

Healthcare Associated Infection Report

April 2019 data

Section 1 – Board Wide Issues

Section 1 of the HAIRT covers Board wide infection prevention and control activity and actions. For reports on individual departments, please refer to the 'Healthcare Associated Infection Report Cards' in Section 2.

Key Healthcare Associated Infection Headlines

- ✚ **Staphylococcus aureus Bacteraemia**- No cases of SAB to report in April. Last SAB Jan 19.
- ✚ **Clostridioides difficile infection (previously known as Clostridium difficile)**
No CDI to report since June 18.
- ✚ **Hand Hygiene**- The **bimonthly** report from March demonstrates an overall Board compliance rate of 99%. Medical staff compliance has increased to 96% from 92%.

Non compliance reported for this time period are predominately staff not taking the opportunity to perform hand hygiene at various key moments.
- ✚ **Cleaning and the Healthcare Environment- Facilities Management Tool**
Housekeeping Compliance: 98.86% Estates Compliance: 99.51%
- ✚ **Surgical Site Infection**-
Hip and Knee replacement SSI rates are within control limits.
Cardiac and CABG SSIs are currently within control limits. CABG SSI rate has been in decline to around the median since Dec 18 and supported by the improvement work plan.

Other HAI Related Activity

Problem Assessment Groups (PAG) - Locally convened group to further investigate an HAI issue which may require additional multidisciplinary controls.

PAGs	Update
Cardiac/CABG Surgical Site Infection	A draft skin prep protocol has been developed by Theatre Services Manager. The Prevention and Control of Infection Team have had the opportunity to contribute to this. The final protocol is a scheduled agenda item for April 19 SSCGG and education film under development.

Prevention and Control of Infection Programme 2019/20 & Annual Report 18/19- This planned programme for the coming year and 18/19 Annual Report has been developed and scheduled for approval at the PCIC in June.

HAI measures Excellence in Care- The Prevention and Control of Infection team are working with Associate Director Nursing- Education to test and implement HAI measures within this programme. The measures focus on screening and management of patients in relation to Multi Drug Resistant Organisms (MDRO). Measures focus on CPE and MRSA screening and will influence how MRSA screening is reported in the future. Testing has begun in CCU; progress will be reported via the PCIC.

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: 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>

GJNH approach to SAB prevention and reduction

It is accepted within HPS that care must be taken in making comparisons with other Boards data because of the specialist patient population within GJNH. All SAB isolates identified within the laboratory are subject to case investigation to determine future learning and quality improvement.

Small numbers of cases can quickly change our targeted approach to SAB reduction.

Broad HAI initiatives which influence our SAB rate include-

- Hand Hygiene monitoring
- MRSA screening at pre-assessment clinics and admission
- Compliance with National Cleaning Standards Specifications
- Audit of the environment and practices via Prevention and Control of Infection Annual Reviews & monthly SCN led Standard Infection Control Precautions and CNM Peer Review monitoring
- Participation in National Enhanced SAB surveillance- gaining further intelligence on the epidemiology of SAB locally and nationally.

SSI Related SAB

- Introduction of MSSA screening for cardiac and subsequent treatment pre and post op as a risk reduction approach.
- Surgical Site Infection Surveillance in collaboration with Health Protection Scotland and compared with Health Protection Agency data to allow rapid identification of increasing and decreasing trends of SSI.
- Standardisation of post op cardiac wound care.
- Review and continued implementation of a wound swabbing protocol and competency.

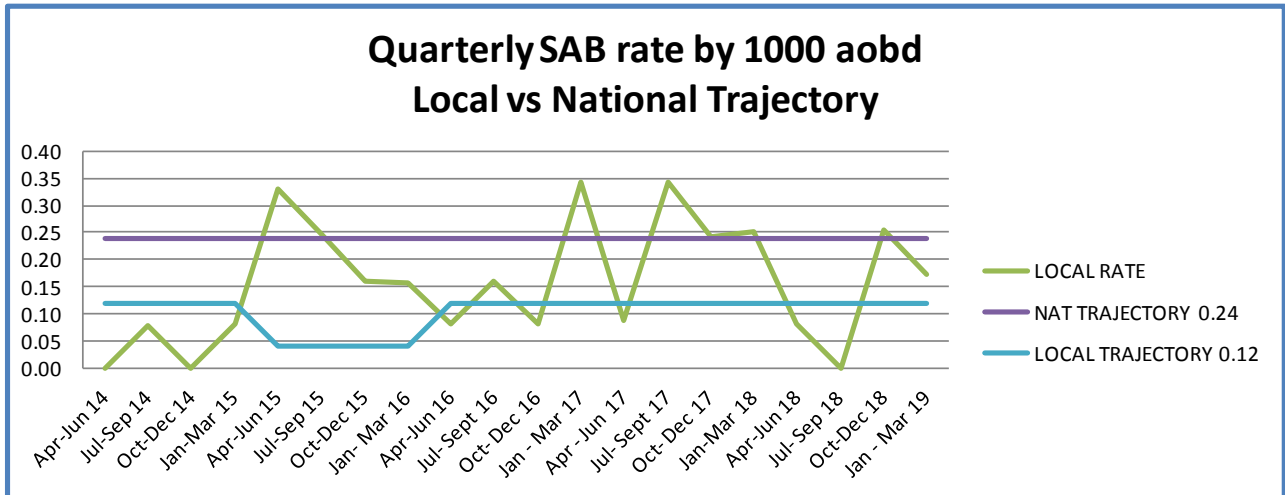
Device Related SAB

- SPSP work streams continue to aim to sustain compliance with PVC, CVC, PICC and IABP bundles; assessment of compliance locally aids targeting of interventions accordingly.
- Implementation of combined PVC insertion and maintenance bundle
- Implementation of arterial line maintenance bundle in Critical Care.

SAB Local Delivery Plan (LDP) Heat Delivery Trajectories

SGHD have not yet announced new targets, therefore we continue to work toward the extant target rolling trajectory of 0.24 cases per 1,000 acute occupied bed days or lower.

Boards currently with a rate of less than 0.24 are expected to at least maintain this, as reflected in their trajectories.



Sources of SAB

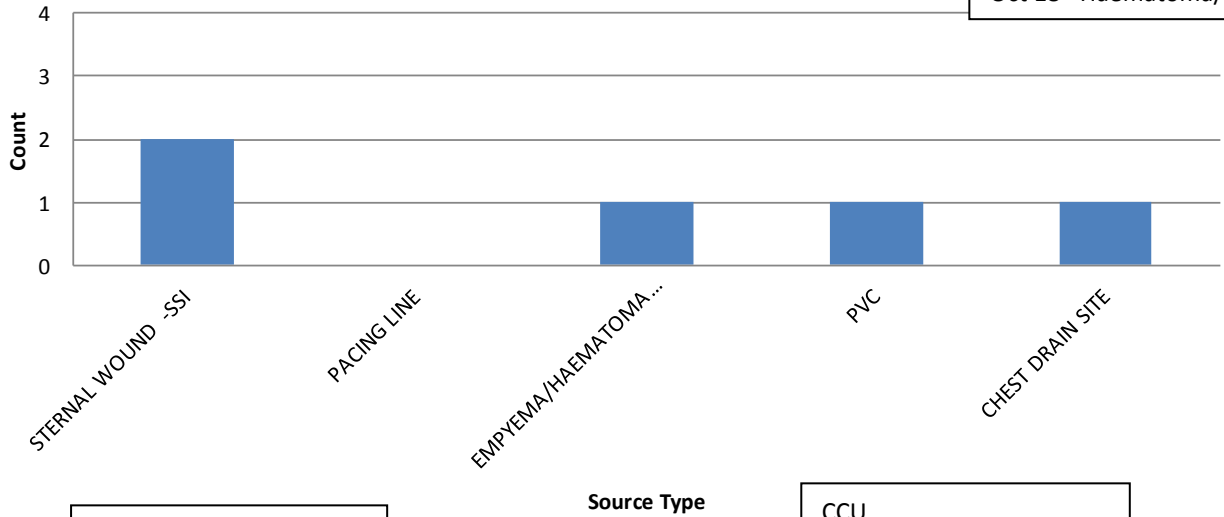
The Prevention and Control of Infection Team continue to work closely with the clinical teams, CGRM and clinical educators to gain insight into the sources of SAB acquisition and associated learning.

Each SAB is subject to an enhanced surveillance process involving the PCIT, SCN and responsible consultant to determine any learning from the source of the SAB. Thereafter the Enhanced SAB surveillance reports are submitted to the relevant division clinical governance group to share potential learning and note actions required.

SAB Sources Rolling year May 18- Apr 19

HDU 3
Nov 18 – SSI

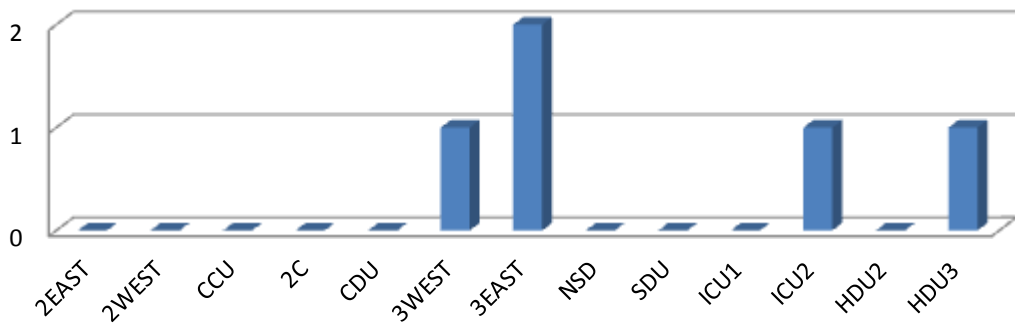
3 West
Oct 18 –Haematoma/Emphyema



3 EAST
Nov 18- SSI
Jan 19- Chest drain site

CCU
Jan 19- PVC

SAB by Area Rolling Year May 18- Apr 19



***Clostridioides difficile* infection (previously known as *Clostridium difficile*)**

Clostridioides 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 *Clostridioides 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>

The species was transferred from the genus *Clostridium* to *Clostridioides* in 2018, giving it the new combination *Clostridioides difficile*. This new name reflects the taxonomic differences between this species and other members of the genus *Clostridium*, while maintaining the common name as *C. diff.*

GJNH approach to CDI prevention and reduction

Our numbers of CDI cases are low in comparison with other Boards, which is likely to relate to our specialist patient population.

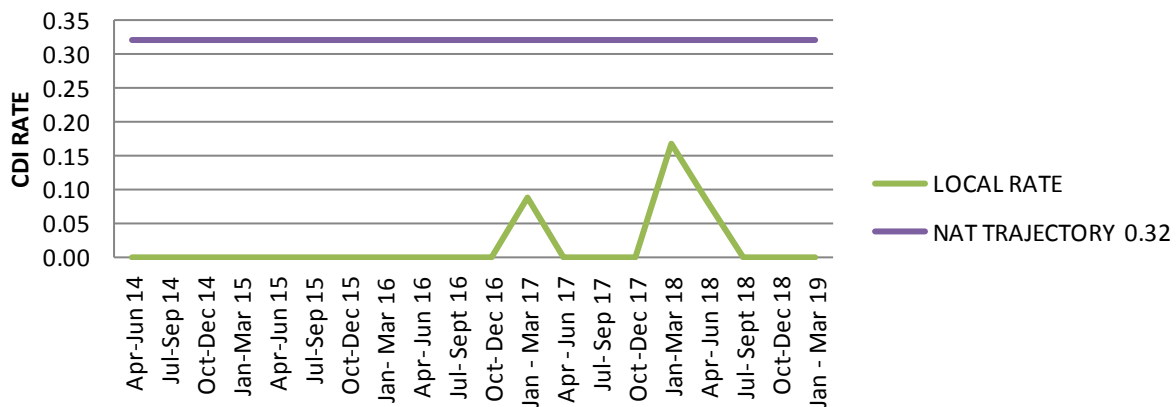
Actions to reduce CDI-

- Ongoing alert organism surveillance and close monitoring of the severity of cases by the PCIT.
- Unit specific reporting and triggers.
- Implementation of HPS Severe Case Investigation Tool if the case definition is met
- Typing of isolates when two or more cases occur within 30 days in one unit.

CDI LDP Heat Delivery Trajectories

SGHD have not yet announced new targets, therefore we continue to work toward the extant target of rolling trajectory of 0.32 cases CDI per 1,000 occupied bed days. This relates to people aged 15 and over. Boards currently with a rate of less than 0.32 will be expected to at least maintain this, as reflected in their trajectories.

Quarterly CDI rate by 1000 aobd Local vs National Trajectory



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.nipcm.hps.scot.nhs.uk>

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>

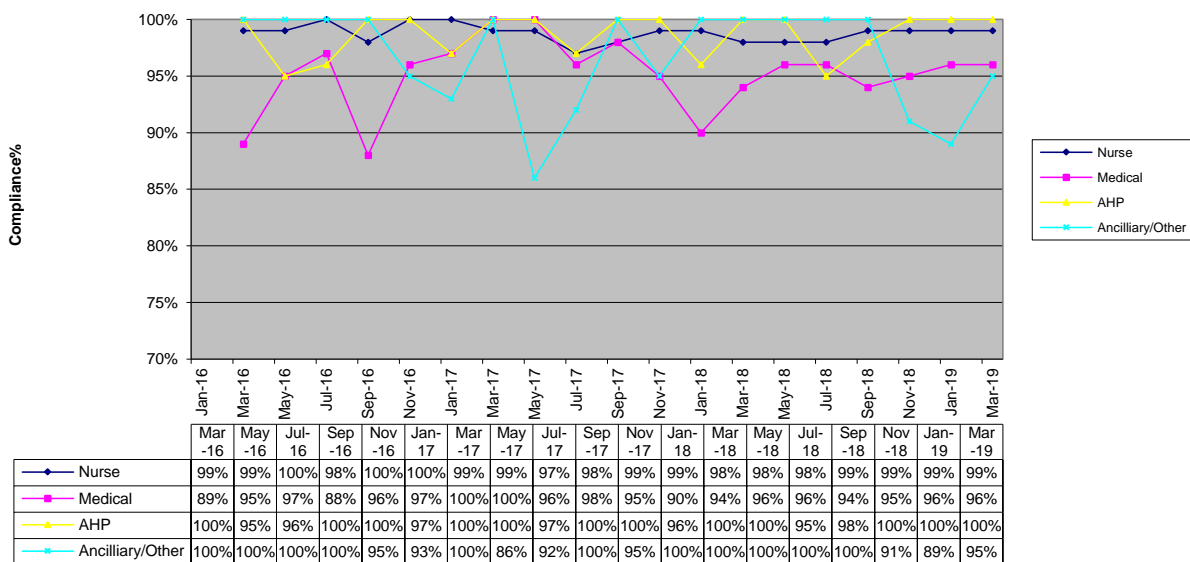
GJNH approach to Hand Hygiene

The **bimonthly** report from March demonstrates an overall Board compliance rate of 99%. Medical staff compliance increased to 96% from 92%.

Non compliance reported for this time period are predominately staff not taking the opportunity to perform hand hygiene at various key moments.

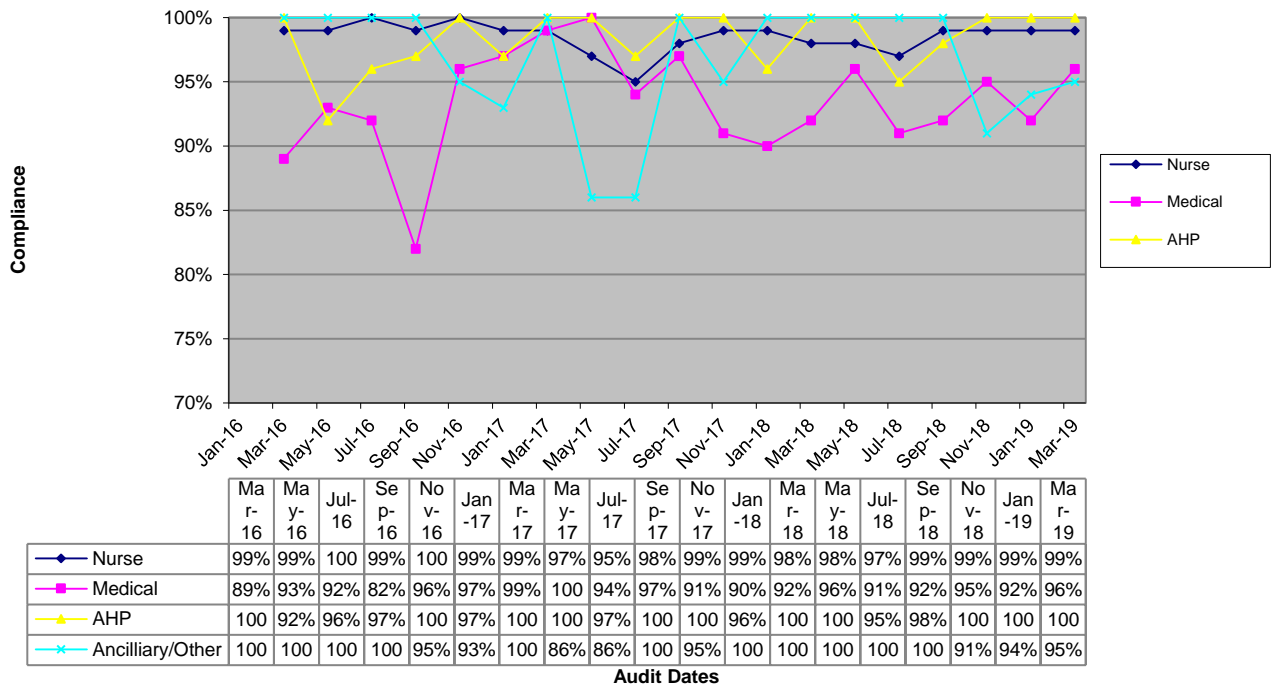
Staff within the GJF are reminded to actively promote good hand hygiene and challenge non compliance. Where repeated incidents of non compliance are noted, staff are should utilise the "Repeated Hand Hygiene Non Compliance Form" to record and escalate these incidents.

HH "Opportunity Taken" Compliance Board Level

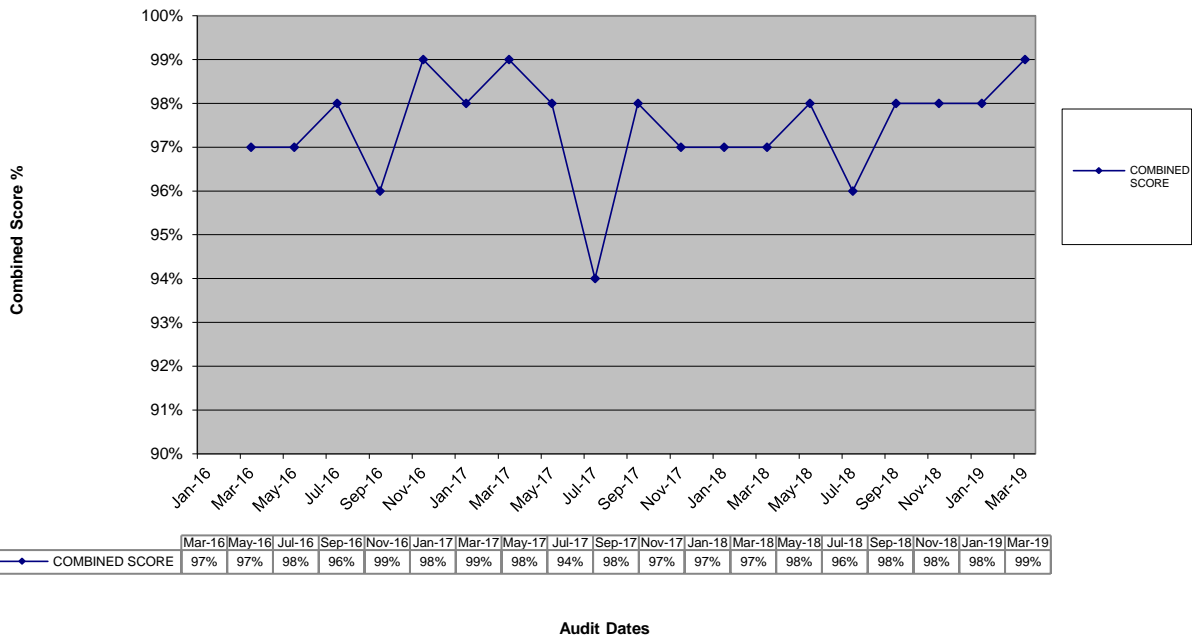


Audit Dates

HH Combined Compliance by Staff Group



HH Combined (Opportunity and Technique)Score



Summary of Non Compliance Type/Area

All reported non compliance have been as a result of not taking the opportunity to perform hand hygiene at various key moments.

AREA	STAFF GROUP	KEY MOMENT	OPPORTUNITY TAKEN	CORRECT TECHNIQUE
TH 4	D	4	NO	NO
TH 12	D	4	NO	NO
HDU 3	N	3	NO	NO
ICU 2	O	5	NO	NO

AREA AUDITED	COMPLIANCE
TH 4	95%
TH 12	95%
HDU 3	95%
ICU 2	95%
TH 7	100%
TH 2	100%
PACU	100%
CCU	100%
2 WEST	100%
3 EAST	100%
3 WEST	100%
NSD	100%
ICU 1	100%
2D	100%
HDU 2	100%
95% Compliance or above	
80% - 94% Compliance	
Below 80% Compliance	

Cleaning and Maintaining the Healthcare Environment

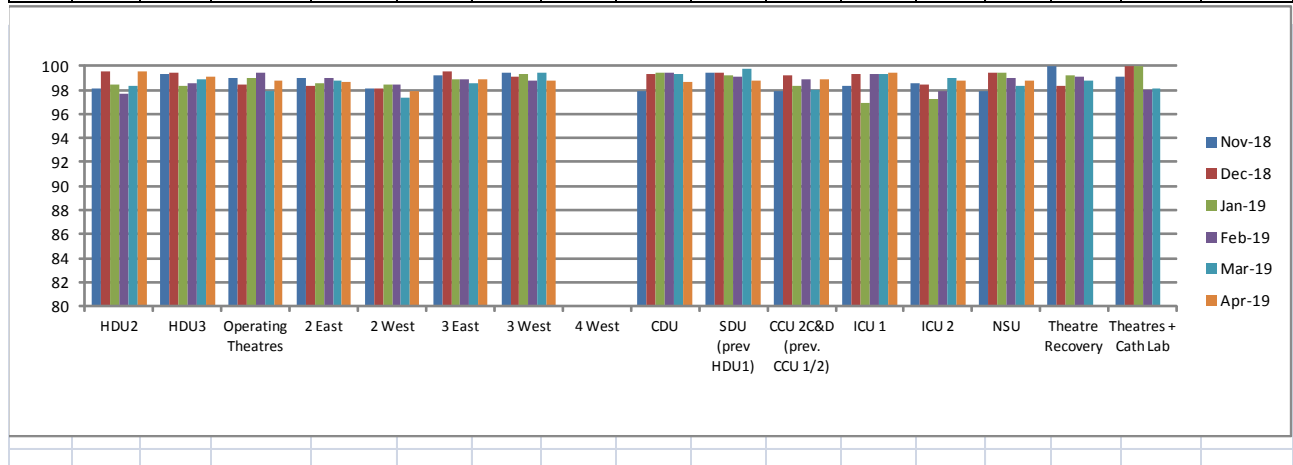
Housekeeping FMT Audit Results

Cleaning services continue to be monitored against the NHSScotland National Cleaning Service Specifications (NCSS) using the HFS Domestic monitoring tool. All healthcare facilities and component parts, e.g. wards, treatment rooms, corridors etc, **are expected to be at least 90% compliant with the requirements set out in the NCSS**. The FMT is currently under review nationally via HFS.

Since mid April, Boards have not been able to submit FMT data to HFS due to issues with the national DMT system. Audit activity continues and estates issues reported via the helpdesk in the meantime. HFS advise that the system will be functional by the end of May 2019 and have requested the retention of manual audits.

The data presented below has been collected prior to DMT system issues; therefore data from all areas audited has not been submitted or noted below.

	HDU2	HDU3	Operating Theatres	2 East	2 West	3 East	3 West	4 West	CDU	SDU (prev HDU1)	CCU 2C&D (prev. CCU 1/2)	ICU 1	ICU 2	NSU	Theatre Recovery	Theatres + Cath Lab
Apr-18	98.76	98.13	99.48	98.50	98.21	99.33	99.22		100.00	99.49	98.87	99.00	99.55	98.43	99.30	100.00
May-18	98.58	99.72	99.48	99.26	97.36	99.23	98.05		100	99.55	99.06	99.32	98.38	98.28	98.82	99.16
Jun-18	98.04	99.14	99.48	98.54	97.59	99.23	99.07		96.94	99.16	98.7	98.13	100	100	99.11	98.56
Jul-18	99.59	99	100	97.47	96.99	99.59	99.16		97.63	98.63	98.87	98.55	100	98.31	97.89	97.63
Aug-18	97.61	99.21	99.47	98.92	99.15	98.92	99.72		98.88	99.55	99.72	99.14	96.71	98.84	100.00	98.42
Sep-18	99.42	98.65	100	97.56	97.68	99.65	100		98.78	99.46	98.81	98.18	99.38	98.8	100.00	99.21
Oct-18	99.25	98.83	99.47	98.47	99.15	98.58	99.22		97.9	99.38	97.87	98.98	98.97	97.6	100	98.8
Nov-18	98.16	99.34	98.94	98.95	98.09	99.22	99.39		97.87	99.48	97.92	98.29	98.5	97.93	100	99.11
Dec-18	99.51	99.41	98.44	98.3	98.07	99.58	99.14		99.36	99.47	99.23	99.36	98.42	99.4	98.33	100
Jan-19	98.47	98.35	98.96	98.57	98.42	98.88	99.28		99.45	99.21	98.35	96.87	97.25	99.4	99.19	100
Feb-19	97.7	98.56	99.48	98.95	98.42	98.88	98.81		99.45	99.15	98.84	99.35	97.91	99.03	99.11	98.03
Mar-19	98.32	98.89	97.88	98.81	97.37	98.57	99.48		99.35	99.78	98.01	99.35	99.01	98.29	98.82	98.14
Apr-19	99.52	99.14	98.75	98.65	97.93	98.91	98.77		98.69	98.81	98.89	99.40	98.74	98.78		



MRSA Screening Compliance

Staphylococcus aureus is a bacterium which normally colonises the nose, throat and skin of approximately 35% of the population at any one time.

Meticillin resistant *Staphylococcus aureus* (MRSA) is a resistant form of the organism. Infections caused by MRSA are more difficult to treat because of reduced treatment options as a result of resistance to a variety of antibiotics.

Patients may be colonised without signs of infection. MRSA can cause a wide range of conditions from wound infections, soft tissue infections, line related infections, blood stream infections, osteomyelitis and endocarditis.

MRSA screening promotes early identification of patients colonised or infected with MRSA. This facilitates early implementation of decolonisation / treatment with the aim of reducing the reservoir of MRSA and therefore the risk of transmission to other vulnerable patients.

Within GJNH MRSA screening must be completed for all elective admissions within high impact specialities e.g.

- ORTHOPAEDIC /CARDIAC/CARDIOTHORACIC/CARDIOLOGY

MRSA screening consists of nose & perineum and where applicable, wounds and invasive devices.

Screening must be completed at pre assessment where applicable, and on admission into GJNH. Thereafter patients whose length of stay is 10 days or more are subject to additional screening on:

- Day 10
- And each 7 days thereafter

The purpose of this additional screening is to ensure that healthcare associated interventions have not significantly altered the patients normal flora and resistant.

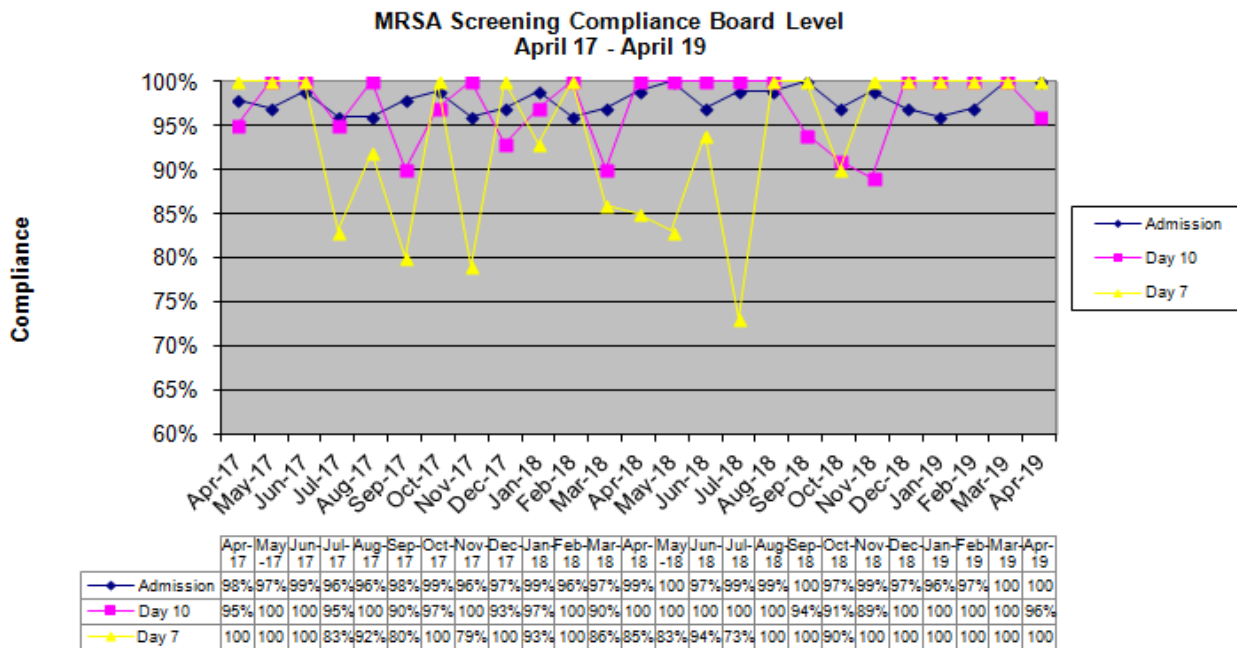
Day 10 screen was identified as the initial screen date as it captures patient stay beyond routine pathways. Compliance is monitored via reviewing a sample of eligible patients against submitted MRSA screens. SCNs are informed of results at the time of audit and informed an action plan required to improve compliance should be submitted.

The table below provides an overall monthly compliance with MRSA screening and subsequent graph detail compliance over time.

Data analysis report April 2019:

April 19	Board Total
SAMPLE SIZE	139
ADMIT COMPLIANCE	100%
SAMPLE SIZE	25
10 DAY COMPLIANCE	96%
	N=1
SAMPLE SIZE	14
7 DAY COMPLIANCE	100%

There is one missed 10 day MRSA screen noted during the April 19 MRSA audit.



Transfer of MDRO screening compliance to Excellence in Care, HAI measures in early 2019/20 will change how this data is captured and reported both locally and nationally. Future HAIRT reports will describe this process when finalised.

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 outwith 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. difficile* 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. 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 BOARD REPORT CARD

Staphylococcus aureus bacteraemia monthly case numbers

	May 18	Jun 18	Jul 18	Aug 18	Sept 18	Oct 18	Nov 18	Dec 18	Jan 19	Feb 19	Mar 19	Apr 19
MRSA	0	0	0	0	0	0	0	0	0	0	0	0
MSSA	0	0	0	0	0	1	2	0	2	0	0	0
Total SABS	0	0	0	0	0	1	2	0	2	0	0	0

Clostridium difficile infection monthly case numbers

	May 18	Jun 18	Jul 18	Aug 18	Sept 18	Oct 18	Nov 18	Dec 18	Jan 19	Feb 19	Mar 19	Apr 19
Ages15-64	0	1	0	0	0	0	0	0	0	0	0	0
Ages 65+	0	0	0	0	0	0	0	0	0	0	0	0
Ages 15 +	0	0	0	0	0	0	0	0	0	0	0	0

Hand Hygiene Monitoring Compliance (%)

	May 18	Jun 18	Jul 18	Aug 18	Sept 18	Oct 18	Nov 18	Dec 18	Jan 19	Feb 19	Mar 19	Apr 19
AHP	100		95		98		100		100		100	
Ancillary	100		100		100		91		94		95	
Medical	96		91		92		95		92		96	
Nurse	98		97		99		99		99		99	
Board Total	98		96		98		98		98		99	

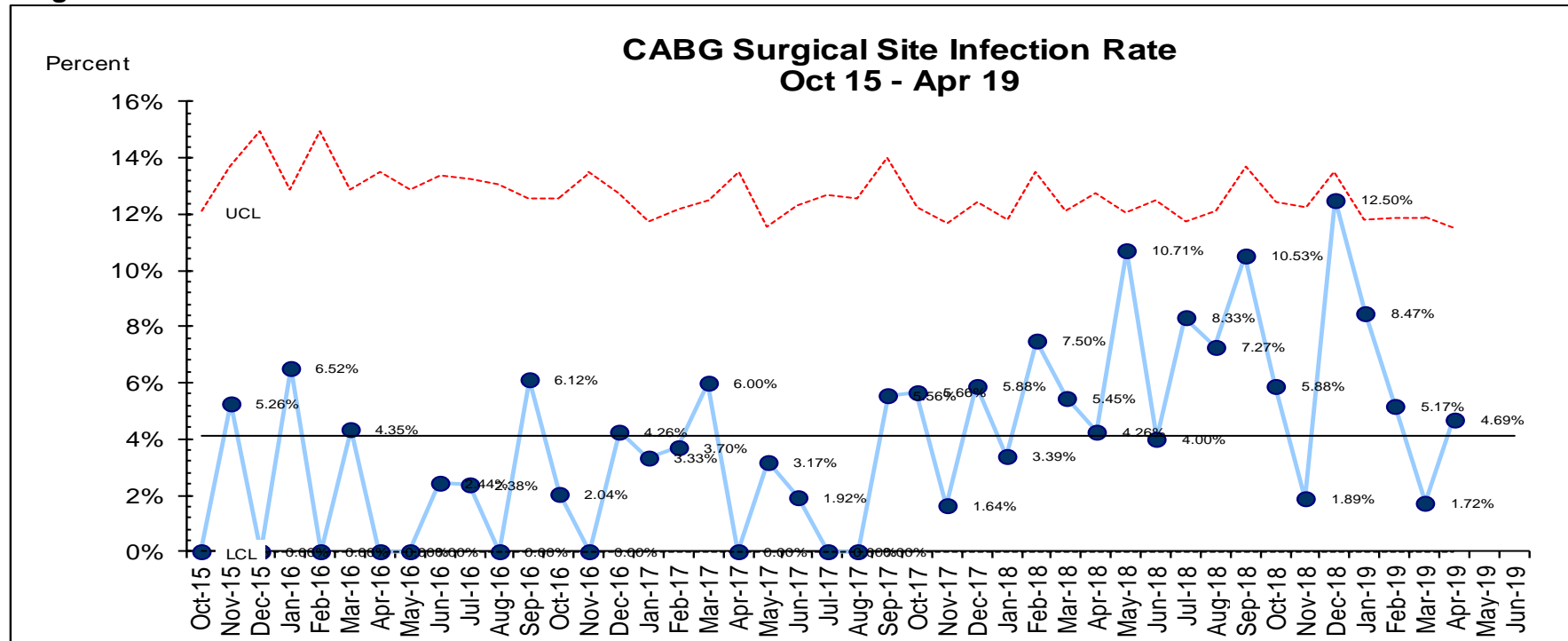
Cleaning Compliance (%)

	May 18	Jun 18	Jul 18	Aug 18	Sept 18	Oct 18	Nov 18	Dec 18	Jan 19	Feb 19	Mar 19	Apr 19
Board Total	98.95%	98.61	98.67	98.92	98.93	98.83	98.75	99.08	98.71	98.79	98.34	98.86

Estates Monitoring Compliance (%)

	May 18	Jun 18	Jul 18	Aug 18	Sept 18	Oct 18	Nov 18	Dec 18	Jan 19	Feb 19	Mar 19	Apr 19
Board Total	98.95%	99.42	99.14	99.51	98.79	99.02	99.35	99.46	98.93	98.52	98.95	99.51

Surgical Site Infection Surveillance

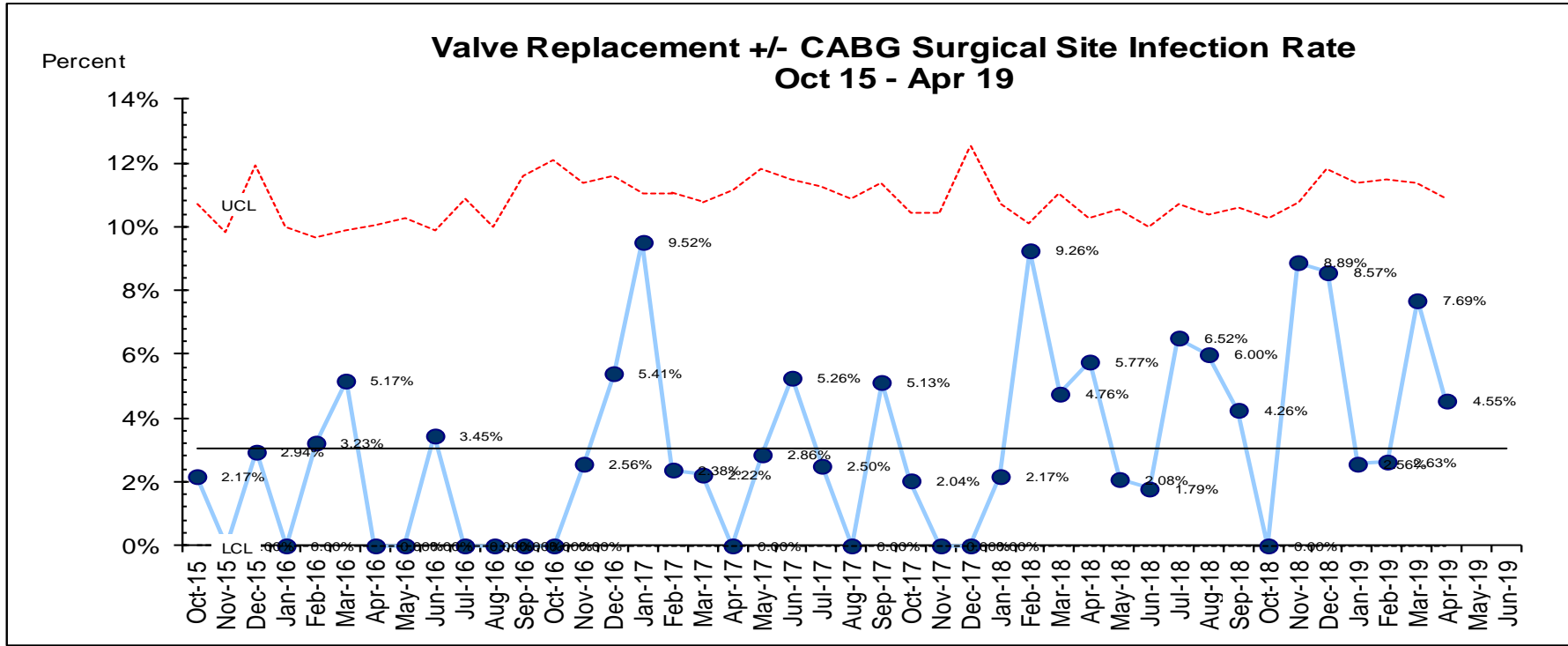


CABG SSI -HPA 2012-2017 SSI rate CABG – 3.8%

Number of Procedures	Month	Type of SSI	Status
51	Oct 18	1 Deep Sternum /2 Superficial Sternum	Confirmed
53	Nov 18	1 Superficial Leg	Confirmed
40	Dec 18	2 Deep Sternum /2 Superficial Sternum/ 1 Superficial leg & sternum	Confirmed
59	Jan 19	1 Organ space Sternum/3 Superficial Sternum/1 Superficial leg	Confirmed
58	Feb 19	2 Superficial Sternum/1 Superficial leg	Confirmed
58	Mar 19	1 Superficial Sternum	Confirmed
64	Apr 19	1 Deep Sternum/1 Superficial Sternum/1 Deep Sternum & Bilat Legs	Extent unconfirmed until 30 days post op

*A surgical site infection is defined a superficial, deep or organ space infection occurring within 30 days of operation. Definitions of superficial, deep and organ space are defined in Health Protection Scotland Surgical Site Infection Surveillance Protocol.

Heather Gourlay- Senior Manager Prevention and Control of Infection
 Sandra Wilson- CNM Prevention and Control of Infection
 Date -24/05/19



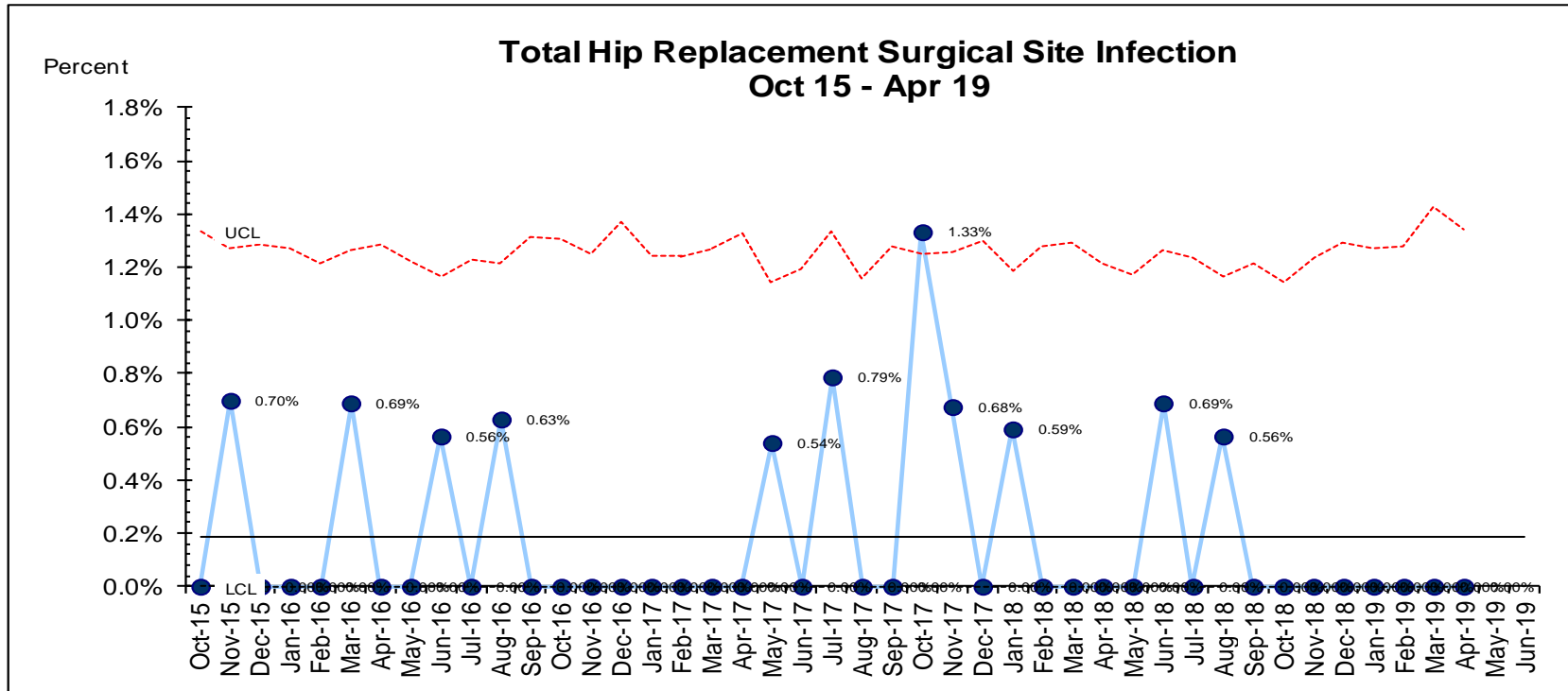
Valve Replacement +/- CABG SSI HPA 2012-2017 SSI rate -1.3%

Number of Procedures	Month	Type of SSI	Status
52	Oct 18	NIL	
45	Nov 18	1 organ space sternum/ 2 Superficial Sternum/1 Superficial R + L leg	Confirmed
35	Dec 18	3 Superficial sternum	Confirmed
39	Jan 19	1 Superficial Leg/Sternum	Confirmed
38	Feb 19	1 Superficial Leg/Sternum	Confirmed
39	Mar 19	1 Superficial Leg/ 2 Superficial Sternum	Confirmed
44	Apr 19	1 Superficial Leg & Sternum/1 Superficial Sternum	Extent unconfirmed until 30 days post op

*A surgical site infection is defined a superficial, deep or organ space infection occurring within 30 days of operation. Definitions of superficial, deep and organ space are defined in Health Protection Scotland Surgical Site Infection Surveillance Protocol.

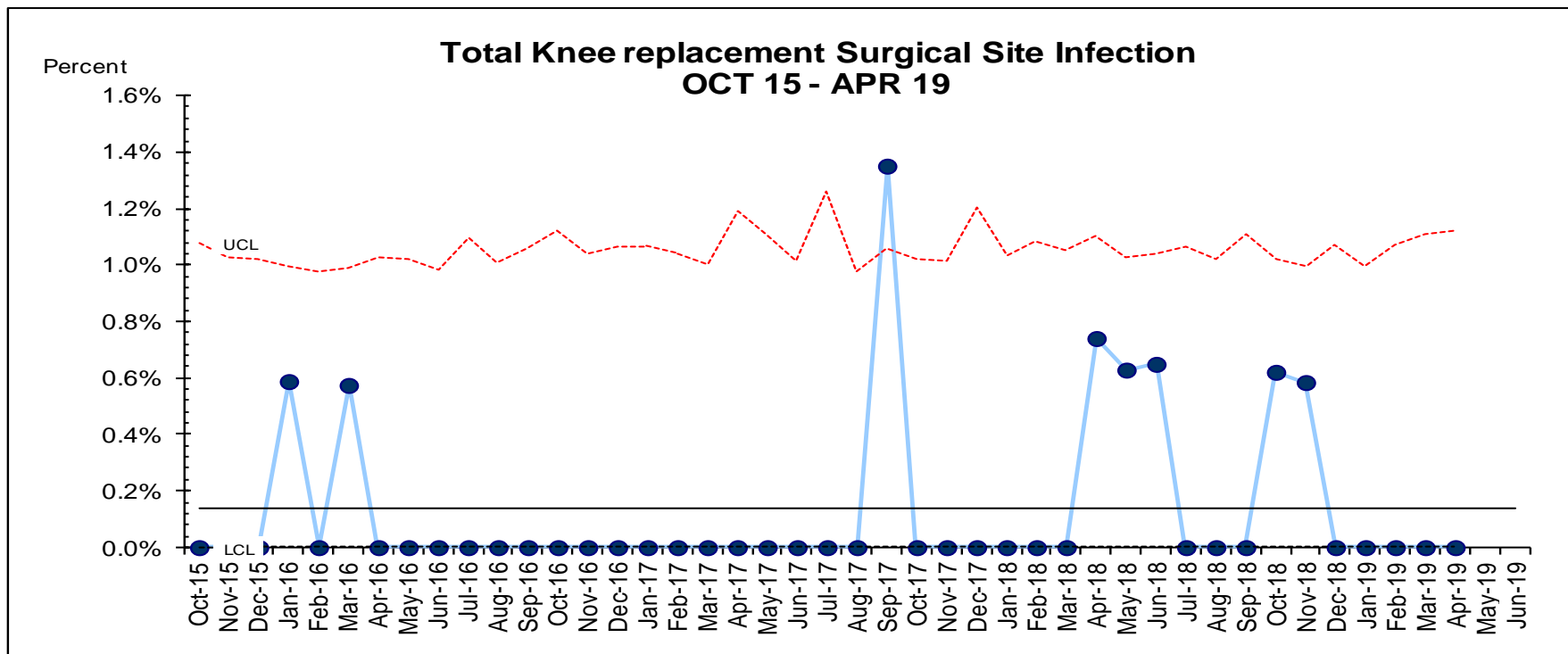
Heather Gourlay- Senior Manager Prevention and Control of Infection
 Sandra Wilson- CNM Prevention and Control of Infection
 Date -24/05/19

Surgical Site Infection Surveillance- Orthopaedic Local data



*A surgical site infection is defined a superficial, deep or organ space infection occurring within 30 days of operation. Definitions of superficial, deep and organ space are defined in Health Protection Scotland Surgical Site Infection Surveillance Protocol.

Heather Gourlay- Senior Manager Prevention and Control of Infection
 Sandra Wilson- CNM Prevention and Control of Infection
 Date -24/05/19



TKR SSI
 Oct 18- Primary TKR 1 Superficial
 Nov 18- Primary TKR 1 Superficial

*A surgical site infection is defined a superficial, deep or organ space infection occurring within 30 days of operation. Definitions of superficial, deep and organ space are defined in Health Protection Scotland Surgical Site Infection Surveillance Protocol.

HAIRT Table of Abbreviations

AHP	Allied Health Professional
CABG	Coronary Artery Bypass Graft
CCU	Coronary Care Unit
CDI/C. difficile	<i>Clostridium Difficile</i> Infection
CNM	Clinical Nurse Manager
CVC	Central Venous Catheter
DMT	Domestic Monitoring Tool
E.coli	Escherichia coli
FMT	Facilities Monitoring Tool
GJNH	Golden Jubilee National Hospital
GP	General Practitioner
HAI	Healthcare Associated Infection
HAIRT	Healthcare Associated Infection Report Template
HA MRSA	Hospital Acquired Meticillin Resistant <i>Staphylococcus aureus</i>
HEAT	Health Improvement, Efficiency, Access to treatment, and Treatment
HEI	Healthcare Environment Inspection
HFS	Healthcare Facilities Scotland
HH	Hand Hygiene
HIS	Healthcare Improvement Scotland
HPA	Health Protection Agency
HPS	Health Protection Scotland
IABP	Intra aortic balloon pump
IC	Infection Control
ICAR	Infection Control Audit Review
LDP	Local Delivery Plan
MRSA	Meticillin Resistant <i>Staphylococcus aureus</i>
MSSA	Meticillin Sensitive <i>Staphylococcus aureus</i>
NAT	National
NCSS	National Cleaning Standard Specification
PAG	Problem Assessment Group
PCIC	Prevention & Control of Infection Committee
PCINs	Prevention & Control of Infection Nurses
PCIT	Prevention & Control of Infection Team
PVC	Peripheral Venous Cannula
SAB	<i>Staphylococcus aureus</i> bacteraemia
SCN	Senior Charge Nurse
SICP s	Standard Infection Control Precautions
SPSP	Scottish Patient Safety Programme
SSI	Surgical Site Infection
TBPs	Transmission Based Precautions
THR	Total Hip Replacement
TKR	Total Knee Replacement