

<b>NHS Greater Glasgow and Clyde</b>	<b>Paper No. 23/57</b>
<b>Meeting:</b>	<b>NHSGGC Board Meeting</b>
<b>Meeting Date:</b>	<b>29 August 2023</b>
<b>Title:</b>	<b>The Healthcare Associated Infection Reporting Template (HAIRT) for May &amp; June 2023</b>
<b>Sponsoring Director/Manager:</b>	<b>Professor Angela Wallace, Executive Director of Nursing</b>
<b>Report Author:</b>	<b>Mrs Sandra Devine, Director of Infection Prevention and Control</b>

## 1. Purpose

The Healthcare Associated Infection Reporting Template (HAIRT) is a mandatory reporting tool for the Board to have an oversight of the Healthcare Associated targets; *Staphylococcus aureus* bacteraemias (SAB), *Clostridioides difficile* infections (CDI), *E. coli* bacteraemias (ECB), incidents and outbreaks and all other Healthcare Associated Infections' (HCAI) activities across NHS Greater Glasgow & Clyde (NHSGGC) in May & June 2023.

The full HAIRT will now be considered by the Clinical and Care Governance committee on an ongoing basis with a summary being submitted to the NHS Board meeting.

## 2. Executive Summary

The paper can be summarised as follows:

- Annual Operational Plan (AOP) targets set for 2019-2024 for SAB, CDI and ECB are presented in this report.  
The Chief Nursing Officer Directorate (CNOD) issued an update on 28<sup>th</sup> February 2023 which includes an extension to the standards until 2024.  
Available at: [https://www.sehd.scot.nhs.uk/dl/DL\(2023\)06.pdf](https://www.sehd.scot.nhs.uk/dl/DL(2023)06.pdf)
  - SAB rates remain within expected limits. There were 33 healthcare associated SAB reported for May & 25 in June 2023 with the aim being 23 or less per month. We remain within expected limits and continue to support improvement locally to reduce rates via the Infection Prevention and Control Quality Improvement Network (IPCQIN) and local SAB Groups.

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- ECB rates remain within normal control limits. There were 60 healthcare associated ECB in May & 59 in June 2023. Aim is 38 or less per month.
- There were 21 healthcare associated CDI in May & 28 in June 2023. Aim is 17 or less per month. It is recognised that CDI may have seasonal variation. This has been closely monitored and no evidence of cross transmission between patients has been identified. Due to an increase in CDI cases in June, an additional analysis of the cases is being undertaken with specific regards to possible increases in PPI or antimicrobial prescriptions which may have had an influence in numbers.
- National SSI surveillance was paused in 2020 and remains paused for the foreseeable future although continues locally.
- Clinical Risk Assessment (CRA) compliance was **90%** for CPE and **89%** for MRSA in the last validated reporting quarter (Q1-2023). We have consistently reported around 90% compliance with both therefore IPCT will focus on local feedback to areas where compliance has fallen below expected standards. This pattern is present across Scotland for the last reported quarter, NHS Scotland reported compliance of 77% and 78% respectively. Unvalidated compliance results for quarter 2 indicate that GGC is above 90% for both assessments.
- The following link is the ARHAI report for the period January to March 2023. This report includes information on GGC and NHS Scotland's performance for Quarterly epidemiological data on Clostridioides difficile infection, Escherichia coli bacteraemia, Staphylococcus aureus bacteraemia and Surgical Site Infection in Scotland. [Quarterly epidemiological data on Clostridioides difficile infection, Escherichia coli bacteraemia, Staphylococcus aureus bacteraemia and Surgical Site Infection in Scotland. January to March \(Q1\) 2023 | National Services Scotland \(nhs.scot\)](#) Please refer to page 4 & 5.
- The Board's cleaning compliance and Estates compliance are  $\geq 95\%$  for May & June 2023.
- The fifth issue of the Infection Prevention and Control Quality Improvement Network (IPCQIN) newsletter was issued to staff via Core Brief in June 2023. This ensures shared learning across the organisation on the improvements implemented thus far by the network.

### 3. Recommendations

The NHS Board is asked to consider the following recommendations:

- Note the content of the HAIRT report.
- Note the performance in respect of the Annual Operational Plan (AOP) Standards for SAB, CDI and ECB.
- Note the detailed activity in support of the prevention and control of Healthcare Associated Infections.

### 4. Response Required

This paper is presented for assurance

### 5. Impact Assessment

The impact of this paper on NHSGGC's corporate aims, approach to equality and diversity and environmental impact are assessed as follows:

- Better Health Positive impact
- Better Care Positive impact
- Better Value Positive impact
- Better Workplace Positive impact
- Equality & Diversity Neutral impact
- Environment Positive impact

## 6. Engagement & Communications

The issues addressed in this paper were subject to discussion with the Infection Prevention and Control (IPC) Team and the IPC Surveillance & Data Team. Comments were also taken into consideration from the below groups when reviewing the content and format following presentation:

- Partnerships Infection Control Support Group (PICSG)
- Acute Infection Control Committee (AICC)
- Board Infection Control Committee (BICC)

## 7. Governance Route

This paper has been previously considered by the following groups as part of its development:

- The Infection Prevention and Control Team (IPCT)
- Partnerships Infection Control Support Group (PICSG)
- Acute Infection Control Committee (AICC)
- Board Infection Control Committee (BICC)

This paper is then shared with the Board Clinical Governance Forum for information once considered by CCGC.

## 8. Date Prepared & Issued

Date the paper was written: 22 August 2023

Date issued to NHS Board on: 22 August 2023

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### Healthcare Associated Infection Summary – May & June 2023

The HAIRT Report is the national mandatory reporting tool and is presented every two months to the Clinical and Care Governance Committee with a summary report to the NHS Board. This is a Scottish Government requirement and informs NHSGGC of activity and performance against Healthcare Associated Infection Standards and performance measures. This section of the report focuses on NHSGGC Board-wide prevention and control activity and actions.

Performance at a glance relates only to the 2 months reported and should be viewed in the context of the overall trend in the following pages.

	May 2023	June 2023	Status toward AOP target (based on trajectory to March 2024)
Healthcare Associated <i>Staphylococcus aureus</i> bacteraemia (SAB)	33	25	Aim is 23 per month
Healthcare Associated <i>Clostridioides difficile</i> infection (CDI)	21	28	Aim is 17 per month
Healthcare Associated <i>Escherichia coli</i> bacteraemia (ECB)	60	59	Aim is 38 per month
Hospital acquired IV access device (IVAD) associated SAB	11	8	
Healthcare associated urinary catheter associated ECB (includes suprapubic catheter)	9	10	
Hand Hygiene	95	95	
National Cleaning compliance (Board wide)	95	95	
National Estates compliance (Board wide)	96	96	

**Quarterly epidemiological data on Clostridioides difficile infection, Escherichia coli bacteraemia, Staphylococcus aureus bacteraemia and Surgical Site Infection in Scotland**  
**Published 04/07/2023**

#### Q1-2023 at a glance

HCAI Standards met for CDI and SAB Quarter 1 2023  
 Below National rate for CDI, ECB and SAB.

Q1-2023	GGC rate per 100,000 OBDs	SCOTLAND rate per 100,000 OBDs	Status
CDI	11.6	13.4	Below national rate for quarter
ECB	36.2	37.3	Below national rate for quarter
SAB	17.2	19.1	Below national rate for quarter

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April 2022 to March 2023 (rolling year)

Year end Q1-2023	GGC rate per 100,000 OBDs	SCOTLAND rate per 100,000 OBDs	STATUS for year end
CDI	13.0	13.6	Below national rate
ECB	33.7	35.7	Below national rate
SAB	18.2	18.2	Same as national rate

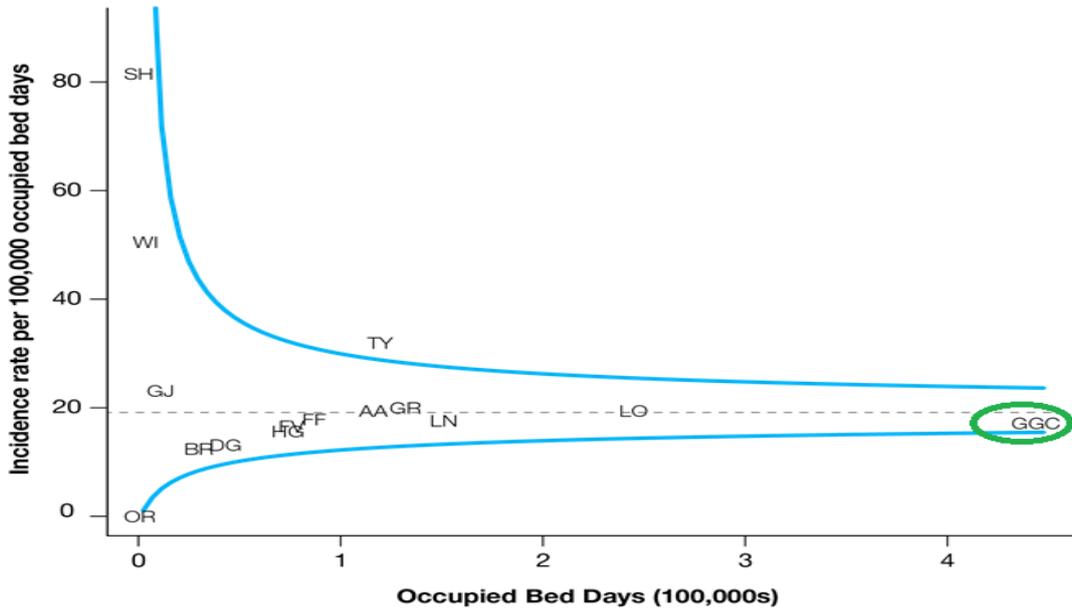
The rolling year figures demonstrate that improvements have occurred over time.

### Healthcare Associated Infection (HCAI) Surveillance

NHSGGC has systems in place to monitor key targets and areas for delivery. An electronic HCAI surveillance system and ways of working allow early detection and indication of areas of concern or deteriorating performance.

<b>Staphylococcus aureus bacteraemia (SAB)</b>			
		<b>May 2023</b>	<b>June 2023</b>
Total		<b>39</b>	<b>32</b>
Hospital *		19	16
Healthcare*		14	9
Community		6	7
<p>HCAI monthly Aim for Hospital and Healthcare is 23 patient cases.</p>			
<p>Healthcare associated <i>S. aureus</i> bacteraemia total for the rolling year July 2022 to June 2023 = 339.</p> <p>HCAI yearly aim is <b>280</b>.</p> <p><b>*Hospital and Healthcare are the cases which are included in the Scottish Government (SG) reduction target.</b></p>			
<p><b>Comments:</b></p> <ul style="list-style-type: none"> <li>• There was an increase in overall SAB cases in April and May 2023 with 39 cases each month, however this has reduced in June to 32 cases. Numbers remain within expected limits.</li> <li>• The number of SAB HCAI cases has been variable but within expected limits since 2020.</li> <li>• Community cases have shown a reduction since March 2021 with minimal variation which indicates a stable system.</li> <li>• In addition to the nationally set targets and mandatory surveillance, in GGC infections from an IVAD caused by <i>S. aureus</i> or <i>E.coli</i> are investigated fully and reported in the monthly directorate reports and in the quarterly SAB &amp; ECB reports. This data is used to drive improvement in the local SAB groups.</li> <li>• Information (including source if known) for all acute hospital cases are available in real time on the MicroStrategy IPC dashboard.</li> </ul>			

**ARHAI Validated Q1 (January – March 2023) funnel plot – HCAI SAB cases**



Rate: **17.2** per 100,000 OBDs. **HCAI standard aim met and** below the national rate of 19.1.

NHSGGC rate is well within the control limits for this quarter and demonstrates good performance when compared to other boards.

**E.coli bacteraemia (ECB)**

	May 2023	June 2023
<b>Total</b>	<b>104</b>	<b>104</b>
Hospital *	24	31
Healthcare*	36	28
Community	44	45

**HCAI Aim for Hospital and Healthcare is 38.**

Healthcare associated *E. coli* bacteraemia total for the rolling year July 2022 to June 2023 = 607.

HCAI yearly aim is **452**.

**\*Hospital and Healthcare are the cases included in the SG reduction target.**

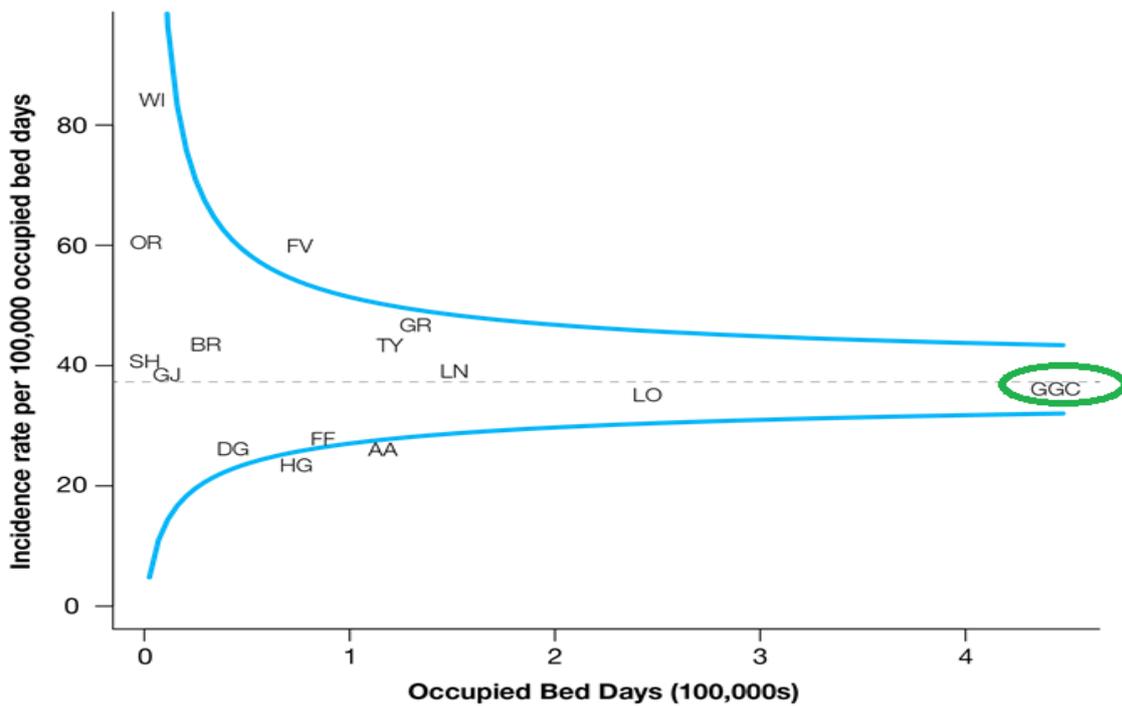
**Comment:**

- There has been an increase in overall ECB cases over the past two months.
- There has also been an increase in ECB HCAI cases in the last two months. Enhanced surveillance of ECB continues and is prospectively available to view by clinicians on Microstrategy, however, teams across GGC continue to monitor and impliment improvements where possible. It is hypothesised that in the warmer months the number of ECB increases due to the effects of dehydration. IPCT contine to promote SG hydration initaitives across GGC.
- There is variability in monthly ECB community onset cases, however cases remain within control limits.
- Ward level data of entry point of bacteraemia is available via MicroStrategy. This provides real time information to clinical staff to assist in the decision to use improvement methodology to test interventions that may lead to a reduction in the number of patients with this infection.

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- **The Public Health Scotland** Urinary Catheter Care Passport contains guidelines to help minimise the risk of developing an infection and is available at: [HPS Website - Urinary Catheter Care Passport \(scot.nhs.uk\)](https://www.scot.nhs.uk)
- Any ECB thought to be associated with a urinary catheter triggers a review of practice by the local IPCT. The ward is visited and all the patients with urinary catheters in situ are reviewed to assess if the National CAUTI bundle is in place. Results from this audit are returned to the Senior Charge Nurse/Lead Nurse and Chief of Nursing for review and improvement were applicable.
- Information (including source if known) for all acute hospital cases are available in real time on the MicroStrategy IPC dashboard.

### ARHAI Validated Q1 (January – March 2023) funnel plot – HCAI ECB cases



Rate: **36.2** per 100,000 OBDs.

NHSGGC rate is within the control limits for this quarter and below the national rate of 37.3. This also demonstrates good performance when compared to other boards.

### *Clostridioides difficile* infection (CDI)

	May 2023	June 2023
<b>Total</b>	<b>25</b>	<b>38</b>
Hospital *	11	17
Healthcare*	7	7
Indeterminate*	3	4
Community	4	10

HCAI aim for Hospital and Healthcare and Indeterminate onset is 17.

Healthcare associated *Clostridioides difficile* total for the rolling year July 2022 to June 2023 = 232.  
HCAI yearly aim is **204**.

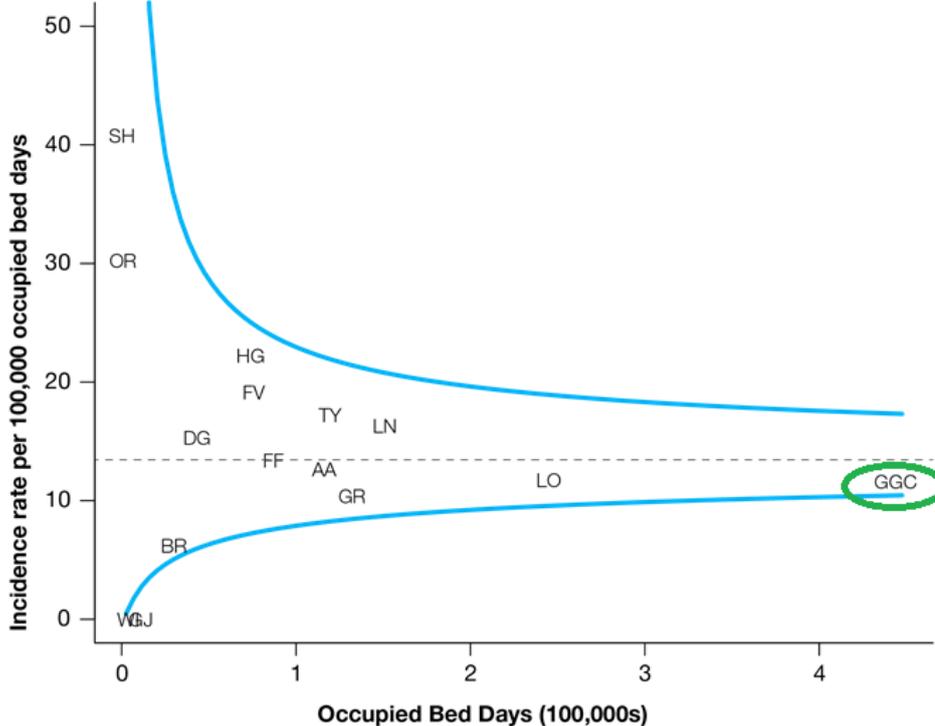
**\* Hospital, Healthcare & Indeterminate are the cases which are included in the SG reduction target.**

Comments:

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- There has been an increase in cases in the last month (June 2023). The IPCT continues to closely monitor and implement local actions in any areas with higher than expected numbers. CDI trigger tool was completed for one ward area in May 2023. Typing later confirmed that both were different so not due to cross transmission on the ward.
- There has been an increase in number of cases in the last two months. There were no linked cases in June. An additional analysis of the cases in June is being undertaken with specific regards to possible increases in PPI or antimicrobial prescriptions which may have had an influence in numbers.
- CDI Community acquired cases also increased in June 2023.

### ARHAI Validated Q1 (January – March 2023) funnel plot – HCAI CDI cases



Rate: **11.6** per 100,000 OBDs. **HCAI standard aim met.** Below NHS Scotland rate of 13.4

NHSGGC rate is within the control limits for this quarter and demonstrates good performance when compared to other boards.

### Meticillin resistant *Staphylococcus aureus* (MRSA) and *Clostridioides difficile* recorded deaths

The National Records of Scotland monitor and report on a variety of death causes recorded on the death certificate. Two organisms are monitored and reported; MRSA and *C. difficile*. Please click on the link for further information:

<https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/vital-events/deaths>

There were zero deaths in May 2023 and two in June 2023, where hospital acquired *Clostridioides difficile* was recorded in on the patient's death certificate. These were both considered to be antibiotic associated and not due to cross infection (all were in different wards and did not cross in time or place). Datix incident reports were raised and the clinical teams were asked to complete clinical reviews to ensure any learning is captured.

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<b>May 2023</b>	
<b>Hospital acquired CDI recorded on one part of the Death Certificate</b>	Nil
<b>June 2023</b>	<b>QEUH</b>
<b>Hospital acquired CDI recorded on one part of the Death Certificate</b>	2

There were no deaths this period where hospital acquired MRSA was recorded on the death certificate.

### NHS GGC Hand Hygiene Monitoring Compliance (%)



IPCT continue to promote hand hygiene in all areas. The Board Hand Hygiene Co-ordinator is a dedicated resource in place to provide education, support for frontline clinical teams and assurance regarding hand hygiene compliance. GGC will continue to strive to improve compliance with this core prevention precaution.

### Estate and Cleaning Compliance (per hospital)

The data is collected through audit by the Domestic Services Team using the Domestic Monitoring National Tool. Areas chosen within each hospital are randomly selected by the audit tool. Any issues such as inadequate cleaning is scored appropriately and if the score is less than 80%, a re-audit is scheduled. Estates compliance assesses whether the environment can be effectively cleaned; this can be a combination of minor non-compliances such as missing screwcaps, damaged sanitary sealant, scratches to woodwork etc. The results of these findings are shared with Serco/Estates for repair. Similar to the cleaning audit. Scores below 80% trigger a re-audit.

### Infection Prevention and Control Quality Improvement Network (IPCQIN) Update

The IPCQIN aim is to create the organisational conditions to facilitate and support the reduction of preventable infections associated with healthcare delivery. The Steering Group and the Operational Group continue to meet and the three main work streams are progressing.

The fifth issue the network's Newsletter was published and shared with staff via Core Brief in June 2023.



5th Issue - IPCQI  
Network Newsletter

### Outbreaks or Incidents in May & June 2023

#### Outbreaks / Incidents

Outbreaks and incidents across NHSGGC are identified primarily through ICNet (surveillance software package), microbiology colleagues or from the ward. ICNet automatically identifies clusters of infections

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of specific organisms based on appendix 13 of the National Infection Prevention & Control Manual (NIPCM) to enable timely patient management to prevent any possible spread of infection. The identification of outbreaks is determined following discussion with the Infection Control Doctor/Microbiologist. In the event of a possible or confirmed outbreak/incident, a Problem Assessment Group (PAG) or Incident Management Team (IMT) meeting is held with staff from the area concerned, and actions are implemented to control further infection and transmission.

The ARHAI Healthcare Infection Incident Assessment Tool (HIIAT) is a tool used by the IMT to assess the impact of the outbreak or incident. The tool is a risk assessment and allows the IMT to rate the outbreak/incident as **RED**, **AMBER**, or **GREEN**.

All incidents that are HIIAT assessed are reported to the Antimicrobial Resistance & Healthcare Associated Infection (ARHAI) group.

### HIIAT

The HIIAT is a tool used by boards to assess the impact of an outbreak or incident. The tool is a risk assessment and allows boards to rate the outbreak/incident as **RED**, **AMBER**, or **GREEN**. ARHAI are informed of all incidents who onward report to the Scottish Government Health and Social Care Directorate (SGHSCD).

HIIAT **GREEN** – reported 5 in May and 3 in June 2023.

HIIAT **AMBER** - reported 2 in May and 2 in June 2023.

HIIAT **RED** – reported zero in May and 2 in June 2023.

(COVID-19 incidents are now included in the above totals but not reported as incident summaries)

### Outbreaks/Incidents (HIIAT assessed as AMBER or RED excluding COVID-19)

There was only 1 incident HIIAT assessed as Red in June:

#### Queen Elizabeth University Hospital, Langlands Unit, Norovirus

3 wards within the Langlands unit QEUH closed due to suspected or confirmed norovirus. The incident was HIIAT assessed as **GREEN** on 16<sup>th</sup> June 2023 then **RED** on 23<sup>rd</sup> June 2023 as one of the patients affected sadly passed away. It was de-escalated to **GREEN** and closed on 26<sup>th</sup> June 2023.

- Ward 51 was re-opened following terminal clean on 21<sup>st</sup> June 2023. 18 patients affected in total, 1 positive Norovirus result obtained.
- Ward 54 re-opened 17<sup>th</sup> June 2023 following a terminal clean. 17 patients affected in total, 13 confirmed Norovirus.
- Ward 55 reopened 22<sup>nd</sup> June 2023 following a terminal clean. 13 patients affected in total. 5 confirmed Norovirus. 5 staff members affected.

#### Control Measures:

- All 3 wards received a terminal clean and a twice daily cleaning during the incident.
- All Patients had Transmission Based Precautions (TBPs) in place.
- Norovirus checklist was completed daily.
- IPCT carried out hand hygiene audits in all 3 wards and SICPs audits in ward 51 and 55 (ward 54 had recently had SICPs audit carried out by IPCT).

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### Greater Glasgow & Clyde COVID-19 Incidents:

During May and June there were 5 outbreaks of COVID 19 which scored either AMBER (4) or RED (1). As a precautionary principle, during incidents and outbreaks in GGC, if COVID 19 appeared on any part of a patient's death certificate, the assessment was considered to be automatically RED. This was in excess of what is in the HIIAT assessment tool in which states that a major impact on patients should be defined as "Patients require major clinical interventional support as a consequence of the incident and/or severe/life threatening/rare infection and/or there is associated mortality."

All incidents and outbreak are reported to ARHAI regardless of the assessment. National guidance has been implemented for all incidents and outbreaks as per the NIPCM (COVID 19 Appendix 21 – Pandemic Controls for Acute NHS Settings including Scottish Ambulance Service (SAS) Dental Services).

Sector	RAH
COVID-19 (RED HIIAT)	1

### Healthcare Environment Inspectorate (HEI)

#### Acute Care – Safe Delivery of Care Inspections

An unannounced inspection of Gartnavel General Hospital was undertaken on 23rd/24th May 2023 using HIS safe delivery of care inspection methodology. Areas of good practice included staff being focused on the provision of safe and compassionate care, wards were well managed with clear leadership, effective communication and multi-disciplinary team work, an open and supportive culture with senior hospital managers was observed displaying a good oversight of clinical and wider system pressures across both the hospital site and NHS Greater Glasgow and Clyde and a supportive real time staffing discussions, which took place during safety huddles, with a focus on patient care and safety to reduce and mitigate risks.

Areas for improvement were also identified; these included hand hygiene, medication management and the safe storage of cleaning products. This inspection resulted in six areas of good practice, one recommendation and three requirements.

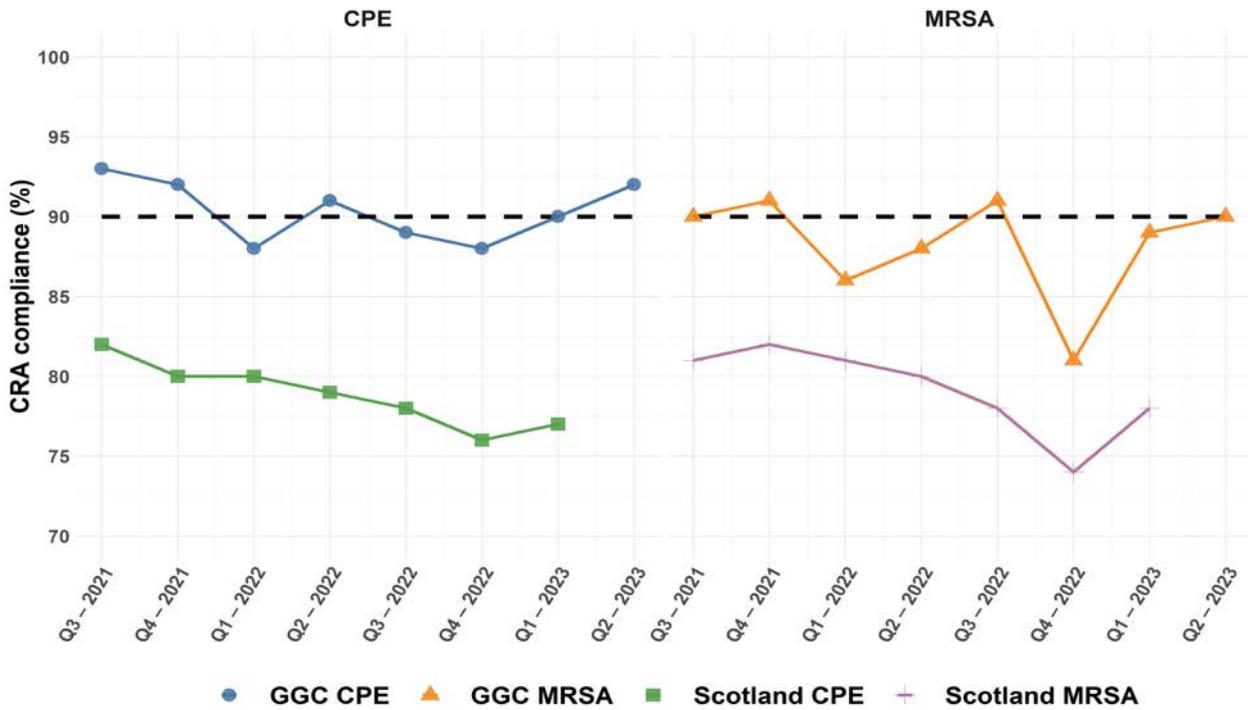
All HEI reports and action plans can be viewed by clicking on the link:

[http://www.healthcareimprovementscotland.org/our\\_work/inspecting\\_and\\_regulating\\_care/nhs\\_hospitals\\_and\\_services/find\\_nhs\\_hospitals.aspx](http://www.healthcareimprovementscotland.org/our_work/inspecting_and_regulating_care/nhs_hospitals_and_services/find_nhs_hospitals.aspx)

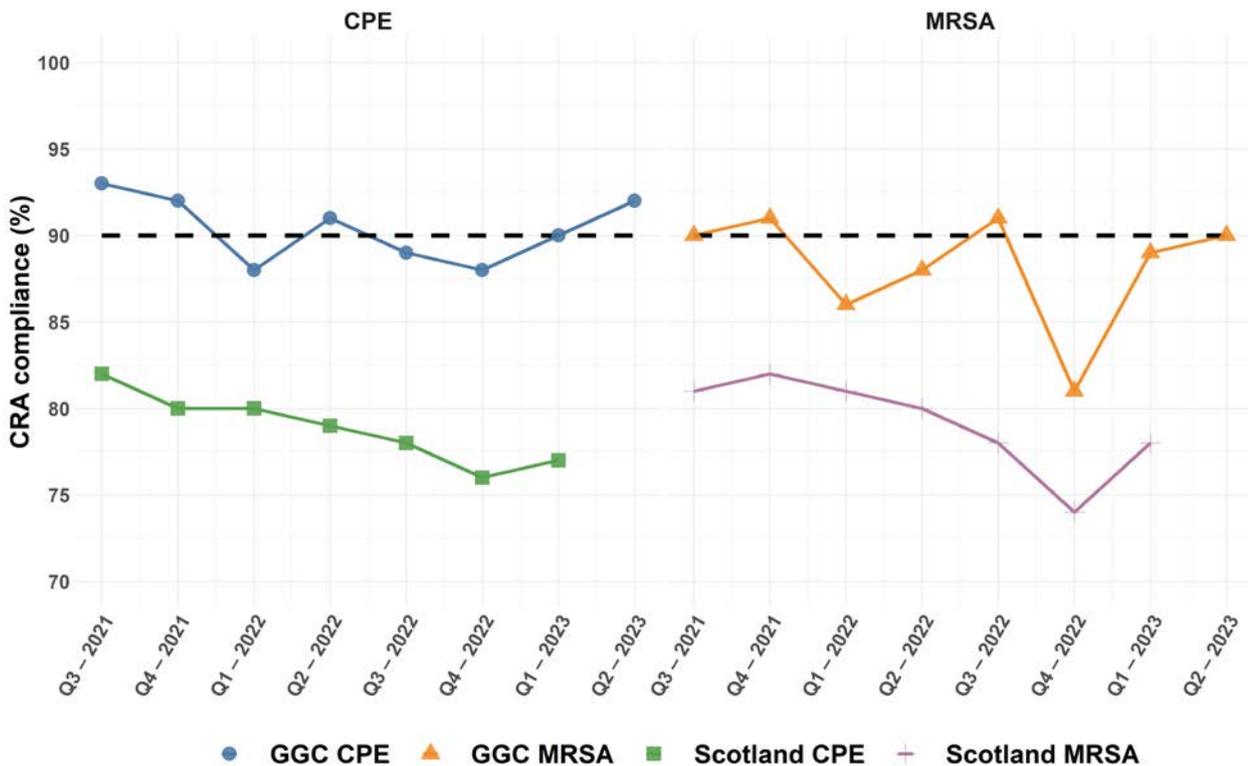
#### Multi-drug resistant organism screening

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As part of the national mandatory requirements, each board is expected to screen specific patients for resistant organisms. These are Carbapenemase producing Enterobacteriaceae (CPE) and MRSA. The decision to screen depends on the outcome of a clinical risk assessment performed on all admissions. On a quarterly basis we assess compliance of completing this risk assessment to provide assurance of effective screening and this is reported nationally. The national expectation of compliance is **90%** (black dashed line). National data for Q2 is not yet validated, however, the local data is included and the 90% compliance standard has been achieved.



Last validated quarter	NHSGGC 90% compliance rate for CPE screening	Scotland 77%
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Jan-Mar 2023		NHSGGC <b>89%</b> compliance rate for MRSA screening	Scotland 78%
Local data		NHSGGC <b>92%</b> compliance rate for CPE screening	Scotland tbc
Apr- June 2023		NHSGGC <b>90%</b> compliance rate for MRSA screening	Scotland tbc

We continue to support clinical staff to implement this screening programme and work is currently underway with eHealth to incorporate this information electronically into the patient admission eRecord.

**APPENDIX - 1****Healthcare Associated Infection Reporting Guidance, Glossary, Definitions and Infection Control Targets****Purpose:**

This paper can be referred to when reading the HAIRT Summary Reports, it covers any Scottish Government guidance and aims relating to Infection Prevention and Control (IPC), list of abbreviations and definitions for some of the medical terms or infection types mentioned in the HAIRT Summary reports. It also includes some systems and processes that have been put in place by IPC to reduce the harm from infections and prevent them from happening.

**Glossary of abbreviations**

Following feedback from stakeholders, below is a list of abbreviations used within this report:

<b>AOP</b>	Annual Operational Plan
<b>ARHAI</b>	Antimicrobial Resistance Healthcare Associated Infection
<b>CDI</b>	<i>Clostridioides difficile</i> infection
<b>CNOD</b>	Chief Nursing Officer Directorate
<b>CPE</b>	Carbapenemase producing Enterobacteriaceae
<b>CVC</b>	Central Venous Catheter
<b>Datix</b>	The software used by NHS Greater Glasgow and Clyde for clinical and non-clinical incident reporting (and managing complaints and legal claims) and forms part of the Risk Management Strategy. It is a web-based application that allows any staff member with access to StaffNet to report an incident.
<b>ECDC</b>	European Centre for Disease Control
<b>HAI</b>	Hospital Acquired Infection (not present or incubating on admission to hospital and arising $\geq$ 48 hours after admission). Please note this excludes COVID-19 cases (hospital onset currently thought to be >14 days).
<b>HCAI</b>	Healthcare Associated Infection
<b>HEI</b>	Healthcare Environment Inspectorate
<b>HIIAT</b>	Healthcare Infection Incident Assessment Tool
<b>HPV</b>	Hydrogen Peroxide Vapour
<b>IMT</b>	Incident Management Team
<b>IPCAT</b>	Infection Prevention and Control Audit Tool
<b>IPCN</b>	Infection Prevention and Control Nurse
<b>IPCT</b>	Infection Prevention and Control Team
<b>IVAD</b>	Intravenous/Intravascular Access Device
<b>MRSA</b>	Meticillin Resistant <i>Staphylococcus aureus</i>
<b>NES</b>	NHS Education for Scotland
<b>PAG</b>	Problem Assessment Group
<b>PEG</b>	Percutaneous Endoscopic Gastrostomy
<b>PICC</b>	Peripherally Inserted Central Catheter
<b>PVC</b>	Peripheral Vascular/Venous Catheter
<b>SAB</b>	<i>Staphylococcus aureus</i> bacteraemia
<b>SG</b>	Scottish Government
<b>SGHSCD</b>	Scottish Government Health and Social Care Directorate
<b>SICPs</b>	Standard Infection Control Precautions
<b>SPC</b>	Statistical Process Control: An analytical technique that plots data over time. It helps us understand variation and in so doing, guides us to take the most appropriate action. SPC is a good technique to

use when implementing change as it enables us to understand whether changes made have resulted in an improvement.

- SSI** Surgical Site Infection
- UCC** Urinary Catheter Care
- UTI** Urinary Tract Infection

**S. aureus and E. coli bacteraemias**

Definition of a bacteraemia

Bacteraemia is the presence of bacteria in the blood. Blood is normally a sterile environment, so the detection of bacteria in the blood (most commonly accomplished by blood cultures) is always abnormal. It is distinct from sepsis, which is the host response to the bacteria. Bacteria can enter the bloodstream as a severe complication of infection, (like pneumonia, meningitis, urinary tract infections (UTI) etc.), during surgery, or due to invasive devices such as peripheral vascular catheters (PVC), Hickman lines, urinary catheters etc. Transient bacteraemias can result after dental procedures or even brushing of teeth although this poses little or no threat to the person in normal situations.

Bacteraemia can have several important health consequences. The immune response to the bacteria can cause sepsis and septic shock which has a high mortality rate. Bacteria can also spread via the blood to other parts of the body (haematogenous spread), causing infections away from the original site of infection, such as endocarditis (infection of the heart valves) or osteomyelitis (infection of the bones). Treatment for bacteraemia is with intravenous antibiotics often for a prolonged period, e.g. in cases of *S. aureus* bacteraemia, 14 days of antibiotic therapy is normally required.

**Origin Definitions for Bacteraemia Surveillance**

<https://www.ARHA1.scot.nhs.uk/web-resources-container/protocol-for-national-enhanced-surveillance-of-bacteraemia>

<b>Healthcare Associated Infection</b>	<p><b>Hospital Acquired Infection</b></p> <p>Positive blood culture obtained from a patient who has been hospitalised for ≥48 hours. If the patient was transferred from another hospital, the duration of in-patient stay is calculated from the date of the first hospital admission.</p> <p style="text-align: center;">If the patient was a neonate / baby who has never left hospital since being born. OR</p> <p style="text-align: center;">The patient was discharged from hospital in the 48 hours prior to the positive blood culture being taken. OR</p> <p style="text-align: center;">A patient who receives regular haemodialysis as an out-patient. OR</p> <p style="text-align: center;">Contaminant if the blood aspirated in hospital. OR</p> <p style="text-align: center;">If infection source / entry point is surgical site infection (SSI). <i>[This will be attributed to hospital of surgical procedure]</i></p>
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	<p><b>Healthcare Associated Infection</b></p> <p>Positive blood culture obtained from a patient within 48 hours of admission to hospital and fulfils one or more of the following criteria:</p> <p style="padding-left: 40px;">Was hospitalised overnight in the 30 days prior to the positive blood culture being taken.</p> <p style="text-align: center;">OR</p> <p style="padding-left: 40px;">Resides in a nursing, long-term care facility or residential home.</p> <p style="text-align: center;">OR</p> <p style="padding-left: 40px;">IV, or intra-articular medication in the 30 days prior to the positive blood culture being taken, but excluding IV illicit drug use.</p> <p style="text-align: center;">OR</p> <p style="padding-left: 40px;">Had the use of a registered medical device in the 30 days prior to the positive blood culture being taken, e.g. intermittent self-catheterisation or Percutaneous Endoscopic Gastrostomy (PEG) tube with or without the direct involvement of a healthcare worker (excludes haemodialysis lines see HAI).</p> <p style="text-align: center;">OR</p> <p style="padding-left: 40px;">Underwent any medical procedure which broke mucous or skin barrier, i.e. biopsies or dental extraction in the 30 days prior to the positive blood culture being taken.</p> <p style="text-align: center;">OR</p> <p style="padding-left: 40px;">Underwent care for a medical condition by a healthcare worker in the community which involved contact with non-intact skin, mucous membranes or the use of an invasive device in the 30 days prior to the positive blood culture being taken, e.g. podiatry or dressing of chronic ulcers, catheter change or insertion.</p>
<p><b>Community Acquired Infection</b></p>	<p>Positive blood culture obtained from a patient within 48 hours of admission to hospital who does not fulfil any of the criteria for healthcare associated bloodstream infection.</p>

***Staphylococcus aureus* bacteraemia (SAB), *Escherichia coli* Bacteraemia (ECB) & *Clostridioides difficile* infection (CDI) targets.**

SAB, ECB and CDI targets are described in [DL \(2022\)13.pdf \(scot.nhs.uk\)](#). The target is Board-specific, based on the NHS Boards current infection rates. The target was set to be achieved by 2022, however, this was further extended due to the pandemic and is now to be achieved by 2024.

Information on performance against all three targets is available to the Directorate/Division in three ways; monthly summary reports, SAB and ECB specific quarterly reports and via the micro strategy dashboard. All SABs/ECBs associated with an IVAD are followed-up by an audit of PVC/CVC practice in the ward or clinical area of origin and the results are returned to the Chief Nurse for the Sector/Directorate. The analysis of the data and subsequent reports enable the IPCT to identify trends in particular sources of infections such as central line infections etc. and it also enables the IPCT to identify areas requiring further support. The data collected on all targets influences the IPC Annual Work Plan and the IPCQIN.

Continual monitoring and analysis of local surveillance data, enables the IPCT and local teams to identify and work towards ways to reduce infections associated with IVADs. All SABs/ECBs are reviewed and investigated fully and highlighted to the patients' clinicians, nursing staff and management colleagues. Where appropriate, a DATIX is generated for infections so learning is shared and discussed at local clinical governance meetings.

**Healthcare Associated Infection Standards – local reduction aims**

- *S. aureus* bacteraemia – reduction of 10% from 2019 to 2024

**Local quarterly reduction aim charts have been produced for GGC as a whole and for the five Acute Sectors**

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	2018/19 Rate (base line) per 100,000 total bed days	No of HCAI cases (per annum)	Reduction %	Date for reduction	Target HCAI rate per 100,000 total bed days	Target HCAI cases per annum	Target HCAI cases per month
SAB	19.3	324	10	March 2024	17.4	280	23

**Sector/Directorate local reduction aims – May & June cases**

Sector	Patient cases	Aim per 2 months
Clyde Sector	12	10
North Glasgow Sector	15	12
Regional Services	15	8
South Glasgow Sector	10	14
Women's & Children	6	2
<b>GGC Total</b>	<b>58</b>	<b>46</b>

Sector/Directorate reports are issued for action by IPCT Sector/Directorate teams.

Information (including source if known) for all acute hospital cases are available in real time on the MicroStrategy IPC dashboard.

**Escherichia coli bacteraemia (ECB)**

**NHSGGC's approach to ECB prevention and reduction**

*E. coli* is one of the most predominant organisms of the gut flora, and for the last several years the incidence of *E. coli* isolated from blood cultures, i.e. causing sepsis, has increased to the point that it is the most frequently isolated organism in the UK. As a result of this, the HAI Policy Unit has now included *E. coli* as part of the AOP targets. The most common cause of ECB is from complications arising from UTIs, hepato-biliary infections (gall bladder infections) and infections associated with urinary catheters. It should be acknowledged that there is limited number of possible interventions to target ECB because infections are often spontaneous and not associated with health care or health care interventions.

**Healthcare Associated Infection Standards – local reduction aims**

- *E.coli* bacteraemia – reduction of 25% by 2024

Local reduction aim charts have been produced for GGC as a whole and for the five Acute sectors.

	2018/19 Rate (base line) per 100,000 total bed days	No of HCAI cases (per annum)	Reduction %	Date for reduction	Target HCAI rate per 100,000 total bed days	Target HCAI cases per annum	Target HCAI cases per month
ECB	38.1	638	25	March 2024	28.6	452	38

**Sector/Directorate local reduction aims May & June cases**

Sector	Patient cases	Aim per 2 months
Clyde Sector	20	18
North Glasgow Sector	33	24

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Regional Services	14	8
South Glasgow Sector	43	24
Women's & Children	8	2
HSCP	1	N/A
<b>GGC Total</b>	<b>119</b>	<b>76</b>

Information (including source if known) for all acute hospital cases are available in real time on the MicroStrategy IPC dashboard.

### ***Clostridioides difficile* infection (CDI)**

Reporting to ARHAI of *C. difficile* infections has been mandatory for many years in NHS Scotland. NHSGGC has met its targets over the years and has maintained a low rate of infection. Similar to the SAB target, the new target set for 2019-2024 is based on our Board's rate rather than an overall national rate.

*C. difficile* can be part of the normal gut flora and can occur when patients receive broad-spectrum antibiotics which eliminate other gut flora, allowing *C. difficile* to proliferate and cause infection. This is the predominant source of infection in GGC. *C. difficile* in the environment can form resilient spores which enable the organism to survive in the environment for many months, and poor environmental cleaning or poor hand hygiene can lead to the organism transferring to other patients, leading to infection. Another route of infection is when a patient receives treatment to regulate stomach acid which affects the overall pH of the gut allowing the organism to proliferate and cause infection.

### **Origin definitions for *Clostridioides difficile* infections**

#### **Local Enhanced CDI Surveillance in NHSGGC: Definition of Origin**

**Hospital acquired CDI** is defined as when a CDI patient has had onset of symptoms at least 48 hours following admission to a hospital.

**Healthcare associated CDI** is defined as when a CDI patient has had onset of symptoms up to four weeks after discharge from a hospital.

**Indeterminate cases of CDI** is defined as a CDI patient who was discharged from a hospital 4-12 weeks before the onset of symptoms.

**Community associated CDI** is defined as a CDI patient with onset of symptoms while outside a hospital and without discharge from a hospital within the previous 12 weeks; or with onset of symptoms within 48 hours following admission to a hospital without stay in a hospital within the previous 12 weeks.

### **NHSGGC's Approach to CDI Prevention and Reduction**

Similar to our SAB and ECB investigations, patient history is gathered including any antibiotics prescribed over the last several months. Discussions with the clinical teams and microbiologists assist in the determination and conclusion of the significance of the organism, as occasionally the isolation of the organism can be an incidental finding and not an infection. Data is shared with the antimicrobial pharmacists to identify any issues with prescribing and incidence of infections are discussed at the Antimicrobial Utilisation Committee.

**Revised Guideline:** approved 10<sup>th</sup> May 2022

Suspected or Proven *Clostridioides Difficile* Infection Management in Adults

[clostridioides.pdf \(nhsggc.org.uk\)](#)

**Healthcare Associated Infection Standards – local reduction aims *C. difficile* – reduction of 10% from 2019 to 2024**

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	2018/19 Rate (base line) per 100,000 total bed days	No of HCAI cases (per annum)	Reduction %	Date for reduction	Target HCAI rate per 100,000 total bed days	Target HCAI cases per annum	Target HCAI cases per month
CDI	19.0	318	10	March 2024	17.1	204	17

**Sector/Directorate local reduction aims – May & June cases**

Sector	Patient cases	Aim per 2 months
Clyde Sector	10	8
North Glasgow Sector	12	10
Regional Services	8	4
South Glasgow Sector	13	10
Women’s & Children (age ≥ 15 yr.)	1	2
GP specimens	5	-
<b>GGC Total</b>	<b>49</b>	<b>34</b>

Information on all Acute hospital cases is available on Micro-Strategy.

**Surgical Site Infection (SSI) Surveillance**

SSI surveillance is the monitoring and detection of infections associated with a surgical procedure. In GGC the procedures included are hip arthroplasty, caesarean birth, major vascular surgery and large bowel surgery. These are all mandatory procedure categories for national reporting. In addition, the IPCT undertake surveillance on knee arthroplasty and repair of fractured neck of femur.

The IPC Surveillance Team monitor patients for 30 days post-surgery.

National SSI surveillance remains paused and light surveillance methodology has been utilised since November 2022.

**NHSGGC’s Approach to SSI Prevention and Reduction**

SSI criteria is determined by using the European Centre for Disease Control (ECDC) definitions. Any infection identified is investigated fully and information is gathered to identify risk factors which in turn inform reduction strategies. The types of information collected includes the patients’ weight, duration of surgery, grade of surgeon, prophylactic antibiotics given, theatre room, elective or emergency, primary theatre dressing, etc. The IPCT closely monitor infection rates, and any increased incidence of SSIs are promptly reported to management and clinical teams, and if required Incident Management Team (IMT) meetings are held.

SSI rates should be interpreted with due caution, as procedure denominators vary between surgery categories. The impact of COVID-19 pandemic upon NHS services should also be reflected upon when comparing current SSI rates with those prior to 2020.

Please note that surveillance is not yet complete for procedures undertaken in June 2023.

**Meticillin resistant *Staphylococcus aureus* (MRSA) and *Clostridioides difficile* recorded deaths**

The National Records of Scotland monitor and report on a variety of death causes recorded on the death certificate. Two organisms are monitored and reported; MRSA and *C. difficile*. Please click on the link for further information:

<https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/vital-events/deaths>