Royal Papworth Hospital
NHS Foundation Trust

Infection Prevention & Control Annual Report 2016/2017

Board of Directors Approval date:	04/01/18
Infection Prevention & Control Committee Submission date:	14/12/17

Position at 31st March 2017
WTE = whole time equivalent.

Papworth Hospital
NHS Foundation Trust

Contents

1. Introduction

All NHS organisations must ensure that they have effective systems in place to control healthcare associated infections (see Table 1). The prevention and control of infection is part of Papworth's overall risk management strategy. Evolving clinical practice presents new challenges in infection prevention and control, which need continuous review.

Table 1: The requirements of the Health and Social Care Act (2008) updated in this report in line with revised guidance issued July 2015.

Compliance criterion	What the registered provider will need to demonstrate
1	Systems to manage and monitor the prevention and control of infection. These systems use risk assessments and consider the susceptibility of service users and any risks that their environment and other users may pose to them.
2	Provide and maintain a clean and appropriate environment in managed premises that facilitates the prevention and control of infections.
3	Ensure appropriate antimicrobial use to optimise patient outcomes and to reduce the risk of adverse events and antimicrobial resistance.
4	Provide suitable accurate information on infections to service users, their visitors and any person concerned with providing further support or nursing/medical care in a timely fashion.
5	Ensure prompt identification of people who have or are at risk of developing an infection so that they receive timely and appropriate treatment to reduce the risk of transmitting infection to other people.
6	Systems to ensure that all care workers (including contractors and volunteers) are aware of and discharge their responsibilities in the process of preventing and controlling infection.
7	Provide or secure adequate isolation facilities.
8	Secure adequate access to laboratory support as appropriate.
9	Have and adhere to policies, designed for individual's care and provider organisations that will help to prevent and control infections.
10	Providers have a system in place to manage the occupational health needs and obligations of staff in relation to infection.

The Trust has registered with the CQC and declared full compliance with the ten compliance criteria as detailed in Table 1 above.

The Trust puts infection control and basic hygiene at the heart of good management and clinical practice, and is committed to ensuring that appropriate resources are allocated for effective protection of patients, their relatives, staff and visiting members of the public. In this regard, emphasis is given to the prevention of healthcare associated infection, the reduction of antibiotic resistance and the sustained improvement of cleanliness in the hospital.

The issues that the Trust must consider include:

- The number and type of procedures carried out across the Trust and the systems in place to support infection control and decontamination.
- The different activities of staff in relation to the prevention and control of infection.
- The policies relating to infection prevention and control and decontamination.

- Staff education and training programmes.
- The accountability arrangements for infection prevention and control.
- The infection control advice received by the Trust.
- The microbiological support for the Trust.
- The integration of infection control into all service delivery and development activity.

This report has been written to provide information about infection prevention and control at Papworth Hospital. This information is primarily aimed at patients and their carers, but may also be of interest to members of the public in general.

The report aims to reassure the public that the minimisation and control of infection is given the highest priority by the Trust.

In publishing this report we recognise that patients and the public are increasingly concerned about infection risks. Access to information about this aspect of hospital care is rightly needed in order to make informed decisions and choices about their health care needs.

2. Executive Summary – Overview of Infection Control Activities within the Trust

The Trust has a pro-active infection prevention and control team that is very clear on the actions necessary to deliver and maintain patient safety. Equally, it is recognised that infection prevention and control is the responsibility of every member of staff and must remain a high priority for all to ensure the best outcome for patients.

The hospital has signed up to the "Saving Lives" programme developed by the Department of Health to reduce Healthcare Associated Infections (HCAIs), including MRSA. Saving Lives version 2 (based on the Health Act – Code of Practice) went live in 2007. The Saving Lives documents were updated in July 2010 and are now known as High Impact Interventions. The infection prevention and control audit and surveillance programme incorporates the updated guidance and allows constant monitoring of all infection, prevention and control policies and procedures.

In February 2016 the National Institute for Health and Care Excellence (NICE) published Quality Standard 113 which covers organisational factors in preventing and controlling healthcare-associated infections in hospital settings. Papworth is compliant with the standards in this document.

Papworth continues to take part in mandatory surveillance of Vancomycin Resistant *Enterococci* (VRE) bacteraemia and *Clostridium difficile* infection as well as Methicillin Resistant *Staphylococcus aureus* (MRSA) bacteraemia. *C.difficile* and MRSA reporting continues via the national Public Health England healthcare associated infections Data Capture System (HCAI DCS) which requires sign off by the Chief Executive on a monthly basis. In addition, mandatory reporting of Methicillin-sensitive *Staphylococcus aureus* (MSSA) and *E. coli* bacteraemias has been performed since January 2011.

Papworth Hospital NHS Foundation Trust has made year on year reductions in *C. difficile* cases. The ceiling target is reset on a yearly basis. Since April 2013 this has been done by the Clinical Commissioning Group (CCG).

Incidents and outbreaks were managed as they arose throughout the year. The management of influenza remains high on the Trust's agenda and local policies and procedures are continually updated and reviewed in line with national guidance.

3. Description of Infection Control Arrangements

3.1 Corporate Responsibility

The Director of Nursing has lead responsibility within the Trust for Infection Prevention and Control and reports to the Chief Executive and the Board of Directors. Following publication, by the Department of Health in December 2003, of the Chief Medical Officer's strategy for infection control (*Winning Ways: working together to reduce healthcare associated infection*) the Director of Nursing post has been designated as Director for Infection Prevention and Control (DIPC) for the Trust.

The Medical Director and the Heads of Clinical Governance and Risk Management, through their respective roles, also exert their influence at a corporate level in areas that have direct impact on infection prevention and control.

3.2 Infection Prevention & Control Team

Specialist advice is provided to clinicians throughout the hospital by the infection prevention and control team. A Consultant Microbiologist is the designated Infection Prevention and Control Doctor (IPCD) with the weekly allocation of 4.5 programmed activities (18 hours) of infection control doctor time. A second Consultant Microbiologist provides an additional 0.5 (2 hours) programmed activities of infection control doctor time. When needed, cover for leave of absence is provided by another Consultant Microbiologist at Papworth Hospital.

Additional support to the team is provided by a Specialist Registrar in microbiology and on-call cross cover arrangements are in place for Microbiologists from Papworth, Hinchingbrooke and Addenbrookes hospitals. Specialist advice in virology is provided by the Addenbrookes Consultant Virologists.

The specialist infection, prevention and control nursing team provide education, support and advice to all Trust staff with regard to infection prevention and control matters and liaise regularly with patients and relatives to provide information on alert organisms, offering advice and reassurance when required.
The team liaise with clinicians and Directorate managers together with managers who have responsibility for Operational Support, Clinical Governance and Risk Management. The remit of the team includes:

- To have in place policies, procedures and guidelines for the prevention, management and control of infection across the organisation.
- To communicate information relating to communicable disease to all relevant parties within the Trust.
- To ensure that training in the principles of infection control is accurate and appropriate to the relevant staff groups.
- To work with other clinicians to improve surveillance and to strengthen prevention and control of infection in the Trust.
- To provide appropriate infection control advice, taking into account national guidance, to key Trust committees.
- To share information between relevant parties within the NHS when transferring the care of patients to other healthcare institutions or community settings.

Full details of the infection prevention and control team are provided in the organisation chart shown on page 7 of this report.

3.3 Infection Prevention & Control Committee Structure and Accountability

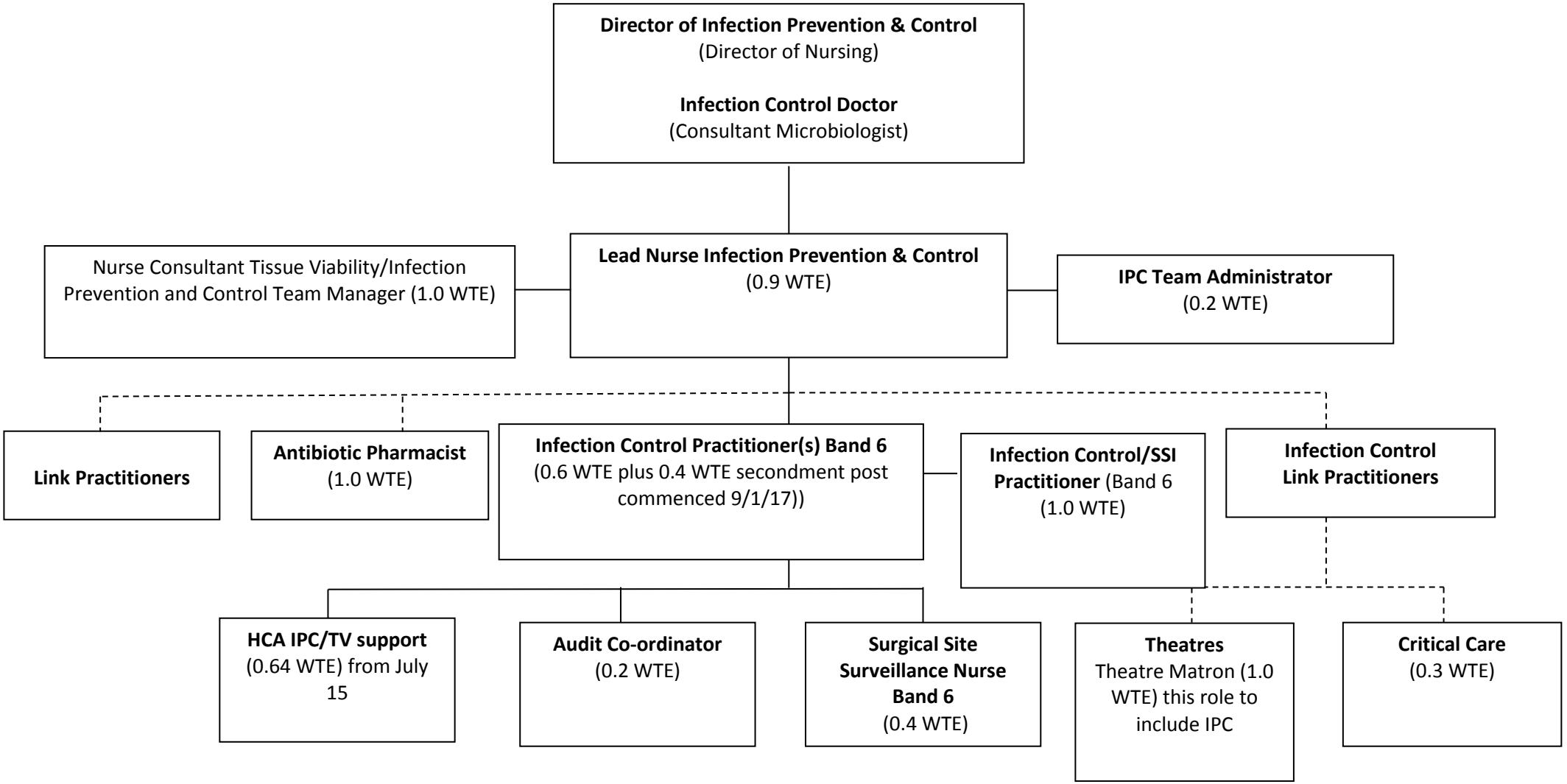
The Infection Control and Pre and Perioperative Committee (ICPPC) is the main forum for discussion concerning changes to policy or practice relating to infection prevention and control. This Committee, instigated in June 2015, replaced the previous separate Infection Prevention and Control Committee (IPCC) and Pre- and Peri-operative Group (POCG) as it was recognised that there was a great degree of overlap of business items between IPCC and POCG, and it was felt that it would be more efficient and effective if the two were combined. The membership of the Committee is multi-disciplinary and includes representation from all Directorates and senior management. The Committee is chaired by the Director of Infection Prevention and Control (DIPC) or deputy, and meets every 8 weeks. The Committee has a link via the Clinical Governance Management Group and the Director of Nursing (DIPC) into the Quality and Risk Committee and the Board of Directors. The DIPC provides a monthly report to the Board.

The Terms of Reference were revised and drawn up with due regard to the recommendations for the composition and conduct of infection control committees contained in *Standards in Infection Control in Hospitals* (prepared by the infection control standards working party) 1993. The Terms of Reference also incorporate Saving Lives: A Delivery Programme to Reduce HCAI (DoH 2010). Signing up to this programme by the Trust demonstrates its commitment to patient safety and reduction of HCAI.

Additionally, clinical champions have been identified in each area who come together as an “Infection Control Link Group”. This group helps to facilitate best practice and acts as a forum for education and discussion. The relationship and reporting lines between the various committees showing Ward to Board arrangements is shown in the diagram on page 8.

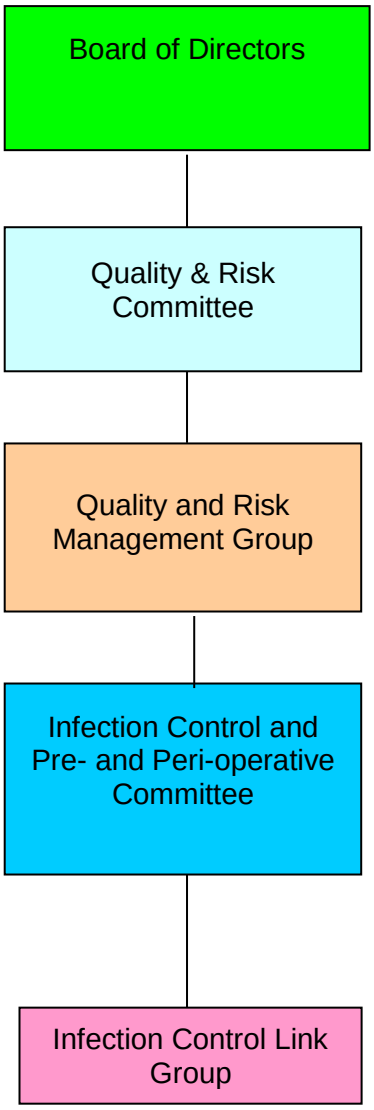
Papworth Hospital NHS
NHS Foundation Trust

Infection Prevention & Control Team



Position at 31st March 2017
WTE = whole time equivalent.

Infection Prevention & Control Committee Structure and Accountability



Committee / Group Membership:

Director of Infection Prevention & Control					
Infection Prevention & Control Doctor					
Infection Prevention & Control Nurse					
Representatives from each Clinical Directorate					
Assistant Director of Operations					
Antimicrobial Pharmacist					

3.4.1 **Infection Control Team Representation on Committees at Papworth Hospital:**

- Antimicrobial Stewardship Group
- Band 7 Senior Nurse Meeting
- Quality and Risk Management Group
- Drugs & Therapeutics Committee
- Food and Nutrition Group
- Health & Safety Committee
- Infection Control and Pre- and Peri-operative Committee
- Water Quality Control Group
- Links to Prescribing and Formulary Committee
- Medical Advisory Committee
- Medical Devices Group
- New Papworth/Capital Bid meetings
- Nursing Advisory Committee
- Pathology Management Group
- Product Review Group

- Waste Management Committee

3.4.2 **Infection Control Team Representation on External Committees**

- East of England Regional Microbiology Development Group
- East of England Infection Prevention Society Branch Meetings
- Extra-ordinary network meetings with Cambridgeshire Commissioning Group and other Regional hospital IPCNs

3.5 **Assurance**

The assurance process includes internal and external measures. Internally, the accountability exercised via the committee structure described above ensures that there is internal scrutiny of compliance with national standards and local policies and guidelines. Furthermore, external assessments are also used. These include the "Controls Assurance" measures for infection control and decontamination standards, ISO, Care Quality Commission standards and the Patient-led assessments of the care environment (PLACE) review. Progress in these areas during 2016/17 is summarised below.

Standards for Decontamination	Sterile Services Department has been audited and meets the requirements of disinfection, assembly, packing, moist heat and gas plasma sterilisation of theatre trays and procedure packs and supplementary instruments in accordance with ISO 13485:2003 and ISO 9001:2008. For moist heat and gas plasma sterilisation of theatre trays, procedure packs and supplementary instruments in accordance with Medical Devices Directive 93/42/EEC Annex V, Article 12 (Sterility Aspects Only).
PLACE	This external audit was carried out in April 2016. The score for cleanliness was 99.3% % (98.96% in 2015). The overall score for food was 91.3% % (86.19% in 2015). Privacy, dignity and well-being was 76.1% % (77.23% in 2015; this category included provision for family/relatives/carers to access food Actions identified have been reported to the Trust's Operational Executive Group and monitored through contract meetings. Condition, appearance and maintenance score was 96.0% (87.47% in 2015 There was an additional new audit around dementia, and the score was 82.2% % (74.84% in 2015)

Care Quality Commission Standards	The Trust reported the following for 2016/17 MRSA bacteraemia 0 (against a ceiling target of 0). *C.difficile* reported 0 attributable*****cases (against a ceiling target of 5). There were 2 C. difficile cases but both were deemed not to be on trajectory.

***** Papworth attributable cases are those that occur more than two days after admission to Papworth Hospital NHS Foundation Trust and which, after discussion at a scrutiny panel meeting, are deemed to be placed on our trajectory by the CCG Matrons.

3.6 DIPC Reports to Board of Directors

The monthly DIPC report forms part of the patient safety agenda and reports on mandatory monitored healthcare associated infections (HCAIs) such as *C.difficile* and MRSA, as well as other healthcare associated infections. The report also highlights any topical infection prevention and control issues and incidents occurring in clinical practice. The DIPC annual report is submitted to the Board of Directors.

3.7 Budget Allocation

Budget allocation for infection control activities:

- 0.9 WTE Band 7 Lead Nurse in Infection Prevention and Control 0.6 WTE Band 6 Infection Control Nurse0.4 WTE Band 6 Infection Control Nurse secondment post commenced 9/1/17
- 1.0 WTE Band 6 Infection Control/SSI Practitioner0.5 WTE of Consultant Microbiologist time.
- 0.4 WTE Band 6 surgical site surveillance nurse time.
- 0.4 WTE Band 5 surgical site surveillance nurse time.
- Scientific support and technical capability is funded within the contract that the Trust has with the Public Health England (PHE).
- Administrative support is provided via a team administrator (11.75 annualised hours per week) and the PA to the DIPC.
- Training and IT support are funded from corporate IT and Education budgets based on any case of need submitted by the infection control team.

3.8 Infection Control Report & Programme for 2016/17

Work undertaken by the Infection Prevention and Control Team during 2016/17 covers the following areas:

- Compliance with the Health and Social Care Act 2008
- Infection Prevention and Control Committee
- Link Practitioner Network
- Development and maintenance of policies and procedures
- Audit and Surveillance monitoring and reporting
- Education
- Compliance with Department of Health initiatives – High Impact Interventions / WHO 5 Moments for hand hygiene
- Outbreak and incident management
- Infection Prevention and Control input into planning for the New Papworth Hospital

4. HCAI Statistics

4.1 Introduction

Papworth Hospital NHS Foundation Trust continues to take part in mandatory surveillance of Methicillin-resistant *Staphylococcus aureus* (MRSA) bacteraemias, Methicillin-Sensitive *Staphylococcus aureus* (MSSA) bacteraemias , Glycopeptide (or Vancomycin)-Resistant *Enterococci* (GRE/VRE) bacteraemias and *Clostridium difficile* cases. MRSA bacteraemias and laboratory detected C. difficile toxin results are reported monthly via the Public Health England healthcare associated infections Data Capture System (HCAI DCS) website and signed off on behalf of the Chief Executive. From June 2011 mandatory surveillance of E. coli bacteraemia was commenced as required by the Department of Health.

Feedback on the results for mandatory surveillance is given monthly to the Board of Directors, 8 weekly to the Infection Prevention and Control Committee and quarterly to the Clinical Management Groups. Individual monthly results for Critical Care (CCA) are discussed at the Critical Care Unit Business meetings.

Additional surveillance data on GRE, and resistant Gram negative isolates expressing Extended Spectrum B-lactamases is also collected and feedback given as that for the mandatory reports.

Central venous catheter related bloodstream infection rates (CVC-BSI) were initially monitored through the National Patient Safety Agency's program ("Matching Michigan"). The aim was to match the reduction in CVC-BSI achieved in Michigan USA. In order to achieve this, a group was formed to ensure implementation of the Department of Health High Impact Intervention No. 1 (Central Venous Catheter Care Bundle) and other technical interventions relating to CVC care. After the completion of the Matching Michigan program in 2011 CVC-BSI rates have continued to be monitored on a monthly basis and infection rates reported to the Trust Board. A new system of recording CVC-BSI has been in place since May 2016 and all positive blood culture results are submitted via a central Infection in Critical Care Quality Improvement Programme (ICCQIP) website.

The results for 2016/17 year are as follows:

Papworth Hospital NHS Foundation Trust, Papworth Critical Care Area: May 2016-April 2017

Counts and rates of positive blood cultures and blood stream infections which meet the case definition in your critical care unit and for all adult critical care units, May 2016-April 2017

	Q 1 (May-July 2016)		Q 2 (August-October 2016)		Q 3 (November 2016-January 2017)		Q 4 (February-April 2017)	
	Your Unit	Adult CCUs[§]	Your Unit	Adult CCUs[§]	Your Unit	Adult CCUs[§]	Your Unit	Adult CCUs[§]
Total number of positive blood cultures	28	181	17	237	28	369	28	505
Total number of patient days	2,692	20,142	2,692	24, 866	2,665	33,875	2,516	52,559
Total number of blood culture sets taken	306	2,127	292	2, 935	399	5,033	312	6,506

Rate of positive blood cultures per 1,000 patient days	10.4	9	6.3	9.5	10.5	10.9	11.1	9.6
Rate of positive blood cultures per 1,000 blood culture sets taken	91.5	85.1	58.2	80.7	70.2	73.3	89.7	77.6
Total number of BSIs[¥]	3	86	8	139	10	230	10	269
Rate of BSI per 1,000 patient days	1.1	4.3	3.0	5.6	3.8	6.8	4.0	5.1

[§] 24, 30, 47, and 59 units provided full denominator and event data and are included in the total Adult CCU metrics in Q1, Q2, Q3 and Q4 respectively. Additional units provided only event data and so could not be included in the overall totals and overall rates.
[¥]see appendix for definitions

Counts and rates of ICU-associated blood stream infections, CVC-associated ICU-associated BSI and CVC-related ICU-associated BSI in your critical care unit and all adult critical care units, May 2016-April 2017

	Q 1 (May-July 2016)		Q 2 (August-October 2016)		Q 3 (November 2016-January 2017)		Q 4 (February-April 2017)	
	Your Unit	**Adult CCUs[§]**	**Your Unit**	**Adult CCUs[§]**	**Your Unit**	**Adult CCUs[§]**	**Your Unit**	**Adult CCUs[§]**
Number of ICU-associated BSIs[¥]	3	50	5	84	9	149	7	150
Number of patient days, amongst patients in the ICU>2 days	1,974	14,359	1,974	18,535	2,042	23,696	1,520	36,540
Rate of ICU-associated BSI per 1,000 patient days*	1.5	3.5	2.5	4.5	4.4	6.3	4.6	4.1
Number of CVC-associated ICU-associated BSIs[¥]	0	12	2	16	4	29	0	18
Number of CVC days, amongst patients in the ICU>2 days	1,864	9,194	1,864	12,719	1,879	15,025	1,503	21,694
Rate of CVC-associated ICU-associated BSI per 1,000 ICU-CVC days*	0.0	1.3	1.1	1.3	2.1	1.9	0.0	0.8
Number of CVC-related ICU-associated BSI[¥]	0	11	3	14	2	28	0	32
Rate of CVC-related ICU-associated BSI per 1,000 ICU- CVC days*	0.0	1.2	1.6	1.1	1.1	1.9	0.0	1.5
CVC utilisation*	94.4%	64%	94.4%	68.6%	92.0%	63.4%	98.9%	59.4%

§24, 30, 47, and 59 units provided full denominator and event data and are included in the total Adult CCU metrics in Q1, Q2, Q3 and Q4 respectively. Additional units provided only event data and so could not be included in the overall totals and overall rates.
¥see appendix for definitions
*calculated from patients in the ICU >2 nights

4.2 Mandatory Reports

4.2.1 MRSA

MRSA bacteraemia figures for the past 14 complete years are represented in the table below.

Papworth Annual MRSA bacteraemia rates (from 1 April 2002)

01.04.02 to 31.03.03	01.04.03 to 31.03.04	01.04.04 to 31.03.05	01.04.05 to 31.03.06	01.04.06 to 31.03.07	01.04.07 to 31.03.08	01.04.08 to 31.03.09	01.04.09 to 31.03.10	01.04.10 to 31.03.11	01.04.11 To 31.03.12	01.04.12 To 31.03.13	01.04.13 To 31.03.14	01.04.14 To 31.03.15	01.04.15 To 31.03.16	01.04.16 to 31.03.17
24	13	7	14	4	5	1	2	1	1	2	0	1	0	0

The ceiling for MRSA bacteraemias set for Papworth for 2016/17 by the CCG was zero. There were no cases of MRSA bacteraemia reported from Papworth. MRSA screening of all elective and emergency admissions continued to be performed in 2016/17. Compliance with screening in 2016/17 was 98%. Since the introduction of universal MRSA screening the numbers of patients who attend Papworth who are found to carry MRSA have reduced considerably because the screening has allowed early isolation and treatment of patients with MRSA.

4.2.2 *C.difficile*

C. difficile figures for the last six years are represented in the table below. Cases are attributed to the Trust if the positive sample was taken more than 2 days after admission to the Trust and which, after discussion at a scrutiny panel meeting, are deemed to be placed on our trajectory by the CCG Matrons.

	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
C. difficile >65 yrs	5	5	4	7	4	4	5	2
C. difficile < 65 yrs	8	6	6	1	3	5	4	0
Total	13 (12 attributable)	11 (9 attributable)	10 (8 attributable)	8 (7 attributable)	7 (4 attributable)	9 (3 attributable)	9 (3 attributable)	2 (0 attributable)

The ceiling set for Papworth by the CCG for 2016/17 was 5 attributable cases. All *C. difficile* cases had a root cause analysis carried out, and were reported to the Infection Prevention and Control Committee and via the Public Health England healthcare associated infections Data Capture System (HCAI DCS).

4.2.3 **MSSA bacteraemia**

Reporting of Methicillin Sensitive Staphylococcus aureus (MSSA) bacteraemia to the Department of Health through the MESS system has been compulsory since January 2011. Root cause analysis is carried out for these infections which are reported to the Infection Prevention and Control Committee. There is no ceiling set by external authorities for these infections. The numbers given below include cases where the blood culture was taken within 48 hours of admission to the hospital (community acquired infections).

	2008/9	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Methicillin sensitive Staphylcoccus aureus bacteraemias (MSSA)	21	18	10	18	9	16	21	17	14

A reduction in the incidence of MSSA bacteraemia compared with 2014/15 and 2016/17 was noted.

4.2.4 **E. coli bacteraemia**

Reporting of E. coli bacteraemia to the Department of Health through the HCAI DCS system has been compulsory since June 2011. These infections are reported to the Infection Prevention and Control Committee. There is no ceiling set by external authorities for these infections.

	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
E. coli bacteraemias	9 (Jun 11– Apr 12)	8	10	6	11	12

4.3 **Other Surveillance Reports**

4.3.1 **GRE/VRE and ESBL bacteraemia**

	2008/9	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/6	2016/17
Glycopeptide (or Vancomycin)-Resistant *Enterococcus* (GRE/VRE) bacteraemias	5	4	0	4	8	2	4	3	8
Extended spectrum B-lactamase producers (ESBL) bacteraemias	1	3	1	0	3	0	0	3	5

VRE bacteraemias and ESBL bacteraemias are reported to the Infection Prevention and Control Committee and to Public Health England quarterly. There are no ceilings set by external authorities for these healthcare associated infections.

4.3.2 **Central venous catheter related bloodstream infection (CVC-BSI)**

The rate of CVC-BSI during 2016/172016/17 was generally lower than average national rate as can be seen from the tables above.The data reflected a continuous effort of infection control and critical care teams to improve the use of CVC at Papworth.

4.4 **Wound Care**

The Trust commenced continuous surgical site infection (SSI) surveillance on 1 April 2009, and this continues to date as a rolling programme. The methodology used is the Public Health England scheme for surgical site infection surveillance on Coronary Artery Bypass Graft (CABG). Surveillance was carried out on all CABG +/- Valve (or other cardio-thoracic surgery) patients. Patients following CABG surgery are in surveillance for one year for any sternotomy wound infections and for 30 days for leg wound infections post operatively. Therefore, each one year period of surveillance takes two years to complete.

Since September 2015 the Infection Control/SSI Team have also carried out continuous SSI surveillance on patients who have had valve surgery only. This group of patients are also in surveillance for one year for any sternotomy wound infections post-operatively. Therefore, each one year period of surveillance takes two years to complete.

Surgical Site Infection (SSI) rates:

SSI figures for 2009-2010 CABG + or - valve patients = 9.85%
SSI figures for 2010-2011 CABG + or - valve patients = 5.93%
In 2011/12 focus changed, see figures below:

Full year SSI figures for Valve only = 1.24%
Full year SSI figures for Thoracic = 0.71%
Full year SSI figures for PTE = 5.03%
October 2011-March 2012 Transplant Surgery = 0%
July 2011-September 2011 CABG +/- Valve = 4%

SSI figures for 2012/13
April 2012-March 2013 CABG +/- Valve = 4.84%
April 2012-March 2013 PTE = 2.1%

SSI figures for 2013/14
April 2013- March 2014 CABG +/- Valve = 4.03%

October – December 2013 PTE = 2.22%

SSI figures for 2014/15
April 2014 – March 2015 CABG +/- Valve = 2.11%

SSI figures for 2015/16
April 2015-March 2016 CABG +/- =3.3%
Sept 2015-March 2016 Valve only = 2.05% (Continuous surveillance commenced in Sept 2015 therefore only 7 months of data).

Current SSI figures for 2016/17
April 16 – March 17 CABG +/- valve = 3.3.%
April 16 – March 17 Valve only = 2%
(These figures are subject to change as patients are in surveillance for 1 year post surgery)

Continuous surveillance and the actions put in place by the Trust Pre and Peri-Operative Care Group, including a focus on pre-operative skin preparation, continued use of iodised drapes, disseminating results to the hospital wide audit meeting and feedback of individual SSI rates to surgeons, has resulted in continuing reduction in SSI rates. This multi-disciplinary group meets three times a year, and sets the SSI surveillance agenda. In 2016/17 we have continued to undertake root cause analysis of organ space SSIs to examine risk factors for the development of such infections and to action any identified required improvements in practice.

For robust statistical analysis of the data we enlisted the assistance of our regional PHE epidemiologist. The results demonstrated that all categories of SSIs from superficial-organ space were associated with a high body mass index (BMI) and diabetes. Superficial SSIs were also associated with patients aged over 65 years and with one or more procedures additional to CABG. The economic analysis has now been completed for this data and has shown significant cost savings for the Trust as a result in reduction of SSI's in CABG patients.

4.5 Antimicrobial Stewardship

The term 'antimicrobial stewardship' is defined as 'an organisational or healthcare-system-wide approach to promoting and monitoring judicious use of antimicrobials to preserve their future effectiveness' (NG15, August 2015). Antimicrobial Stewardship operates across all clinical areas of Papworth as part of the Trusts antimicrobial stewardship programme. The goals of our antimicrobial stewardship programme are to:

- Improve Patient Outcomes
- Improve Patient Safety
- Reduce Antimicrobial Resistance
- Reduce Healthcare Costs without adversely impacting quality of care

The Antimicrobial Stewardship Group (ASG) met in January 2016 to set out its annual plan to meet its obligations to deliver the Trust's Antimicrobial Strategy (DN 182). Key areas of work identified for the 2016/17 action plan:

	Actions	Progress
1.Antimicrobial stewardship management team	Antimicrobial Stewardship Group meetings take place quarterly Antimicrobial Stewardship Lead reports to the Drugs and Therapeutics Committee. (or the Antimicrobial Pharmacist in her absence) A ward focused antimicrobial stewardship team consists of Antimicrobial Stewardship Lead and Antimicrobial Pharmacist	This has been established and membership has been increased to include an Advanced Nurse Practitioner and a member of the ALERT Team. Number of ward rounds increased to 8 (from 4) to provide support to prescribers managing surgical and cardiology patients.
2.Antimicrobial guidelines and policies	The following policies are due for review and have been updated this year: • Antimicrobial strategy DN 182 • Antibiotic Therapy in Lung Defence Clinic DN 016 • Tobramycin Drug Level Monitoring for Lung Defence and Cystic Fibrosis patients guidelines DN059 • Management of the Transplant Patient DN 215 Review local antimicrobial stewardship targets after the Trust and CCG discussion has taken place Maintain and update MicroGuide application on a regular basis	Updated – next review due 30/8/19 Updated – next review due 31/12/19 Updated – next review due 31/12/19 Updated – next review due 01/01/18 Local CQUIN targets 2017/2018 - achieved MicroGuide application updated following approval by DTC of any antimicrobial guideline/policy.

	Reach the decision whether local guidelines on antibiotic desensitisation is possible to write or not following consultations with the respiratory team Take part in development of sepsis guidelines in critical care to make sure that main criteria are incorporated Review NICE guideline Antimicrobial Stewardship Baseline Assessment Tool on annual basis	Antibiotic Desensitisation Guideline written and Incorporated into Guidelines for Drug Allergies and intolerances (DN640) In progress Completed 19/12/16
3. Audit and quality improvement programme	The following audits have been performed this year • Antifungal prescribing in critical care • Compliance with gentamicin prescribing for surgical prophylaxis • Monthly audits of key prescribing indicators • Carbapenem and tazocin consumption (quarterly) • Vancomycin prescribing in critical care (re-audit) • European Centre for Disease Control Point Prevalence Survey on healthcare associated infections, devices and antimicrobial use in acute hospitals	 Completed 30/1/2017 Completed 4/7/2016 Completed for all months Completed and incorporated into quarterly reports Completed3/2/2017 Completed October 2016 – still awaiting publication and dissemination of results.
4.Education and training	Provide mandatory core training in antibiotic use for doctors according to education department plan Provide educational sessions in antimicrobial prescribing for pharmacists (yearly) Provide educational sessions for registered and technical staff on antimicrobial resistance according to education department plan Continue ward based one-to one teaching in antimicrobial use and prescribing	Mandatory Training for all junior grades of medical staff. Training provided in July and August and programme incorporated in annual Pharmacist Mandatory Training Plan. Antimicrobial Resistance Session incorporated into annual mandatory training for all clinical staff On-going. Advance Nurse Practitioner and ALERT

	at weekly ward rounds	Nurse to also participate and accompany ward rounds.
5.Antimicrobial prescribing	Produce monthly reports on main indicators with feedback to prescribers Provide antibiotic prescribing audit data to the Trust board (quarterly) Introduce stickers for drug charts as a reminder to review prescribing at 72 hours	In progress Completed Completed
6.Surveillance and monitoring of antimicrobial consumption and resistance	Review Trust antimicrobial consumption data quarterly at ASG meeting report Piperacillin/Tazobactam and meropenem consumption to the board and to clinical specialties (quarterly) Monitor antimicrobial consumption on Define Obtain and disseminate data on local antimicrobial resistance from the regional epidemiology unit	Completed and data sent to PHE for publication in See https://fingertips.phe.org.uk/ On-going In progress
7. Ward focused antimicrobial stewardship team	Review prescriptions at ward level (weekly) Antimicrobial stewardship ward rounds by Consultant Microbiologist and Antimicrobial Pharmacist (twice weekly), Endocarditis Ward Rounds on Fridays Follow up patients on broad-spectrum antibiotics discharged from critical care Review *C.difficille* patients at weekly ward rounds	4 ward rounds/week on surgery and cardiology 3 ward rounds/ week in Critical Care Revised as above Used as basis for ward rounds In progress
8.Restrictions and new antibiotics	Review the list of restricted antibiotics on a yearly basis Consider new antimicrobials for clinical practice	Annual review In progress. Close working with CUH colleagues

4.6 Incidents and Outbreaks

Incident and outbreak investigations occurring in 2016/17 were reported to the hospital Infection Control and pre- and peri-operative Committee throughout the year.

Influenza

Plans for the vaccination of health care workers and the management of patients with influenza were co-ordinated through the ICPPC and led by the Occupational Health Team. Leads from all directorates were involved with the planning. The fit testing program for FFP3 masks is on-going. The seasonal flu vaccination programme continued during 2016/17 and staff were strongly encouraged to have the vaccine. The Occupational Health Department co-ordinated an extremely successful programme and the clinical staff uptake rate was 75% (up almost 10% from 2015/16. This was helped greatly by establishing a mobile flu clinic and assistance from the Education Department.

During this period, Papworth continued to be a registered ECMO (extra corporeal membrane oxygenation) centre. This is treatment used for patients who have respiratory difficulties including H1N1. 34 patients were admitted for ECMO treatment during the 2016/17 year

Norovirus

There were two incidents of ward closuresdue to confirmed Norovirus during 2016/17, and a number of bay closures due to unconfirmed cases of viral gastroenteritis. Both incidents occurred on Hugh Fleming ward. The first incident in December 2016/ January 2017was not reported as a serious incident as the ward was closed due to a combination of norovirus, staff shortage and reduced activity over the Christmas period. The second incident in March 2017 was reported and treated as a serious incident – 107 bed days were lost as a result of the outbreak but it appeared after thorough investigation that Norovirus was brought in to the ward from at least one external source, possibly two. There were 16 confirmed cases of Norovirus at Papworth during the year.

Clostridium difficile

There were no incidents relating to Clostridium difficile infection in 2016/17.

MRSA

There were no cases of MRSA bacteraemia in 2016-17.

Tuberculosis

There were no incidents during 2016/17. All cases were followed up as appropriate.

Mycobacterium abscessus

At the end of 2012, the Trust reported on the increase of infections caused by the antibiotic-resistant bacterial species *Mycobacterium abscessus (M. abscessus). M. abscessus* is distantly related to the bacterium that causes Tuberculosis and is usually found in water and soil. This is of concern particularly in the cystic fibrosis population due to their susceptibility to serious infections. The teams at Papworth Hospital, the University of Cambridge and the Wellcome Trust Sanger Institute have continued with their research into this area and are linking with other centres across the world to further understand this species and its transmission. As a result of their initial findings, during 2013/14 a new cystic fibrosis clinic was established to further segregate patients with M. abscessus. Inpatient care has also changed with patients being cared for in different locations with the directorate. New cleaning regimes have been introduced in both inpatient and outpatient facilities for all cystic fibrosis patients to reduce the risk of cross infection. Regular meetings are held to ensure that infection prevention measures for patients with cystic fibrosis are continuously reviewed and improved. Papworth Consultant Microbiologists took part in

the national meeting at the CF Trust in March 2017 to discuss M.abscessus infection control policy for CF patients. An updated version of national recommendations are due to be published later in 2017.

Vancomycin Resistant Enterococcus (VRE)

It was agreed at the Infection Control Committee meeting in June 2016 to stop screening al patients on Critical care for the carriage of VRE, but to screen certain patient groups such as heart failure patients waiting for VAD insertion on CCA and high risk patients on admission (e.g. those transferred from other critical care units).
Any results continue to be monitored by the IPC team. There have been no incidents relating to this change in practice during 2016/17.

Carbapenemase Producing Enterobacteriacae (CPE)

Over the past decade large increases in carbapenemase-producing Enterobacteriaceae (CPE) infections have been reported globally2. Recent data from the UK shows an alarming year-on-year increase in the number of isolates of Gram-negative bacteria confirmed as Carbapenemase-producing, with 1,600 confirmed isolates in 2014, up from just over 1,000 confirmed in 2013, 4. As CPE infections are susceptible to only a small number of antimicrobials this situation compromises a major public health problem and priority. In March 2014 Public Health England launched the acute Trust toolkit to promote the early detection, management and control of CPE colonisation. In response to this the IPCT developed a procedure to manage diagnosis, isolation and treatment of patients with these organisms. In 2016-17 there was one patient diagnosed with CPE infection at Papworth Hospital but this was not an acquisition.

5. Health and Social Care Act 2008 – External Inspections 2016/17

There have been no further CQC inspections since December 2014.

5.1 Cleaning Services

ISS continue to provide cleaning services across the Trust.

Deep Cleaning Programme

An annual rolling deep cleaning programme is in place to ensure all hospital in-patient areas are deep cleaned annually. The progress of the programme and any concerns are monitored at the ICPPC.

Management Arrangements

ISS, the cleaning contactors, are overseen by the **Associate Director of Estates & Facilities from Papworth and the ISS** Regional Contracts Manager who visits the site regularly; together they oversee the cleaning contract. These managers also support the supervisors on a day to day basis.

Monitoring Arrangements

The employment of supervisors ensures consistent focus on both quality of service delivery and effective communication on monitoring results. The results of all cleans across the Trust are sent to the IPC team and Senior Nurses/Department Heads weekly and any discrepancies are discussed at the ICPPC. ISS utilise the National Standards for Cleanliness audit tools and follow the recommendations as laid down by this national body.

Budget Allocation

The budget provision for ISS output specification contract, including all routine cleans, deep cleans and ad hoc cleans is £1.35 million.

Clinical Responsibility

The Matron has input into service change. Matrons, ward sisters and weekend on-call managers assist the domestic services supervisors on their quality control rounds. In addition, the IPC team get involved in any issues concerning the monitoring of cleaning and general maintenance standards.

6. Targets & Outcomes

The number of MRSA bacteraemias was 0 (ceiling 0) and numbers of attributable C. difficile cases 0 (ceiling 5).

Root cause analyses (RCAs) were carried out on all C. difficile cases, and some MSSA and VRE bacteraemias as guided by the IPC team. These were done with involvement from the clinical teams and reported to the ICPPC.

The Trust remained compliant with MRSA Screening during 2016/17. Monthly audits showed that the average annual MRSA screening compliance rate was 98%.

7. Training Activities

Infection Prevention and Control training mandatory sessions were delivered as out-lined in the table below:

Teaching sessions	Duration	Frequency	Delivered by
Induction session for **all** new starters via the Market place presentation	Captured within 90 minute session	Monthly	Presentation provided and reviewed by IPC team; supervised by education team
Training for Foundation and Core Medical Trainees	60 minutes	Three times yearly	Education
Yearly update for qualified nurses in cardiac and thoracic directorate via the Market place presentation	Captured within 90 minute session	At least monthly	Presentation provided and reviewed by IPC team; supervised by education team
Yearly update for non-qualified nurses in cardiac and thoracic directorate via the Market place presentation	Captured within 90 minute session	At least monthly	Presentation provided and reviewed by IPC team; supervised by education team
Yearly hand hygiene update for all other clinical staff	15 minutes	Skills/CPR weeks	IPCT/Education team
Training session for Housekeepers	30 minutes	At least quarterly	IPC team

Infection Control & Hand Hygiene Training April 16 - March 17	
	Compliance
Hand hygiene training	Monitored on Education database
General training	Compliance is now linked to incremental progression and this will ensure that full compliance is obtained.

Compliance with Infection Prevention and Control yearly updates is a requirement for all staff for completion of their annual appraisals. Compliance is regularly monitored and reported back to the IPCC meetings on a quarterly basis. The Education Department follow up any non-compliance.

8. Annual Programmes

The infection Prevention and Control team continue to work to an annual programme, with all actions progressing to date. A full audit programme runs in parallel with this.