

Borders NHS Board
HEALTHCARE ASSOCIATED INFECTION – PREVENTION AND CONTROL REPORT
APRIL 2016
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.

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	This is a bi-monthly update report with all risks 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

Name	Designation	Name	Designation
Evelyn Rodger	Director of Nursing, Midwifery and Acute Services		

Author(s)

Name	Designation	Name	Designation
Sam Whiting	Infection Control Manager	Caroline Young	Infection Control Administrator

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 2016

- NHS Borders had 3 *Staphylococcus aureus* Bacteraemias (SAB) in April 2016, and is off trajectory to achieve the SAB HEAT rate of 24.0 cases or less per 100,000 acute occupied bed days (AOBD) by March 2017. To achieve the HEAT target NHS Borders should have no more than 19 cases per year which equates to less than 2 per month.
- NHS Borders had 1 *Clostridium difficile* infection (CDI) April 2016 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. To achieve the HEAT target NHS Borders should have no more than 33 cases per year which equates to less than 3 per month.

Staphylococcus aureus Bacteraemia (SAB)

See Appendix A for definition.

In April 2016, there were 3 SAB cases. Figure 1 shows these SABs by location. SAB cases previously classified as "Healthcare Acquired Infection" are now classified as "Hospital Acquired Infection"

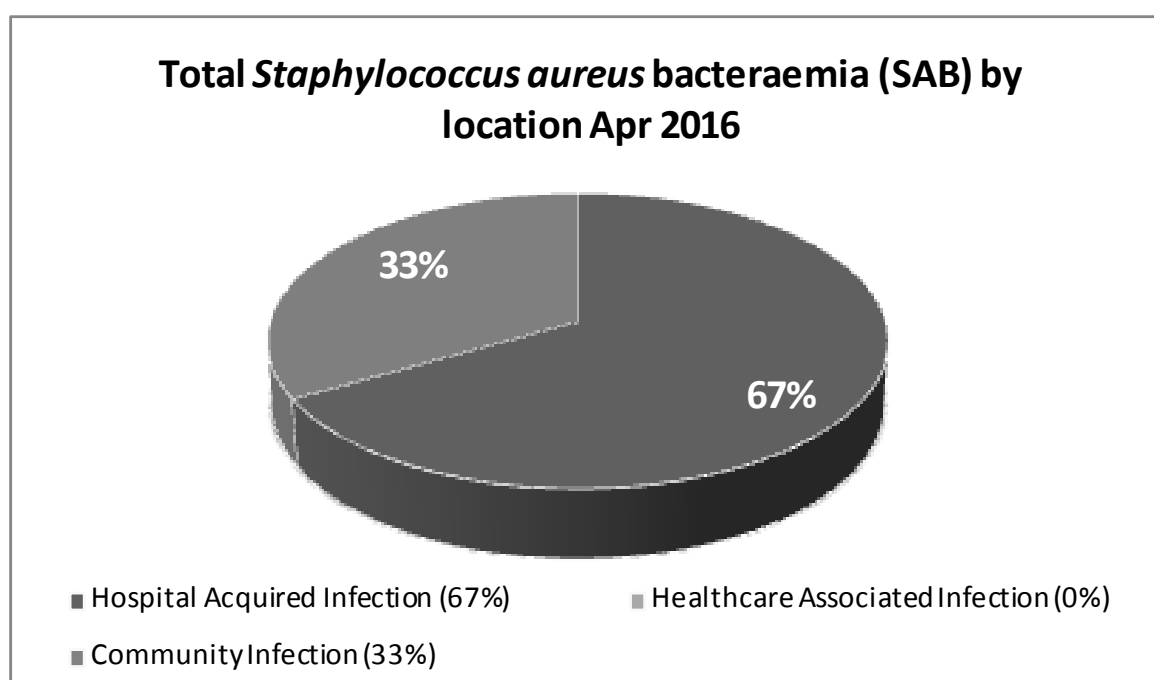


Figure 1: NHS Borders total *Staphylococcus aureus* bacteraemia (SAB) location April 2016

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.

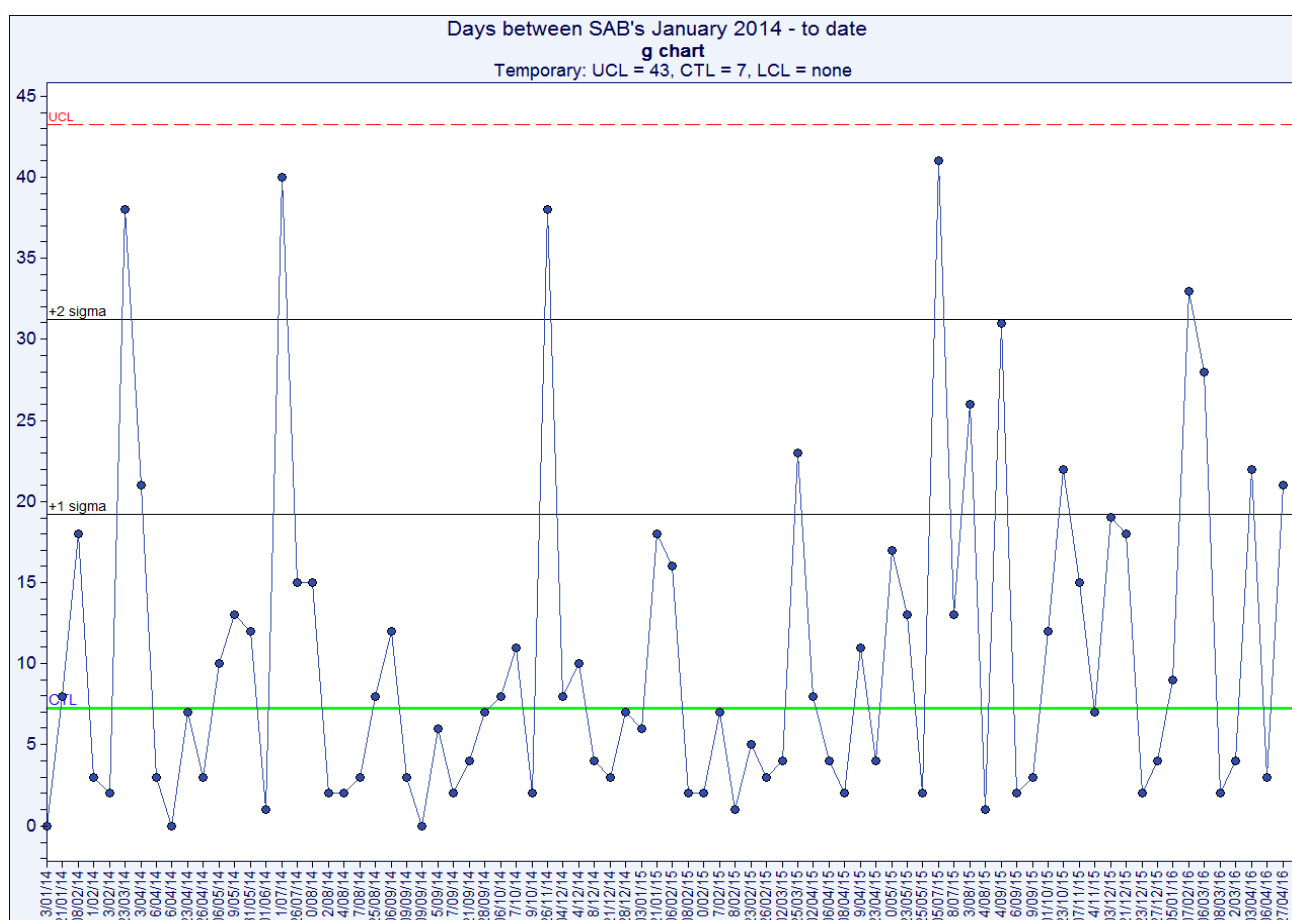


Figure 2: NHS Borders days between SAB cases (January 2014 – April 2016)

Since January 2016 there has only been one Meticillin-resistant *Staphylococcus aureus* (MRSA) case, with the remaining cases being Meticillin-sensitive *Staphylococcus aureus* (MSSA).

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.

In April 2016, there were 3 SAB cases compared with 5 in the same period in the previous year.

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.

In April 2016 there has been 1 case of *Clostridium difficile* infection (CDI).

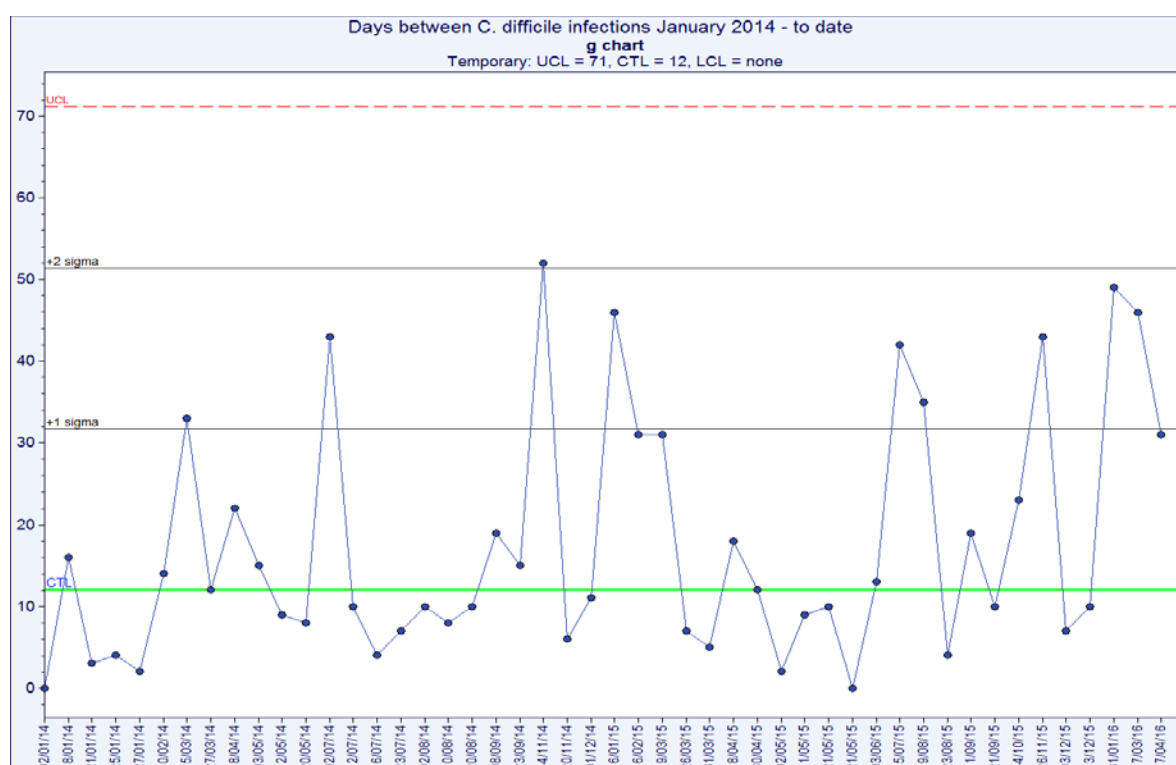


Figure 3: NHS Borders, days between CDI cases against indicative HEAT target (January 2014 – April 2016)

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.12) is an average figure across the sites using the national cleaning and estates monitoring tool that was implemented in April 2012.

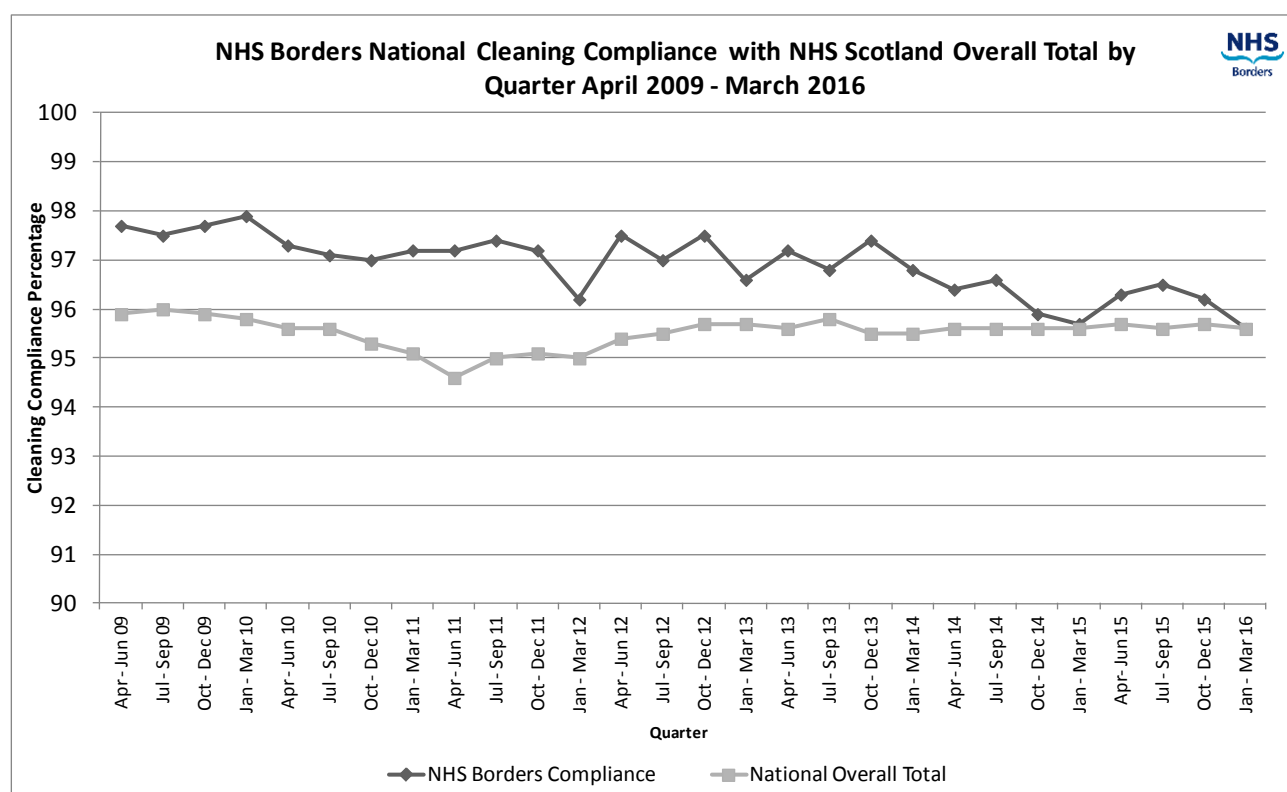


Figure 4: NHS Borders national cleaning compliance versus NHS Scotland's overall performance

Figure 4 shows that in the latest quarter (Jan-Mar) NHS Borders overall cleaning compliance has dropped to the Scottish average. The reason for the overall drop in NHS Borders cleaning compliance is due to low scores achieved in the Community and Emergency Department (ED). Staff cleaning rosters were altered from 4th April and since then, cleanliness scores in ED have improved. In the community, Domestic Supervisors are working on their areas to improve cleanliness.

Other Healthcare Associated Infections (HAI) Related Activity

2015/16 Infection Control Workplan

As at 31st March 2016, 90% of actions due for completion in the 2015/16 Workplan were completed. Due to significant progress already made against the outstanding actions, the risk to the organisation of the delay in implementation is low. The outstanding actions have been added to the 2016/17 Workplan.

Norovirus

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

Since the last Board update paper, one ward (Ward 9) was affected with diarrhoea and vomiting and was closed for 1 day as a precaution. Laboratory results for Norovirus tests were subsequently found to be negative.

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

Health Protection Scotland produces weekly data on the impact of Norovirus across Scotland in terms of ward closures. Figure 5 shows the most recently published data (25/05/16) for NHS Scotland, which compares the impact of Norovirus this season with a five year average and shows that so far, this is a relatively low impact season.

Number of wards closed 2015/16 Compared with the Average Number of Wards Closed from 2010-2015

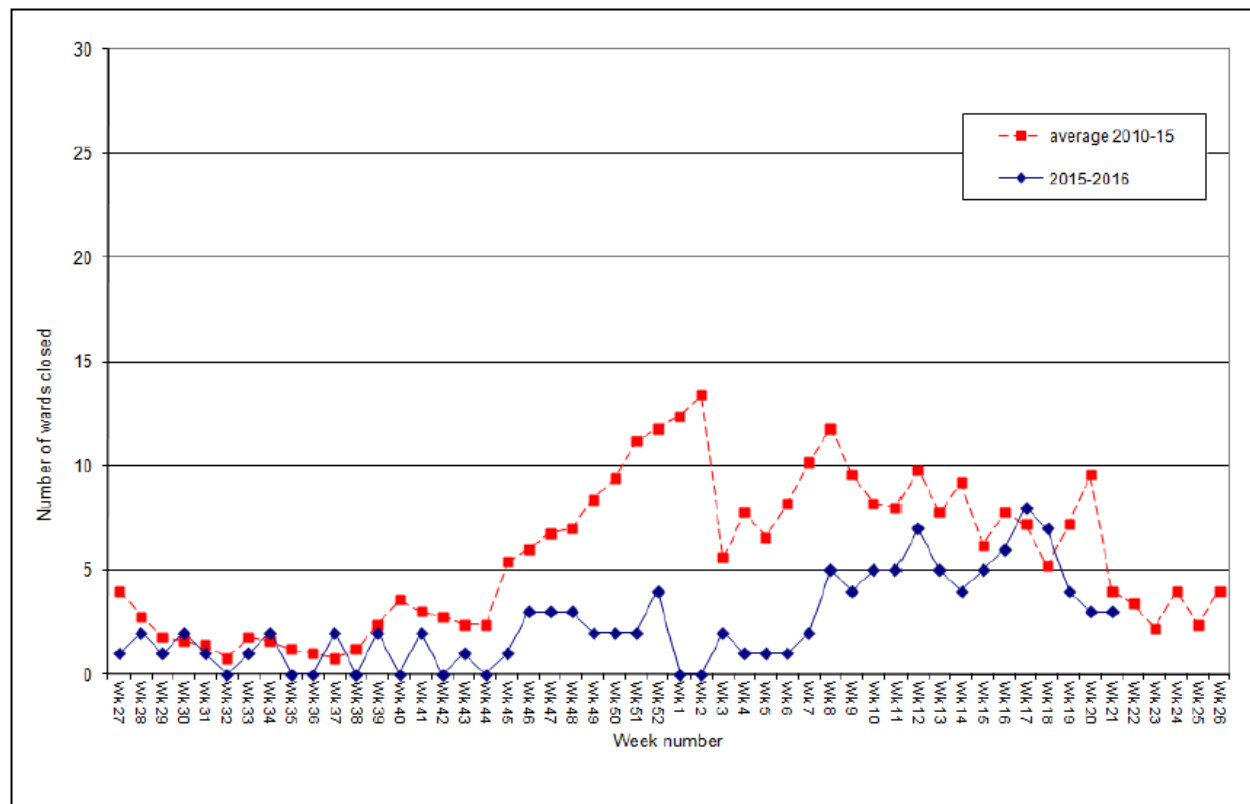


Figure 5: NHS Scotland - Average number of wards closed 2010-15 compared with 2015/16

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.

As Figures 6 and 8 show, since January 2016, there has been one Hip and one Colorectal SSI case. Figure 7 shows the surgical site infections relating to Caesarean Section.

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 meeting HPS definitions was in August 2014.

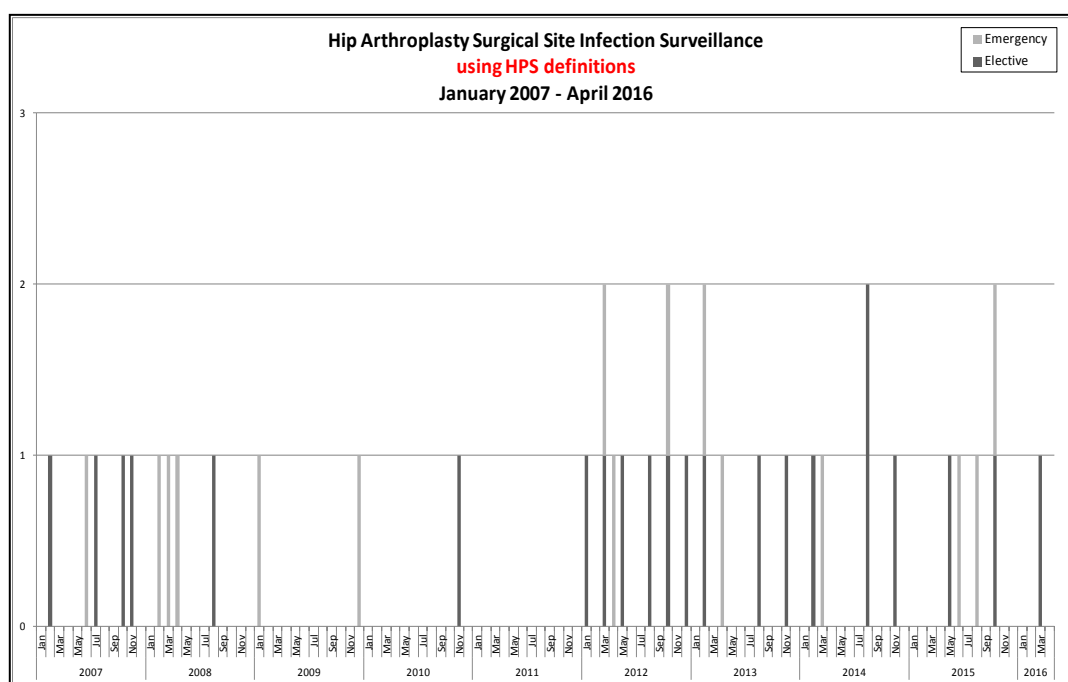


Figure 6: SSI for Hip Arthroplasty April 2012 – April 2016

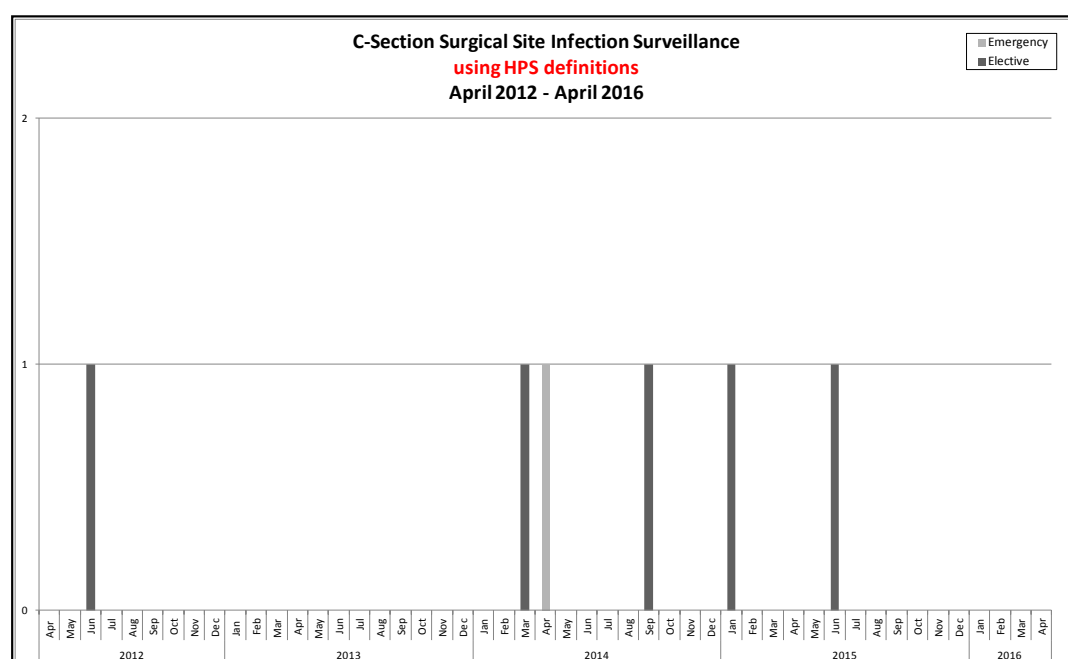


Figure 7: SSI for C-Sections April 2012 – April 2016

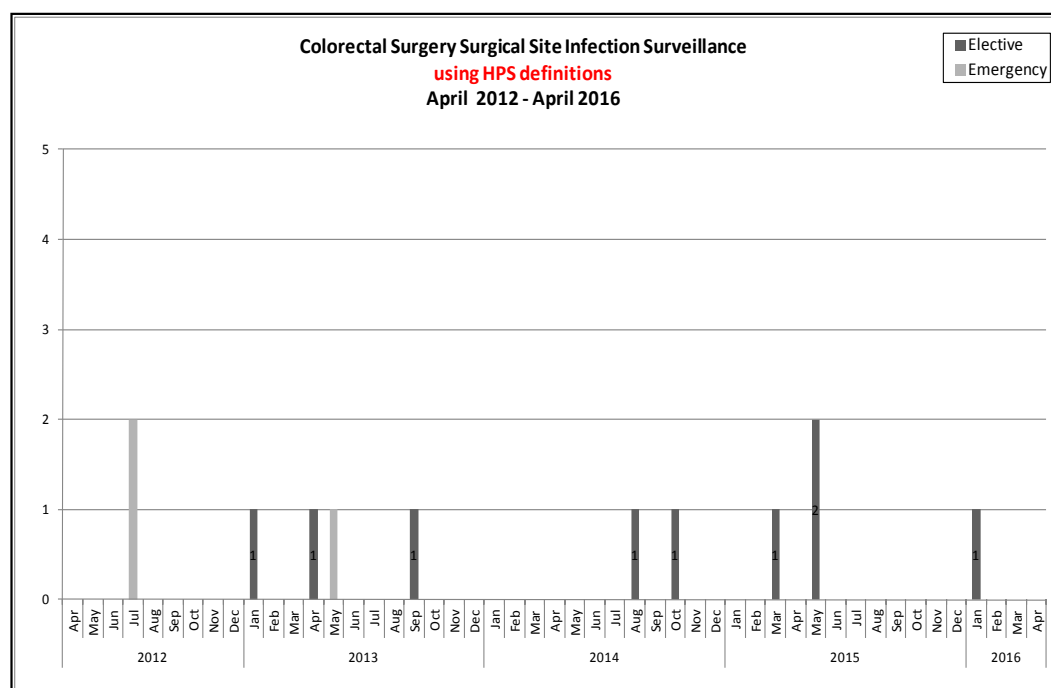


Figure 8: SSI for Colorectal Surgery April 2012 – April 2016

Monitoring that Systems and Processes are Operating as Intended

A programme of Infection Control spot checks is maintained to confirm that systems and processes are operating as intended. Detailed monthly reports of compliance by location are circulated to all Senior Charge Nurses, operational managers and senior managers as well as non-executive Directors.

The Infection Prevention and Control Team also undertake a programme of audits to monitor compliance with infection control policy.

Since the January 2016, 13 areas have been audited. Immediate verbal feedback is given to each area at the time of the audit. An Action Plan is sent to the Senior Charge Nurse of each ward who is required to return the completed plan within 28 days.

The timescale for follow-up infection control audits has previously been based on the total (average) audit score achieved in the initial audit. This focus on the overall audit score could lead to false assurance and failure to address significant areas of non-compliance within specific sections of audit. To address this, all infection control audits are now conducted as follows:

- 1) Every prioritised area is subject to one full audit per year
- 2) A follow-up audit of all non-compliant issues is conducted within 3 months of the initial full audit. Any remaining issues that have not been addressed are escalated to the Infection Control Manager (ICM).

Table 1 below shows the audit results and updates by location.

A key recurring theme of non-compliance in recent audits was poor knowledge on the use of the Actichlor Plus cleaning solution. This cleaning product is used for managing blood and body fluids. Actichlor Plus requires two different dilution levels and 3 different contact times depending on what is being cleaned. Actichlor Plus is in the process of being

replaced with an alternative cleaning product (Fuse) following staff training. The new product will support improved staff compliance as it requires one dilution level and one contact time regardless of what is being cleaned.

Ward	Date of Audit	Score	No. Of Issues	Action Plan	Follow-Up Audit Date	Outstanding Issues	Further Action
Hawick	05-Jan-16	90%	9	Received	09-May-16	0	No further action.
DME	14-Jan-16	80%	16	Received	09-Mar-16	11	ICM reviewed outstanding issues with SCN on 17/05/16. SCN confirmed all actions now complete. No further action.
Ward 9	02-Feb-16	84%	13	Received	24-Apr-16	4	ICM reviewed outstanding issues with SCN on 17/05/16. SCN confirmed all actions now complete. No further action.
Ward 5	01-Mar-16	98%	2	Received	16-May-16	1	Outstanding action relates to building space and facilities which has already been escalated. No further action required by the ward.
Cauldshiels	01-Mar-16	83%	14	Received	16-May-16	10	ICM reviewed outstanding issues with SCN on 23/05/16. SCN confirmed 5 of the 10 actions remain outstanding. Further meeting being arranged w/c 13/06/16.
Huntlyburn	03-Mar-16	88%	9	Received			
Borders Stroke Unit	25-Mar-16	100%	0	-			
MAU	31-Mar-16	88%	10	Received			
Emergency Department	01-Apr-16	100%	0	-			
ASDU	01-Apr-16	93%	4	Received			
Ward 12	08-Apr-16	82%	14	Received			
Melburn Lodge	12-Apr-16	85%	12	Received			
ITU	21-Apr-16	96%	2	Due 30-May-16			

Table 1: Summary of infection control audits and follow-up outcomes

Healthcare Environment Inspectorate

In May 2016 all Health Boards were required to complete and submit a self assessment against the national HAI Standards together with supporting evidence of compliance.

NHS Borders self assessment reported the following areas for improvement:-

- NHS Borders plans to roll out the approach for monitoring that systems and processes are operating as intended beyond infection control. This will contribute to wider improvements in patient safety.
- NHS Borders will set a trajectory and monitor progress to increase compliance with Infection Control mandatory training (current compliance is 77%).
- NHS Borders is progressing focussed work to improve reliable compliance with PVC and urinary catheter bundles.

Actions related to this improvement work have been added to the Infection Control Workplan.

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

	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015	Jan 2016	Feb 2016	Mar 2016	Apr 2016
MRSA	0	0	0	0	0	0	0	0	1	0	0	0
MSSA	3	0	2	2	3	2	2	4	0	1	3	3
Total SABS	3	0	2	2	3	2	2	4	1	1	3	3

Clostridium difficile infection monthly case numbers

	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015	Jan 2016	Feb 2016	Mar 2016	Apr 2016
Ages 15-64	1	1	0	0	1	0	0	0	0	0	0	0
Ages 65 plus	3	0	1	2	1	1	1	2	1	0	1	1
Ages 15 plus	4	1	1	2	2	1	1	2	1	0	1	1

Hand Hygiene Monitoring Compliance (%)

	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015	Jan 2016	Feb 2016	Mar 2016	Apr 2016
AHP	98	100	100	100	100	100	98	99	97	100	100	100
Ancillary	96	96	97	95	98	96	94	97	99	96	93	96
Medical	98	97	96	95	97	97	94	98	97	94	97	98
Nurse	99	99	99	99	99	100	100	97	99	99	97	99
Board Total	99	98	98	98	99	99	98	98	99	97	98	99

Cleaning Compliance (%)

	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015	Jan 2016	Feb 2016	Mar 2016	Apr 2016
Board Total	97.4	96.9	97.4	96.2	97.9	96.8	91.5	97.4	95.6	94.6	95.3	94.5

Estates Monitoring Compliance (%)

	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015	Jan 2016	Feb 2016	Mar 2016	Apr 2016
Board Total	96.2	98.5	97.1	99.7	97.9	99.2	95.7	99.1	97.9	97.3	98.3	97.1

BORDERS GENERAL HOSPITAL REPORT CARD

Staphylococcus aureus bacteraemia monthly case numbers

	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015	Jan 2016	Feb 2016	Mar 2016	Apr 2016
MRSA	0	0	0	0	0	0	0	0	0	0	0	0
MSSA	1	0	0	1	0	0	0	0	0	0	2	1
Total SABS	1	0	0	1	0	0	0	0	0	0	2	1

Clostridium difficile infection monthly case numbers

	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015	Jan 2016	Feb 2016	Mar 2016	Apr 2016
Ages 15-64	0	0	0	0	0	0	0	0	0	0	0	0
Ages 65 plus	0	0	1	2	1	0	0	0	1	0	1	1
Ages 15 plus	0	0	1	2	1	0	0	0	1	0	1	1

Cleaning Compliance (%)

	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015	Jan 2016	Feb 2016	Mar 2016	Apr 2016
Board Total	95.6	96.0	95.9	95.7	95.8	96.8	96.0	96.1	96.0	96.5	95.8	96.8

Estates Monitoring Compliance (%)

	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015	Jan 2016	Feb 2016	Mar 2016	Apr 2016
Board Total	99	99.3	99.4	99.8	99.7	99.2	99.3	99.6	99.7	99.5	99.7	99.5

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

	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015	Jan 2016	Feb 2016	Mar 2016	Apr 2016
MRSA	0	0	0	0	0	0	0	0	1	0	0	0
MSSA	0	0	0	1	0	0	0	0	0	0	0	1
Total SABS	0	0	0	1	0	0	0	0	1	0	0	1

Clostridium difficile infection monthly case numbers

	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015	Jan 2016	Feb 2016	Mar 2016	Apr 2016
Ages 15-64	0	0	0	0	0	0	0	0	0	0	0	0
Ages 65 plus	1	0	0	0	0	1	0	1	0	0	0	0
Ages 15 plus	1	0	0	0	0	1	0	1	0	0	0	0

NHS OUT OF HOSPITAL REPORT CARD

Staphylococcus aureus bacteraemia monthly case numbers

	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015	Jan 2016	Feb 2016	Mar 2016	Apr 2016
MRSA	0	0	0	0	0	0	0	0	0	0	0	0
MSSA	2	0	2	0	3	2	2	4	0	1	1	1
Total SABS	2	0	2	0	3	2	2	4	0	1	1	1

Clostridium difficile infection monthly case numbers

	May 2015	Jun 2015	July 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015	Jan 2016	Feb 2016	Mar 2016	Apr 2016
Ages 15-64	1	1	0	0	1	0	0	0	0	0	0	0
Ages 65 plus	2	0	0	0	0	0	1	1	0	0	0	0
Ages 15 plus	3	1	0	0	1	0	1	1	0	0	0	0

Appendix A

Definitions and Supplementary Information**Staphylococcus aureus Bacteraemia (SAB)**

Staphylococcus aureus is an organism which is responsible for a large number of healthcare associated infections, although it can also cause infections in people who have not had any recent contact with the healthcare system. The most common form of this is Meticillin Sensitive *Staphylococcus Aureus* (MSSA), but the more well known is MRSA (Meticillin Resistant *Staphylococcus Aureus*), which is a specific type of the organism which is resistant to certain antibiotics and is therefore more difficult to treat. More information on these organisms can be found at:

Staphylococcus aureus : http://www.nhs24.com/content/default.asp?page=s5_4&articleID=346

MRSA: http://www.nhs24.com/content/default.asp?page=s5_4&articleID=252

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

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

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>

Hand Hygiene

Information on national hand hygiene monitoring can be found at:

<http://www.hps.scot.nhs.uk/haic/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/haic/>

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>