

NHS Greater Glasgow and Clyde	Paper No. 25/165
Meeting:	NHSGGC Board Meeting
Meeting Date:	18 December 2025
Title:	Infection Prevention and Control Annual Report 2024/2025
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1. Purpose

The purpose of this paper is to present to the NHS Board the Infection, Prevention and Control Annual Report for 2024/2025.

2. Executive Summary

The paper can be summarised as follows:

The content of the report details a broad range of IPC activities in place across NHSGGC:

- Performance against national indicators
- Overview of Policies and Guidelines.
- Education & Research
- National Groups and Memberships

3. Recommendations

The Board is asked to consider the following recommendations:

- Note the content of the IPC Annual Report.
- Note the next steps going forward.

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	<u>Positive</u> impact
• Better Care	<u>Positive</u> impact
• Better Value	<u>Positive</u> impact
• Better Workplace	<u>Positive</u> impact
• Equality & Diversity	<u>Neutral</u> impact
• Environment	<u>Positive</u> impact

6. Engagement & Communications

The content in this report was subject to discussion with the Infection Prevention and Control (IPC) Team.

7. Governance Route

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

- Partnership Infection Control Support Group (PICSG)
- Acute Infection Control Committee (AICC)
- Board Infection Control Committee (BICC)
- The Nursing and Midwifery Council
- Clinical and Care Governance Committee (CCGC) – 4 December 2025
- Board Clinical Governance Forum (BCGF) – 8 December 2025

8. Date Prepared & Issued

Paper prepared on: 8 December 2025

Paper issued on: 10 December 2025

Infection Prevention and Control

Annual Report 2024/25



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Welcome

The annual report summarises the work programme, outcomes, and impacts for Infection Prevention and Control (IPC) across the organisation from 1 April 2024 to 31 March 2025. It outlines the overall work programme and highlights areas of improvement, success, and remaining challenges.

IPCT maintains proactive approach, with a strong focus on training, education, supporting best practices, and learning. One of the examples of this approach is the IPC Quality Improvement Network which remains committed to delivering workstreams that foster continuous improvement and innovation. I encourage anyone interested in participating in this group to contact us. We hope the IPCQIN newsletters and updates are beneficial, fostering shared learning across our organisation.

We are excited to welcome new members to our team. As we continue to diversify roles, we aim to ensure our service is fit for the future and can further support clinical teams in implementing evidence-based IPC practices to enhance patient safety within our diverse organisation. Additionally, we aspire to contribute to the IPC evidence base by maintaining a strong focus on research and innovation within GGC.

Our performance this year against the Scottish Government Standards on Healthcare Associated Infections is noted in the table below. GGC continues to deliver care to some of the most complex patients in the West of Scotland. The successful prevention and control of infections are achieved by our frontline clinical staff, supported by the IPCT. We take this opportunity to acknowledge and celebrate their accomplishments.

I hope you find the information within this IPC Annual Report both informative and reassuring. The dedication of the IPCT to continually strive for excellence in our service is unwavering. We are committed to enhancing patient safety through evidence-based practices, ongoing education, and proactive measures. Your support and engagement are invaluable as we work collectively towards our goals of keeping patients, staff and visitors safe.

Sandra Devine

Director of Infection Prevention & Control NHS Greater Glasgow and Clyde

Scottish Government Healthcare Associated Infection Indicators

Performance April 2024 to March 2025 (rolling year)

Year end Q1-2025	GGC rate per 100,000 OBDs	SCOTLAND rate per 100,000 OBDs
CDI	17.0	16.7
ECB	37.5	38.8
SAB	18.5	18.5



CDI causes life threatening gastrointestinal infections especially in the elderly. This is distressing and debilitating infection associated with antibiotics. Preventing this infection promotes patient safety and wellbeing. The number of patients with CDI in NHS GGC is around the average rate for Scotland.



It is the most common type of bloodstream infection in the UK and is closely associated with how we manage urinary catheters. Catheters can cause urinary infections and this bacteria can travel into the patients' bloodstream. ECB can also cause the infections associated with SABs. As with SAB prevention will save lives. The number of patients with ECB in the NHS GGC is lower than in the rest of Scotland.



S.aureus can cause extremely serious infections in the heart, prosthetic joints and vascular devices. Preventing this infection, saves lives.

The number of patients with SAB in NHS GGC is the same as the rest of Scotland even though our patient population is more vulnerable.

Introducing our Team

Our Vision

To promote a safer environment for patients, staff and service users in all areas of health and social care within NHS Greater Glasgow and Clyde, and that no person is harmed by a preventable infection.

Our Team Values



The IPCT provides a comprehensive IPC service for all healthcare workers, patients, residents and visitors within NHSGGC Acute and Community Services including Care Homes.

The Senior Management Team includes a Director of Infection Prevention and Control (DIPC), Lead Infection Control Doctor (LIPCD) and Associate Nurse Director for Infection Prevention and Control (ANDIPC). The team is supported by an IPC Nurse Consultant (NCIPC) and dedicated business and administrative support.

The IPC Service in NHSGGC has a local IPC Team (IPCT) in each sector:

- Clyde
- North
- South (Adults)
- South (Paediatrics); and
- Health and Social Care Partnerships (HSCPs)

The local IPCTs consist of an IPC Doctor, Lead IPC Nurse, a combination of Senior Infection Control Nurses and IPC Nurses, and an administrator. The IPCTs cover all hospital sites and provide a service to mental health in-patient sites and directly managed community NHS services. The IPCT is supported by a dedicated Surveillance Team led by a Surveillance Operations Manager.

The primary role of the IPCT is the prevention of healthcare-associated infections (HCAI).

The key functions of the department are:

- IPC advice and support to healthcare workers to ensure patient safety is prioritised and patients have best clinical outcomes possible.
- Policy and guideline provision and advice on implementation.
- Education.
- Surveillance.
- Outbreak and incident management.
- Audit.
- Provision of IPC advice to patients, parents and visitors.



Performance at a Glance - April 2024 to March 2025:



CDI - Above NHS Scotland rate



ECB - Below NHS Scotland rate



20,999 Infection Control Learn Pro Modules were completed



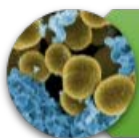
Managed 255 Ward Closures



281 Audits of Wards SICPS, PVC and CVC practice



47,335 Patient Referrals



SAB - Same as NHS Scotland rate

The IPCT provides highly specialised advice to the Board's Senior Management Team (SMT) on compliance with national mandatory requirements, standards and best practice, and takes the lead in supporting the implementation of these throughout the organisation on a Board and Sector level.

The department advises operational staff on the implementation of both national and NHS GGC IPC Policies and Procedures. The service is provided to all clinical and non-clinical disciplines within the organisation.

The IPC department:

- Provides IPC education to pre and post registration courses at higher and further

education establishments.

- Delivers up-to-date education and training in a variety of models, including mandatory online, face-to-face local and MS Teams education sessions. Other formats also include local posters, videos and stands for drop-in learning opportunities.
- Produces an annual programme presented and approved by the Board Infection Control Committee (BICC) and updates to the programme are presented at each bi-monthly meeting.


The specific roles and responsibilities for IPCT can be found in the IPC Assurance and Accountability Framework:

[Assurance and Accountability Framework V3 - NHSGGC](#)

Policies and Guidelines

The Board intranet site contains an IPCT webpage hosting a comprehensive set of standard operation procedures (SOPs), guidelines, aide memoires, etc. as well as linked policies from other specialties, e.g. Estates. It also has a direct link to the National IPC Manual.

The IPCT webpage is where service users, their visitors and anyone providing support can easily access up-to-date National Guidance and information on infections and the current IPC measures in place.



Checklists on this site ensures that Healthcare Workers have the core information they require to manage patients with infections

Education

Over the past year the IPCT have strived to ensure that education delivery reflects the evolving landscape of the NHS GGC. While continually reviewing and updating the content of our education sessions we are also exploring innovative methods of delivery to ensure that all staff, regardless of ward or departmental pressures and time constraints can access IPC education.

The primary aim of IPC education is to equip health care workers with the knowledge and competencies required to deliver safe and effective care. This, in turn, supports the reduction of Healthcare Associated Infections and helps combat antimicrobial resistance, thereby safeguarding both patients and HCWs.



We aim to deliver education in ways that support the needs of clinical teams

Ward and department staff have provided positive feedback on the usefulness of IPC Tool Box Talks. In response, we are currently developing narrated video versions of the six most commonly used Tool Box Talks, each accompanied by a QR code to allow quick and easy access for staff. To enhance the visual impact of our education materials and create a standalone resource, we have worked with Medical Illustrations and Microbiology team to produce plated images showing microbial growth on everyday items such as a watch, mobile phone, jacket sleeve, and lanyard. These items are not always perceived as IPC risks, but the images offer a powerful way to demonstrate the potential for contamination and transmission risks and reinforce key infection prevention messages.

While new resources are being developed, established materials such as “Question of the Week” and “Spot the Mistake” posters continue to be used regularly. These tools enable the IPCT to engage ward and department teams in ongoing education, supporting quality improvement and reducing IPC risks.

A quarterly IPC Newsletter is also shared with all staff via the CoreBrief. The newsletter includes fun facts and key IPC information, along with introductions to IPC team members. Interactive elements such as a hand hygiene quiz for National Hand Hygiene Day offer a fun

and engaging way for staff to refresh their knowledge, with answers provided in the following issue of the newsletter.

The Statutory mandatory training module “Standard Infection Control Precautions” is a core training requirement for all staff via Learn-Pro. This has recently been updated to reflect the post-pandemic guidance. From April 2024 to March 2025, 17,408 staff members undertook this Learn-Pro module, including 8,573 Nursing & Midwifery staff, 1,688 Medical staff, 4,107 Administration and Ancillary staff and 1,675 Allied Health Professional (AHP) staff.

In addition to staff being directed to the National Infection Prevention & Control Manual, a comprehensive IPC Portal is available containing guidance documents, care checklists and aide memoires.



Infection Prevention and Control Quality Improvement Network (IPCQIN)

Network's 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.

Over the past year, the IPCQIN has met regularly, driving forward key initiatives and improvements across all our workstreams. Our newsletter was published every two months and had spotlighted good practice, improvement work and education initiatives.

IPCQIN Workstreams

The IPCQIN is a collaborative space where members share learning, drive improvement, and support staff in all aspects of IPC. Some of the workstreams include:

Staff Education – Launch of Vascular Access Device Education Package and Quality Improvement:



The IPCQIN continues to focus on education, training and quality improvement and have made significant progress over the period of 2024/25.

VAD (Vascular Access Device)

NHSGGC have recently launched a new package of education and competency assessment for any practitioner involved in the care and maintenance of VADs. As part of this package, there is a new Learn-Pro module for practitioners to complete: **GGC 329 Vascular Access Devices**. The module consists of a core module and a number of VAD specific modules.

A Short Life Working Group (SLWG) is being established to support the ongoing work of the Vascular Access Device education in terms of communication and promotion of the e-learning module.

More information on this VAD package, Champions, demonstration videos and care plans can be found here: [Care and Maintenance of Vascular Access Devices \(VADs\)](#)

Quality Improvement Training:

The IPCQIN QI representative had encouraged IPCQIN members to apply and join the Scottish Improvement Leader (SciL) programme. This is the lead-level QI programme, run by NHS Education Scotland, which is open to all health and social care staff across Scotland.

The QI Leads have also contributed to work across the IPCQIN throughout the year when required, with membership continued in 2025/26.

Standard Infection Control Precautions (SICPs) Workstream

The Standard Infection Control Precautions (SICPs) workstream remains focused on driving improvement and preventing avoidable infections, ensuring sustained progress across NHSGGC.

Key areas of work include:

- Development and implementation of the SICPs Audit Tool.
- Ongoing Quality Assurance and Hand Hygiene audits.
- Enhancing tools and methodologies to support best practices.

A new generic SICPs tool is currently in development for use in areas which are not in-patient wards, with a trial planned for 2025. This tool will support infection prevention in areas such as:

- Dental Clinics
- Theatres
- Physiotherapy
- Maternity Outpatient Departments
- Renal Dialysis Units
- Imaging
- Ophthalmology

Additionally, a thematic analysis report is underway to review key findings from the last 8–10 SICPs audits from each of the 5 sectors. This will help identify common trends and areas for learning and shaping future improvements in infection prevention.

Person Centred Care Workstream

The Person-Centred Care workstream has continued to drive forward engagement work across NHSGGC in 2024/25, supporting the IPCQIN.



As part of this year's What Matters to You (WMTY) Day, we celebrated meaningful conversations that have led to positive outcomes for patients and their families. The IPCT played an important role in these efforts, with over 150 staff completing WMTY forms during visits to Mental Health Wards to discuss staff knowledge related to glove use.

A key focus for WMTY 2024 was understanding whether patients or their relatives were aware of why a Peripheral Venous Catheter (PVC) had been inserted and if they received appropriate information at the time. Data was collected across eight hospital sites using a Microsoft Forms questionnaire, which improved response rates compared to the previous year. The results showed that while most patients (88%) knew why the PVC was in place, only 48% recalled receiving an explanation about the device and associated risks. Additionally, 55% of patients

expressed a preference for accessing Patient Information Leaflets (PILs) via their own mobile device, suggesting a need for alternative formats.

Action Points:

- IPCT has developed narrated videos with QR codes on posters, allowing patients, relatives, and staff to access information easily.
- Staff engagement will continue through weekly ward visits, emphasising the importance of sharing PILs with patients.
- Future surveys will be refined to capture more detailed insights into patient understanding and preferred information formats.

The data collection for What Matters to Me (WMTM) Day 2024 was presented at the March 2025 IPCQIN, with actions set to follow.

Each quarter, the team published an IPC Newsletter, which received positive feedback. Looking ahead to 2025/26, there are plans to expand the newsletter's reach through social media and other digital platforms.

We also introduced the IPC Advent Calendar 2024, which was a great success! [Infection Prevention and Control Advent Calendar 2024](#)



Sector SAB Groups Workstream

North Sector SAB Group

In 2024/25, the North Sector SAB Group focused on strengthening its foundation by reviewing membership, updating the Terms of Reference, and refining its work plan and objectives. Bi-monthly SAB meetings provided a platform for sharing improvement work and discussing hotspot areas across the sector.

A key aspect of the group's approach was inviting teams who had undergone PVC audits following IPC sweeps to share their experiences, fostering shared learning and best practices.

Key Achievements:

- Development of CAUTI, SAB, and ECB toolbox talks with ward teams.
- Introduction of Scrub the Hub awareness posters across the sector.
- Hosting IPC Interactive Days for Registered Nurses (RNs) and Healthcare Support Workers (HCSWs).

The group's dedication was reflected in its success in meeting its HCAI SAB reduction target for five consecutive months from September 2024 to January 2025.

South Sector SAB Group

In 2024/25, the South Sector SAB Group prioritised education and engagement, implementing several initiatives to enhance awareness and drive improvement.

Key Focus Areas:

- IPC Lunch & Learn sessions.
- PVC Feedback Fridays.
- Development of a PVC Ward Audit Tool.
- Increased use of the SAB group for shared learning.

To identify and address recurring SAB cases, the group's efforts contributed to significant reductions in both HCAI SAB and HCAI ECB cases in January 2025.

Looking ahead, the group aims to:

- Expand the VAD Champion role across wards.
- Enhance ward education and auditing.
- Streamline PICC line practices to ensure clarity and accessibility.
- Develop comprehensive patient information for all vascular access devices.

Clyde Sector SAB Group

The Clyde Sector SAB Group successfully rolled out the PVC Care & Maintenance poster and introduced IPCT-led Lunch & Learn sessions, both of which were well received by staff.

In 2024/25, the sector remained on or below its target for HCAI SABs in six out of twelve months, demonstrating steady progress.

Key Priorities for 2025/26:

- Refocusing and refreshing SAB meeting membership.
- Enhancing PVC sweeps and safety crosses.
- Improving compliance with PVC Care Plans and CAUTI bundle completion.
- Exploring the use of midlines in Cardiology.
- Continuing to test A4 documentation in notes as an alternative to stickers.

Regional SAB Group

The Regional SAB Group focused on quality improvement within Renal Services, particularly in Renal Dialysis Units and inpatient wards.

Key Findings:

63% of HAI SABs in the past year were linked to IV access devices, primarily tunnelled dialysis lines (tCVCs) used in haemodialysis.

To address this, the team took targeted action to improve patient and staff education on tCVC care and maintenance.

Key Achievements:

- Updated the tCVC information leaflet, adding a section on "Caring for Your Line".
- Enhanced hub cleaning practices, leading to the development of the Scrub the Hub campaign.
- Co-created an educational poster with two patients, now displayed in Renal Dialysis Units and inpatient wards.

As a result of these improvements, Regional Services successfully reduced SAB incidence to on or below target for nine consecutive months.

CAUTI Group

A Bladder Health/CAUTI Short Life Working Group (SLWG) has been established to take a collaborative, system-wide approach to improving care pathways for patients with indwelling urinary catheters. This initiative focuses on providing patient-centred, safe, and effective care across both Acute and Community settings.

The group plans on continuing to scope what resources we already have and how we relaunch them to support our aims – e.g. the catheter passport.

The group consists of multidisciplinary membership drawn from across IPCQIN - moving forward with various actions:

- Agreement on the Terms of Reference and scheduling of bimonthly meetings.
- Creation of a Teams channel to act as a centralised information repository for all members.

Key Aims of the Group in the coming year:

- Optimise bladder health and minimise the risk of CAUTIs and UTIs.
- Standardise catheter care documentation and re-launch the catheter passport.
- Support nurses with evidence-based guidance for catheter management.
- Use data to measure outcomes and drive improvements.

The group's ongoing workplan includes exploring the HOUDINI protocol, finalising the NHSGGC catheter passport, enhancing the GC competency framework, and refining related Standard Operating Procedures (SOPs).

This partnership represents a system-wide effort to foster collaboration across NHSGGC and improve the quality of care for patients.

Spotlight: 'Renal NEPHLIC Channel' (Nurse Education Programme - Hospital Learning in Chunks)

One of the highlights of this year and a fantastic example of the creative and innovative work happening across the IPCQIN Network, is the Renal Team's NEPHLIC Channel.

The NEPHLIC Channel is a monthly series of short, practical, evidence-based lectures designed to enhance nurse confidence and autonomy in managing renal patients which is hosted via Microsoft Teams to reach as many nurses as possible and is recorded for later review.

The sessions focus on key learning areas, including:

- Empowering Nurses – Ensuring confidence in everyday renal patient management.
- Addressing Concerns – Based on DATIX reviews, covering topics like dialysis access care & patient deterioration.
- Feedback-Driven Topics – Covering requests such as hyperkalaemia management, incremental dialysis, and more.

The team is actively promoting the NEPHLIC Channel using:

- QR codes for easy access.
- Merchandise to build awareness.
- SharePoint & Teams to keep sessions accessible, fun, and inclusive.



PVC (Peripheral Venous Cannula) Care Plan

In 2022, Antimicrobial Resistance and Healthcare Associated Infection (ARHAI) issued new recommendations from the Insertion and Maintenance of Peripheral Venous Catheters (PVC) literature review with the key recommendation being: **PVCs should only be removed when clinically indicated or no longer needed, rather than at routine intervals.**

A Short Life Working Group (SLWG) was established to review the current adult PVC care plan as this appeared to be an opportune time to develop one that could be utilised in both adults and paediatrics. A new PVC care plan was developed to align with other vascular access device care plans, with the objective of ensuring uniformity and facilitating its use in both adult and paediatric settings.

A period of piloting was undertaken in both adult and paediatric settings, after which changes were implemented in response to user feedback.

Prior to the launch date, information was disseminated to staff on a weekly basis for a period of four consecutive weeks via the Core Brief. A Situation Background Actions Recommendations

(SBAR) was presented at the Chief of Medicine and Chief of Nursing meetings as well as local *S. aureus* Bacteraemia (SAB) groups and via email to Senior Charge Nurses.

The IPCT shared the information at weekly ward visits, and members of the SLWG visited areas such as Theatres and Emergency Departments, where historically the care plan had not been used. Although there were some challenges, the rollout of the updated PVC care plan has been successfully implemented in all settings, although work is ongoing in Neonatology ICU and Emergency Departments.

Surveillance

NHS GGC uses an electronic patient management system ICNET, which links information from hospital systems (e.g. laboratories, theatres and Track care) and ensures that results are received in real time (every 15 minutes) by the teams who in turn can act upon this promptly. A full record of the patient's diagnosis and management is included in the system, which facilitates documentation audit. The system allows the IPCT to view the records of any patient referred via this system in any hospital across the board.



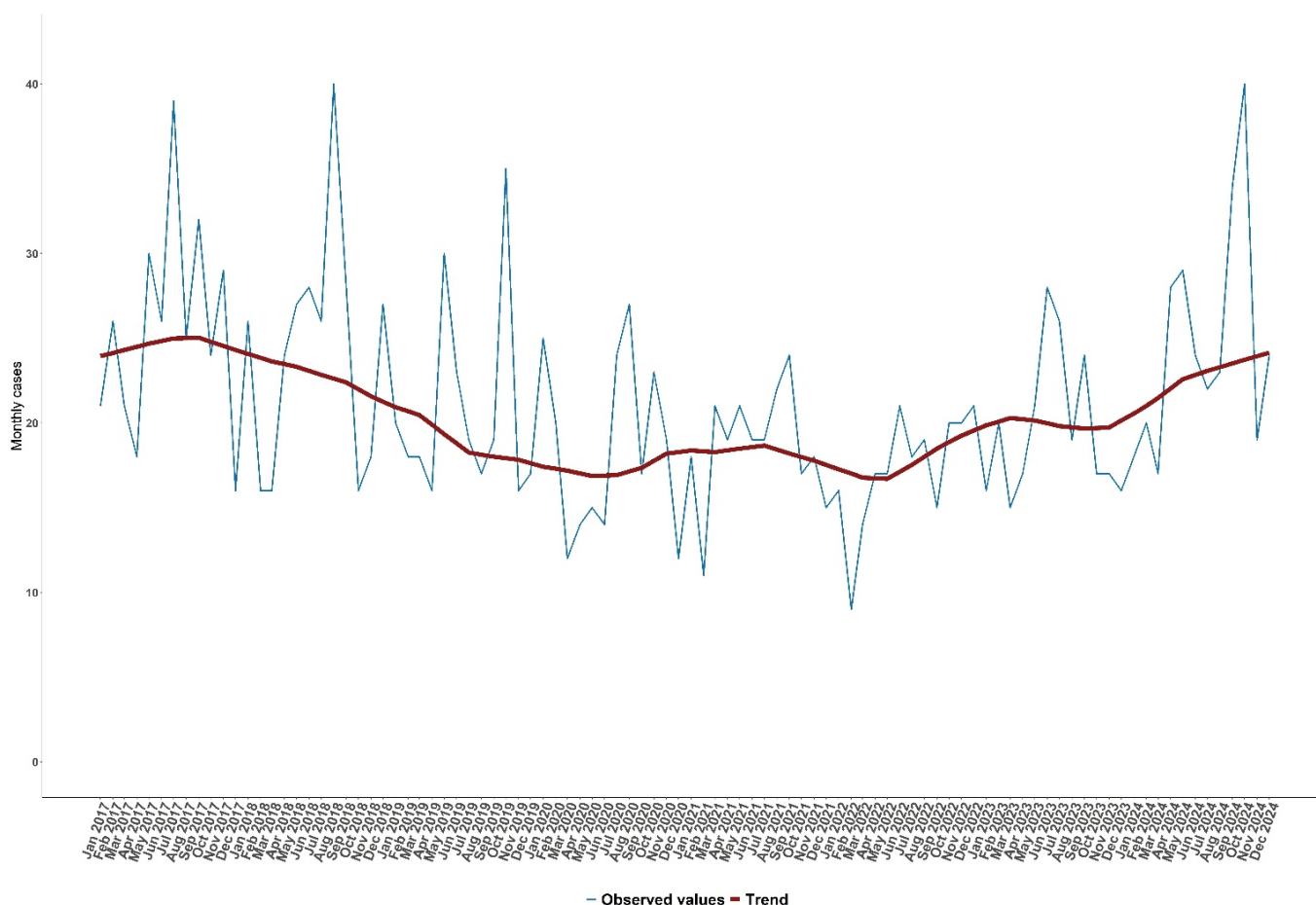
Surveillance allows us to identify problems quickly and implement improvements promptly

October 2024 *Clostridium difficile* infection (CDI) increases investigation

As a response to the increase in CDI cases in October 2024, IPCT carried out an investigation of 8-year historic trends of *Clostridium difficile* infection (CDI) cases in NHS GGC and their potential association with seasonality, antibiotic usage, and the average length of stay in over-65 in-patients on the investigation and the historic review from January 2017 to December 2024.

The investigation concluded that there was little support for seasonality on healthcare-associated CDI cases in the reported period. The figure below shows the number of healthcare-

associated *Clostridium difficile* infection (CDI) monthly cases (blue line) and an estimated long-term trend (red line) using time series decomposition. A downward trend is visible from January 2018, followed by a stable period in 2019 - 2023, and an increasing trend in recent months.



As reported in the literature, antibiotic exposure may play an important role in CDI incidence variation. In the model used for this investigation, monthly co-amoxiclav and clindamycin DDDs, as well as average length of stay in over 65 non-elective in-patients, might have had a correlation with the monthly CDI cases. Rather than seasonality (increase at specific months annually), the CDI variation (increase/decrease) might be driven by a combination of multiple factors.

Staphylococcus aureus bacteraemia (SAB) sector groups

IPC Surveillance Team supported the NHS GGC SAB Sector Groups with data and visualisations. Reports on healthcare associated SAB cases, incidence trends and locations were presented to the groups to aid with targeted interventions. IPCT continue to support these groups with monthly and quarterly reports related to SAB cases.

Ward closures

Our IPC data team creates a data base of closed wards reported by our ICNs within each Sector. The details on the closure/opening dates, numbers of days closed and the reason for closure are gathered for each closed ward (see a summary in the table below).

Reason	No of closed wards	
	2023 - 2024	2024 - 2025
Chickenpox	-	-
COVID-19	160	93
Group A Streptococcus	-	-
Influenza	15	39
Norovirus	47	67
Respiratory Illness	1	-
RSV	1	2
Suspected Gastroenteritis	44	63
Confirmed Scabies	-	1
Suspected Scabies	-	1
Total	268	266

GGC Performance in management of Scottish Government Healthcare Associated Targets (National Programmes)

Scottish Government Standards on Healthcare Associated Infections Indicators (SGHAI) set for 2019-2024 for SAB, CDI and ECB are presented in this report. Available at: [https://www.sehd.scot.nhs.uk/dl/DL\(2023\)06.pdf](https://www.sehd.scot.nhs.uk/dl/DL(2023)06.pdf)

Overall cases

Figure 1 shows total cases of *Clostridium difficile* infection (CDI), *Staphylococcus aureus* bacteraemia (SAB) and *Escherichia coli* (ECB) bacteraemia from 1st April 2023 to 31st March 2024, and from 1st April 2024 to 31st March 2025, based on **ARHAI definitions**.

- **293** cases of healthcare-associated *Clostridium difficile* infection in 2024 – 2025 compared to **240** cases in 2023 – 2024.

- **328** cases of healthcare-associated *Staphylococcus aureus* bacteraemia in 2024 – 2025 compared to **313** cases in 2023 – 2024.
- **666** cases of healthcare-associated *Escherichia coli* bacteraemia in 2024 – 2025 compared to **610** cases in 2023 – 2024.

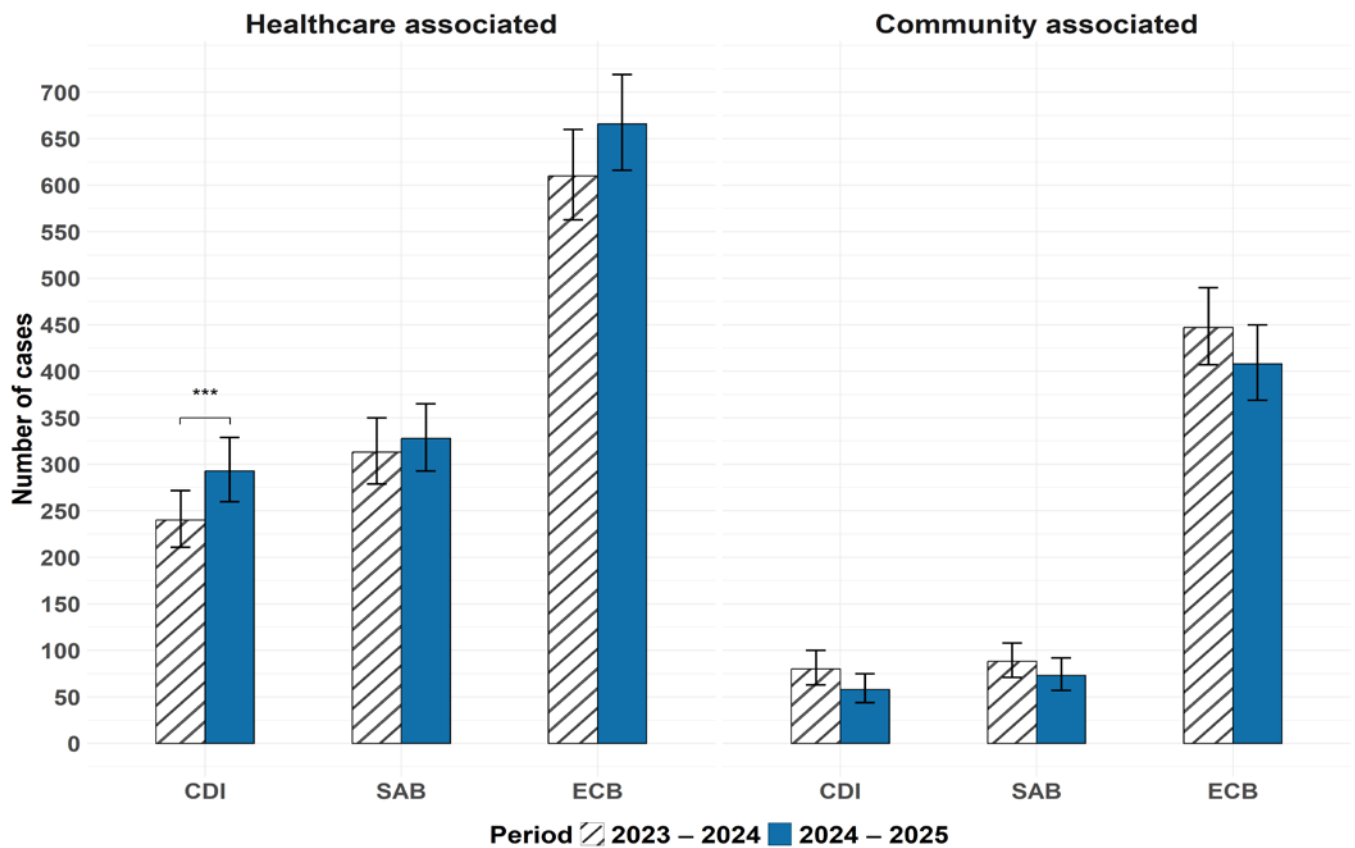


Figure 1 Comparison of the total healthcare-associated and community cases for *Clostridium difficile* infection (CDI), and *Staphylococcus aureus* (SAB) and *Escherichia coli* (ECB) bacteraemia. Bars show the total cases in period 2023 – 2024 (black stripes) compared to the 2024 – 2025 (solid blue) period for each organism, with significant (p-value < 0.02) comparisons indicated by three asterisks (***). 95% confidence intervals (error bars) and p-values were estimated using exact Poisson tests. Healthcare-associated SAB, CDI, and ECB cases increased in the 2024 – 2025 period. Community-associated cases decreased for ECB, CDI and SAB in the 2024 – 2025 period.

Annual and monthly incidence rates in the NHS Greater Glasgow and Clyde

Incidence rates were estimated for acute hospitals using their available monthly data on occupied bed days. The upper warning limit (UWL 2SD) and upper control limit (UCL 3SD) represent the +2 and +3 standard deviations from the average incidence rate, respectively.

Clostridium difficile infection

The average 2023 – 2025 incidence rate was **20.2** per 100,000 occupied bed days compared to **18.6** in the 2022 – 2024 period.

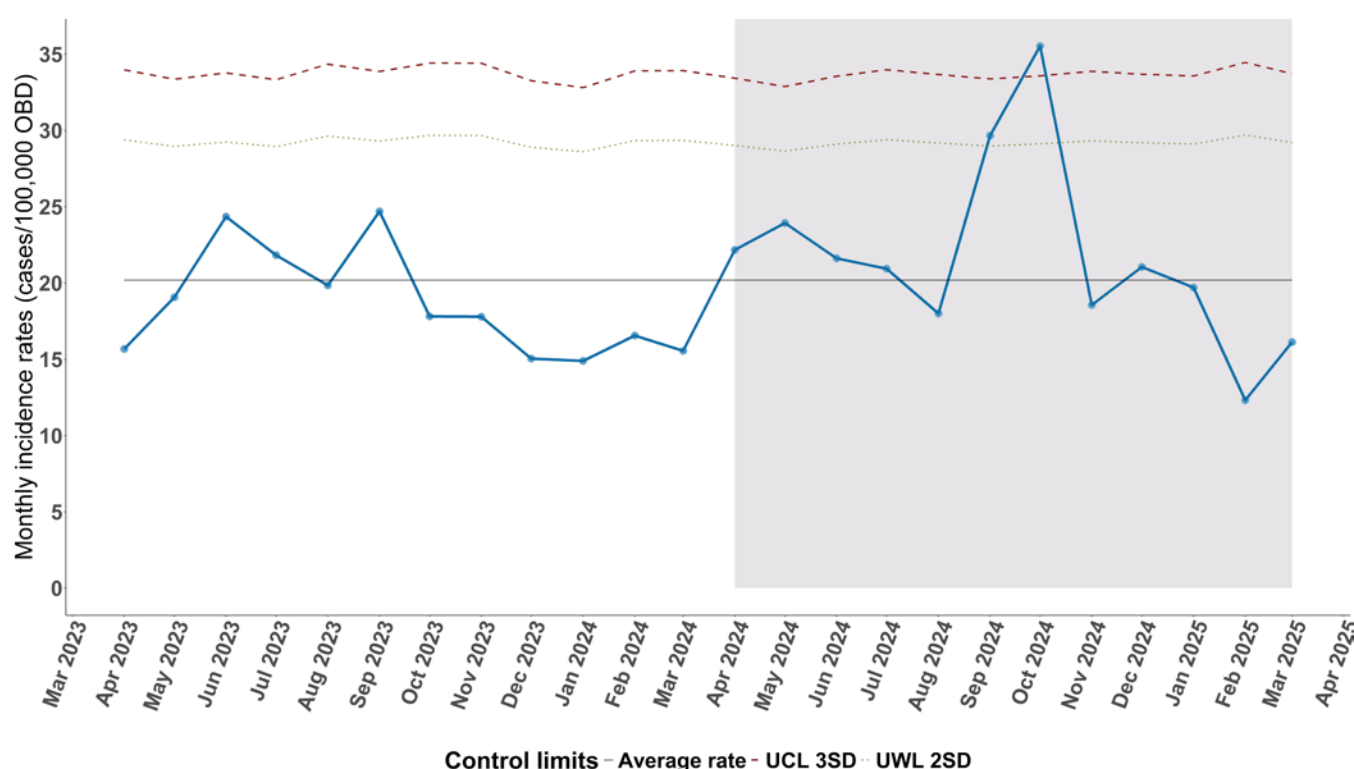


Figure 2 Monthly Greater Glasgow and Clyde *Clostridium difficile* infection incidence rates (cases per 100,000 occupied bed days (OBD)). Monthly *Clostridium difficile* infection incidence rates fluctuate around the average rate (20.2), estimated from April 2023 to March 2025. Notice most incidence rates are below a 2 SD upper warning limit (UWL - green dotted line), except for September and October 2024, with the highest monthly incidence rate. SPC U-chart control limits (UCL 3SD and UWL 2SD) were estimated, accounting for the period average rate as a baseline and monthly acute hospital bed occupancy.

Staphylococcus aureus bacteraemia

The average 2023 – 2025 incidence rate was **25.6** per 100,000 occupied bed days compared to **25.3** in the 2022 – 2024 period.

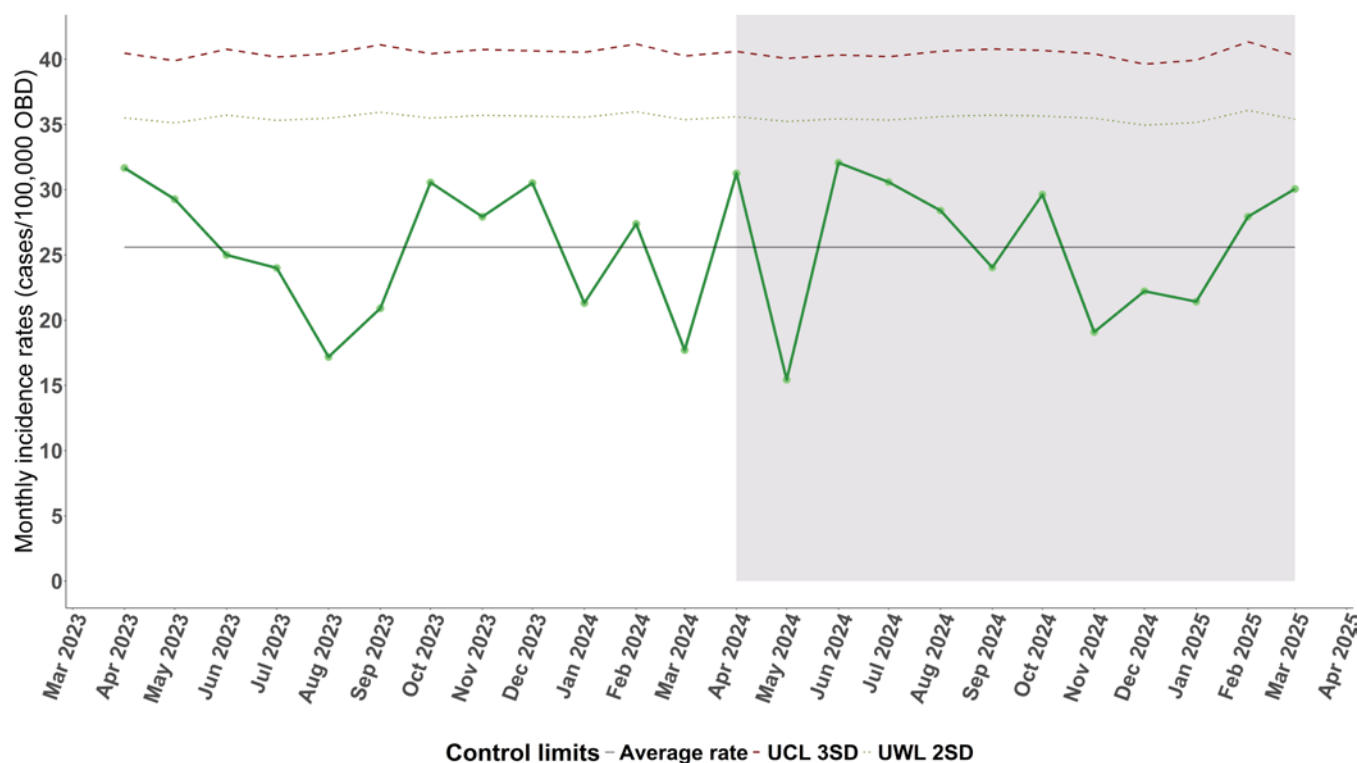


Figure 3 Monthly Greater Glasgow and Clyde *Staphylococcus aureus* bacteraemia incidence rates (cases per 100,000 occupied bed days (OBD)). Monthly *Staphylococcus aureus* bacteraemia incidence rates fluctuate around the average rate (25.6) estimated from April 2023 to March 2025. The SAB incidence rates remained stable and fluctuated closely to the average rate (black solid line) in this period, with no months rising above the upper warning or control limits between April 2023 and March 2025. SPC U-chart control limits (UCL 3SD and UWL 2SD) were estimated, accounting for the period average rate as a baseline and monthly acute hospital bed occupancy.

Escherichia coli bacteraemia

The average 2023 – 2025 incidence rate was **47.4** per 100,000 occupied bed days compared to **44.7** in the 2022 – 2024 period.

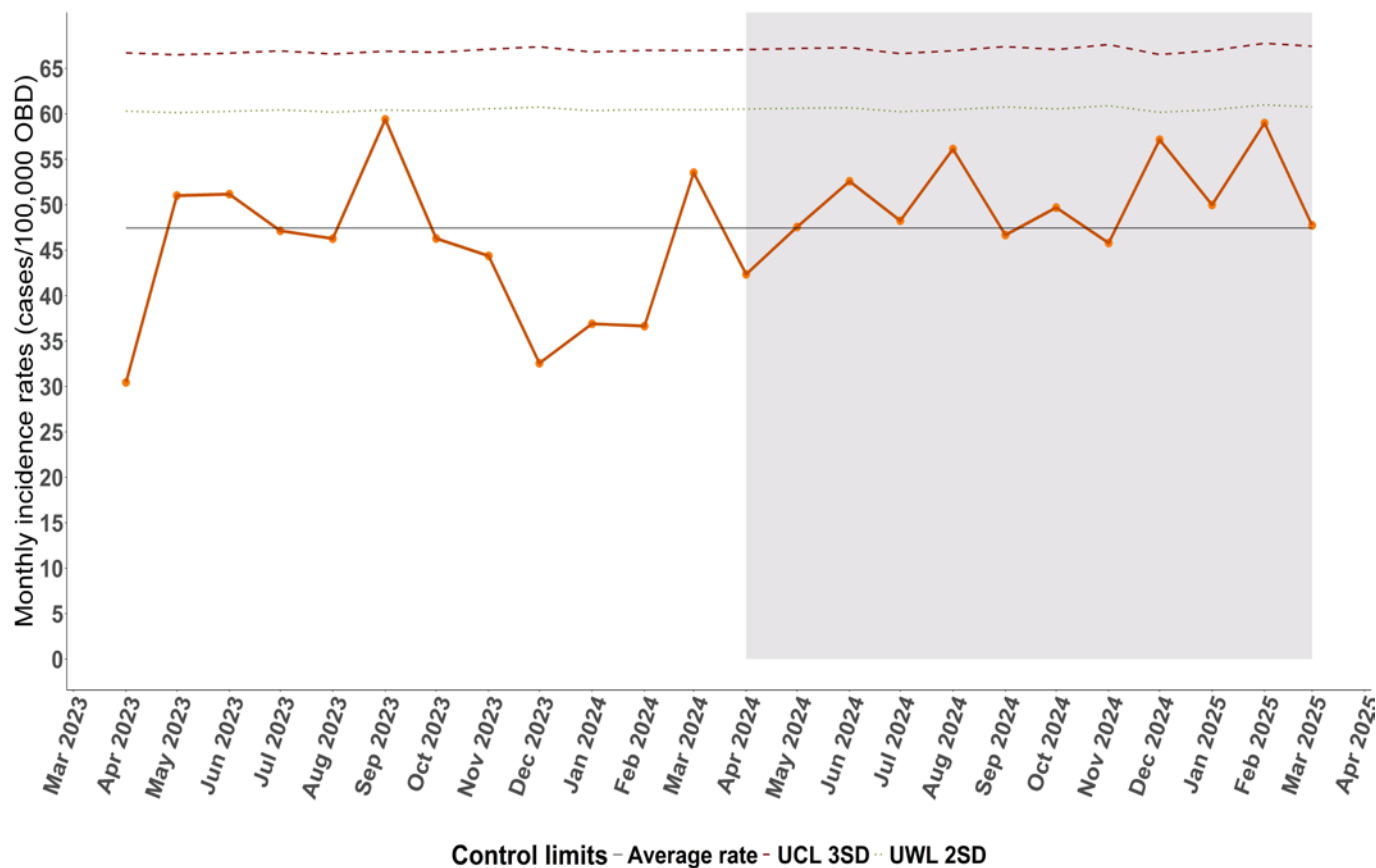


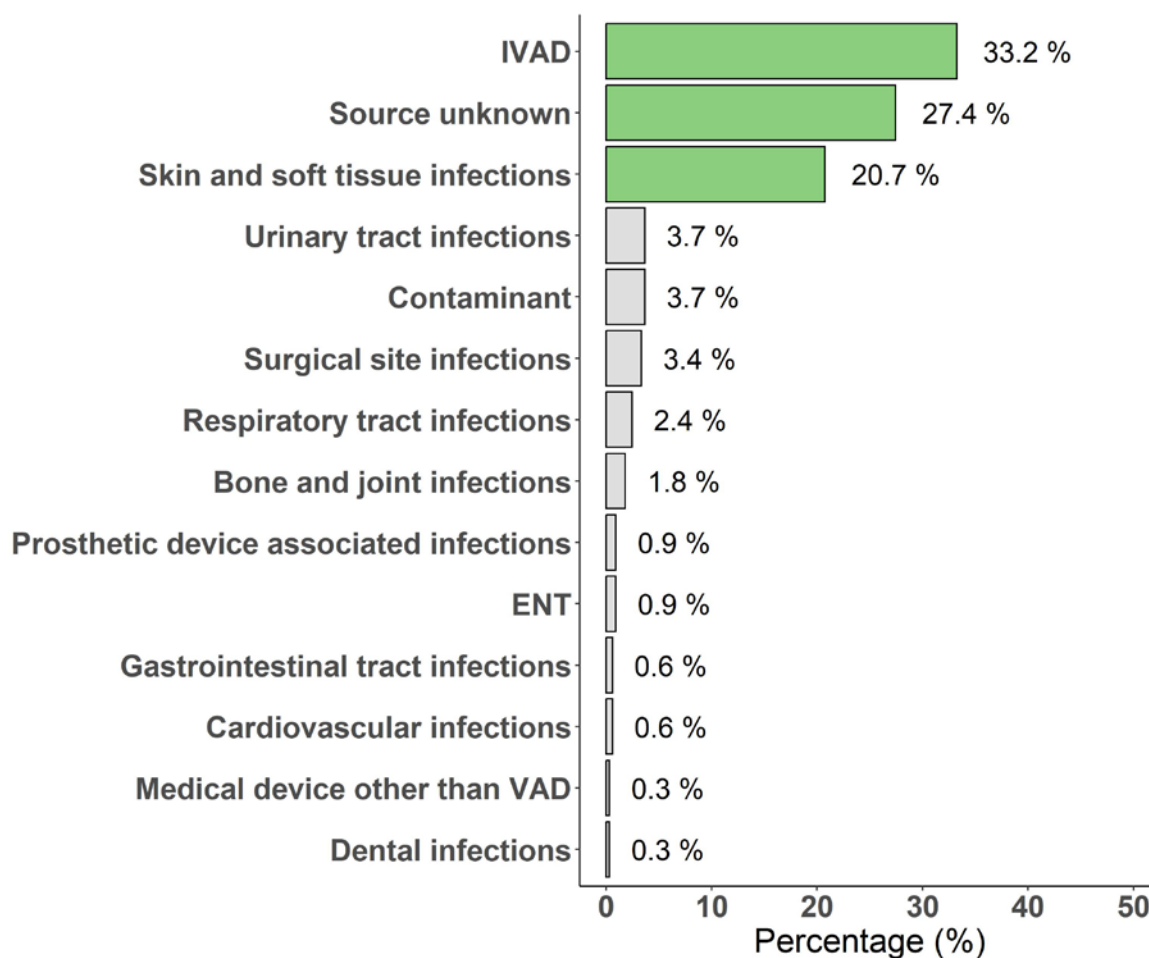
Figure 4 Monthly Greater Glasgow and Clyde *Escherichia coli* bacteraemia incidence rates (cases per 100,000 occupied bed days (OBD)). Monthly *Escherichia coli* bacteraemia incidence rates fluctuate around the average rate (47.4) estimated from April 2023 to March 2025. All incidence rates between April 2023 and March 2025 are below a 2 SD UWL (green dotted line), but several monthly incidence rates were above the average rate (black solid line) in the 2024 – 2025 period.

Enhanced Surveillance

Staphylococcus aureus bacteraemia

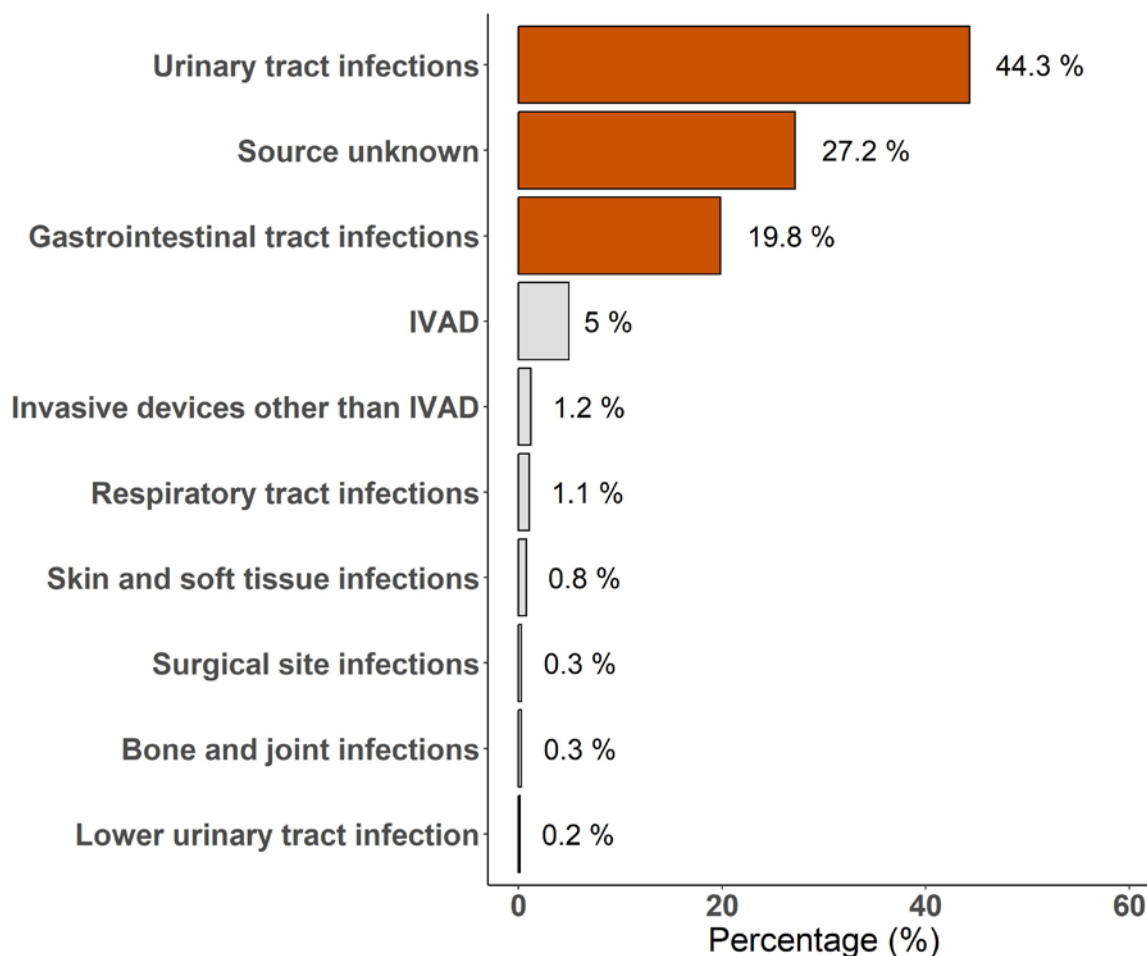
2.7% (9/328) of *S. aureus* bacteraemia were MRSA cases in the period 2024 – 2025 compared to **2.9%** (9/313) MRSA cases in 2023 – 2024.

In 2024 – 2025, **32.2%** (109/328) of all 328 *S. aureus* cases had a proven or probable entry point via IVAD, **27.4%** (90/328) were unknown, and **20.7%** (68/328) were skin and soft tissue-related infections. The top sources are highlighted as green bars with several other sources in smaller proportion in grey.



Escherichia coli bacteraemia

In 2024 – 2025, **44.3%** (295/666) *E. coli* bacteraemia cases were related to urinary tract infections, **27.2%** (181/666) were unknown, and **19.8%** (132/666) were due to gastrointestinal tract infections. The top sources are highlighted as orange bars, with several other sources at smaller proportions in grey.



Carbapenemase-Producing Organisms (CPOs) in NHS Greater Glasgow and Clyde.

CPE are a type of Enterobacterales that are resistant to carbapenem antibiotics. Infections caused by CPE are associated with high rates of morbidity and mortality and can have severe clinical consequences. Treatment of these infections is increasingly difficult as these organisms are often resistant to many and sometimes all available antibiotics.

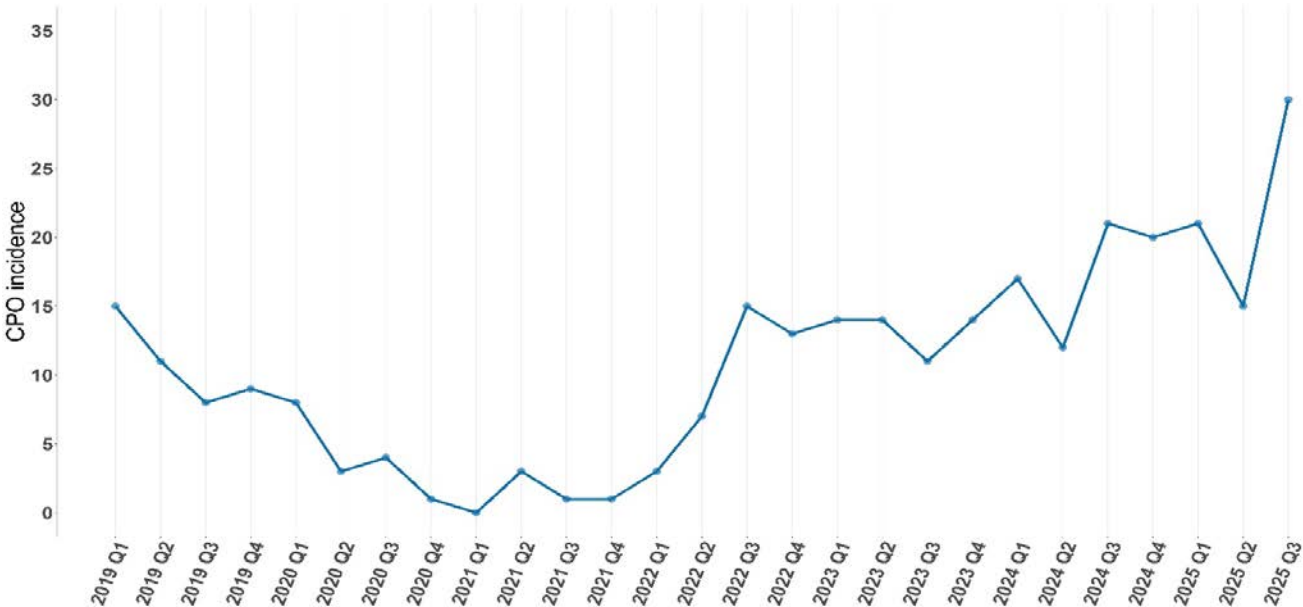
Over the last decade CPE have spread throughout the world and are now endemic in healthcare facilities in many countries. Currently ARHAI Scotland guidance recommends screening inpatients who have had healthcare contact outside Scotland in the preceding 12 months and contacts of positive cases.

An increasing number of KPC, NDM and OXA CPEs have been detected across GGC since 2021. This may reflect changing travel patterns post COVID-19 travel restrictions. The Scottish One Health Antimicrobial Use and Antimicrobial Resistance (SONAAR) report in 2023 [arhai-sonaar-annual-report-2023-v12.pdf](#) also describes an increasing trend throughout Scotland. The GGC IPCT are represented on ARHAI CPE surveillance Short Life Working Group.

Between 1 January 2019 and 25 September 2025, NHS Greater Glasgow and Clyde (GGC) recorded 291 cases of carbapenemase-producing organisms (CPOs). Each case represents the first detection of a patient carrying a carbapenemase gene or gene combination, regardless of the specific organism or enzyme involved.

The highest number of cases occurred in Q3 of 2025 (n = 30), while the lowest was in Q1 of 2021 (n = 0). From Q3 2021 onward, the data show a clear upward trend (see Figure 1), which may indicate an expanding population of multidrug-resistant Gram-negative bacteria. This increase might also reflect evolving screening practices, diagnostic protocols, and infection control policies.

Figure 1. Quarterly cases of carbapenemase-producing organisms (CPOs) in NHS Greater Glasgow and Clyde from



January 2019 to September 2025. The data show a rising trend from Q3 2021 onward, peaking in Q3 2025. Each case reflects the first detection of a patient with a carbapenemase gene, regardless of organism or enzyme type.

Figure 2 illustrates that most carbapenemase-producing organisms (CPO) cases were attributed to Enterobacterales (n = 249), with fewer cases involving non-Enterobacterales species (n = 42). Across both groups, as the first sample positive screening samples (n = 133) were less frequent compared to clinical samples (n = 158).

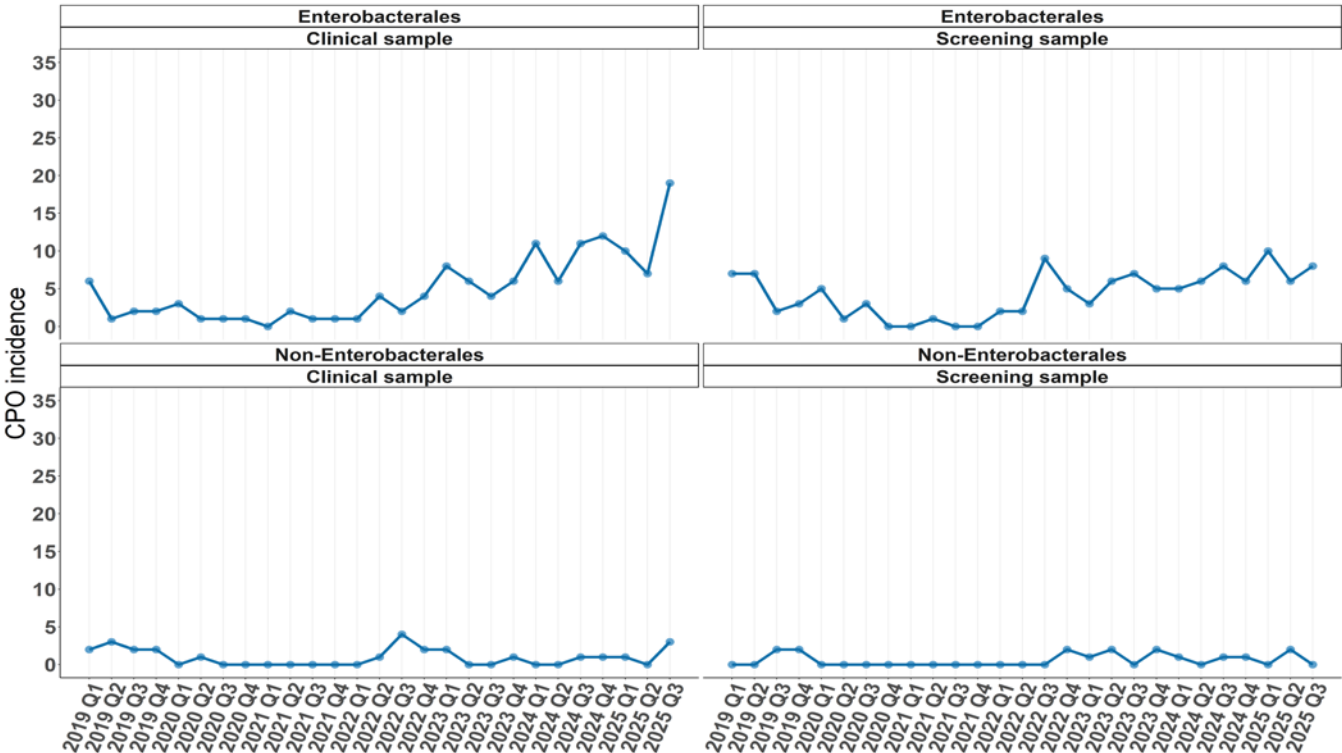


Figure 2. Distribution of CPO cases by organism group and sample type. Enterobacterales accounted for the majority of cases. Screening samples were less common than clinical samples across both groups.

Figure 3 presents the distribution of organism–carbapenemase gene combinations identified between January 2019 and September 2025, grouped into six major enzyme categories. The most prevalent enzymes were NDM, OXA, and KPC. Among Enterobacterales CPOs, consistently high proportions of NDM and OXA were observed across all years, while KPC emerged from 2021 onward.

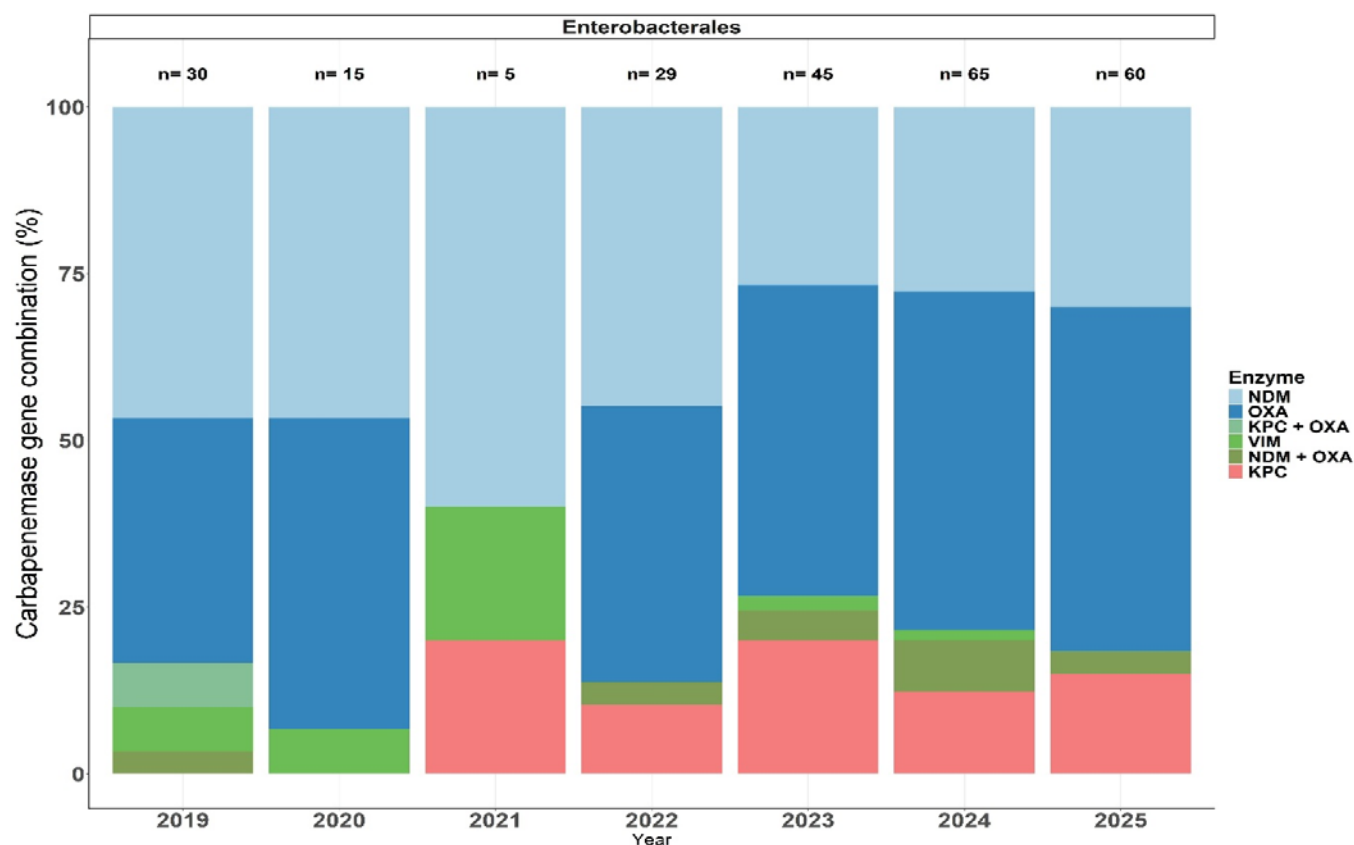


Figure 3. Distribution of carbapenemase gene combinations across years in Enterobacterales CPOs. NDM and OXA enzymes were consistently dominant throughout the period, with KPC emerging from 2021 onward. Identified Enterobacterales species include *Citrobacter amalonaticus*, *Citrobacter farmeri*, *Citrobacter freundii*, *Citrobacter koseri*, *Citrobacter werkmanii*, *Enterobacter cloacae*, *Escherichia coli*, *Klebsiella oxytoca*, *Klebsiella pneumoniae*, *Kluyvera ascorbata*, *Leclercia adecarboxylata*, *Morganella morganii*, *Providencia rettgeri*, *Providencia stuartii*, *Raoultella ornitholytica*, *Raoultella planticola* and *Serratia marcescens*.

Research

As members of the Infection Control and Fungal Infection working group of the International Society for Antimicrobial Chemotherapy, the infection control doctors in GGC namely Dr Bal, Dr Marek, and Dr Bagrade published a paper entitled "A practical approach to investigating nosocomial acquisition of *Aspergillus*" in Medical Mycology. This paper for the first time outlines what steps should be taken if there is nosocomial acquisition of invasive aspergillosis. Our extensive review of literature shows that environmental sampling as part of infection control investigations should only be done if there are multiple cases of aspergillosis in a short period of time or if a case occurs when there is an ongoing construction activity. Prior to its publication, the paper was presented at the 33rd International Congress of Chemotherapy at Istanbul in November 2024

Dr Bal and Dr Marek also published an article entitled "The Paediatric European Confederation of Medical Mycology (ECMM) Quality (Paed-EQUAL) Candida Score for the Management of *Candidaemia* in Children and Neonates" in Mycoses. Though this work pertains more to microbiology, it is also relevant to infection control e.g. discussion pertaining to species identification of yeast. The emerging yeast *C. auris* is a major infection control hazard. This paper standardizes the management of *candidemia* in children and neonates with the help of a scoring system.

Dr Bal, Dr Marek, and Dr Bagrade are presently working on two more reviews. In association with our international colleagues, the review "A practical approach to investigating nosocomial acquisition of rare moulds" is a follow up to their published work on *Aspergillus* above. They are also working on a review on rare yeasts. Dr Marek is contributing to a guideline looking at the infection control aspects of fungal infection in burns unit.

Our team of infection control nurses (Gillian Mills) and infection control doctors (Dr Marek, Dr Bagrade, Dr Bal, Dr Leanord) presented a poster entitled "Outbreak of a linezolid resistant clone of ST18 *Enterococcus faecium* bearing the G2576T 23S rRNA gene mutation and its control" at the 34th ESCCMID Global Congress in Barcelona. We are in the process of submitting this original work paper for publication.

Our team of infection control nurses (Lynn Pritchard, Nicola Mallon) and infection control doctors (Dr Marek, Dr Bagrade, Dr Bal) presented a poster entitled "Successful control of a cluster of OXA-48 producing *Klebsiella pneumoniae* sequence type 147 in a tertiary care spinal

unit" at the 34th ESCCMID Global Congress in Barcelona. We are in the process of submitting this original work paper for publication.

The infection control doctors, along with the team's clinical scientist, Dr Chaput, also maintain an active research programme into water microbiology and the management of risks associated with water. Dr Marek and Dr Chaput are members of the SinkBug consortium, a large UK-wide collaborative project led by UKHSA and the University of Oxford that is investigating the microbiology of sinks and their role as possible sources of antimicrobial resistance. The first paper from this consortium project was published in the Journal of Hospital Infection in February 2025, entitled "Survey of healthcare-associated sink infrastructure, and sink trap antibiotic residues and biochemistry, in 29 UK hospitals". Three of GGC's acute sites were included in this study. A further publication from this project is currently under review at the journal Nature Microbiology.

Membership of National Groups

- NHS GGC IPCT actively participate in work of national strategic and operational groups promoting and delivering IPC programmes and initiatives. The list below gives some examples of our involvement in this work.
- Scottish Surveillance of Healthcare Associated Infection Priority Programme Board (SOHNAPP).
- Data & Intelligence Priority Programme Oversight and Advisory Group, NHS Education for Scotland (NES).
- ARHAI Education Oversight and Advisory Group, NHS Education for Scotland (NES).
- Scottish Microbiology and Virology Network IPCDs Subgroup.
- Scottish Microbiology and Virology Network Steering Group.
- Antimicrobial Resistance Hospital Acquired Infection Scotland National Policies Guidance and Evidence Working Group.

Next Steps

During the review period of the Scottish Hospitals Inquiry, it is vital to identify recurring themes and promptly demonstrate the steps taken to address the issues identified. It will be essential at this time to reach out to external and internal colleagues to help to build confidence in the services provided in the Queen Elizabeth University Hospital (QEUH) and the Royal Hospital for Children (RHC). Drawing from Health Improvement Scotland (HIS) inspections and collaborations with NHS Assure, coupled with meeting the Scottish Government targets, will provide the necessary assurance. Additionally, linking the work of the IPCQIN with the visibility of performance data, both locally and Board-wide via the IPC Dashboard, will further support this goal.

The proposed three-year IPC strategy for GGC will specify the goals and objectives related to preventing avoidable infections and aims to position the IPCT appropriately within this context.



Conclusion

The content of this report details the broad range of IPC activities in place across NHS Greater Glasgow and Clyde. We hope it demonstrates that preventing and reducing the risk caused by healthcare associated infection has been and remains a clear priority for NHS GGC. The commitment of teams within GGC working together across services to reduce the incidence of preventable HCAs and enhancing patient safety we hope is also demonstrated.

The IPCT will collaborate with others to accomplish key Board priorities, such as the implementation of the GGC Quality Strategy, the planned and ambitious transformation of services, and the implications of the Health and Care (Staffing) (Scotland) Act 2019.

The World Health Organization (WHO) lists Antimicrobial Resistance (AMR) among the top 10 threats for global health. Reducing the use of antibiotics is crucial. It is a top priority for healthcare now and in the future. The IPCT is committed to supporting antimicrobial stewardship throughout GGC and beyond.

We will continue to actively seek opportunities for research and quality improvement. Specifically, we will maintain our support for the IPCQIN.

Our aspirations are to support front line clinical teams to make avoidable healthcare associated infection a never event. Infections can have a significant impact on how patients experience healthcare, and can cause, pain, anxiety and in some instances can have severe or life changing outcomes for the individual. We will endeavour to put people at the centre of all we do and support teams to embed IPC practice into everything they do.

Glossary

ARHAI	Antimicrobial Resistance and Healthcare Associated Infection Group (part of Public Health Scotland)
BICC	Board Infection Control Committee
CAUTI	Catheter Associated UTI
CDI	<i>Clostridioides difficile</i> infections
CPO	carbapenemase-producing organisms
CVC	Central Vascular Catheter
ECB	<i>E. coli</i> bacteraemia
HCAI	Healthcare Associated Infections
HIS	Health Improvement Scotland
IPCD	Infection Prevention and Control Doctor
IPCQIN	Infection Prevention and Control Quality Improvement Network
IPCT	Infection Prevention and Control Team
MRSA	Meticillin Resistant <i>Staphylococcus aureus</i> . A <i>Staphylococcus aureus</i> resistant to first line antibiotics; most commonly known as hospital acquired organism
PVC	Peripheral Vascular Catheter
SAB	<i>Staphylococcus aureus</i> bacteraemias

SICPs	Standard Infection Control Precautions
SMT	Senior Management Team
SONAAR	Scottish One Health Antimicrobial Use and Antimicrobial Resistance
WHO	World Health Organisation

