NHS Greater Glasgow and Clyde	**Paper No. 22/57**
Meeting:	**NHS Board Meeting**
Meeting Date:	**23 August 2022**
Title:	**The Healthcare Associated Infection Reporting Template (HAIRT) for April - June (Quarter 2) 2022**
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* 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) over the second quarter of 2022 (April - June).

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 2019-2023 for SAB, CDI and ECB are presented in this report;
    - SAB rates remain within limits. There were **70** healthcare associated SAB reported locally this quarter. Aim is 69 or less per quarter, so GGC are performing well against this target.
    - ECB rates remain within normal control limits. There were **134** healthcare associated ECB this quarter, the aim is to have less than 114 cases per quarter.
    - CDI rates remain within normal control limits for the period of the report. There were **54** healthcare associated CDI this quarter, the aim is to have less than 51 cases per quarter.
    - Surgical Site Infection (SSI) surveillance remains paused nationally. Local surveillance resumed in February 2022.

  - MRSA and CPE Clinical Risk Assessment (CRA) compliance for April to June 2022 was **88%** and **91%** respectively. NHS GGC continue to perform well in terms of the overall average for NHS Scotland for both of these measures.

- The following link is the ARHAI report for the period January to March 2022. This report includes information on GGC and NHS Scotland's performance for Clostridioides difficile infection, Escherichia coli bacteraemia, Staphylococcus aureus bacteraemia and Surgical Site Infection in Scotland (windows.net). The 2022 targets continue to be challenging but the ARHAI report demonstrates that GGC are not outliers in any category presented. Charts within this report, where appropriate, highlight continuous improvement over time. Reduced variability indicate stable systems.
- The third issue of the Infection Prevention and Control Quality Improvement Network (IPCQIN) newsletter was issued to staff via Core Brief in May 2022. This ensures shared learning across the organisation on the improvements implemented thus far by the network.
- COVID-19 activity continued during this quarter. IPCT are working closely with colleagues to support the implementation of national guidance in practice. ARHAI have updated the publication of COVID-19 data to exclude community onset cases. To date, in NHSGGC, there have been over 484,000 confirmed positive cases. 10,614 of these cases were reported after admission to hospital. There was a decrease in ward closures in this quarter. The IPCT are supporting the organisation to manage successive waves of COVID-19.
- The Board's cleaning compliance and Estates compliance are both above 95% for the Quarter.
- Prospective SAB, CDI and ECB data with origin of infection is now available to clinical staff via MicroStrategy IPC dashboard. SSI surveillance was incorporated onto the platform in December 2021. This ensures frontline clinical teams have access to real time data to inform decisions and actions to reduce healthcare associated infections. This dashboard will continue to be developed.
- Close communication with ARHAI and other external organisations continues, with contributions from several members of the IPCT to National Groups.

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 <u>assurance</u>

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), and
- Clinical and Care Governance Committee

8. Date Prepared & Issued

Prepared on 29 July 2022

Issued on 16 August 2022

Healthcare Associated Infection Summary – April to June 2022

The HAIRT Report is the national mandatory reporting tool and is presented quarterly 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 quarter reported and should be viewed in the context of the overall trend in the following pages.

	Apr 2022	May 2022	Jun 2022	Status toward AOP target (based on trajectory to Mar 2023)
Healthcare Associated ***Staphylococcus aureus*** **bacteraemia (SAB)**	**22**	**18**	**30**	**Aim is 23 per month**
Healthcare Associated ***Clostridioides difficile*** **infection (CDI)**	**17**	**17**	**20**	**Aim is 17 per month**
Healthcare Associated ***Escherichia coli*** **bacteraemia (ECB)**	**48**	**40**	**46**	**Aim is 38 per month**
Hospital acquired IV access device (IVAD) associated SAB	**7**	**5**	**9**	
Healthcare associated urinary catheter associated ECB	**3**	**9**	**9**	
Hand Hygiene	**98**	**98**	**97**	
National Cleaning compliance (Board wide)	**95**	**95**	**96**	
National Estates compliance (Board wide)	**97**	**97**	**97**	

Key infection control challenges (relating to performance)

Staphylococcus aureus **bacteraemia**

- There were 22 healthcare associated SAB in April; 18 in May and 30 in June. Aim is 23 or less per month.

Clostridioides difficile **infection**

- There were 17 healthcare associated CDI in April; 17 in May and 20 in June. Aim is 17 or less per month.

Escherichia coli **bacteraemia**

- There were 48 healthcare associated ECB in April; 40 in May and 46 in June. Aim is 38 or less per month.

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

Surgical Site Infection Surveillance

- Surveillance was paused nationally (CNO letter 25th March 2020) however, NHSGGC continued to sustain SSI surveillance until December 2021, when it was paused locally due to the surveillance nurses being deployed to support the vaccine rollout programme.
  Surveillance recommenced on 1st February 2022.
  National SSI surveillance is expected to recommence in the last quarter of 2022.

***Staphylococcus aureus* bacteraemia (SAB)**

	Apr 2022	May 2022	Jun 2022
Total	**33**	**24**	**38**
Hospital *	16	11	19
Healthcare*	6	7	11
Community	11	6	8

HCAI monthly Aim for Hospital and Healthcare is 23 patient cases.

Healthcare associated *S. aureus* bacteraemia total for the rolling year July 2021 to June 2022 = **300.**

HCAI yearly aim is **280.**

***Hospital and Healthcare are the cases which are included in the Scottish Government (SG) reduction target.**

Comments:

- There has been a 6% reduction in the overall *S.aureus* bacteraemia cases in 2022 to date (n=186), compared to the first half of 2021 (n=198). The overall SAB numbers have been stable and in control with minimal variation since 2020 which indicates a stable system.
- The number of Healthcare Associated Infection cases has been variable but within expected limits since 2020.
- Community cases have shown a reduction since March 2021.
- Enhanced bacteraemia surveillance temporarily switched to light methodology as directed by the Scottish Government because of the acknowledged increased workload of IPCTs responding to the challenges of COVID-19.
- 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 report.
- There have been 21 SAB cases associated with an IVAD in Q2-2022. There are now local SAB reduction groups in each of the geographical sectors and Regional Services as part of the IPCQIN.

***E.coli* bacteraemia (ECB)**

	Apr 2022	May 2022	Jun 2022
Total	**87**	**85**	**83**
Hospital *	30	21	31
Healthcare*	18	19	15
Community	39	45	37

HCAI Aim for Hospital and Healthcare is 38.

Healthcare associated *E. coli* bacteraemia total for the rolling year July 2021 to June 2022 = **520.**

HCAI yearly aim is **452.**

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

Comments:

- There has been a 7% reduction in the overall *E.coli* bacteraemia cases in 2022 to date (n=476), compared to the first half of 2021 (n=511).
- There has been a 13% reduction in healthcare associated E.coli bacteraemia cases in 2022 to date (n=238), compared to the first half of 2021 (n=272).
- There remains minimal variability in monthly community onset cases.
- Urinary catheters remain a high risk factor for ECB, and were associated with **16%** of all healthcare associated cases this quarter.
- SPC charts for healthcare associated cases related to a urinary catheter are now included in each Acute Sector monthly report.

- Ward level data of entry point of bacteraemia is also available via MicroStrategy. This provides prospective information to Senior Charge Nurses to assist in the reduction of cases that may be amenable to improvement methodology.
- 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)

Clostridioides difficile infection (CDI)

	Apr 2022	May 2022	Jun 2022
Total	**24**	**21**	**25**
Hospital *	9	11	11
Healthcare*	7	6	5
Indeterminate*	1	-	4
Community	7	4	5

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

Healthcare associated *Clostridioides difficile* total for the rolling year July 2021 to June 2022 **= 208.**

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 area with higher than expected numbers.
- There has been a 15% reduction in healthcare associated CDI cases in 2022 to date (n=93), compared to the first half of 2021 (n=109).
- Community acquired cases increased slightly in 2021.

Micro-Strategy and ICNet – prospective tailored data provision on SAB, CDI, ECB and SSI Surveillance

IPC have been working collaboratively with eHealth colleagues to incorporate several measures into the MicroStrategy dashboard. These went live in May 2021.

This has enabled staff to quickly view real time information on SAB, CDI and ECB from point of care to Board level. The software platform has the benefits of providing users with the ability to view all key quality indicators in one screen to get a quick overview of performance in real-time and also easily interpret detailed information with data graphics.

Security access for each specific user will allow tailored access to interactive dossiers for each ward area. The system provides functionality to filter reports seamlessly for the users and the capacity to view trends over time in order to monitor improvement in the reduction of HCAI cases in NHSGGC.

This will allow SCNs in the Acute Sector to access their own ward level data on each of the three measures. Lead Nurses, Clinical Service Managers and General Managers will have access to the wards and hospitals included in their remit.

Acute Directors, the Chief Operating Officer and Chief Executive will also be able to view this information via the suite of reporting tools. Surgical Site Infection (SSI) surveillance information was also incorporated into the platform in December 2021.

This provides information and data on surgical procedures included in the SSI programme to the respective surgical clinicians in real time.

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*. The following link provides further information:
https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/vital-events/deaths

There were two deaths in April 2022, two in May 2022 and two in June 2022, 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. Datix incident reports were raised and the clinical teams were asked to complete clinical reviews.

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

Hand Hygiene Monitoring Compliance

NHSGGC Board

	July 2021	Aug 2021	Sept 2021	Oct 2021	Nov 2021	Dec 2021	Jan 2022	Feb 2022	Mar 2022	Apr 2022	May 2022	Jun 2022
Board Total	98	98	97	98	97	98	98	97	98	98	98	97

Estate and Cleaning Compliance (per hospital)

The data is collected through audit by the Domestic Services Team using the Domestic Monitoring National Tool, and 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.

Attached is the third issue of the network's Newsletter which was shared with staff in May 2022.

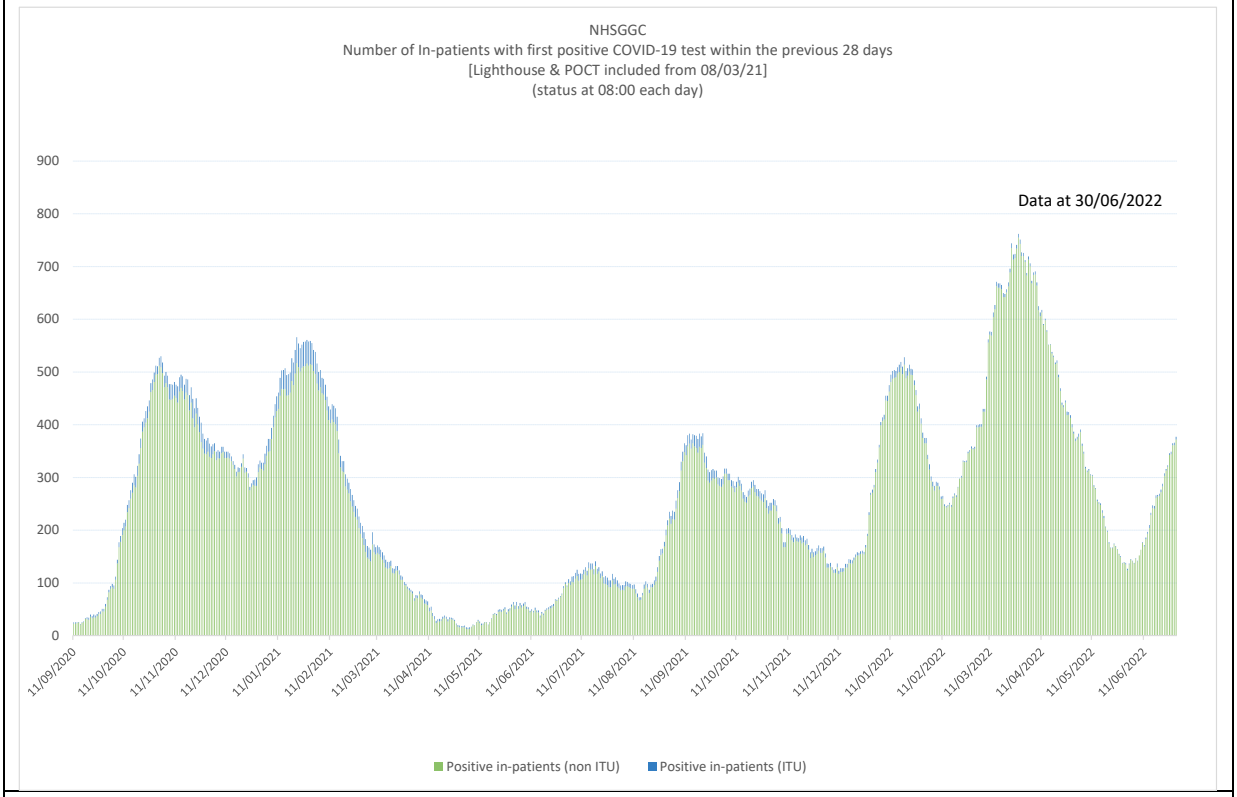
COVID-19 - Update

NHS Scotland is now experiencing its most recent wave of COVID-19. As of 17th July 2022 in NHSGGC there have been over **484,000** confirmed positive cases. This has continued to be a significant wave in terms of inpatient activity.

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 correct at 30 June 2022.

DAILY REPORTING – from 15/09/2020 to date



Daily 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).

Public Health Scotland now publish weekly reports on the incidence of COVID-19 in Scotland. These are available at: https://beta.isdscotland.org/find-publications-and-data/population-health/covid-19/covid-19-statistical-report/

Further information on Coronavirus (COVID-19) data, intelligence and guidance is available at: https://www.publichealthscotland.scot/our-areas-of-work/sharing-our-data-and-intelligence/coronavirus-covid-19-data-and-guidance

Ward closures due to COVID-19

There were **96** ward closures this quarter for COVID-19.

Month	Jul-21	Aug-21	Sept-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22
Ward Closures	5	18	22	21	14	28	65	41	84	47	13	36
Bed Days Lost	519	1078	1521	1892	1305	1699	3262	2087	3576	1582	526	1834

Below is an extract from ARHAI Scotland's Report on the incidence of Hospital onset COVID-19 in Scotland – validated data up until 26th June 2022. Please note that this is a **revision** to the format of data presentation as **community onset cases** are now **excluded**.

Table 1: Hospital onset COVID-19 cases, by onset status and NHS board: specimen dates up to 26 June 2022.[1,2,3]

NHS board	Total Hospital onset COVID-19 cases (n)	Non-hospital onset (n)	Indeterminate hospital onset cases (n)	Probable hospital onset cases (n)	Definite hospital onset cases (n)	Non-hospital onset (%)	Indeterminate hospital onset cases (%)	Probable hospital onset cases (%)	Definite hospital onset cases (%)
Ayrshire & Arran	4,016	2,198	332	484	1,002	54.7%	8.3%	12.1%	25.0%
Borders	516	196	78	64	178	38.0%	15.1%	12.4%	34.5%
Dumfries & Galloway	989	779	73	35	102	78.8%	7.4%	3.5%	10.3%
Fife	2,100	1,263	150	113	574	60.1%	7.1%	5.4%	27.3%
Forth Valley	2,447	1,691	174	149	433	69.1%	7.1%	6.1%	17.7%
Golden Jubilee	88	48	20	9	11	54.5%	22.7%	10.2%	12.5%
Grampian	2,449	1,511	187	173	578	61.7%	7.6%	7.1%	23.6%
Greater Glasgow & Clyde	10,614	5,300	1,177	1,196	2,941	49.9%	11.1%	11.3%	27.7%
Highland	1,362	887	92	78	305	65.1%	6.8%	5.7%	22.4%
Lanarkshire	4,175	1,964	577	548	1,086	47.0%	13.8%	13.1%	26.0%
Lothian	6,014	3,195	593	691	1,535	53.1%	9.9%	11.5%	25.5%
Orkney	55	45	2	1	7	81.8%	3.6%	1.8%	12.7%
Shetland	51	43	4	1	3	84.3%	7.8%	2.0%	5.9%
Tayside	3,490	2,136	290	330	734	61.2%	8.3%	9.5%	21.0%
Western Isles	119	89	7	6	17	74.8%	5.9%	5.0%	14.3%
Scotland	**38,485**	**21,345**	**3,756**	**3,878**	**9,506**	**55.5%**	**9.8%**	**10.1%**	**24.7%**

Outbreaks or Incidents in Quarter 2 2022

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 - None reported for April, 3 for May and 24 for June 2022
HIIAT AMBER - 1 reported for April, 1 for May and 15 for June 2022
HIIAT RED - 2 reported for April, 4 for May and 4 for June 2022
(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)

Royal Hospital for Children – 2 patients with MDRO *Klebsiella pneumonia.*

2 patients had MDRO *Klebsiella pneumonia* identified from microbiology samples. One patient was treated for infection (blood and wound) the other patient was colonised (urine). The incident was assessed as AMBER on 25th May 2022 using the Healthcare Infection Incident Assessment Tool (HIIAT) then GREEN on 6th June 2022 after implementation of agreed control measures. There were no further cases. Typing results indicated the isolates were related which suggests possible patient to patient transmission.

Control Measures:

- Hand Hygiene Audit was carried out on 23rd May 2022: 90%. Unit staff agreed to reinforce hand hygiene compliance with visiting clinical staff.
- Both patients had transmission based precautions implemented.
- A deep clean of bed bay was completed by domestic services. Clinical equipment was decontaminated at the same time by ward staff.
- Double cleans of all areas of the unit and a deep clean of non-clinical areas including the peripheral rooms such as the dirty utility room and storage areas was ongoing throughout.
- SICPs audit completed by IPCT – 94%. Ongoing reinforcement of compliance with SICPs.

Both patients recovered from infection and the incident was closed.

Healthcare Environment Inspectorate (HEI)

There was an unannounced inspection to QEUH during this quarter. No time frame for the publication of the report has been given as yet.

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 Apr-June 2022		NHSGGC **88%** compliance rate for CPE screening	Scotland 79%
		NHSGGC **86%** compliance rate for MRSA screening	Scotland 80%

Local results have been feedback to the ward areas audited this quarter to encourage improved compliance with CRA completion.

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 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 reports. It also includes some systems and process 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
CPE	Carbapenemase producing Enterobacteriaceae
CVC	Central Venous Catheter
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
SSI	Surgical Site Infection
UCC	Urinary Catheter Care
UTI	Urinary Tract Infection
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.

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.

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.

Healthcare Associated Infection (HCAI) Surveillance

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

***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 extended due to the pandemic and is now to be achieved by 2023.

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 Hickman 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 2023

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	2023	**17.4**	280	23

Sector/Directorate local reduction aims – April - June cases

	Patient cases	Aim per Quarter	Status
Clyde Sector	13	14	Below aim
North Glasgow Sector	19	17	Above aim
Regional Services	16	13	Above aim
South Glasgow Sector	17	22	Below aim
Women's & Children	5	4	Above aim
GGC Total	**70**	**69**	**Above aim**

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 – initial reduction of 25% by 2021/2023

Local reduction aim charts have been produced for GGC as a whole and for the five Acute sectors. The IPC Work Plan for 2022/2023 includes the development of tools to assist clinical teams to reduce the incidence of *E. coli* bacteraemia.

	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	2023	**28.6**	452	38

Sector/Directorate local reduction aims - April - June cases

	Patient cases	Aim per Quarter	Status
Clyde Sector	33	27	Above aim
North Glasgow Sector	34	35	Below aim
Regional Services	20	12	Above aim
South Glasgow Sector	42	35	Above aim
Women's & Children	6	4	Above aim
GGC Total	**135**	**113**	**Above aim**

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 2019-2023 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 investigation, 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.

Healthcare Associated Infection Standards – local reduction aims *C. difficile* – reduction of 10% from 2019 to 2023

	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	2023	**17.1**	204	17

Sector/Directorate local reduction aims – April - June cases

	Patient cases	Aim per Quarter	Status
Clyde Sector	10	15	Below aim
North Glasgow Sector	18	15	Above aim
Regional Services	10	5	Above aim
South Glasgow Sector	10	15	Below aim
Women's & Children (age ≥ 15 yr)	2	1	Above aim
GP specimens	4	-	-
GGC Total	**54**	**51**	**Above aim**

Information on all Acute hospital cases are 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-section, 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, repair of fractured neck of femur and in the Institute of Neurological Sciences (QEUH campus), spinal and cranial surgery. The IPCT 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. Mandatory data is reported nationally to enable board to board comparison. GGC infection rates are comparable to national infection rates.

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 2022.

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

COVID-19

Public Health Scotland now publish weekly reports on the incidence of COVID-19 in Scotland. These are available at: https://beta.isdscotland.org/find-publications-and-data/population-health/covid-19/covid-19-statistical-report/

Further information on Coronavirus (COVID-19) data, intelligence and guidance is available at: https://www.publichealthscotland.scot/our-areas-of-work/sharing-our-data-and-intelligence/coronavirus-covid-19-data-and-guidance

IPCQIN newsletter
Healthcare without preventable infections
NHS Greater Glasgow and Clyde

May 2022 | Issue 3

Welcome to the third issue of the Infection Prevention and Control Quality Improvement Network (IPCQIN) Newsletter

Our Vision:

As an Improvement Network, we influence and support our staff, patients and carers to continuously improve person centred infection prevention and control practices, ensuring a safe and effective care experience.

The **Infection Prevention and Control Quality Improvement Network** Steering Group and the Operational Group have continued to meet on a bi-monthly basis to support and oversee the development of the Network business and its recommendations.

IPCQIN Workstream Groups' Update:

1. Person Centred Care - Infection Prevention and Control

Lead: Pamela Joannidis, Infection Prevention and Control Associate Nurse Director and Ann McLinton, PCHC Programme Manager, Clinical Governance Support Unit.
Focus: Effectively engage with patients, carers and the public in the planning and delivery of our services and be able to demonstrate that we are listening and learning from our service users.

Update on Progress:

- Work is ongoing with Patient Experience and Public Involvement (PEPI) and the Person Centred Care Group to recruit representatives for the workstream. Advert for members of the public with lived experience to join the Person Centred Care Reference Group was circulated, awaiting response. The PEPI and PCC Teams are leading on the recruitment process. A Patient Focus Group is also being looked at as an alternative approach.
- IPC Patient Centred Care Reference Group has been established.

2. Reducing Infections Associated with the Use of Invasive Access Devices

There are currently four SAB Groups in the North Sector, South Sector, Clyde Sector and a newly established SAB Group in Regional Services. The work of the SAB Groups informs this workstream and ensures that there is a seamless approach across all sectors with minimal variation.

Focus: Increasing awareness of SAB prevention across NHSGGC among all professional groups with reviews and actions to address any barriers to good SAB prevention practices.

Update on Progress:

North Sector SAB Group

Lead: John Carson, Chief Nurse, North Sector, Acute Services

- SAB toolbox talk integrated into the wards and good liaison with ward staff.
- Working with Medical illustration to get good and poor visual examples of inserted PVCs and dressings to aid clinical teams.
- The Vascular Access Service is supporting targeted education in areas in the GRI that have a high incidence of SABs.
- 2019-2020 PICC related SABs in North Sector being reviewed by IPCT for care bundle compliance.

South Sector SAB Group

Lead: Morag Gardner, Chief Nurse, South Sector, Acute Services

- Good clinical leadership and wide MDT membership.
- Framework for knowledge, skills and then competency for all HCSWs involved in the use of invasive lines – draft now being consulted on, pre going to Learn Pro team to build the modules.
- Working clinical definition of what constitutes a line infection agreed locally.
- Human Factors and observation of practice work scoped.
- Good progress to reduce line infections in the pilot ward (5D QEUH) – now spreading to 5C and 9A QEUH

Clyde Sector SAB Group

Lead: Con Gillespie, Acting Chief Nurse, Clyde Sector, Acute Services

- The Clyde SAB Group has been established; structures are in place, good progress is being made and Terms of Reference have been signed off.
- Good buy-in from Clinical Teams, senior nursing staff and medical staff.

Regional Services SAB Group

Lead: Dr Peter Thomson, Consultant Nephrologist, Renal Medicine

- Group structure now in place with chair identified and draft terms of reference and driver diagram shared.

3. Standard Infection Control Precautions (SICPs) Workstream

Lead: Pamela Joannidis, Infection Prevention and Control Associate Nurse Director
Aim: By October 2022, all acute areas will demonstrate > 90% compliance with all standard infection control precautions.

Update on Progress:

- Incorporating the new SICPS Audit Tool into the development section of the Care Assurance and Improvement Resource (CAIR) Dashboard and testing it.
- IPC SICPs strategy has been agreed and in the process of being shared.
- The SOP IPCAT Strategy is currently being reviewed.
- Work continues looking at ways to display SICPs scores using a true quality structure that focuses on improvement. IPCQIN Steering Group and BICC members have been asked to consider how data from audit is to be reported and displayed.

Key results to date:

- QI have plans to look at the number of SAB infections in 2021 across the Board, using the information from the IPC Data Team, to match with the deprivation scores.
- There is a QI fundamentals Learn-Pro around awareness raising which can be shared and promoted within the IPCT through the induction portal and is for all staff.
- The Communication Strategy for the IPCQIN is now completed.
- An overarching Project plan has been established. This will be continuously updated throughout the life of the Project.
- 23 IPCNs have completed the Scottish Improvement Foundation Skills Programme (SIFS) to support quality improvement.

For any queries/suggestions or if you would like to become a member of any of the work-stream groups mentioned above, please contact Natalia Hedo, Infection Prevention and Control Business Manager on Natalia.Hedo@ggc.scot.nhs.uk