

Borders NHS Board



**HEALTHCARE ASSOCIATED INFECTION – PREVENTION AND CONTROL REPORT
APRIL 2014**

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

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 April 2014

- The next publication of infection performance data against the Scottish Government HEAT targets is scheduled for the first week of April 2014. Therefore at the time of writing this report (17th March 2014), there is no update from what was reported to the Board in February 2014.
- There is an increase in the prevalence of Norovirus across Scotland with outbreaks affecting Borders General Hospital. The situation is being managed by the Infection Prevention and Control Team and Hospital Executive Team with support from frontline colleagues. An enhanced cleaning regime is in place in all affected wards as well as core public areas including toilets. Regular media releases and press interviews have been used to promote precautions that the public can take including reducing the number of visitors to areas affected by outbreak.
- In the period from January 2014 to the time of writing this report, NHS Borders has had no Surgical Site Infections (SSI) identified through the national surveillance system coordinated by Health Protection Scotland.
- The Healthcare Associated Infection Strategic Oversight Group continues to critically review progress to reduce infection and improve performance against the HEAT targets.

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/sshqip/publicationsdetail.aspx?id=30248>

Staphylococcus aureus Bacteraemia (SAB) 2013/14

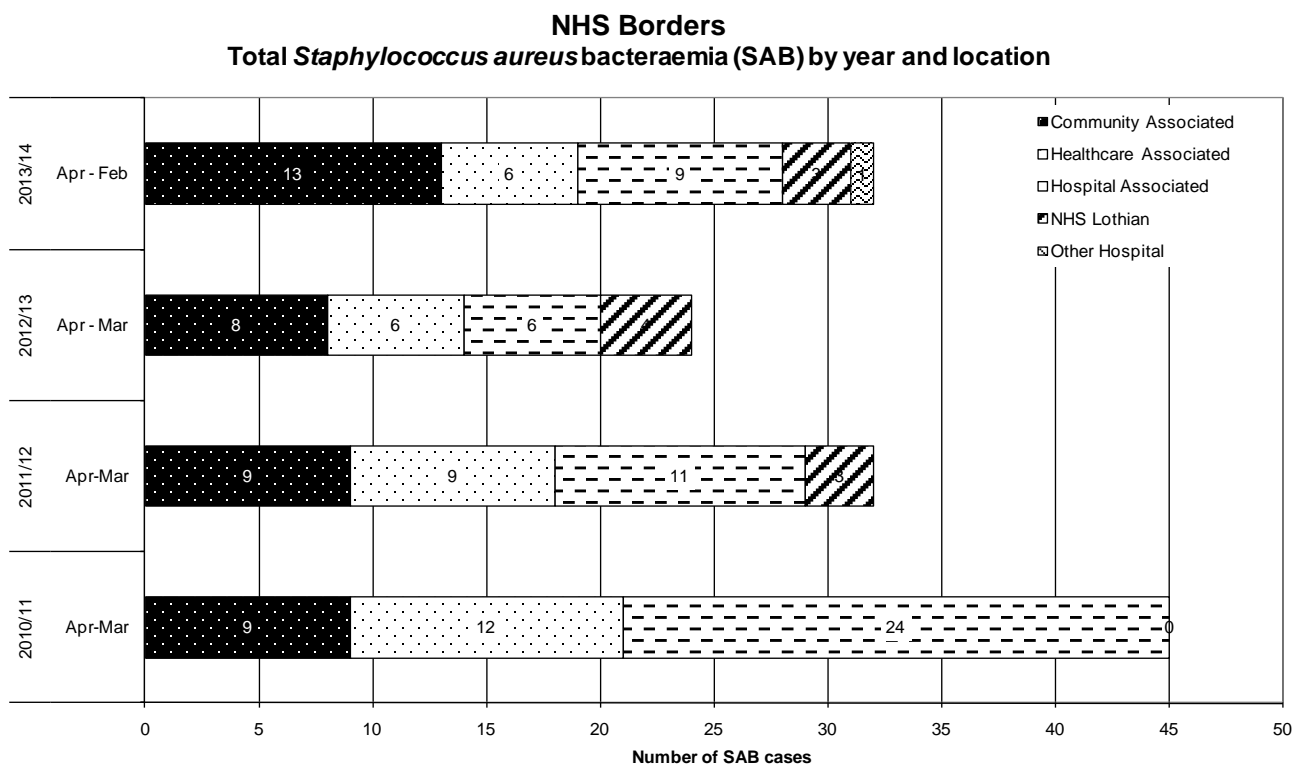
As Figure 1 shows, during the period April 2013 to February 2014, NHS Borders had a total of 32 SAB cases. This compares to 24 cases in the full year of April 2012 to March 2013.

Six of the SAB cases were attributed to three patients who each had two separate SAB episodes.

Case investigations have found that the biggest increase in 2013/14 compared with the previous year is in community cases (Figure 1) where there is very limited opportunity for prevention. Achieving the HEAT target therefore remains a significant challenge with 53% of cases attributed to either community (out of hospital) or infection onset following interventions received in other NHS board areas.

47% of all SAB cases since April 2013 were either Hospital or Healthcare associated and these represent the greatest opportunity for intervention to reduce numbers.

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

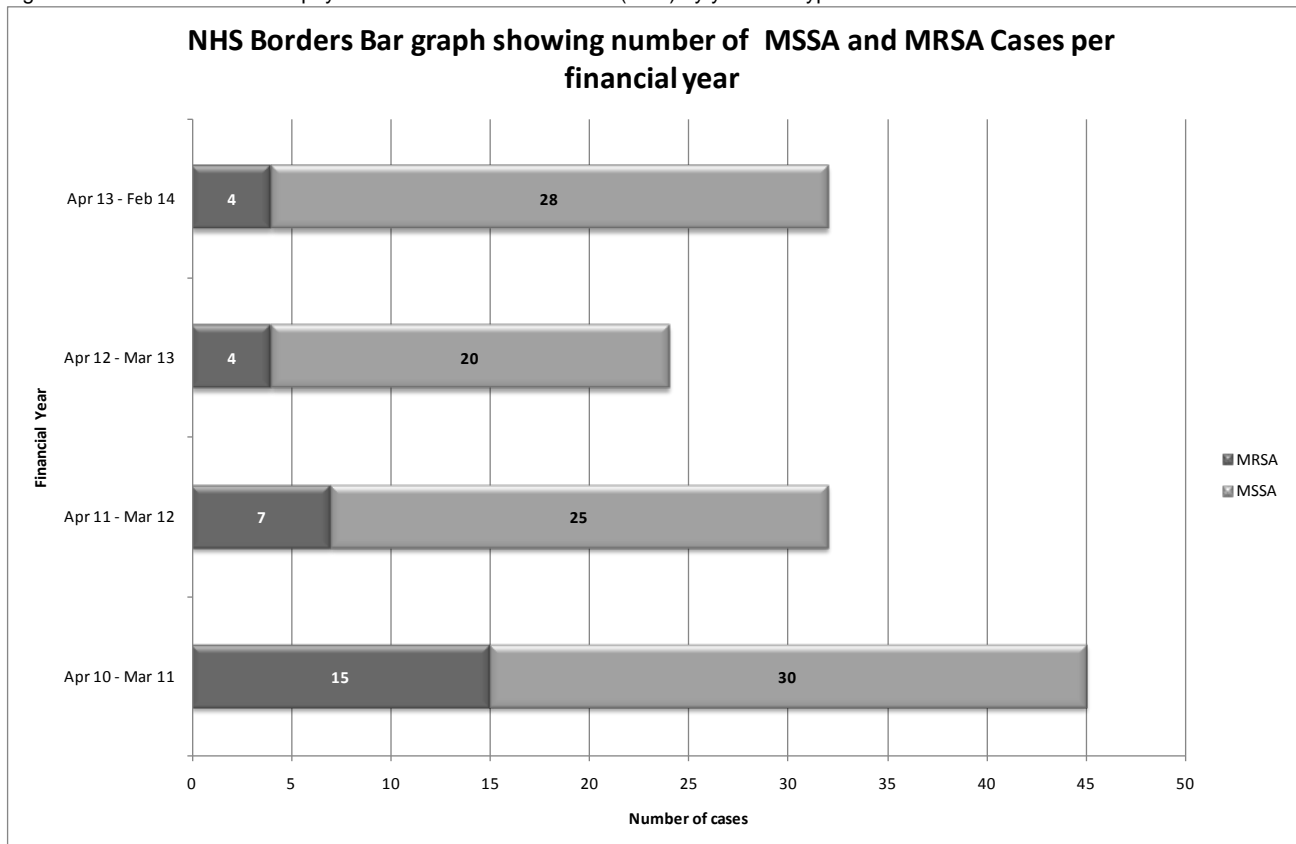


The Infection Prevention and Control Team (IPCT) have developed an action plan, based on the workstreams identified by the Prevention of SAB Group. This prevention group meets on a monthly basis and continues to work with clinical services. Every SAB case is subject to a rigorous review which includes a feedback process to the clinicians caring for the patient.

Progress against the SAB action plan is critically reviewed by the recently formed Healthcare Associated Infection Strategic Oversight Group (HAI SOG). In addition, this group, chaired by the HAI Executive Lead (Director of Nursing & Midwifery), provides support and guidance to instil a Borders wide collaborative approach to achieve the new HEAT target.

Figure 2 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 2: NHS Borders total staphylococcus aureus bacteraemia (SAB) by year and type.



Clostridium difficile

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>

***Clostridium difficile* infections (CDI) 2013/14**

From April 2013 to February 2014, there have been 30 cases of *Clostridium difficile* infection (CDI).

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

NHS Borders community hospitals have not experienced CDI cases during the rolling year March 2013 to February 2014 (NHS Community Hospitals Report Card p.13).

A CDI action plan has been developed through the Prevention of CDI Group established in 2013. Progress against actions are monitored and supported through the HAI Strategic Oversight Group agenda.

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

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/haic/ic/nationalhandhygienecampaign.aspx>

The hand hygiene data tables contained within the NHS Borders Report Card (Section 2 p.11) 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.

In addition, the Infection Control Team is currently conducting hand hygiene audits in ward areas as part of a quality assurance process.

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/>

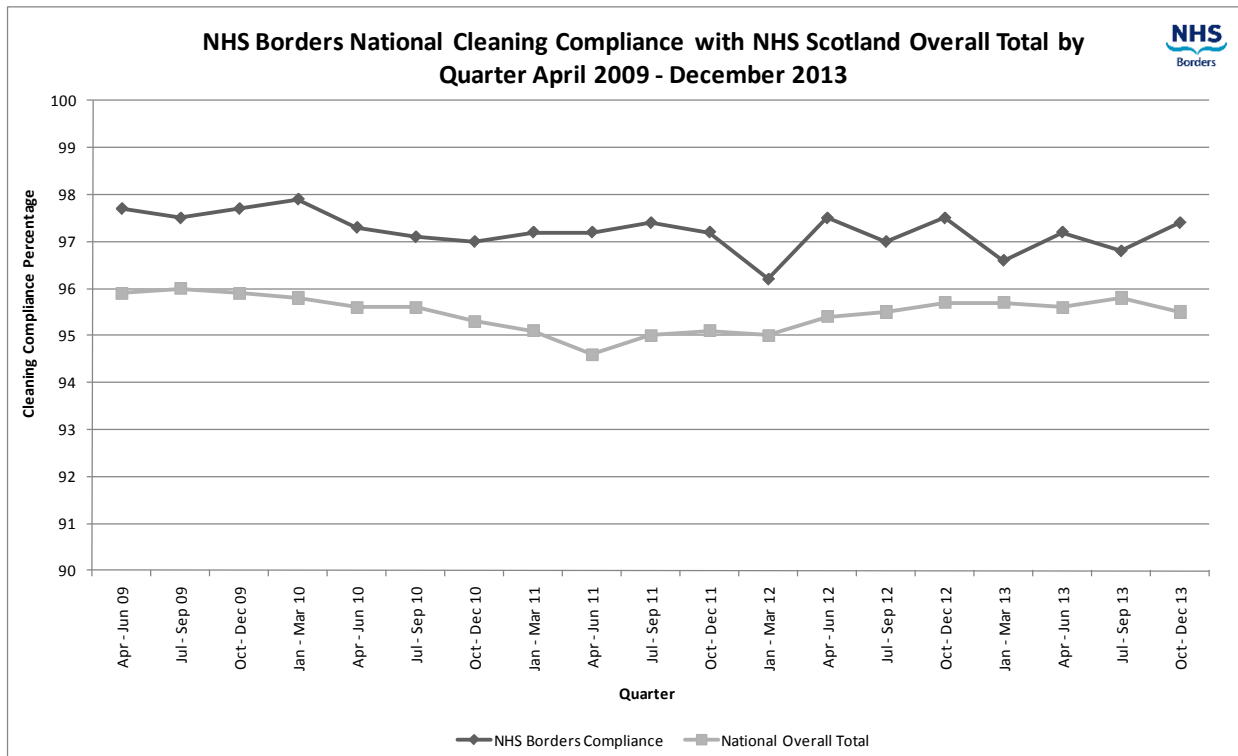
Healthcare environment standards are also independently inspected by the Healthcare Environment Inspectorate. More details can be found at:

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

High levels of cleanliness continue to be recorded through the monitoring process across NHS Borders estate. The data presented within the NHS Borders Report Card (Section 2 p.11) is an average figure across the sites using the national cleaning and estates monitoring tool that was implemented in April 2012. Figure 3 below, highlights NHS

Borders cleaning compliance has been consistently higher than the national average over recent years.

Figure 3: NHS Borders national cleaning compliance versus NHS Scotland's overall performance



Outbreaks

Infection Incidents Resulting in Ward/Bay Closures

Table 1 presents a monthly closure summary of wards and bays due to infection control activity within NHS Borders. The sole cause of closure during the period of display was viral gastroenteritis.

Health Protection Scotland announced that the norovirus season in Scotland officially started on the 9th December 2013. Since 3rd January 2014, there have been outbreaks of Norovirus affecting Borders General Hospital which reflects the prevalence of Norovirus both in the local community and across Scotland.

Figure 4 shows the daily impact of norovirus on patients and the service in terms of blocked beds (restricting patient movement due to room or ward closure) and blocked empty beds which reduces the available bed capacity.

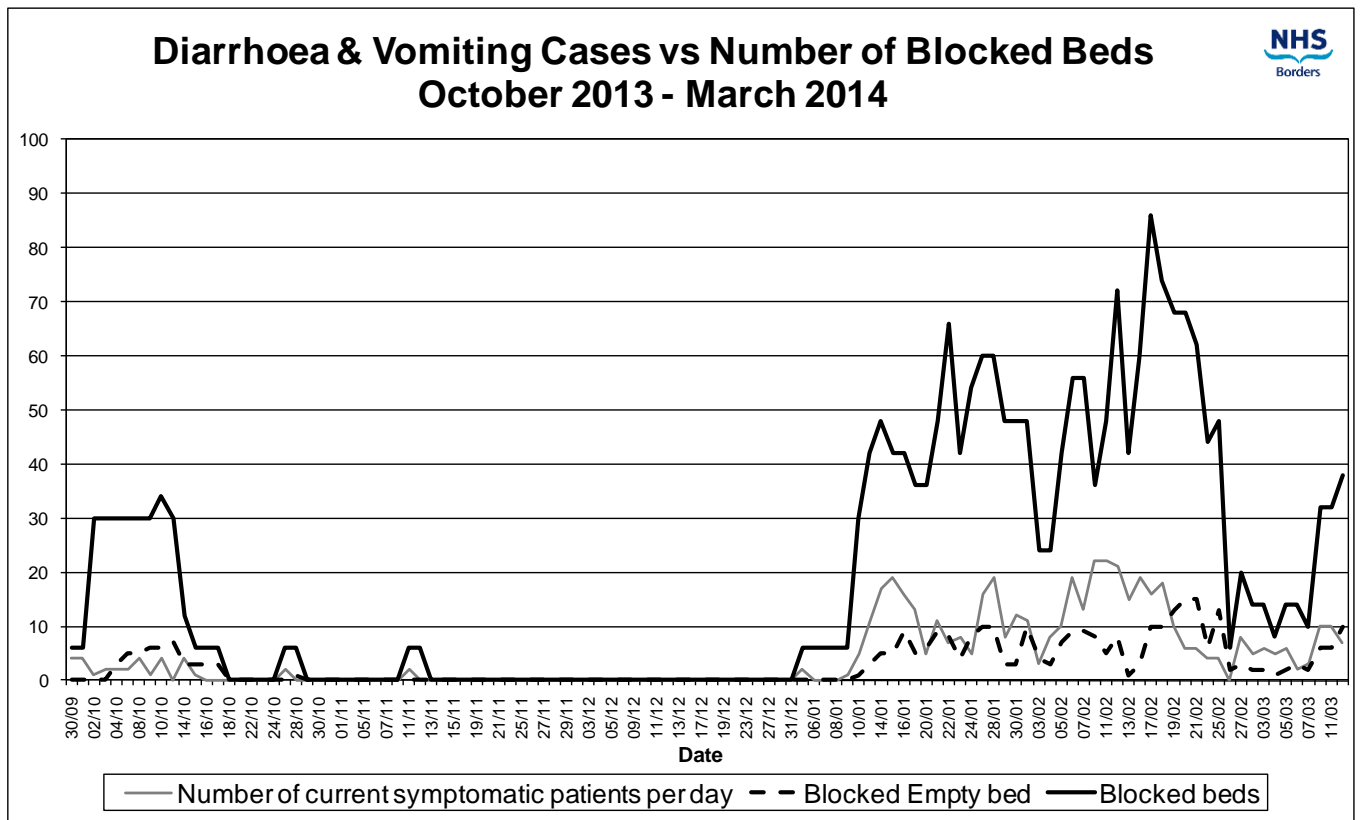
Proactive daily press releases as well as reactive responses to media queries and radio interviews have been used to keep the public up to date on the situation including precautions to take relating to Norovirus.

Table 1: NHS Borders infection control closure summary due to GI illness

Infection Control Closure Summary - Viral Gastroenteritis																									
		Reported during 2012/2013 Outbreak						2013/2014																	
		Qtr 1				Qtr 2				Qtr 3				Qtr 4 (upto 12/03/14)											
		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec		Jan		Feb		Mar	
		Bays	Wards	Bays	Wards	Bays	Wards	Bays	Wards	Bays	Wards	Bays	Wards	Bays	Wards	Bays	Wards	Bays	Wards	Bays	Wards	Bays	Wards	Bays	Wards
Ward 4	Total days																			1	1	2			
Ward 5	Total days																			9	8	10			
MAU/ Ward 6	Total days			1	1															3		2	1		
Ward 7	Total days																					8	2		
Ward 8	Total days																					2	1		
Ward 9	Total days																					9	1		
DME	Total days	2	1								1			1	1					2	1	2	1	1	
Stroke Unit	Total days	8	2							1			3	8	2					5	9	3	10	2	
Ward 12	Total days	2	1	1																2		2	1		
Ward 14	Total days	5	3	3																10		10	2		
Ward 15	Total days																								
Ward 16	Total days													1						2		1			
Ward 17	Total days												5							6		4			
Kelso	Total days																								
Haylodge	Total days																								
Hawick	Total days			1		1																			2
Knoll	Total days			2		7																			4
Knoll	Total days																								1
Knoll	Total days																								2
TOTAL		4	2	2	2	0	2	0	0	0	0	1	0	3	1	1	0	0	0	9	2	14	5	3	1

The number of bay closures indicated in a month is the maximum bay closures for that period
 When ward has been closed during a month, the bay closures indicated during this period have either preceded or followed the ward closure
 Ward/ bay closures running over consecutive months are part of one episode

Figure 4: NHS Borders line graph showing daily impact of D&V



The Norovirus outbreaks are managed by the Infection Prevention and Control Team and Hospital Executive Team with support from frontline colleagues.

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:-

- Caesarean section
- Hip Arthroplasty
- Knee Arthroplasty
- Colorectal Surgery

Table 2 (p.9) displays the results of the surgical site infection (SSI) surveillance data for each procedure since surveillance started. Please note that the data from the last quarter of 2013 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.

To date, in 2014, there have been no surgical site infections recorded as part of this process.

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 drafted. This will shortly be tested in a ward area.

2013/14 Infection Control Work Plan

- At the time of writing this report, the Infection Prevention and Control Team 2013/14 Work Plan has three actions that are not on track to be completed within the specified timeframe. Significant progress has been made against each of these actions and it is anticipated that they will be completed by the end of April 2014. The delay in completing these actions does not expose NHS Borders to significant risk.

Table 2: Surgical Site Infection Data Table

Surgical Site Infection (SSI) Data Table

	Year	NHS Borders				NHS Scotland		Comments
		Number of Procedures	Number of Surgical Site Infections (SSIs)	SSI Rate %	95% Confidence Interval	National SSI Rate %	95% Confidence Interval	
C-Section	2009	222	1	0.45	0.1 to 2.5	2.6	2.3 to 2.8	
	2010	255	3	1.18	0.4 to 3.4	2.6	2.4 to 2.9	
	2011	222	1	0.45	0.1 to 3.3	1.4	1.1 to 1.8	
	2012	224	1	0.45	0.1 to 2.5	2.0	1.8 to 2.2	
	2013	258	0	0.00	0.0 to 5.7	1.7	0.9 to 1.8	
	2014	25	0	0.00				
Hip Arthroplasty	2009	230	2	0.87	0.2 to 3.1	1.2	1.0 to 1.4	
	2010	235	1	0.43	0 to 1.8	0.8	0.7 to 1.1	
	2011	222	0	0.00	0 to 3.3	1.4	1.1 to 1.8	
	2012	281	8	2.85	1.4 to 5.5	0.8	0.6 to 0.9	
	2013	295	5	1.69	0.6 to 7.7	1.0	0.6 to 1.7	
	2014	13	0	0.00				
Knee Arthroplasty	2011	154	0	0.00	0 to 2.4	0.2	0.1 to 0.5	
	2012	136	0	0.00	0 to 2.7	0.2	0.1 to 0.3	
	2013	194	0	0.00	0.0 to 8.4	0.1	0.0 to 0.7	
	2014	13	0	0.00				
Colorectal Surgery	2012	80	2	2.50	0.7 to 8.7	15.0	11.4 to 19.5	Large Bowel
	2012	4	0	0.00	0 to 49.0	0.0	0 to 49.0	Small Bowel - no national data available
	2013	109	4	3.67	1.4 to 9.1	14.7	11.8 to 18.0	Large Bowel
	2013	7	0	0.00	0 to 35.4	11.5	4.0 to 29.0	Small Bowel - no national data available
	2014	16	0	0.00				Large Bowel
	2014	1	0	0.00				Small Bowel - no national data available

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 2013	Apr 2013	May 2013	Jun 2013	Jul 2013	Aug 2013	Sept 2013	Oct 2013	Nov 2013	Dec 2013	Jan 2014	Feb 2014
MRSA	0	0	0	0	0	0	2	0	1	0	0	1
MSSA	1	3	3	3	2	2	3	3	1	3	2	2
Total SABS	1	3	3	3	2	2	5	3	2	3	2	3

Clostridium difficile infection monthly case numbers

	Mar 2013	Apr 2013	May 2013	Jun 2013	Jul 2013	Aug 2013	Sept 2013	Oct 2013	Nov 2013	Dec 2013	Jan 2014	Feb 2014
Ages 15-64	0	3	0	0	1	2	2	0	0	2	1	0
Ages 65 plus	1	1	2	2	4	1	2	1	2	1	4	1
Ages 15 plus	1	4	2	2	5	1	4	1	2	1	5	1

Hand Hygiene Monitoring Compliance (%)

	Mar 2013	Apr 2013	May 2013	Jun 2013	Jul 2013	Aug 2013	Sept 2013	Oct 2013	Nov 2013	Dec 2013	Jan 2014	Feb 2014
AHP	100	98.8	98.5	100	100	94.8	96.9	100	98.4	98.4	96.4	96.4
Ancillary	98.4	95.5	97.8	99.0	97.0	94.5	98.4	100	100	99.0	99.0	93.2
Medical	98.1	96.9	95.7	95.0	98.0	93.3	96.2	99.0	99.1	98.8	100	95.9
Nurse	99.7	99.7	99.8	99.3	99.0	98.6	98.7	99.2	100	100	100	99.4
Board Total	99.4	98.6	98.8	98.7	98.7	96.7	98.1	99.4	99.7	99.5	99.4	97.5

Cleaning Compliance (%)

	Mar 2013	Apr 2013	May 2013	Jun 2013	Jul 2013	Aug 2013	Sept 2013	Oct 2013	Nov 2013	Dec 2013	Jan 2014	Feb 2014
Board Total	97.8	98.0	96.9	97.0	96.4	96.6	97.3	97.1	97.6	97.4	97.1	96.5

Estates Monitoring Compliance (%)

	Mar 2013	Apr 2013	May 2013	Jun 2013	Jul 2013	Aug 2013	Sept 2013	Oct 2013	Nov 2013	Dec 2013	Jan 2014	Feb 2014
Board Total	98.5	98.2	98.1	97.9	98.5	98.9	98.6	98.4	98.6	99.2	98.9	99.2

BORDERS GENERAL HOSPITAL REPORT CARD

Staphylococcus aureus bacteraemia monthly case numbers

	Mar 2013	Apr 2013	May 2013	Jun 2013	Jul 2013	Aug 2013	Sept 2013	Oct 2013	Nov 2013	Dec 2013	Jan 2014	Feb 2014
MRSA	0	0	0	0	0	0	0	0	0	0	0	1
MSSA	0	0	0	1	0	0	0	1	0	2	0	0
Total SABS	0	0	0	1	0	0	0	1	0	2	0	1

Clostridium difficile infection monthly case numbers

	Mar 2013	Apr 2013	May 2013	Jun 2013	Jul 2013	Aug 2013	Sept 2013	Oct 2013	Nov 2013	Dec 2013	Jan 2014	Feb 2014
Ages 15-64	0	0	0	0	0	0	0	0	0	1	1	0
Ages 65 plus	0	0	0	0	2	0	2	0	2	1	2	1
Ages 15 plus	0	0	0	0	2	0	2	0	2	0	3	1

Cleaning Compliance (%)

	Mar 2013	Apr 2013	May 2013	Jun 2013	Jul 2013	Aug 2013	Sept 2013	Oct 2013	Nov 2013	Dec 2013	Jan 2014	Feb 2014
Board Total	97.8	97.8	97.1	97.3	96.9	96.2	97.3	97.0	97.6	97.1	96.9	97.0

Estates Monitoring Compliance (%)

	Mar 2013	Apr 2013	May 2013	Jun 2013	Jul 2013	Aug 2013	Sept 2013	Oct 2013	Nov 2013	Dec 2013	Jan 2014	Feb 2014
Board Total	97.8	97.8	97.1	97.3	96.9	96.2	98.8	98.4	99.2	99.3	99.0	99.2

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

Staphylococcus aureus bacteraemia monthly case numbers

	Mar 2013	Apr 2013	May 2013	Jun 2013	Jul 2013	Aug 2013	Sept 2013	Oct 2013	Nov 2013	Dec 2013	Jan 2014	Feb 2014
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	1
Total SABS	0	0	0	0	0	0	0	0	0	0	0	1

Clostridium difficile infection monthly case numbers

	Mar 2013	Apr 2013	May 2013	Jun 2013	Jul 2013	Aug 2013	Sept 2013	Oct 2013	Nov 2013	Dec 2013	Jan 2014	Feb 2014
Ages 15-64	0	0	0	0	0	0	0	0	0	0	0	0
Ages 65 plus	0	0	0	0	0	0	0	0	0	0	0	0
Ages 15 plus	0	0	0	0	0	0	0	0	0	0	0	0

NHS OUT OF HOSPITAL REPORT CARD

Staphylococcus aureus bacteraemia monthly case numbers

	Mar 2013	Apr 2013	May 2013	Jun 2013	Jul 2013	Aug 2013	Sept 2013	Oct 2013	Nov 2013	Dec 2013	Jan 2014	Feb 2014
MRSA	0	0	0	0	0	0	2	0	1	0	0	0
MSSA	1	3	3	2	2	2	3	2	1	1	2	1
Total SABS	1	3	3	2	2	2	5	2	2	1	2	1

Clostridium difficile infection monthly case numbers

	Mar 2013	Apr 2013	May 2013	Jun 2013	Jul 2013	Aug 2013	Sept 2013	Oct 2013	Nov 2013	Dec 2013	Jan 2014	Feb 2014
Ages 15-64	0	3	0	0	1	2	2	0	0	1	0	0
Ages 65 plus	1	1	2	2	2	1	0	1	0	0	2	0
Ages 15 plus	1	4	2	2	3	1	2	1	0	1	2	0