NHS Greater Glasgow and Clyde	**Paper No. 23/40**
Meeting:	**NHSGGC Board Meeting**
Meeting Date:	**27 June 2023**
Title:	**The Healthcare Associated Infection Reporting Template (HAIRT) for March and April 2023**
Sponsoring Director/Manager:	**Professor Angela Wallace, Executive Director of Nursing**
Report Author:	**Mrs Sandra Devine, Director of Infection Prevention and Control**

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* bacteraemia (SAB), *Clostridioides difficile* infections (CDI), *E. coli* bacteraemia (ECB), incidents and outbreaks and all other Healthcare Associated Infections' (HCAI) activities across NHS Greater Glasgow and Clyde (NHSGGC) in March and April 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 CNOD issued an update on 28th February 2023 which includes an extension to the standards until 2024. Available at:
  https://www.sehd.scot.nhs.uk/dl/DL(2023)06.pdf
  - SAB rates remain within expected limits. There were 26 healthcare associated SAB reported locally for March & 31 in April 2023. Aim is 23 or less per month. We continue to support improvement locally to reduce rates via the Infection Prevention and Control Quality Improvement Network (IPCQIN) and local SAB Groups.

  - ECB rates remain within normal control limits. There were **47** healthcare associated ECB in March & **35** in April 2023. Aim is 38 or less per month. In recognition of this extremely challenging target, the Scottish Government have reviewed the emerging evidence and have made the decision to continue with a 25% reduction target rather than the 50% previously proposed.
  - There were **15** healthcare associated CDI in March & **17** in April 2023. Aim is 17 or less per month. In this period of reporting, GGC has met the 2024 target.
  - Surgical Site Infection (SSI) surveillance remains paused nationally.
  - Clinical Risk Assessment (CRA) compliance was **89%** for MRSA **90%** for CPE in the first quarter of 2023; the compliance for NHS Scotland for the same quarter was 78% and 79% respectively. Data collection for Quarter 2 is ongoing at time of report compilation.
- Prospective SAB, CDI and ECB data with origin of infection data is available to clinical staff via MicroStrategy IPC dashboard. This ensures frontline clinical teams have access to real time data to inform decisions and actions to reduce healthcare associated infections.
- The following link is the ARHAI report for the period of October to December 2022. 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: https://www.nss.nhs.scot/publications/quarterly-epidemiological-data-on-clostridioides-difficile-infection-escherichia-coli-bacteraemia-staphylococcus-aureus-bacteraemia-and-surgical-site-infection-in-scotland-october-to-december-q4-2022/. The 2024 targets continue to be challenging but the ARHAI report demonstrates that GGC are not outliers in any category presented.
- The Board's cleaning compliance and Estates compliance are >95% for March & April 2023.
- The fifth issue of the Infection Prevention and Control Quality Improvement Network (IPCQIN) newsletter will be 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)

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

8. Date Prepared & Issued

Prepared on 5 June 2023
Issued on 20 June 2023

Healthcare Associated Infection Summary – March & April 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.

	March 2023	April 2023	Status toward AOP target (based on trajectory to March 2024)
Healthcare Associated ***Staphylococcus aureus*** **bacteraemia (SAB)**	**26**	**31**	**Aim is 23 per month**
Healthcare Associated ***Clostridioides difficile*** **infection (CDI)**	**15**	**17**	**Aim is 17 per month**
Healthcare Associated ***Escherichia coli*** **bacteraemia (ECB)**	**47**	**35**	**Aim is 38 per month**
Hospital acquired IV access device (IVAD) associated SAB	**4**	**6**	
Healthcare associated urinary catheter associated ECB	**8**	**10**	
Hand Hygiene	**96**	**96**	
National Cleaning compliance (Board wide)	**95**	**95**	
National Estates compliance (Board wide)	**97**	**96**	

Key infection control challenges (relating to performance)

Staphylococcus aureus **bacteraemia**

- There were 26 healthcare associated SAB in March & 31 in April 2023. Aim is 23 or less per month.

Clostridioides difficile **infection**

- There were 15 healthcare associated CDI in March & 17 in April 2023. Aim is 17 or less per month.

Escherichia coli **bacteraemia**

- There were 47 healthcare associated ECB in March & 35 in April 2023. Aim is 38 or less per month.

SAB, CDI and ECB case numbers remain within control limits this period.

Surgical Site Infection Surveillance

- This has been paused nationally but local surveillance is in place in GGC.

Healthcare Associated Infection (HCAI) Surveillance

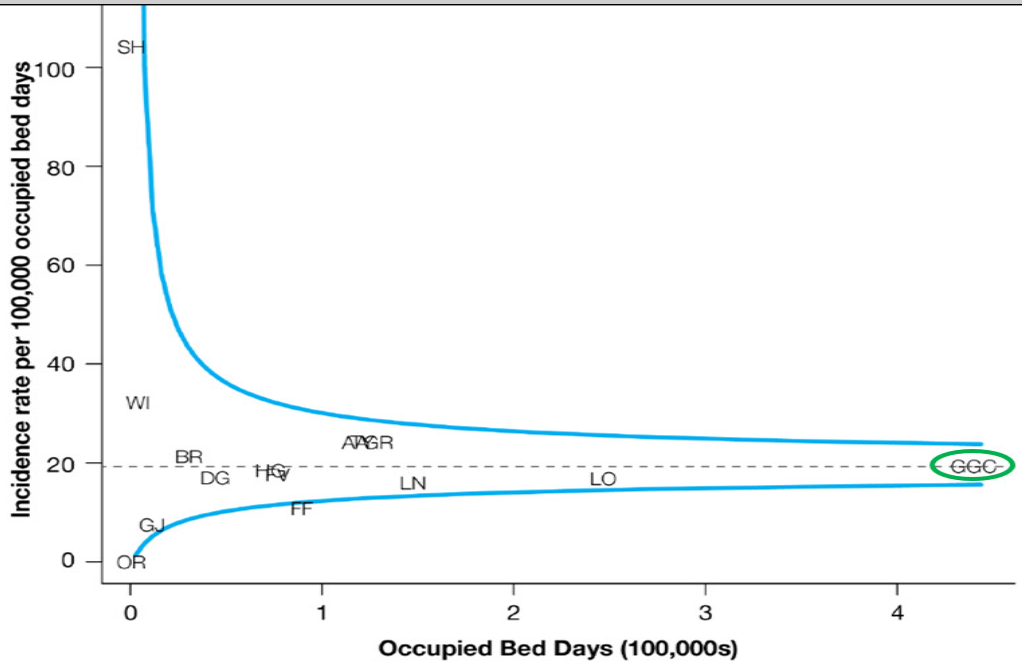
NHSGGC has systems in place to monitor key targets and areas for delivery. An electronic HCAI surveillance system and ways of working allow early detection and indication of areas of concern or deteriorating performance.

***Staphylococcus aureus* bacteraemia (SAB)**	
<table><tr><th></th><th>March 2023</th><th>April 2023</th></tr><tr><td>Total</td><td>35</td><td>39</td></tr><tr><td>Hospital *</td><td>9</td><td>17</td></tr><tr><td>Healthcare*</td><td>17</td><td>14</td></tr><tr><td>Community</td><td>9</td><td>8</td></tr></table> **HCAI monthly Aim for Hospital and Healthcare is 23 patient cases.**	Healthcare associated *S. aureus* bacteraemia total for the rolling year May 2022 to April 2023 = 328. HCAI yearly aim is **280.** ***Hospital and Healthcare are the cases which are included in the Scottish Government (SG) reduction target.**

Comments:

- The number of the Healthcare Associated SAB cases has been variable but within expected limits since 2020.
- Community SAB cases have shown a reduction since March 2021 with minimal variation which indicates a stable system.
- In addition to the nationally set targets and mandatory surveillance, in GGC infections from an IVAD caused by *S. aureus* or *E.coli* are investigated fully and reported in the monthly directorate reports and in the quarterly SAB & ECB reports.
- Information (including source if known) for all acute hospital cases are available in real time on the MicroStrategy IPC dashboard.

ARHAI Validated Q4 (October – December 2022) funnel plot – HCAI SAB cases



Rate: **19.4** per 100,000 TOBDs. Above HCAI standard aim, however NHSGGC rate is within the control limits for this quarter and demonstrates good performance when compared to other boards.

E.coli bacteraemia (ECB)

	March 2023	April 2023
Total	**86**	**62**
Hospital *	31	17
Healthcare*	16	18
Community	39	27

HCAI Aim for Hospital and Healthcare is 38.

Healthcare associated *E. coli* bacteraemia total for the rolling year May 2022 to April 2023 = 574.

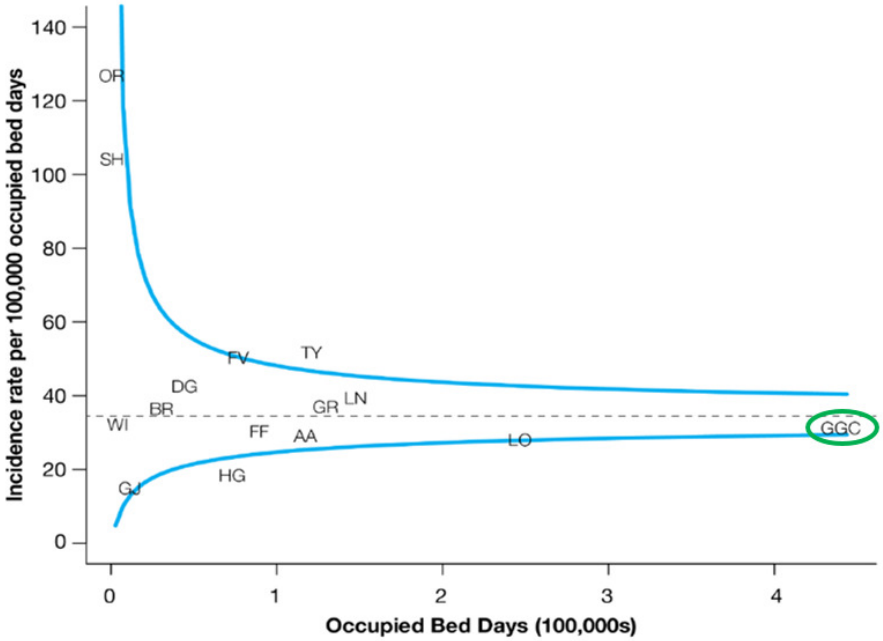
HCAI yearly aim is **452.**

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

Comments:

- There has been a decrease in the overall ECB cases over the past two months. There are limited meaningful interventions available to reduce this rate which has informed the change to the government reduction target, however, teams across GGC continue to monitor and impliment improvements where possible.
- There has been a decrease in 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.
- There is variability in monthly community onset cases, however cases remains 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.
- 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)**

ARHAI Validated Q4 (October – December 2022) funnel plot – HCAI ECB cases



Rate: **31.3** per 100,000 TOBDs.

NHSGGC rate is within the control limits for this quarter and below the national rate of 34.5. This also demonstrates good performance when compared to other boards.

Clostridioides difficile infection (CDI)

	March 2023	April 2023
Total	**20**	**21**
Hospital *	8	9
Healthcare*	6	4
Indeterminate*	1	4
Community	5	4

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

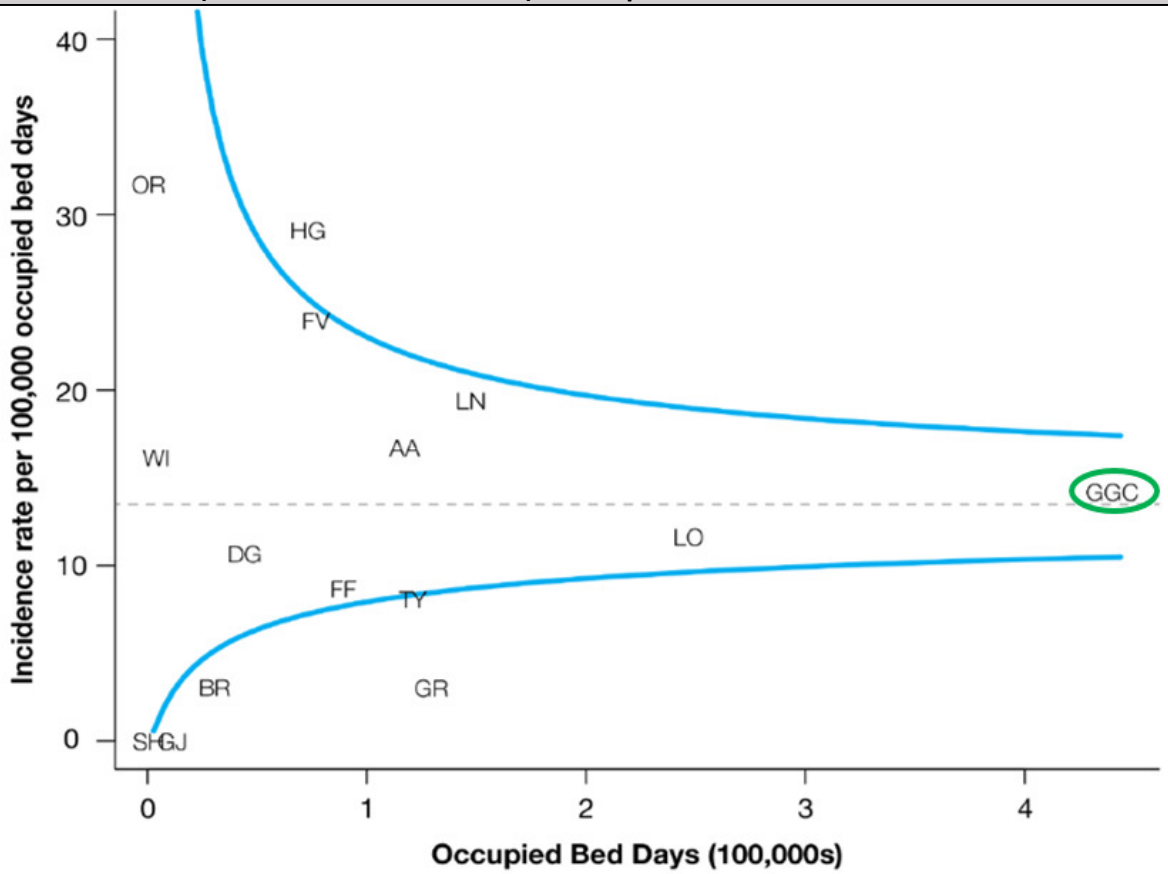
Healthcare associated *Clostridioides difficile* total for the rolling year May 2022 to April 2023 = 220.
HCAI yearly aim is **204.**

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

Comments:

- There has been a reduction in the overall CDI cases from October 2021 to date. The IPCT continues to closely monitor and implement local actions in any areas with higher than expected numbers. There have been no incidents of cross transmission due to CDI during this period.
- The Healthcare associated CDI cases have been within control limits with reduced variability since October 2022 which indicates a stable system.
- Community acquired cases decreased in 2022.

ARHAI Validated Q4 (October – December 2022) funnel plot – HCAI CDI cases



Rate: **14.2** per 100,000 TOBDs. **HCAI standard aim met.**

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

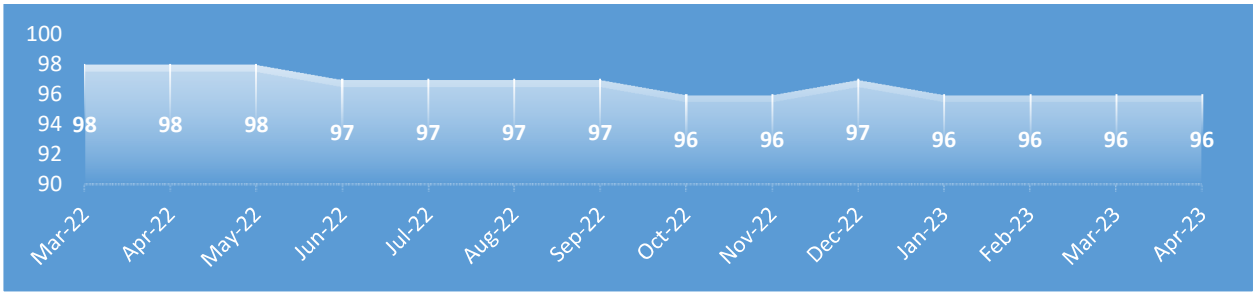
The National Records of Scotland monitor and report on a variety of death causes recorded on the death certificate. Two organisms are monitored and reported; MRSA and *C. difficile*. Please click on the link for further information:
https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/vital-events/deaths

There were two deaths in March 2023 and one in April 2023, where hospital acquired *Clostridioides difficile* was recorded in one of the parts of the patient's death certificate. These were all 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.

March 2023	**IRH**	**GRI**
Hospital acquired CDI recorded on one part of the Death Certificate	1	1
April 2023	**QEUH**	
Hospital acquired CDI recorded on one part of the Death Certificate	1	

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

NHS GGC Hand Hygiene Monitoring Compliance (%)



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.

COVID-19

NHS Scotland is now experiencing its most recent wave of COVID-19. ARHAI have ceased weekly reporting of nosocomial onset cases.

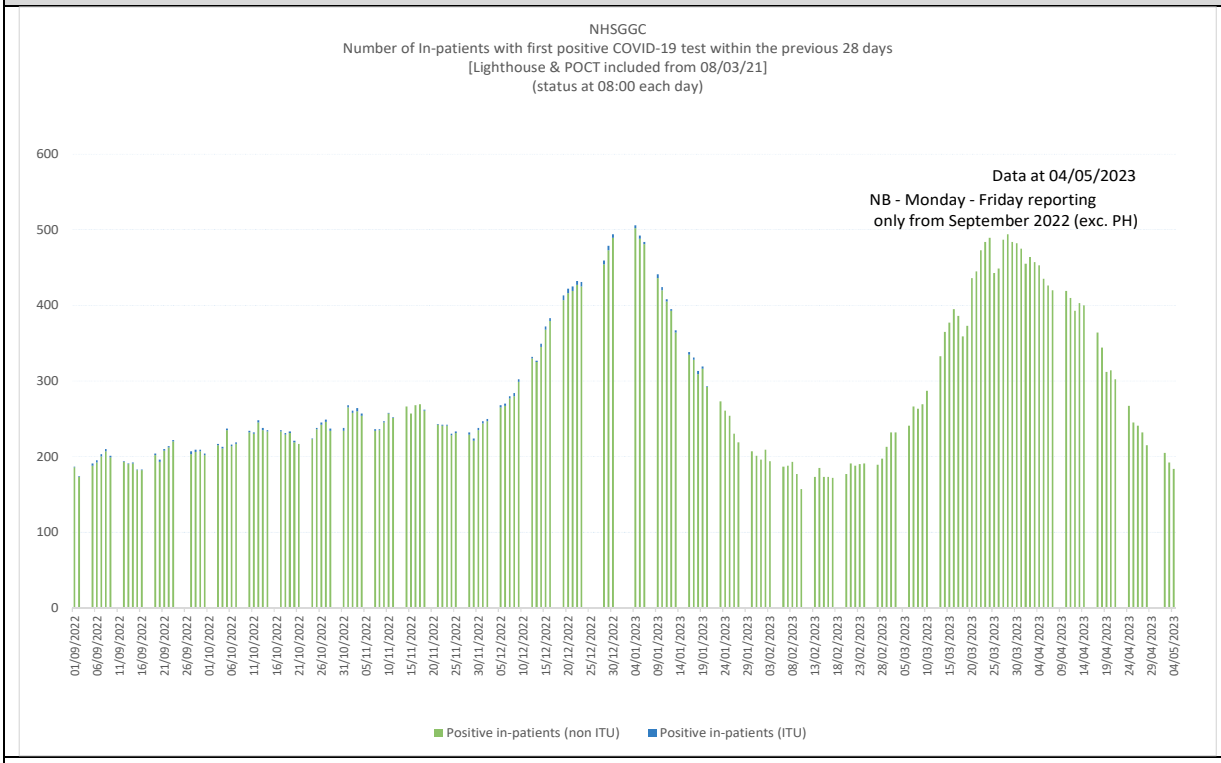
This has continued to be a significant wave in terms of inpatient activity, with an average of 371 in-patients per day in March & April 2023, however ICU in-patient activity has been very low.

As well as the IPCNs providing advice and expertise to the local clinical teams, the IPCT monitor all COVID-19 positive cases in hospital to assist with both national and local data collection.

The bar graph displays the number of in-patients across all GGC hospitals who tested positive for COVID-19. In blue is the number of people in intensive care areas. Data is correct as of 30th April 2023.

Please note there has been significant changes to testing requirements, as per DL (2022)32. Details of these changes be viewed here www.sehd.scot.nhs.uk/dl/DL(2022)32.pdf

DAILY REPORTING – from 15/09/2020 to date



Reporting includes only those in-patients who have had a first positive COVID-19 test within the previous 28 days. It includes Lighthouse, PCR and selected point of care testing results (Not LFD).

Ward closures due to COVID-19

There were 32 ward closures this reporting period for COVID-19.

Month	May 2022	Jun 2022	July 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023	Apr 2023
Ward Closures	13	36	36	21	10	25	20	37	15	17	40	14
Bed Days Lost	526	1834	1545	809	620	865	573	1657	503	625	975	244

Ward closures due to Norovirus / Suspected Gastroenteritis

There were 32 ward closures this reporting period for Norovirus.

Month	May 2022	Jun 2022	July 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023	Apr 2023
Ward Closures	3	1	2	2	1	0	0	11	14	18	10	2
Bed Days Lost	33	7	24	33	4	0	0	102	309	237	103	5

In-Patients with Influenza

There were 159 In-patients this reporting period due to Influenza

Month	May 2022	Jun 2022	July 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2022	Feb 2023	Mar 2023	Apr 2023
Ward Closures	84	21	36	74	99	251	388	**2108**	611	94	84	75

NB there will be no COVID specific update in future HAIRT reports.

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 will be published and shared with staff via Core Brief in June 2023.

Outbreaks or Incidents in March & April 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 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 – 9 reported in March and 9 in April 2023.
HIIAT AMBER - 24 reported in March and 3 in April 2023.
HIIAT RED – 8 reported in March and 4 in April 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 were no Non-COVID incidents in March and April 2023 that were HIIAT assessed at Red or Amber.

Greater Glasgow & Clyde COVID-19 Incidents:

During March and April there were 39 outbreaks of COVID 19 which scored either AMBER (27) or RED (12). 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	GRI	Dykebar	GGH	QEUH	RAH	VoL
COVID-19 (RED HIIAT)	5	1	1	1	2	2

Healthcare Environment Inspectorate (HEI)

NHS Inpatient Mental Health Services – Healthcare Associated Infection Inspections

Healthcare Improvement Scotland commenced a new element of external quality assurance work in December 2022, to inspect infection prevention and control arrangements in NHS inpatient mental health services. There was an inspection of services in Gartnavel Royal Hospital carried out on the 18th January 2023. There were 4 requirements and 2 recommendations made. An action plan was completed and the report was published at the end of March.

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

Multi-drug resistant organism screening
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. Assessment to screen depends on a clinical risk assessment performed on all admissions to indicate whether the patient requires to be screened. On a quarterly basis we assess compliance of completing this risk assessment to provide assurance of effective screening and report this nationally. The national expectation of compliance is **90%.**

Last validated quarter Jan- March 2023		NHSGGC **90%** compliance rate for CPE screening	Scotland 77%
		NHSGGC **89%** compliance rate for MRSA screening	Scotland 78%

Data collection for Quarter 2, 2023 is currently underway.

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:

AOP	Annual Operational Plan
ARHAI	Antimicrobial Resistance Healthcare Associated Infection
CDI	*Clostridioides difficile* infection
CNOD	Chief Nursing Officer Directorate
CPE	Carbapenemase producing Enterobacteriaceae
CVC	Central Venous Catheter
Datix	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.
ECDC	European Centre for Disease Control
HAI	Hospital Acquired Infection (not present or incubating on admission to hospital and arising ≥ 48 hours after admission). Please note this excludes COVID-19 cases (hospital onset currently thought to be >14 days).
HCAI	Healthcare Associated Infection
HEI	Healthcare Environment Inspectorate
HIIAT	Healthcare Infection Incident Assessment Tool
HPV	Hydrogen Peroxide Vapour
IMT	Incident Management Team
IPCAT	Infection Prevention and Control Audit Tool
IPCN	Infection Prevention and Control Nurse
IPCT	Infection Prevention and Control Team
IVAD	Intravenous/Intravascular Access Device
MRSA	Meticillin Resistant *Staphylococcus aureus*
NES	NHS Education for Scotland
PAG	Problem Assessment Group
PEG	Percutaneous Endoscopic Gastrostomy
PICC	Peripherally Inserted Central Catheter
PVC	Peripheral Vascular/Venous Catheter
SAB	*Staphylococcus aureus* bacteraemia
SG	Scottish Government
SGHSCD	Scottish Government Health and Social Care Directorate
SICPs	Standard Infection Control Precautions
SPC	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.ARHAI.scot.nhs.uk/web-resources-container/protocol-for-national-enhanced-surveillance-of-bacteraemia

Healthcare Associated Infection	**Hospital Acquired Infection** 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. If the patient was a neonate / baby who has never left hospital since being born. OR The patient was discharged from hospital in the 48 hours prior to the positive blood culture being taken. OR A patient who receives regular haemodialysis as an out-patient. OR Contaminant if the blood aspirated in hospital. OR If infection source / entry point is surgical site infection (SSI). *[This will be attributed to hospital of surgical procedure]*

	Healthcare Associated Infection Positive blood culture obtained from a patient within 48 hours of admission to hospital and fulfils one or more of the following criteria: Was hospitalised overnight in the 30 days prior to the positive blood culture being taken. OR Resides in a nursing, long-term care facility or residential home. OR IV, or intra-articular medication in the 30 days prior to the positive blood culture being taken, but excluding IV illicit drug use. OR 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). OR 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. OR 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.
Community Acquired Infection	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.

***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, as per DL(2023)06.

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

	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 – March & April cases

Sector	Patient cases	Aim per 2 months
Clyde Sector	11	10
North Glasgow Sector	12	12
Regional Services	10	8
South Glasgow Sector	19	14
Women's & Children	5	2
GGC Total	**57**	**46**

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 March & April cases

Sector	Patient cases	Aim per 2 months
Clyde Sector	15	18
North Glasgow Sector	29	24

Regional Services	10	8
South Glasgow Sector	26	24
Women's & Children	1	2
HSCP	1	N/A
GGC Total	**82**	**76**

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 10th 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

	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 – March & April cases

Sector	Patient cases	Aim per 2 months
Clyde Sector	2	8
North Glasgow Sector	5	10
Regional Services	7	4
South Glasgow Sector	15	10
Women's & Children (age ≥ 15 yr.)	-	2
GP specimens	3	-
GGC Total	**32**	**34**

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.

SSI surveillance in spinal and cranial surgery in the Institute of Neurological Sciences (QEUH campus) has been paused since July, however the clinical service has now recruited a 0.5WTE INS Surveillance Nurse and the programme was re-established in January 2023.

The IPC Surveillance Team monitor patients for 30 days post-surgery and for those procedures with implants, up to 90 days post-surgery including any microbiological investigations from the ward for potential infections and also hospital re-admissions relating to their 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 April 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