	•	
<b>Board Total</b>	99.2	99.3	99.0	99.2	99.4	99.2	99.1	99.0	98.5	98.5	95.7	98.1

#### 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

	Nov 2013	Dec 2013	Jan 2014	Feb 2014	Mar 2014	Apr 2014	May 2014	June 2014	July 2014	Aug 2014	Sep 2014	Oct 2014
MRSA	0	0	0	0	0	0	0	0	0	0	0	0
MSSA	0	0	0	1	1	1	1	0	0	0	0	0
Total SABS	0	0	0	1	1	1	1	0	0	0	0	0

Clostridium difficile infection monthly case numbers

	Nov 2013	Dec 2013	Jan 2014	Feb 2014	Mar 2014	Apr 2014	May 2014	June 2014	July 2014	Aug 2014	Sep 2014	Oct 2014
Ages 15-64	0	0	0	0	0	1	0	0	0	0	0	0
Ages 65 plus	0	0	0	0	0	0	1	0	1	0	0	0
Ages 15 plus	0	0	0	0	0	1	1	0	1	0	0	0

#### NHS OUT OF HOSPITAL REPORT CARD

Staphylococcus aureus bacteraemia monthly case numbers

	Nov 2013	Dec 2013	Jan 2014	Feb 2014	Mar 2014	Apr 2014	May 2014	June 2014	July 2014	Aug 2014	Sep 2014	Oct 2014
MRSA	1	0	0	0	0	0	0	0	0	0	1	0
MSSA	1	1	2	1	0	3	2	0	2	3	5	1
Total SABS	2	1	2	1	0	3	2	0	2	3	6	1

Clostridium difficile infection monthly case numbers

	Nov 2013	Dec 2013	Jan 2014	Feb 2014	Mar 2014	Apr 2014	May 2014	June 2014	July 2014	Aug 2014	Sep 2014	Oct 2014
Ages 15-64	0	1	0	0	0	0	0	0	1	1	0	0
Ages 65 plus	0	0	2	0	0	0	1	0	2	0	1	0
Ages 15 plus	0	1	2	0	0	0	1	0	3	1	1	0