Borders NHS Board

NHS Borders

Meeting Date: 3 October 2019

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HEALTHCARE ASSOCIATED INFECTION PREVENTION AND CONTROL REPORT

Purpose of Report:
The purpose of this paper is to update Board members on the current status of Healthcare Associated Infections (HAI) and infection control measures in NHS Borders.

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

Approval Pathways:
This report does not require approval.

Executive 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.

Impact of item/issues on:	
Strategic Context	This report is in line with the NHS Scotland HAI Action Plan.
Patient Safety/Clinical Impact	Infection prevention and control is central to patient safety
Staffing/Workforce	This assessment has not identified any staffing implications.
Finance/Resources	This assessment has not identified any resource implications.
Risk Implications	All risks are highlighted within the paper.
Equality and Diversity	This is an update paper so a full impact assessment is not required.
Consultation	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.
Glossary	See Appendix A.

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 August 2019

- NHS Borders had 4 *Staphylococcus aureus* Bacteraemia (SAB) cases between April 2019 and August 2019. To achieve the HEAT target rate of 24.0 cases or less per 100,000 acute occupied bed days (AOBD) by March 2020, NHS Borders should have no more than 19 cases per year. NHS Borders is on target to achieve this.

- NHS Borders had 6 *Clostridium difficile* infection (CDI) cases between April 2019 and August 2019. 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 2020, NHS Borders should have no more than 33 cases per year. NHS Borders is on target to achieve this.

Staphylococcus aureus Bacteraemia (SAB)

See Appendix A for definition.

Figure 1 below shows that hospital acquired infection accounted for 2 SAB cases between April and August 2019. The definition of hospital acquired infection is where a positive blood culture sample is obtained from a patient who has been in hospital for more than 48 hours or where the organism is considered to be a contaminant when the sample was taken in hospital.

There were 4 cases of Methicillin-sensitive *Staphylococcus aureus* (MSSA) and no cases of Methicillin-resistant *Staphylococcus aureus* (MRSA).

Figure 1:

Total *Staphylococcus aureus* Bacteraemia (SAB)
by location and cause (Apr 2019 - Aug 2019)

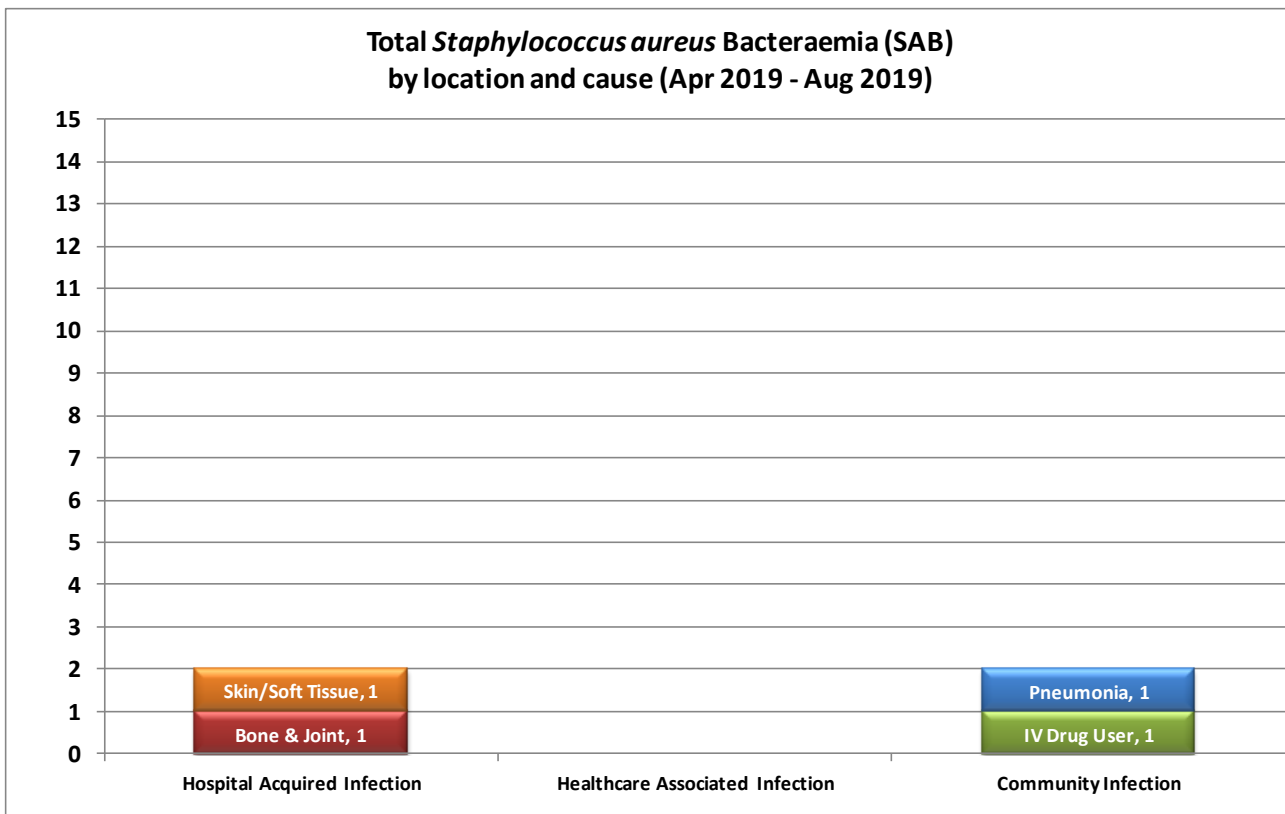| Hospital Acquired Infection	Healthcare Associated Infection	Community Infection
Skin/Soft Tissue, 1		Pneumonia, 1
Bone & Joint, 1		IV Drug User, 1

Figure 1: SAB cases by location and cause (April 2019 – August 2019)

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.

Days between SABs

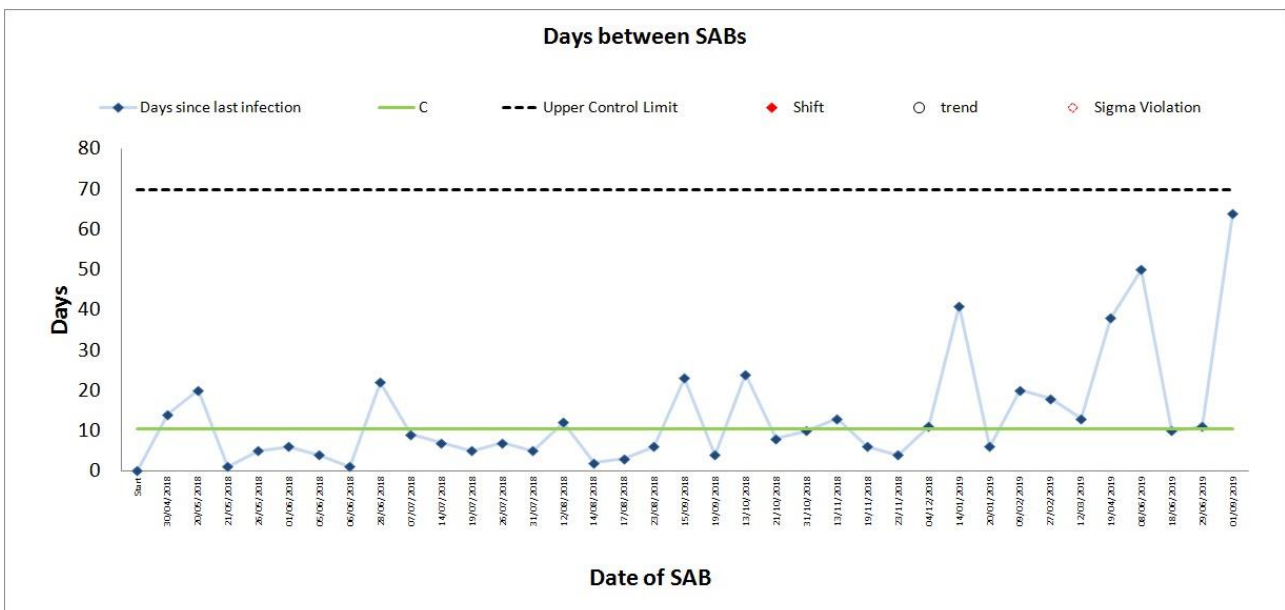Legend: Days since last infection — C — Upper Control Limit — Shift — trend — Sigma Violation

Figure 2: NHS Borders days between SAB cases (April 2018 – August 2019)

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.

Every SAB case is subject to a rigorous review which includes a feedback process to the clinicians caring for the patient. Any learning is translated into specific actions which are added to the Infection Control Work Plan with progress critically reviewed by the Infection Control Committee.

Clostridium difficile infections (CDI)
See Appendix A for definition.

Figure 3 below 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 is 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.

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.
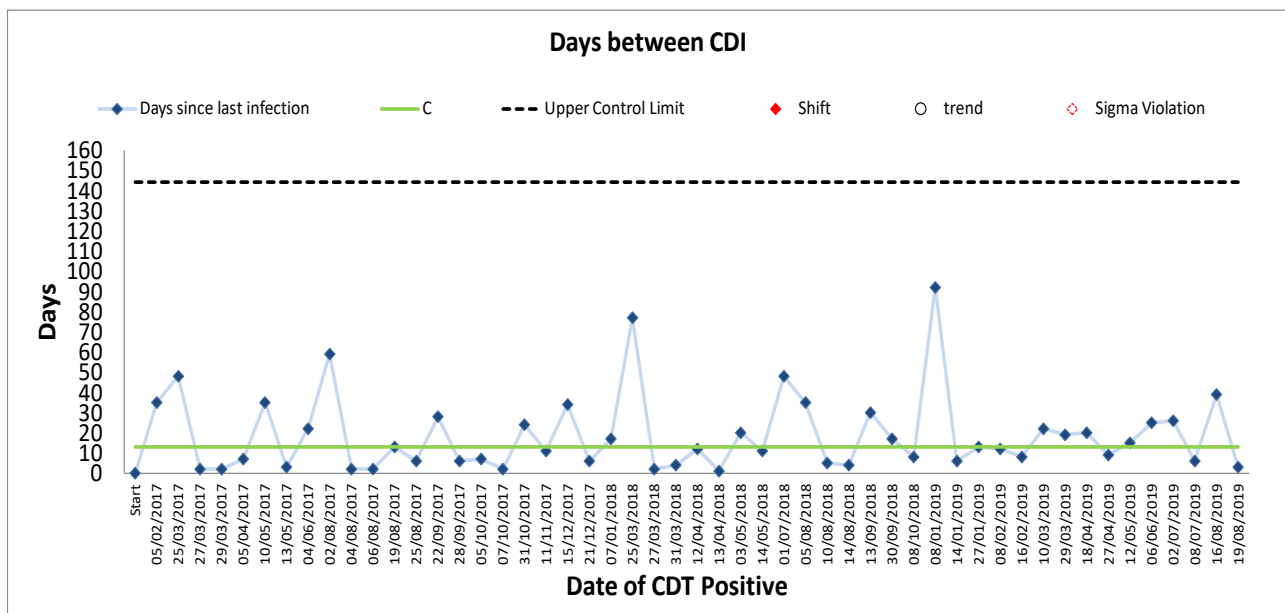

Figure 3: NHS Borders days between CDI cases (January 2015 – August 2019)

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, Senior Charge Nurses and Clinical Directors.

Infection Prevention and Control Compliance Monitoring Programme
The Infection Prevention and Control Team (IPCT) undertake a programme of Standard Infection Control Precautions (SICPs) audits to monitor compliance with the National Infection Prevention and Control Manual; each area is audited approximately every 18 months.

The IPCT also maintain a programme of monthly spot checks to monitor that systems and processes are operating as intended in the interim period between full SICPs audits.

NHS Borders is undertaking a number of actions to improve the recent increase in the number of issues identified during the monthly spot checks. Focused improvement work is progressing with the Senior Charge Nurse and Clinical Nurse Managers in acute services to address ongoing themes.

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.

The Infection control team will be working with the Facilities Manager to develop a process to validate the estates monitoring audits in September.

2019/20 Infection Control Workplan
As of 31st August 2019, all actions are on target for completion.

Outbreaks
There have been no outbreaks of gastrointestinal illnesses or respiratory illnesses since the last update.

- **Rifampicin-resistant MRSA**
  There was an increase in the number of rifampicin-resistant MRSA cases during the period March 2019 to August 2019. A Problem Assessment Group (PAG) was convened on 26/07/19 when the initial increase was identified with a follow-up meeting held on 02/08/19. Initial review of these patients showed an association with previous hospital admission.
  Epidemiological investigation has since been completed and a timeline of cases has been developed. It is still unclear why there was a sudden increase in cases but a further meeting will be held on the 19th of September to identify any learning from this incident.

- **Ebola outbreak in Democratic Republic of Congo (DRC)**
  On 17 July 2019, the World Health Organization (WHO) declared the Ebola virus disease (EVD) outbreak in the Democratic Republic of the Congo (DRC) a Public Health Emergency of International Concern. This declaration is aimed at focusing further support on the outbreak response and does not change the negligible to low risk to Scotland and the wider UK. However, preparedness is required in the event of a symptomatic patient or returning worker attending the Emergency Department.

NHS Borders is currently in the process of training emergency staff on how to 'don' and 'doff' specialised Personal Protective Equipment appropriately and the escalation process should this event arise.

NHS Borders Surgical Site Infection (SSI) Surveillance

NHS Borders participates in a national infection surveillance programme relating to specific surgical procedures. This is coordinated by Health Protection Scotland (HPS) and uses national definitions and methodology which enable comparison with overall NHS Scotland infection rates.

In the period April 2019 to August 2019 there have been no SSIs following Breast surgery, 1 organ space SSI following C-section, 3 deep SSIs following hip arthroplasty, 1 superficial SSI following knee arthroplasty and 1 organ space SSI following colorectal surgery.

Each SSI case is subject to a full review to identify any learning. In addition, a further review of all orthopaedic SSI cases since March 2019 is progressing to identify any recurring themes. To date, no themes have been identified.

NHS Borders is not a statistical outlier from the rest of Scotland.

Antimicrobial Management Team (AMT) Update

The Antimicrobial Management Team (AMT) is responsible for maintaining an antimicrobial stewardship programme across NHS Borders.

This year European Antibiotic Awareness day is on the 18th November. Work is progressing to plan promotional activities. This will include daily board wide communication of antimicrobial facts and information as well as a promotional stall in the hospital. As part of this promotion, staff will be encouraged to sign up to be an Antibiotic Guardian. Public communication will also be issued throughout the week.

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 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 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. 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

	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	June 2019	July 2019	Aug 2019
MRSA	0	0	0	0	0	0	0	0	0	0	0	0
MSSA	2	3	3	1	4	2	1	1	0	3	0	0
Total SABS	2	3	3	1	4	2	1	1	0	3	0	0

Clostridium difficile infection monthly case numbers

	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	June 2019	July 2019	Aug 2019
Ages 15-64	2	0	0	0	0	0	0	1	0	0	0	1
Ages 65 plus	0	1	0	0	3	2	2	1	1	1	2	1
Ages 15 plus	2	1	0	0	3	2	2	2	1	1	2	2

Hand Hygiene Monitoring Compliance (%)

	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	June 2019	July 2019*	Aug 2019
AHP	98	100	98	100	100	100	99	100	100	98	95	100
Ancillary	98	95	100	100	95	99	94	97	97	96	96	96
Medical	97	99	99	99	99	99	99	99	99	98	100	99
Nurse	98	99	99	99	99	100	100	95	98	98	98	99
Board Total	**98**	**98**	**99**	**99**	**99**	**100**	**98**	**98**	**99**	**98**	**97**	**99**

*LANQIP reporting system issues, not all areas were able to submit data within the timescale.

Cleaning Compliance (%)

	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	June 2019	July 2019	Aug 2019
Board Total	96.7	95.9	96.9	96.3	96.5	96.1	95.9	97.4	96.7	95.9	96.1	97.1

Estates Monitoring Compliance (%)

	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	June 2019	July 2019	Aug 2019
Board Total	98.8	100	99.5	99.6	99.7	100	99	98.4	97.1	99.8	98.5	99.4

BORDERS GENERAL HOSPITAL REPORT CARD

Staphylococcus aureus bacteraemia monthly case numbers

	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	June 2019	July 2019	Aug 2019
MRSA	0	0	0	0	0	0	0	0	0	0	0	0
MSSA	1	0	1	0	2	1	0	0	0	2	0	0
Total SABS	1	0	1	0	2	1	0	0	0	2	0	0

Clostridium difficile infection monthly case numbers

	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	June 2019	July 2019	Aug 2019
Ages 15-64	1	0	0	0	0	0	0	0	0	0	0	0
Ages 65 plus	0	0	0	0	1	2	1	0	1	1	2	1
Ages 15 plus	1	0	0	0	1	2	1	0	1	1	2	1

Cleaning Compliance (%)

	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	June 2019	July 2019	Aug 2019
Board Total	96.1	96.3	96.7	97.0	96.9	96.8	96.9	97.5	97.3	97.6	97.7	97.5

Estates Monitoring Compliance (%)

	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	June 2019	July 2019	Aug 2019
Board Total	99.7	99.9	99.6	99.9	99.9	99.9	99.3	99.6	99.8	99.8	99.9	99.9

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

	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	June 2019	July 2019	Aug 2019
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	0
Total SABS	0	0	0	0	0	0	0	0	0	0	0	0

Clostridium difficile infection monthly case numbers

	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	June 2019	July 2019	Aug 2019
Ages 15-64	0	0	0	0	0	0	0	0	0	0	0	0
Ages 65 plus	0	1	0	0	0	0	0	1	0	0	0	0
Ages 15 plus	0	1	0	0	0	0	0	1	0	0	0	0

NHS OUT OF HOSPITAL REPORT CARD

Staphylococcus aureus bacteraemia monthly case numbers

	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	June 2019	July 2019	Aug 2019
MRSA	0	0	0	0	0	0	0	0	0	0	0	0
MSSA	1	3	2	1	2	1	1	1	0	1	0	0
Total SABS	1	3	2	1	2	1	1	1	0	1	0	0

Clostridium difficile infection monthly case numbers

	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	June 2019	July 2019	Aug 2019
Ages 15-64	1	0	0	0	0	0	0	1	0	0	0	1
Ages 65 plus	0	0	0	0	2	0	1	0	0	0	0	0
Ages 15 plus	1	0	0	0	2	0	1	1	0	0	0	1

Appendix A

Definitions and Supplementary Information

Staphylococcus aureus Bacteraemia (SAB)

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

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

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

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

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

Clostridium difficile infection (CDI)

Clostridium difficile is an organism which is responsible for a large number of healthcare associated infections, although it can also cause infections in people who have not had any recent contact with the healthcare system. More information can be found at:

http://www.nhs.uk/conditions/Clostridium-difficile/Pages/Introduction.aspx

NHS Boards carry out surveillance of *Clostridium difficile* infections (CDI), and there is a national target to reduce these. The number of patients with CDI for the Board can be found at the end of section 1 and for each hospital in section 2. Information on the national surveillance programme for *Clostridium difficile* infections can be found at:

http://www.hps.scot.nhs.uk/haiic/sshaip/ssdetail.aspx?id=277

Hand Hygiene

Information on national hand hygiene monitoring can be found at:

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

Good hand hygiene by staff, patients and visitors is a key way to prevent the spread of infections. More information on the importance of good hand hygiene can be found at:

http://www.washyourhandsofthem.com/

Cleaning and the Healthcare Environment

Keeping the healthcare environment clean is essential to prevent the spread of infections. NHS Boards monitor the cleanliness of hospitals and there is a national target to maintain compliance with standards above 90%.The cleaning compliance score for the Board can be found at the end of section 1 and for each hospital in section 2. Information on national cleanliness compliance monitoring can be found at:

http://www.hfs.scot.nhs.uk/online-services/publications/hai/

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

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