ANNUAL INFECTION PREVENTION AND CONTROL REPORT
2016/17

Tom Walsh
Infection Control Manager
May 2017
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1. **INTRODUCTION**


Prevention and control of infection continues to have the highest priority within NHSGGC and the Board Infection Control Committee (BICC), in conjunction with clinical service providers, has developed and implemented a challenging programme of work during the past year.

During 2016/17 NHSGGC has implemented a range of measures and controls in working toward the March 2017 HEAT Targets for *Staph aureus* bacteraemias (SAB) and *Clostridium difficile* Infection (CDI). 2016/17 has also seen the implementation of CPE Screening and the addition of new categories for Surgical Site Infection surveillance. The NHS Board, Board Clinical Governance Forum, Acute Clinical Governance Forum and Sector/Directorate Clinical Governance groups continue to receive ongoing assurance through the publication of bi-monthly reports on key performance indicators for the prevention and control of infection. Central to these achievements are the detailed work plans, governance systems and monitoring and reporting arrangements for effective Infection Prevention and Control (IPC) across NHSGGC.

Good practice in Infection Prevention and Control does not rest solely within the remit of our Infection Prevention and Control Committees and Teams. Every member of staff has a professional responsibility to prevent healthcare associated infection and is accountable for their actions in relation to this. Our service users expect and require us to apply evidence based practice at all times. The most up to date version of the Infection Prevention and Control policies and Standard Operating Procedures (SOPs) can be accessed at:

[www.nhsggc.org.uk/infectioncontrol](http://www.nhsggc.org.uk/infectioncontrol)
2. HEALTHCARE EFFICIENCY AND ACCESS TO TREATMENT TARGETS (HEAT)

*Staphylococcus aureus* Bacteraemias (SAB)

The current National HEAT target required all Boards in Scotland to achieve a rate of 24 cases per 100,000 acute occupied bed days (AOBDs) or lower by 31st March 2017. For the last available reporting quarter (October - December 2016), NHSGGC reported 30.1 cases per 100,000 AOBDs (Figure 1) and NHS Scotland reported 32.9 cases per 100,000 AOBDs.

Following an increase in cases in 2015 there was a decrease in the first quarter of 2016, followed by two successive increases, however there was a slight reduction in the last quarter of the year. This highlights the variability of cases throughout the quarters over the past three years. There was a decrease in total case numbers in 2016 upon the previous year, 437 cases compared to 461 in 2015. This is a reduction of 5%.

A Board wide SAB reduction Action Plan was developed in 2015 including improvement projects, focus groups, modification of existing documentation and ongoing compliance with IV access device care plan monitoring. Progress with this plan continues and is reviewed by the Acute Infection Control Committee and discussed at the Board Infection Control Committee.

A graph showing the distribution of origin of SAB in 2016 is included below (Figure 2) and shows that the majority of cases (61%) were classified as ‘Out of Hospital Infections’.
Hospital Acquired Infections (HAI) are MSSA or MRSA blood cultures obtained from a patient who has been hospitalised for 48 hours or greater.

39% of cases in 2016 were HAI

Healthcare Associated Infections and Community cases are considered as ‘Out of Hospital Infections’.

Figure 2 NHSGGC Origin of SAB 2016

Healthcare Associated cases are those in which the patient has had some type of interaction with healthcare services in the preceding 30 days to when the positive blood culture was aspirated. A proportion of these cases may still benefit from a quality improvement focus within our hospitals, although this remains challenging.

Within the ‘out of hospital’ SABs in 2016, there has also been a noted increase in the proportion of Community cases and a third of all SABs occur in patients who have had no recent contact with healthcare in the last 30 days prior to positive blood culture. These cases are unlikely to respond to any improvement measures in place within our Acute hospitals. Cases with no identifiable source account for 30% of Community cases, followed by those related to illicit intravenous drug use (22%) and skin/soft tissue (18%). Targeted awareness of SAB reduction aims within Health and Social Care Partnerships and Public Health should continue to be actively pursued in order to reduce the burden of bloodstream infection.

A continued consistent approach to quality, safe and effective care of all intravenous access devices remains high priority throughout NHSGGC in order to aim for reduction in all bloodstream infections and not just those isolating Staphylococcus aureus.

Clostridium difficile

The HEAT target due to be achieved by the end of March 2017 is a reduction in the rate of Clostridium difficile infections (CDI) in persons aged 15 and over to 32 cases or less per 100 000 total occupied bed days.

There was an increase in the third quarter of 2016 with 120 reported cases, however almost two thirds of these were not hospital acquired (n=77).
All cases were reviewed by the Lead Infection Control Doctor and there was no evidence of cross transmission to explain the increase however it was noted that this was a high risk patient group with antibiotic history, proton pump inhibitors and underlying bowel disorders identified.

The last available reporting quarter (October - December 2016) published in April 2017 shows the rate of *C. difficile* within NHSGGC as **23.8** cases per 100,000 occupied bed days in ages 15 & over (Figure 3). NHS Scotland reported **26.6** cases per 100 000 OBDs. For NHSGGC this was a **decrease of 35%** upon the previous quarter with a total of 78 patient cases. It should be noted that 42% of these cases were not hospital acquired (n=33).

![NHSGGC CDI rate per 100,000 OBDs](image)

Enhanced surveillance was implemented in October 2016 in order to better determine the origin of the CDI and therefore target interventions appropriately.

**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.
Enhanced data showing origin of CDI cases is displayed in figure 4 below and shows the classification of the non-hospital acquired cases.

<table>
<thead>
<tr>
<th>NHSGGC Hospital acquired</th>
<th>CDI Cases (Q4 Oct-Dec 2016)</th>
<th>Number of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Hospital Acquired</td>
<td>45</td>
</tr>
<tr>
<td>No</td>
<td>Healthcare Associated</td>
<td>11</td>
</tr>
<tr>
<td>No</td>
<td>Indeterminate</td>
<td>4</td>
</tr>
<tr>
<td>No</td>
<td>Community Associated</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>78</strong></td>
</tr>
</tbody>
</table>

Figure 4 Origin of CDI cases

The Infection Prevention & Control Teams (IPCT) reviews every case of CDI for any place/time contact with other patients with CDI and if two HAI cases occur in any ward in a two week period this is considered a ‘trigger’ for additional action and the ward is visited daily until the cases are discharged or are well (there is a presumption until proven otherwise that two in two weeks is most likely due to cross infection).

One of the main risk factors associated with CDI acquisition is exposure to antimicrobial therapy (usually given for chest infections, UTI etc.) specifically co-amoxiclav. Targeted educational sessions have been delivered by the Antimicrobial Management Team to reduce the amount prescribed routinely. The importance of prudent antimicrobial prescribing and adherence to NHSGGC Infection Management Guideline for empirical antibiotic therapy by clinical staff must be sustained in order to see further reduction in total CDI cases.
3. **THE SCOTTISH NATIONAL HAND HYGIENE CAMPAIGN**

The campaign was launched in January 2007 with the aim of improving hand hygiene compliance amongst frontline NHS staff and providing education to the public. Local Health Board Co-ordinators (LHBCs) were employed in all Health Boards to implement the key aims of the campaign. Responsibility for the continued monitoring of hand hygiene has now been placed with NHSGGC.

NHSGGC has systems in place to monitor Hand Hygiene Compliance on a monthly basis in all clinical areas. These results are utilised to populate the bi-monthly HAIRT reports.

A summary of the HAIRT results are shown below.

<table>
<thead>
<tr>
<th>Hand Hygiene Monitoring Compliance (%)</th>
<th>April 16</th>
<th>May 16</th>
<th>June 16</th>
<th>July 16</th>
<th>Aug 16</th>
<th>Sept 16</th>
<th>Oct 16</th>
<th>Nov 16</th>
<th>Dec 16</th>
<th>Jan 17</th>
<th>Feb 17</th>
<th>March 17</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHP</td>
<td>97</td>
<td>97</td>
<td>97</td>
<td>99</td>
<td>98</td>
<td>98</td>
<td>99</td>
<td>99</td>
<td>98</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Ancillary</td>
<td>93</td>
<td>92</td>
<td>94</td>
<td>91</td>
<td>95</td>
<td>92</td>
<td>92</td>
<td>93</td>
<td>92</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Medical</td>
<td>96</td>
<td>95</td>
<td>96</td>
<td>95</td>
<td>96</td>
<td>96</td>
<td>96</td>
<td>97</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Nurse</td>
<td>99</td>
<td>98</td>
<td>98</td>
<td>99</td>
<td>99</td>
<td>99</td>
<td>99</td>
<td>98</td>
<td>99</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Board</td>
<td>98</td>
<td>97</td>
<td>97</td>
<td>98</td>
<td>98</td>
<td>98</td>
<td>98</td>
<td>98</td>
<td>98</td>
<td>98</td>
<td>98</td>
<td>97</td>
</tr>
</tbody>
</table>

These represent *Combined Compliance*, i.e when a staff member takes the opportunity to carry out hand hygiene and does so correctly. This includes being bare below the elbows.

Data by staff group has not been available since December 2016 due to a planned change in the operating systems used to gather data.

Quality Assurance of the process and methodology adopted by the wards is carried out by the LHBC.
4. SURVEILLANCE – NATIONAL PROGRAMMES AND MANDATORY REQUIREMENTS

HDL (2006) 38 & CEL 11 (2009) detail the mandatory requirement for HAI Surveillance. NHSGGC remains fully compliant with the requirements of these documents in both undertaking and reporting surveillance on the following.

- Meticillin Resistant *Staph aureus* Bacteraemias (MRSA)
- Meticillin Sensitive *Staph aureus* Bacteraemias (MSSA)
- *Clostridium difficile* Infections (CDI)
- Surgical Site Infection (SSI) in hip arthroplasty, knee arthroplasty, caesarean section and repair of neck of femur

DL (2015) 19 further specified Healthcare Associated Infection (HAI) and Antimicrobial Resistance (AMR) Policy Requirements for 2016 including:

- Continuation with MRSA screening requirements
- Mandatory reporting of *Escherichia coli* bacteraemias
- Large Bowel and Major Vascular surgical procedures anticipated inclusion into national surveillance programme
- Participation in the third National Point Prevalence Survey (PPS) of HAI

*Escherichia coli* bacteraemias

An implementation phase of surveillance commenced in September 2015 for local information only and published quarterly data for the second half of 2016 is displayed in the table below (Figure 5)

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Cases</th>
<th>Total occupied bed days</th>
<th>Rate per 100,000 bed days</th>
<th>95% CI</th>
<th>Cases</th>
<th>Total occupied bed days</th>
<th>Rate per 100,000 bed days</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jul - Sep-16</td>
<td>161</td>
<td>448038</td>
<td>35.9</td>
<td>(30.5, 41.9)</td>
<td>582</td>
<td>1573514</td>
<td>37.0</td>
<td>(34.0, 40.1)</td>
</tr>
<tr>
<td>Oct - Dec-16</td>
<td>149</td>
<td>445133</td>
<td>33.5</td>
<td>(28.3, 39.3)</td>
<td>563</td>
<td>1580126</td>
<td>35.6</td>
<td>(32.7, 38.6)</td>
</tr>
</tbody>
</table>

NHSGGC has a lower rate for HCAI *E.coli* bacteraemia than NHS Scotland for both quarters. Community cases are displayed in the following table and are based on a rate per 100,000 population. NHSGGC has a higher rate than NHS Scotland for both reporting. As with other bacteraemias, community onset cases are less amenable to improvement measures within Acute hospitals.
Comparison with national figures indicates that ‘Community’ infections continue to dominate the origin of infection with around half of the cases originating in the community. The major source of *E. coli* bacteraemias continues to be lower urinary tract infections.

**Surgical Site Infection**

Local surveillance of large bowel surgery and major vascular surgery commenced in July 2016, in preparation for these procedure categories becoming a mandatory requirement for national SSI surveillance in 2017.

It should be noted that due to the small number of procedures undertaken in both procedure categories, the short length of standard surveillance to date (two months standard and three months ‘light’ to undertake point prevalence survey) and the lack of nationally comparable data to benchmark against, caution should be taken when reviewing SSI rates in these categories.

### Existing mandatory SSI surveillance

#### Caesarean Section

<table>
<thead>
<tr>
<th>Quarter</th>
<th>SSI to day 10</th>
<th>Procedures</th>
<th>GGC SSI Incidence (%)</th>
<th>GGC 95% CI</th>
<th>Scotland SSI Incidence (%)</th>
<th>Scotland 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1-2016</td>
<td>12</td>
<td>1265</td>
<td>0.9</td>
<td>(0.5 ,1.6)</td>
<td>1.4</td>
<td>(1.1 ,1.8)</td>
</tr>
<tr>
<td>Q2-2016</td>
<td>22</td>
<td>1425</td>
<td>1.5</td>
<td>(1.2 ,3)</td>
<td>1.8</td>
<td>(1.4 ,2.1)</td>
</tr>
<tr>
<td>Q3-2016</td>
<td>25</td>
<td>1378</td>
<td>1.8</td>
<td>(1.2 ,2.6)</td>
<td>1.6</td>
<td>(1.2 ,2)</td>
</tr>
<tr>
<td>Q4-2016</td>
<td>14</td>
<td>1269</td>
<td>1.1</td>
<td>(0.6 ,1.8)</td>
<td>1.2</td>
<td>(0.9 ,1.5)</td>
</tr>
</tbody>
</table>

Below national SSI rate for three quarters in 2016.
Overall infection numbers are extremely low in this procedure category and GGC is within 95% Confidence Intervals locally and nationally.


*Please note the national report has not yet been published however figures contained in this report have been validated by Health Protection Scotland.*

Local analysis of the Point Prevalence data is very positive and shows a **decrease** in the HAI rate within Acute Hospitals from the previous survey undertaken in 2011.

The local results have indicated an overall HAI rate of **3.1%** for NHSGGC Acute Hospitals which is a **reduction** from the 2011 rates of 4.7% for NHSGGC and 4.9% nationally.

Ten hospitals were visited and 3834 patients were included in the survey. Details of Acute Hospitals are displayed in **Table 6** below.

### ACUTE

<table>
<thead>
<tr>
<th></th>
<th>WARDS SURVEYED</th>
<th>PATIENTS SURVEYED</th>
<th>PATIENTS WITH HAI</th>
<th>TOTAL HAI DETECTED</th>
<th>HAI RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Queen Elizabeth University Hospital</td>
<td>72</td>
<td>1336</td>
<td>46</td>
<td>53</td>
<td>3.4%</td>
</tr>
<tr>
<td>Glasgow Royal Infirmary</td>
<td>46</td>
<td>713</td>
<td>18</td>
<td>19</td>
<td>2.5%</td>
</tr>
<tr>
<td>Princess Royal Maternity</td>
<td>8</td>
<td>117</td>
<td>2</td>
<td>2</td>
<td>1.7%</td>
</tr>
<tr>
<td>Royal Alexandra Hospital</td>
<td>32</td>
<td>572</td>
<td>22</td>
<td>23</td>
<td>3.8%</td>
</tr>
<tr>
<td>Gartnavel General Hospital</td>
<td>20</td>
<td>318</td>
<td>8</td>
<td>9</td>
<td>2.5%</td>
</tr>
<tr>
<td>Inverclyde Royal Hospital</td>
<td>19</td>
<td>314</td>
<td>9</td>
<td>11</td>
<td>2.9%</td>
</tr>
<tr>
<td>Vale of Leven Hospital</td>
<td>6</td>
<td>81</td>
<td>1</td>
<td>1</td>
<td>1.2%</td>
</tr>
<tr>
<td>GGC ACUTE HOSPITALS TOTAL</td>
<td><strong>203</strong></td>
<td><strong>3451</strong></td>
<td><strong>106</strong></td>
<td><strong>118</strong></td>
<td><strong>3.1%</strong></td>
</tr>
</tbody>
</table>

**Table 6 Acute Hospitals**

Mearnskirk House and Gartnavel Royal Hospital were included in the non-acute hospitals survey and had a combined HAI rate of 0.5%. The Royal Hospital for Children had an HAI rate of 3.6%; a reduction from 6.1% in 2011.
Data on antimicrobial dosing and indications was also collected and this will be presented in the national report. Invasive device use was also captured and shows a slight increase in the proportion of venous access devices used in patients within our acute hospitals.

Further details of the national survey will be included in subsequent reports however local analysis has allowed timely feedback to clinical services and will enable local review of measures to be considered for further reduction of avoidable HAI.

The national report is due to be published in late May 2017.
5. **AUDIT**

The Infection Prevention and Control Team continue a regular programme of audit across Inpatient Acute Care using an Infection Prevention and Control Audit Tool (IPCAT) comprising four sections; standard infection control precautions (SICPs), transmission based precautions, safe patient environment and quality assurance.

IPCAT gives a detailed profile of clinical practice and staff knowledge, to provide the Board with assurance of SICPs implementation, monitoring and compliance linked to the National Infection Prevention and Control Manual. IPCAT also informs the Board that standards of care in NHSGGC will prevent transmission of not only alert organisms/communicable diseases but all types of micro-organisms including emerging pathogens. The application of care bundles / plans to minimise risk of infection linked to an invasive device is demonstrated to the Board through quality assurance criteria assessed by IPCAT.

IPCAT is completed in each Inpatient Acute Care setting as a minimum yearly, using standardised agreed definitions. A RAGG system is used to determine the time scale for re-audit:

- **Gold** 91-100% Reaudit 12 months
- **Green** 80-90% Reaudit 12 months
- **Amber** 66-79% Reaudit 6 months
- **Red** <65% Reaudit 3 months

IPCAT utilises a web based platform and following audit completion, results and an action plan generated can be accessed immediately via the Infection Control dashboard. Actions highlighted as a critical non-compliance must be addressed within 24 hours of completion of IPCAT, with a period of one month allowed for all other actions to be completed. Progress against actions set can be viewed via the dashboard.

During 2016/17 an IPCAT specific to Theatre Care was rolled out across NHSGGC. 2016/17 also saw development followed by roll out of an IPCAT specific to Inpatient Mental Health Care.
The NHSGGC Infection Prevention and Control Audit Group are currently working on development of an IPCAT specific to Outpatient Department Care and once available this tool will be used across a variety of settings including; Imaging Departments, General Outpatient Departments, Oral Health. 2017/18 will see roll out of an IPCAT for Outpatient Department Care with individual locations audited every 24 months as a minimum. Interventional outpatient departments, for example, Vascular Access Service, will have an IPCAT completed a minimum of every 12 months.

During 2017/18 the IPC Audit Group will begin development of an IPCAT for decontamination areas; incorporating Central, Dental and Endoscopy Decontamination units.
6. **STANDARD OPERATING PROCEDURES (SOPs)**

NHSGGC has a comprehensive suite of IPC documents which include standard operating procedures (generic and disease specific), patient information leaflets, care plans, checklists and policies. All NHSGGC IPCT local documents align to the National Infection Prevention and Control Manual (NIPCM) and are developed and disseminated to a specific standard operating procedure which includes consultation through the Acute Infection Control Committee (AICC) and Partnership Infection Control Support Group (PICSG) and subsequent approval at the Board Infection Control Committee (BICC). All staff are able to access these documents and link to the NIPCM via the NHSGGC IPC web site.

Since 2012 a link to the NHSGGC IPC web site has been available on the desk tops of all PCs and tablets in NHSGGC, allowing staff to have access to current Infection Prevention and Control policies and guidance documents, both national and local.

The National Infection Prevention and Control Manual Chapters 1 (Standard Infection Control Precautions - SICPs) and 2 (Transmission based precautions) have been accessible on the NHS Greater Glasgow and Clyde’s Infection Prevention and Control site since January 2013. Chapter 3 will be available from April 2017. It is widely acknowledged that all NHS Boards are required to monitor compliance with SICPs and NHSGGC continues to make SICPs monitoring at ward level available to all acute Senior Charge Nurses (SCNs) to provide assurance on SICPs application.

**Updated Policies & SOPs**

The following were developed or updated between April 2016 and March 2017

- Measles
- Mumps
- Rubella
- Whooping Cough
- CJD
- Norovirus
- Loose Stools
- Policy/Development SOP
- Scabies SOP
- Toy Cleaning SOP
Other

- Food Hygiene for Ward Kitchens – removed from IPC website.
- Outbreak SOP – delayed until the National Outbreak policy review completed.
- Staff screening SOP – delayed until national policy review completed.

New SOPs / Policies developed

- SOP for patients with cystic fibrosis who have *Pseudomonas aeruginosa* and *Burkholderia cepacia*
- SOP for patients with cystic fibrosis who have *Mycobacterium abscessus*
- *Clostridium difficile* Infection (CDI) SOP in Paediatrics

Patient Information Leaflets updated

- Washing clothes at home
- Prevention and control of infection
- MRSA
- CDI

IPC Care Plans

A new format for care plans was developed following a review of the use of the IPC MRSA care plan by the Person-centred Care group. The IPC SOP group developed a new care checklist which includes key aspects of the SOP. It is hoped that this will be easier for staff to use and therefore improve compliance. Combined with the checklist is the IPC risk assessment to be used when any of the elements of the checklist cannot be met. All existing care plans have been revised as IPC care checklists. A review of the benefits of this new documentation will be assessed in 2017/18.
7. GOVERNANCE AND ACCOUNTABILITY

NHSGGC Bi-monthly HAI report

NHSGGC Board, Board Clinical Governance Forum and the Acute Clinical Governance Forum continue to receive bi-monthly reports on key performance indicators on healthcare associated infections.

These reports are designed to:

- Ensure visibility on HAI data and issues for the NHS Board, Clinical Governance Forum, Acute Clinical Governance Forum and Infection Control Committee members.
- Facilitate assurance and awareness around HAI prevalence within NHSGGC.
- Demonstrate performance against Infection Control HEAT targets, mandatory surveillance programmes and agreed key performance indicators (KPIs).
- Place hospital specific information on HAIs in the public domain in the context of an open Board meeting and on the Board website thereafter.

The comprehensive reporting schedule from “Point of Care to Board” is detailed in Figure 7.

Governance Relating to Infection Prevention and Control within Acute Operating Division

Each of the acute sectors/directorates receives comprehensive monthly reports on key performance indicators on HAI. Infection Prevention & Control is a standing agenda item on each Sector/Directorate’s Senior Management Team and/or Governance Forums and Infection Prevention & Control elements are integrated within the Performance Review process within the Acute Operating Division. A Lead Infection Prevention & Control Nurse and Infection Prevention & Control Doctor are aligned to each of the sectors/directorates. Each ward and department receives monthly Statistical Process Control Charts or interval charts for MRSA and CDI together with regular IPCAT audit reports and hand hygiene compliance data.
Governance Relating to Infection Prevention and Control within Partnership Organisations.

The Partnership Infection Control Support Group (PICSG) oversees the implementation of the NHSGGC Infection Prevention & Control Programme within non-acute service delivery areas.

During 2016/17 the group continued to develop and monitor progress against a specific action plan for Infection Prevention and Control within Partnership services.

Specific governance arrangements within our Partnership organisations during 2016/17 are:-

- Governance for non-acute inpatient beds is affected and overseen through the Director of Nursing for Mental Health Services.
- Accountability for Infection Prevention and Control within Health & Social Care Partnerships (HSCPs) rests with local managers.
- The Director of Nursing for Mental Health Services chairs PICSG and represents PICSG at BICC.
- Each HSCP has a nominated member of their Senior Management Team as their lead for HAI and representative on PICSG.

A short life working group with representatives from Infection Prevention & Control, Public Health and Health and Social Care Partnerships has been convened to look in detail at the priorities and requirements for Infection Prevention and Control in Health and Social Care Partnerships.
### Figure 7 – NHSGGC Infection Prevention and Control Team Reporting Level and Schedules

**NHS Board** (Level 1)
- NHS Board Meeting – HAIRT
- NHS Board Clinical Governance Forum – HAIRT
- Acute Services Committee (ASC) – Summary HAIRT and Annual Infection Prevention and Control Report
- CEO and Board Medical and Nurse Directors – Weekly IPC Report and Weekly Norovirus Report
- Board Infection Control Committee – HAIRT, ASC Summary and Education Module Update Report
- Nurse Director – Summary IPCAT Results – monthly
- Exception Reports – for Chief Operating Officer, HAI Executive Lead and Chair of AICC

**Division Acute and Health & Social Care Partnerships** (Level 2)
- Partnership IC Support Group (PICSG) – HAIRT, Monthly Report, Annual IPC Report
- Acute IC Committee (AICC) – HAIRT, SAB Report, IPC Sector Report (including outbreaks and incidents), National Reports
- Acute Clinical Governance Forum – HAIRT and Sector Exception Report
- Acute Operating Division SAB Reports – Chief Nurse / Chief of Medicine / Sector Director
- Norovirus Weekly Reports and Weekly IPC Update Report - Acute Directors
- Antimicrobial Utilisation Committee (AUC) – data on request and HAIRT

**Sector and Health & Social Care Partnerships** (Level 3)
- Sector Directors and PICSG - Sector/Partnership Monthly Activity Reports
- Chief Nurse / Chief of Medicine - Sector Surgical Site Infection (SSI) Reports & SAB Reports
- Sector SPCC and progress against trajectory for HEAT Targets – Sector Director (monthly reports)
- Chief Nurses / Professional Nurse Advisors - IPCAT results
- Results of PVC/CVC Audits in response to cases of SABs associated with IV access devices

**Point of Care / Ward** (Level 4)
- SCN - Statistical Process Control Charts (SPCC) – issued monthly
- Hand Hygiene Audits – undertaken by SCN – monthly – aggregated into HAIRT
- SCN - Results of IPC Audit – aggregated into monthly activity report
- Care Assurance & Accreditation System (CAAS) – CAUTI data lead by SCN, aggregated data to Scottish Safety Patient Indicators (SPSI) Report
- Standard IPC Precautions Audit (Lead by SCN)
- SSI Reports to clinicians
- IPCAT – Report at Ward level
8. **EDUCATION**

The Infection Prevention & Control Team (IPCT) within NHSGGC continues to provide a comprehensive programme of education and training in Infection Prevention and Control. The NHS Greater Glasgow & Clyde (NHSGGC) Board Infection Control Committee recognises that there are significant risks to patients, healthcare workers (HCWs) and visitors as a consequence of Healthcare Associated Infection (HAI). These risks necessitate a specific Infection Prevention and Control (IPC) Education Strategy to educate the workforce and to ensure that the knowledge of the workforce on infection prevention and control is sufficient to prevent and minimise as far as possible, the risks of all HAI as a consequence of inadequate education. The IPC Education Group has representation from all 5 Infection Prevention & Control Teams and an Infection Prevention & Control Doctor and the group’s role includes reviewing current, and developing new training packages for delivery across all of NHSGGC.

**Cleanliness Champions Programme**

The existing Cleanliness Champions Programme which was launched in 2003 is being phased out and will be replaced by the Scottish Infection Prevention & Control Education Pathway (SIPCEP). Although this has been a 3 year project running from autumn 2015 to summer 2018, the foundation learning material will be launched in June 2017. The aim of this new programme is to provide a clear staged pathway of HAI education to enable staff to continuously improve their knowledge and skills around Infection Prevention and Control (IPC), and will align with the National Manual for Infection Prevention and Control. The content is suitable for wide multi-professional clinical and non-clinical staff, in all health and social care settings. The pathway will comprise three layers – Foundation, Intermediate and Improvement.

The foundation layer is for all staff and students across health and social care services. It is designed to develop underpinning knowledge and core behaviours across Standard Infection Control Precautions (SICPs).

Learning materials in the Foundation layer cover Standard Infection Control Precautions and the Chain of Infection.

The Intermediate layer relate to the application of knowledge into practice and motivation of staff. This layer will provide further learning for staff including existing Cleanliness Champions, and the building blocks for them to progress and enhance their knowledge and skills and champion good practice.
The Improvement layer will be designed for those who wish to develop a deeper level of knowledge and skills in relation to IPC and Quality Improvement and lead on an IPC improvement project in their place of work.

NHSGGC continue to be represented on both the NES Cleanliness Champion Management Group and Editorial Group. This allows NHSGGC educational needs to be addressed through the national groups.

**Learn Pro**

Staff can access NHSGGC Infection Prevention & Control education modules on-line via Learn Pro. NHS Education for Scotland (NES) continues to provide Infection Prevention & Control education packages via this platform. The Infection Prevention Control Team supports delivery of this education through the ongoing updating of education resources to reflect current policy and available evidence.

**Induction & Face to Face Training**

The Infection Prevention & Control Teams developed a standard induction presentation which is delivered across the Acute Division as part of NHSGGC mandatory training.

In addition Infection Prevention & Control Teams in all hospital sites provide education locally, both independently and with other partners, e.g. Practice Development to all grades of staff within NHSGGC. Members of the Infection Prevention & Control Teams also provide education to undergraduate medical and nursing students throughout Glasgow and Clyde and also provide training opportunities for volunteers working within NHSGGC premises.

**Mandatory Education Update Training**

This course was developed in 2010/11 and is now in the second cycle, and delivers mandatory update training across the Acute Division. Infection Prevention & Control is a core part of this training and has been supporting its delivery since its launch. The Infection Prevention & Control Team is represented on the NHSGGC Service Leads Group hosted by Learning & Education.
Infection Prevention & Control Education Strategy

The NHS HAI Education Strategy which was updated in August 2016 and takes cognisance of recommendations of the Vale of Leven Inquiry Report (Recommendation 60) and the revised Health Improvement Scotland HAI Standards (Standard 2).

The role of the strategy is to ensure that the NHSGGC workforce has a sufficient knowledge to ensure they can practise safely, preventing and minimising the risks of HAI to their patients, the general public, their co-workers and themselves.

All HCWs are required to attend a generic induction programme; however, specific and additional infection prevention & control programmes are necessary depending on; the profession of the individual HCW and, the location in which the professional is to work. Infection Prevention & Control have developed a single system induction checklist which will facilitate the Manager / Reviewer through this process and an HAI Education Matrix lists the mandatory and recommended HAI modules which staff should undertake and update 3-yearly. The NHS HAI Education Strategy was updated to include Heath & Social Care Partnerships (Mental Health & Community).

Number of Learnpro Modules (01/04/16 – 31/03/17)

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<tr>
<th>LearnPro Module</th>
<th>Nursing &amp; Midwifery</th>
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<th>Allied Health Professionals</th>
<th>Ancillary</th>
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<td>123</td>
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<td>2100</td>
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<td>Aseptic Technique</td>
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<td>5</td>
<td>22</td>
<td>25</td>
<td>1297</td>
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<td>8</td>
<td>1</td>
<td>14</td>
<td>283</td>
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<tr>
<td>Recognising Surgical Site Infection</td>
<td>490</td>
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<td>6</td>
<td>7</td>
<td>507</td>
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<tr>
<td>IPC Standard Infection Control Precautions</td>
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<td>500</td>
<td>510</td>
<td>3517</td>
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<tr>
<td>IPC Statistical process Control Charts</td>
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<td>12</td>
<td>65</td>
<td>82</td>
<td>1012</td>
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<td><strong>Total</strong></td>
<td><strong>13331</strong></td>
<td><strong>310</strong></td>
<td><strong>1012</strong></td>
<td><strong>1100</strong></td>
<td><strong>15753</strong></td>
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</table>
9. **DECONTAMINATION**

NHSGGC is required to comply with national directives/standards for the decontamination of re-usable Medical Devices

**Central Decontamination Units**

Three Central Decontamination Units process surgical instruments within NHSGGC. These are located at Cowlairs in Glasgow, Inverclyde in Greenock and Glasgow Dental Hospital.

All units are accredited BS EN ISO 13485: 2003 Quality Management and Medical Devices Directive (MDD)_93/42/EEC units. All reusable surgical instruments used in Acute sites in Glasgow are processed either at Cowlairs Central Decontamination Unit or for South Clyde Sector at Inverclyde Central Decontamination Unit. All surgical instruments used within Glasgow Dental Hospital are processed within the onsite facility.

The Decontamination Service Governance arrangements are supported by a range of local site groups and a Steering Group. These Groups are only effective if all Directorates attend and input to them to highlight how the service can be developed.

**Decontamination in Primary Care**

Glasgow Dental Hospital Decontamination Unit continues to provide services for 14 Community dentists. Podiatry Services have moved to single use disposable products. Services to Greenock prison continue from Inverclyde CDU.

**Decontamination of Flexible Endoscopes**

A Sub-Group of Senior Management Team, chaired by the Director of Facilities, oversees the implementation of the draft HPS Technical Requirements for the processing of flexible endoscopes.

Flexible Endoscopes are decontaminated within local Endoscopy Suites or in centralised Endoscopy Reprocessing Units (ERU) located within each Acute sites.
All locations within NHSGGC have departments which meet new current regulations. These are New Stobhill Hospital, New Victoria Infirmary Hospital, Vale of Leven, Glasgow Royal Infirmary, Inverclyde Royal Hospital, Gartnavel General Hospital, Royal Alexandra Hospital and Queen Elizabeth University Hospital.

A NHSGGC sub-group has been established to monitor the water quality for all the endoscopy units and standard operating procedures have been created to address any issues that may arise. This has standardised the processes throughout NHSGGC. This group report to the Decontamination sub-group.

The NHSGGC decontamination sub group continues to address any decontamination issues outwith the areas of endoscopy and central decontamination of instruments. The remit of the group is:-

- To provide technical expertise and a consensus on the ideal best practice of decontamination for any given issues.
- To participate and assist in risk assessments by NHSGGC on decontamination issues.
- A dedicated e-mail address has been established to allow staff to contact the decontamination sub-group. A webpage within the NHSGGC Infection Prevention & Control site allows responses to queries to be centrally stored and available to all staff.
HEI: HEALTHCARE ENVIRONMENT INSPECTORATE

Background
The Healthcare Environment Inspectorate (HEI) within Health Improvement Scotland (HIS), are a health body formed on the 1st April 2011, created by the Public Services Reform (Scotland) Act 2010. The HEI is independent of NHS Boards and reports directly to Scottish Government and Ministers, whose remit includes undertaking safety and cleanliness inspections across NHS Scotland hospitals and services. The HEI has a number of internal and external key stakeholders including NHS Boards, NHS Education Scotland, Health Protection Scotland, Health Facilities Scotland and the Scottish Health Council. Following the launch of the new HAI Standards in February 2015, inspectors have undertaken announced and unannounced inspections of healthcare premises against these standards to check that our hospitals are meeting national standards, guidance and best practice in the delivery of care to our patients.

Healthcare Environment Inspectorate – Summary of Visits

From April 2016 to March 2017 NHSGG&C has had 6 unannounced visits

- Queen Elizabeth University Hospital: Unannounced inspection between the 12th and 15th December 2016 with an unannounced follow-up inspection on the 16th and 17th January 2017. These inspections resulted in 10 requirements and 3 recommendations, reported March 2017.
- Princess Royal Maternity Unit: Unannounced inspection on 19th and 20th and 27th October 2016, resulting in 7 requirements, reported January 2017.
- Royal Hospital for Children: Unannounced inspection on 7th and 8th September 2016, resulting in 2 requirements, reported November 2016.
- Gartnavel General Hospital: Unannounced inspection on 25th August 2016, as a follow up inspection, resulting in 1 requirement, reported November 2016.
- Vale of Leven Hospital: Unannounced inspection on 27th and 28th April 2016, resulting in 4 requirements, reported July 2016.
What the inspectors thought we did well

- Staff adherence with hand hygiene was good
- Staff knowledge of standard infection control precautions was good
- Staff completion of HAI-related education was good
- Specialist infection prevention and control advice was recorded and communicated between ward staff and the infection prevention and control team
- There was good communication with patients and their representatives
- Parents and patients were complimentary about the standard of cleanliness of the environment and equipment used for patient care.

Key IPC Themes from Requirements

- Reusable patient equipment is safe and clean and that staff roles and responsibilities for equipment cleaning are agreed and understood.
- Maintaining the healthcare environment clean for patients.
- Safe management of blood and body fluid spillage.

NHSGGC is committed to ensuring that standard infection control precautions (SICPs) are implemented by all healthcare staff, with all patients in all healthcare environments. In particular focussed work has been undertaken by IPCTs with clinical teams to ensure that reusable patient equipment is clean and safe for each patient. Infection Prevention and Control audits (IPCAT) have been undertaken to monitor compliance with application of SICPs and to identify any knowledge gaps underpinned by HAI education delivered locally.

- IPCTs continue to undertake a programme of IPCAT with feedback in real time and via monthly directorate / sector reports tabled at clinical governance meetings.
- IPCAT also includes compliance with bed space / trolley bay cleaning checklists and weekly assurance checklists
- SICPs audits are undertaken by SCN in each ward, supported by Infection Prevention and Control Link Nurses.
- IPCTs have reviewed novel methods for patient trolley cleaning, including spill kits and wipes.
The IPCT for NHSGGC are committed to supporting the HEI inspection process to ensure compliance with the HEI HAI standards.

The inspection reports can be viewed at: http://www.healthcareimprovementscotland.org
11. **ANTIMICROBIAL MANAGEMENT TEAM**

The Antimicrobial Management Team (AMT) provides Board wide leadership on the safe and cost-effective use of antimicrobials underpinned by surveillance of antibiotic use and compliance with guidelines. Minimisation of the collateral microbial effects of antibiotics such as *Clostridium difficile* and antibiotic resistance are AMT priorities, with a focus on reducing and containing the prescribing of broad spectrum agents whilst providing safe and suitable alternative therapies. The AMT is represented on both the Board Infection Control Committee (BICC) and the Acute Infection Control Committee (AICC) whilst IPC is represented on the Antimicrobial utilisation sub-committee of the Area Drugs and Therapeutics committee. The AMT and antimicrobial pharmacists are actively engaged with the HEI processes.

**Primary Care**

In 2016 a 3rd consecutive year of reduction in total antibiotic prescribing has been observed in primary care. The Scottish Government *Clostridium difficile* HEAT target is supported by a primary care antibiotic prescribing target to reduce the number of antibiotics dispensed: 50% of practices to achieve ≤1.8 items/1000 patients (or significant shift) per day. In 2016 the target was met by 66.5% of practices (56.4% in 2015 and 59% in 2014). Sustained reductions in prescribing of co-amoxiclav, quinolones and cephalosporins and lack of seasonal variation in quinolone prescribing have also been observed in primary care. Primary care prescribing advisers continue to provide a vital role in supporting GPs in achieving prescribing targets.

**Secondary Care**

In secondary care there is a continuing trend in increasing antibiotic use (1,754 DDDs/1000 OBDs in Q4 2016). This is multi-factorial reflecting an increasing proportion of inpatients being initiated on antibiotics (observed since 2009), increasing use of recommended combination antibiotic therapy (e.g. amoxicillin + metronidazole + gentamicin in place of broad spectrum single agents such as Ceftriaxone) and longer antibiotic courses. Similar trends have been observed throughout NHS Scotland. Local efforts continue to focus on appropriate initiation and rationalisation of antibiotic therapy and promotion of shorter duration treatment when supported by evidence.
There has been some success in reversing increasing trends in co-amoxiclav prescribing in the acute sector with Q4 use of co-amoxiclav reducing from 218 to 192 DDDs/1000 OBD between 2015 and 2016.

There are ongoing efforts promoting alternatives to Piperacillin-tazobactam and Meropenem in view of concerns over future resistance in Gram negative bacteria. National medicines utilisation data show NHS GGC Piperacillin-tazobactam prescribing at 15.71 DDDs/1000 OBDs (Q4 2016) to be well below the Scottish average and with significant reductions compared to 2015 (18.37 DDDs/1000 OBDs in Q4 2015). Meropenem prescribing at 13 DDDs/1000 OBDs in Q4 2016 is above the Scottish average but has reduced compared to 2015 (16.4 DDDs/1000 OBDs in Q4 2015). The AMT continues to work with site based teams and through the board’s clinical governance structure to promote adherence with GGC guidance. The importance of antibiotic review with rationalisation of therapy at 72 hours is a key area of focus for 2017. Significant manufacturing problems with Aztreonam have limited its widespread use as a carbapenem/ piperacillin-tazobactam alternative for Gram negative bacteria. There has subsequently been a switch to promoting Temocillin as a carbapenem alternative through updated guidance and infection specialist recommendations. Q1 2016/17 saw a marked increase in Temocillin prescribing across GGC to 15 DDDs/1000 OBDs (from 1.1 DDDs/1000 OBDs in Q1 2015/16).

Prescribing indicators for the Scottish Government *Clostridium difficile* HEAT target for GGC hospitals are shown below. The prescribing target for hospitals has focussed on antibiotic review in downstream medical wards since 2014. A particular focus has been to limit the duration of antibiotic therapy, a key antimicrobial stewardship initiative. Steady improvement against the new downstream targets has been observed but recording of proposed duration of antibiotic therapy, although improving, remains challenging. Good adherence to surgical prophylaxis guidance has been observed in orthopaedic surgery and plastic surgery (data not shown). Although national collection of pre-operative surgical prophylaxis data is no longer mandated the GGC AMT has chosen to continue a programme of monitoring and is currently focusing on urological surgical prophylaxis (data not shown). The vital role of the site-based Antimicrobial pharmacists in collecting and feeding back data to local clinical teams to drive quality improvement must be emphasised.
Summary statistics for Primary and Secondary care prescribing indicators supporting the Scottish Government *Clostridium difficile* HEAT target

<table>
<thead>
<tr>
<th>Source/Clinical sites</th>
<th>Indicator</th>
<th>Target</th>
<th>GGC (achieving target)</th>
<th>National median (Boards achieving target)</th>
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<tr>
<td>All GP practices</td>
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<td>50% practices</td>
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<td><strong>Secondary Care data from June 2015 until July 2016</strong></td>
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<td>Downstream Medical Wards (no. Surveyed = 1862)</td>
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<td></td>
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<td></td>
<td>Duration recorded</td>
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<tr>
<td></td>
<td>All doses given</td>
<td>≥95%</td>
<td>91% (No)</td>
<td>8/15</td>
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</table>
12. **SCOTTISH PATIENT SAFETY PROGRAMME**

**SPSP programmes with an infection control element.**

**Sepsis**
All acute unscheduled care receiving areas will be included which is estimated at twenty teams in total. The work stream is monitored through the Deteriorating Patient Steering Group. Reports are also tabled six monthly at the Acute Clinical Governance Committee.

There are two sepsis measures reported nationally;
- compliance with the bundle and
- time to administer first dose of antibiotic

Front line teams collect measures on a spreadsheet and send data in centrally. All of the large acute hospitals have at least 1 team which has sustained a reliable process in the delivery of the Sepsis 6 bundle

**Paediatric & Neonates**
The Paediatric Intensive Care Unit has sustained reliability in Ventilator Associated Pneumonia (VAP) and Central Line processes with a reduction in infections (outcome data) also evident.

The central line insertion work is spreading formally to theatres who are currently testing; the maintenance process has now spread to 8 wards.

Royal Hospital for Children have demonstrated a reduction in central venous catheter related blood stream infections (CRBSI) and are focussing work on improvements to the CVC insertion bundle compliance. The unit is now engaged with the PVC insertion measures and is testing a new data capture form.

Princess Royal Maternity Hospital have reduced the rate of CRBSI compared to the previous year with high levels of compliance to both the CVC insertion and maintenance bundles. The unit is also engaged with PVC insertion measures.
Royal Alexandra Hospital is stepped down to quarterly monitoring for CVC and PVC maintenance bundles having shown sustained process reliability. CRBSI rates are not currently recorded for this unit but they are being supported to enable regular reporting to ensure the processes continue to be effective.
13. **FACILITIES**

**Cleaning Services**

In the published results for the National Cleaning Specification and National Monitoring Framework, NHSGGC has consistently scored green within the Domestic Framework for 2016/17.

The Estates Tool overall score for NHSGGC was green for 2016/17. Focus continues on investment on HAI related issues and the built environment. Facilities Management have progressed a number of established initiatives as summarised below.

Initiatives developed throughout 2016/17 include:

- Consistent with the revised Facilities Monitoring Framework, risk based cleaning audits first implemented on the QEUH campus have been successfully rolled out across a number of other acute sites. A plan to complete implementation within the Clyde sector and non acute sites throughout 17/18 has also been developed.

- Estates Action Learning Sets are now fully established and adhere to a prescribed structure covering a range of staff and disciplines.

- Continuation of the Domestic Supervisors Action Learning Set has also been progressed and has been successful in both identifying and progressing a number of operational challenges and issues highlighted via this model.

- The revised output of the National Cleaning Specification review exercise was completed and the outcomes widely published across NHS Scotland. Hard and electronic copies have also been disseminated to all relevant staff across GG&C.

- Risk Assessment roll out of non conforming HAI SCRIBE issues continues to progress with the support of Health Facilities Scotland. Funding has been rolled over and a revised programme has been developed for 17/18.
14. **PATIENT EXPERIENCE**

**Infection Prevention & Control Person Centred Care/Patient Experience**

The NHSGGC Infection Prevention and Control Person Centred Care (PCC) Group was set up in 2013 led by a Lead Infection Prevention & Control Nurse. 2016/17 saw the amalgamation of the Infection Prevention & Control Person Centred Care and Patient Experience groups.

The group have this year undertaken the following work:-

- Support for the Peer Public Reviews including Infection Prevention & Control Policy audit
- What Matters to You Project
- MRSA Care Plan Evaluation
- TV availability for patients isolated in single rooms

**Support for the Peer Public Reviews including Infection Prevention & Control Policy Audit**

Patient Experience remains a key priority area within the Infection Prevention and Control programme, with public members continuing to participate fully in the Board Infection Control Committee and Partnerships Infection Control Support Group. The Board approved a number of key objectives around Patient Experience for 2016/2017 which were developed in association with our public partners. Activities embedded within our programme have been developed to ensure that the NHS Board responsibilities of participation in all three aspects of the Scottish Government Participation Standard within the Infection Control Service are met.

A member of our Infection Prevention and Control Team, leading on Patient Experience initiatives, worked closely with colleagues on the Patient Experience Group and Facilities team to ensure that:
- Our Public partners continue to participate in the development of the infection control programme on new and revised policies, standard operating procedures and to participate in the development of new patient information leaflets.
- Members of the public are educated on key standards and practices in infection control including use of audit tools for hand hygiene and monitoring of key policies.
- Public partners who participate on monitoring projects including cleaning services standards are provided with information to enable full participation in these processes.

**What Matters to You Project**

What matters to you is at the core of the Scottish Government’s policy on person-centred care in NHS Scotland. Health Improvement Scotland and the Scottish Government collaborated to make the 6th June 2016 (or a day in or around this time) a ‘What matters to you’ day. On this day, staff across health boards in Scotland, were being encouraged to ask their patients “What matters to you today”.

**What matters to you project – Infection Prevention and Control**

During ‘What matters to you’ week, the IPCNs used the following simple questions to start conversations with patients about aspects of infection control impacting on their stay in hospital.

- What are the things that are important to you at the moment?
- What matters to you while you are isolated in this room?
- What matters to you while you are receiving your medicine through this cannula?
- What matters to you now that you have been told you have MRSA?

**Results**

65 patient conversations were undertaken during the week as part of the routine weekly visit of IPCN to each ward, 11 staff conversations and 4 carers.
The most important findings from this project were that the patients found the visits useful and IPCNs enjoyed spending time with patients; they liked talking to patients and are keen to build relationships where possible to improve the patient experience.

It was clear that providing information to patients with alert organisms was useful but we should now consider returning to have a second conversation to ensure that the patient has understood the information provided and to listen to the patients feelings about this. The feedback has highlighted gaps in staff knowledge when caring for patients with alert organisms. The IPC SOP/Policy group is looking to redesign care plans, to support staff understanding of transmission based precautions of our most common infections. The IPCT plan to undertake a second, ‘What matters to you’ project in 2017, using the ‘5 what matters’ principles.

**MRSA Care Plan Evaluation**

Staff’s knowledge/views and the use of NHSGG&C MRSA Care Plan was assessed using set questions. The anticipation was that through increasing knowledge and awareness of the care required we would improve the care for patients with MRSA.

- 39 patients were identified with MRSA during the 1 week survey period
- 29 (74%) had a care plan in place
- 20 (51%) had a care plan in place that was up to date

Most staff questioned were able to demonstrate information contained in the care plan. The main concern noted from staff that the care plan was too long. This information was relayed to NHSGG&C SOP Group who will consider redesigning the care plan.

**Television Availability in Single Rooms in NHSGG&C**

One of the most common themes/concerns raised by patients during the ‘what matters to me’ day in June 2016 was the lack of a television. Many patients felt that if they had a working television that this could have lifted their mood and alleviated boredom during their stay in isolation. Members of the PCC Group investigated television availability in all single rooms within NHSGG&C. This information is being reported to each Sector’s Directorate Management Team.
15. RESEARCH

Members of the NHSGGC Infection Prevention & Control Team have participated in a number of research projects relating to the management and control of infectious disease in 2016-2017

Published papers


**Poster presentations**

**Hospital Infection Society/Federation of Infection Society 2016**

Hospital design and IPC; A UK- India collaboration  
Inkster T, Peters C, Hoffman P

Cupriavidus pauculus bacteraemia related to contamination of an aseptic pharmacy water supply  
Inkster T, Joannidis P

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Kerr A, Aitken I, Little S, O Neill H, Inkster T

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Two cases of Aggregatibacter aphrophilus brain abscess  
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What are the risk factors associated with *Pneumocystis jirovecii* pneumonia (PCP among renal transplant recipients). S Dodd

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https://blogs.fco.gov.uk/viyer/2016/04/07/design-for-infection-control-and-prevention/

**Dissertations**

Risk Assessment and the Use of Gloves and Aprons in Clinical Practice
D McConnell. Completed MSc Infection Control.

Exploring Registered Nurses Decision Making in the Diagnosis Of Catheter Associated Urinary Tract Infections
G Mills. Completed MSc Infection Control.
16. **EMERGING PATHOGENS**

**Antimicrobial resistance**

The spread of antimicrobial resistance (AMR) remains a major public health concern. In 2013 the UK Department of Health published its five year antimicrobial resistance strategy.

Challenges to achieving the goals of the strategy include:

- Lack of integration of the approach to infection control and antimicrobial prescribing in hospital and community settings (including care homes as hot spots).
- Lack of understanding of the background levels of AMR in the general population (colonisation rates and percentage who develop infection).

The IPCT will continue to work closely with the antimicrobial management teams in adults and paediatrics to ensure that IPC systems are collecting the appropriate alert organisms to underpin these processes and with Public Health to ensure optimal management of infection in community settings. Screening for Carbapenemase Producing Organisms (CPE) and Carbapenem Resistant Organisms (CRO) commenced in June 2017. At the time of report writing, 4% of patients who have met the criteria for screening have tested positive for either CPE or CRO.

**Viral haemorrhagic fever**

The recent outbreak of Ebola virus disease in West Africa reminds us of the role global travel can play in the rapid spread of disease. Of concern is that other “exotic” infections such as Crimea Congo Haemorrhagic fever (CCHF) could become endemic in parts of Europe.

Turkey and Balkan countries with the exception of Greece have recorded circulation of CCHF strains among animal hosts, ticks, and humans, and have established CCHF endemicity.
The establishment and maintenance of a CCHF endemic focus requires an environment favouring an efficient contact between competent ticks and animal hosts with relatively high prevalence of infection. Recent studies reveal that Hyalomma ticks are abundant in northern Greece, possibly due to the increased (by approximately 2 °C) mean temperatures and mean maximum temperatures in this area during the last 25 years as such it is not possible to exclude the possibility of CCHF becoming endemic in that part of Greece.

Levels of preparedness achieved for the recent Ebola outbreak need to be maintained over time to cope with this threat.

**Non- tuberculous myobacteria (NTM)**

1) **Mycobacterium abscessus**

   In recent years there has been an increasing number of NTM infections in patients with cystic fibrosis. The most common pathogen is the multi drug resistant *Mycobacterium abscessus* which can lead to severe destructive lung disease and disseminated infection. *M.abscessus* is an environmental organism found in water and soil. Recent evidence suggests cross transmission between patients can occur. The Cystic Fibrosis trust has produced infection control guidelines for *M. abscessus*. NHSGGC ICT will work with paediatric and adult cystic fibrosis colleagues to further develop infection control policy in this area.

2) **Mycobacterium chimaera**

   A small number of patients have developed endocarditis and or bacteraemia due to NTM following cardiac surgery where cardiac bypass was used. Most infections have been due to *M.chimaera*. Symptoms may be slow to manifest in patients occurring many months after transmission. The source of contamination is colonisation of the water used in heater coolers. Guidance recommends sampling of heater cooler devices and ensuring processes are in place for cleaning and disinfection of these devices. These are in place in NHSGGC. In March 2017 a UK patient notification exercise took place informing patients of the risk. Moving forward, the risk of acquiring infection from heater cooler units will become part of the surgical consent process.
Elizabethkingia anoephilis

Recent outbreaks of *Elizabethkingia anoephilis* bacteraemia have occurred in the US. *E. anoephilus* is a Gram negative pathogen found in the environment. The majority of patients in the US outbreaks have been > 65 yrs old with underlying co morbidities. A source is yet to be established. Improved laboratory diagnostics will lead to increased detection of these and other environmental Gram negative organisms some of which may colonise hospital water supplies. Another emerging species is *E. miricola*.

Enterovirus D68 (ED68)

Enterovirus D68 was identified in California in 1962. Outbreaks due to ED68 were reported in the US in 2014. The virus affects children and can cause a severe respiratory illness. Acute flaccid paralysis has also been reported. Two cases were reported in NHSGGC in 2016 in addition to a cluster in NHS Lothian.

Staphylococcus capitis

*S. capitis* is an emerging pathogen in the neonatal setting. Recent outbreaks in Europe have included a strain exhibiting resistance to Vancomycin. The organism is associated with severe morbidity in neonates.

Candida Auris

*Candida auris* is a multi drug resistant yeast. Nosocomial transmission is known to occur. In the UK a significant outbreak occurred in a cardiothoracic surgery unit. The organism survives well in the environment and enhanced cleaning is an important infection control measure. Routine diagnostic labs are unable to identify the organism currently so diagnosis is based on clinical suspicion.
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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<tbody>
<tr>
<td>AICC</td>
<td>Acute Infection Control Committee</td>
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<tr>
<td>AMR</td>
<td>Antimicrobial Resistance</td>
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<tr>
<td>AMT</td>
<td>Antimicrobial Management Team</td>
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<tr>
<td>AOBDs</td>
<td>Acute Occupied Bed Days</td>
</tr>
<tr>
<td>BICC</td>
<td>Board Infection Control Committee</td>
</tr>
<tr>
<td>CAS</td>
<td>Care Assurance System</td>
</tr>
<tr>
<td>CAUTI</td>
<td>Catheter Associated Urinary Tract Infection</td>
</tr>
<tr>
<td>CCHF</td>
<td>Crimea Congo Haemorrhagic Fever</td>
</tr>
<tr>
<td>CCP</td>
<td>Cleanliness Champions Programme</td>
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<tr>
<td>CDI</td>
<td>Clostridium difficile Infection</td>
</tr>
<tr>
<td>CEL</td>
<td>Chief Executive Letter issued by Scottish Government Health Directorates (SGHD)</td>
</tr>
<tr>
<td>CPE</td>
<td>Carbapenemase Producing Enterobacteriaceae</td>
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<tr>
<td>CRBSI</td>
<td>Catheter Related Blood Stream Infections</td>
</tr>
<tr>
<td>CRO</td>
<td>Carbapenem Resistant Organism</td>
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<tr>
<td>CVC</td>
<td>Central Vascular Catheter</td>
</tr>
<tr>
<td>ERU</td>
<td>Endoscopy Reprocessing Units</td>
</tr>
<tr>
<td>HAI</td>
<td>Originally used to mean hospital acquired infection, the official ‘Scottish Government’ term is now Healthcare Associated Infection. These are considered to be infections that were not incubating prior to contact with a healthcare facility or undergoing a health-care intervention. It must be noted that HAI infection is not always an avoidable infection.</td>
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<tr>
<td>HAIRT</td>
<td>Healthcare Associated Infection Reporting Template</td>
</tr>
<tr>
<td>HCW</td>
<td>Healthcare Worker</td>
</tr>
<tr>
<td>HDL</td>
<td>Health Department Letter</td>
</tr>
<tr>
<td>HEI</td>
<td>Healthcare Environment Inspectorate</td>
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<tr>
<td>HIS</td>
<td>Healthcare Improvement Scotland</td>
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<tr>
<td>HSCP</td>
<td>Health &amp; Social Care Partnership</td>
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<tr>
<td>IPC</td>
<td>Infection Prevention &amp; Control</td>
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<tr>
<td>IPCAT</td>
<td>Infection Prevention &amp; Control Audit Tool</td>
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<tr>
<td>IPCT</td>
<td>Infection Prevention &amp; Control Team</td>
</tr>
<tr>
<td>KPI</td>
<td>Key Performance Indicator</td>
</tr>
<tr>
<td>LanQIP</td>
<td>Lanarkshire Quality Improvement Portal</td>
</tr>
<tr>
<td>LHBC</td>
<td>Local Health Board Co-ordinator</td>
</tr>
<tr>
<td>MRSA</td>
<td>Meticillin Resistant Staph aureus Bacteraemias</td>
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<tr>
<td>MSSA</td>
<td>Meticillin Sensitive Staph aureus Bacteraemias</td>
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<tr>
<td>NES</td>
<td>NHS Education for Scotland</td>
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<tr>
<td>NTM</td>
<td>Non-tuberculous myobacteria</td>
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<tr>
<td>OBD</td>
<td>Occupied Bed Days</td>
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<tr>
<td>PCP</td>
<td>Pneumocystis jirovecii</td>
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<tr>
<td>PICSG</td>
<td>Partnership Infection Control Support Group</td>
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<tr>
<td>PVC</td>
<td>Peripheral Vascular Catheter</td>
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<td>QA</td>
<td>Quality Assurance</td>
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<td>QIF</td>
<td>Quality Improvement Facilitator</td>
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<tr>
<td>RSV</td>
<td>Respiratory Syncytial Virus</td>
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<tr>
<td>SABs</td>
<td>Staphylococcus Aureus Bacteraemia</td>
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<tr>
<td>SCN</td>
<td>Senior Charge Nurse</td>
</tr>
<tr>
<td>SGHD</td>
<td>Scottish Government Health Directorates</td>
</tr>
<tr>
<td>SICPs</td>
<td>Standard Infection Control Precautions</td>
</tr>
<tr>
<td>SOP</td>
<td>Standard Operating Procedure</td>
</tr>
<tr>
<td>SPE</td>
<td>Safe Patient Environment</td>
</tr>
<tr>
<td>SPSP</td>
<td>Scottish Patient Safety Programme</td>
</tr>
<tr>
<td>SSI</td>
<td>Surgical Site Infection</td>
</tr>
<tr>
<td>TBP</td>
<td>Transmission Based Precautions</td>
</tr>
<tr>
<td>TOE</td>
<td>Transoesophageal Echocardiograph</td>
</tr>
<tr>
<td>UUC</td>
<td>Urethral Urinary Catheter</td>
</tr>
<tr>
<td>VAP</td>
<td>Ventilator Associated Pneumonia</td>
</tr>
<tr>
<td>4c ANTIBIOTICS</td>
<td>Cephalosporins, Co-amoxiclav, Ciprofloxacin (and the other quinolones) and Clindamycin</td>
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</tbody>
</table>