The Queen Elizabeth Hospital King's Lynn NHS Foundation Trust

REPORT TO THE BOARD OF DIRECTORS (IN PUBLIC)

SUBMITTED BY:	**REPORT FOR:**		**IMPACT:**		
Dr Geoff Hunnam	**Decision**		**High**	**Med**	**Low**
CONSULTATION:	**Information**	✓	✓		
Executive Directors	**REPORT TYPE:**		**RELATED WORK:**		
	Strategic				
	Operational	✓			
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Meeting Date: **29th October 2012**
Report Title: **Infection Prevention and Control Annual Report 2011-12**

Purpose: To provide information on the performance of the Trust and all the infection prevention and control activities of 2011-12.

Summary: Progress was made in improving compliance with the Code of Practice from the Health and Social care Act 2008. The hospital achieved the HCAI reduction target for MRSA bacteraemia but just exceeded the target set for cases of *Clostridium difficile* infection. Investigations into clusters of *C difficile* did not identify transmission between patients in the hospital. There were 24 incidents where parts or whole wards were closed due to outbreaks of diarrhoea and/or vomiting.

Financial Implications / Efficiency Savings:

Risk Assessment (cross-reference with Risk Register where appropriate):

Strategic / External	**Operational/ Organisational**	**Financial**	**Clinical**	**Legal/ Regulatory**	**Reputation / Patient Experience**
✓	✓		✓	✓	✓

Recommendations:
See paper.

Author: Lesley Taylor, Associate Director of Infection Prevention and Control
Date: 23rd October 2012

Work in progress - Commerical in Confidence

The Queen Elizabeth Hospital NHS
King's Lynn
NHS Foundation Trust

Infection Prevention and Control Annual Report 2011-12

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Executive Summary

The Annual Report of the Director of Infection Prevention and Control provides information on the progress of all the infection prevention and control activities throughout the year 2011-12. The report seeks to demonstrate a hospital wide commitment to the prevention and control of Healthcare Associated Infections (HCAIs).

The hospital undertook a self assessment against the Code of Practice on the prevention and control of infections and related guidance from the Health and Social Care Act (2008) and overall compliance progressed from 92% in April 2011 to 95% in March 2012.

The hospital achieved the HCAI reduction target for MRSA bacteraemia but just exceeded the target set for cases of *Clostridium difficile* infection.

In 2011-12 the target for MRSA bacteraemia was no more than one case. The hospital reported only one.

The target for cases of *C. difficile* was no more than 37 cases. The hospital reported 41. There were four periods of increased incidence of *C. difficile*, which were investigated as per the Department of Health guidelines, and no evidence of transmission was identified since the organisms were found to be of differing ribo-types.

There were 24 outbreaks identified during the year that appeared to be associated with diarrhoea and/or vomiting (e.g. Norovirus). Of these, 12 necessitated the closure of a whole ward with the remaining 12 requiring closure of at least one bay.

There were two cases of post-operative endophthalmitis in October that were fully investigated and found unlikely to be related. There were no further infections.

The management of patients with a diagnosed or suspected infection in hospital continues to be challenging. These challenges, and the actions taken in response, are described within the report.

Introduction

The term Healthcare associated infections (HCAIs) is defined by the Department of Health as:

"all infections acquired as a direct or indirect result of health care."

It can be seen from this that not all HCAI are acquired in hospital. This report focuses primarily on those HCAI that are hospital acquired or associated (nosocomial) which is defined as infections from which the patient was not suffering from or incubating on admission. Infections are generally considered to be nosocomial if there are no symptoms until at least two days after admission to hospital.

Good infection prevention and control practices are essential to ensure that people who use health services receive safe and effective care. Effective prevention and control of infection must be part of everyday practice and be applied consistently by everyone. It is supported by good management and organisational processes which are crucial to make sure that high standards of infection prevention and control are set up and maintained.

The Queen Elizabeth Hospital Kings Lynn NHS Foundation Trust puts infection prevention and 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 use of antimicrobials and the management of antibiotic resistance and the improvement of cleanliness in the hospital.

This is the sixth annual report of the Director of Infection Prevention and Control at The Queen Elizabeth Hospital. The report has been written to provide information about infection prevention and control and is primarily aimed at patients, their carers and staff but, may also be of interest to members of the public in general. The format of the report reflects the compliance criteria taken from the Health and Social Care Act 2008 Code of Practice for health and adult social care on the prevention and control of infections and related guidance.

The Code of Practice identifies ten compliance criteria that 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 how susceptible service users are, together with any risks 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 infection.
3. Provide suitable and accurate information on infections to service users and their visitors.
4. Provide suitable accurate information on infections to any person concerned with providing further support or nursing/medical care in a timely fashion.
5. Ensure that people who have or develop an infection are identified promptly and receive the appropriate treatment and care to reduce the risk of passing on the infection to other people.
6. Ensure that all staff and those employed to provide care in all settings are fully involved in the process of preventing and controlling infections.

7. Provide or secure adequate isolation facilities.
8. Secure adequate access to laboratory support as appropriate.
9. Have and adhere to policies, designed for the individual's care and provider organisations, that will help to prevent and control infections.
10. Ensure, so far as is reasonable practicable, that care workers are free of and are protected from exposure to infections that can be caught at work and that all staff are suitably educated in the prevention and control of infection associated with the provision of health and social care.

This report aims to outline the progress made during 2011-12 in line with these criteria, plus the performance of the hospital in key areas. It will also summarise the work planned for 2012-13 and beyond and, in this way, reassure the public that the minimisation and control of infection is given the highest priority by the hospital and a philosophy of "zero tolerance" for all avoidable infections will persist in the future.

Overall the hospital's compliance with the Health and Social Act (2008) progressed from 92% in April 2011 to 95% in March 2012. The assessment is used as the basis of the assurance framework and the balanced scorecard for the year is attached at Appendix 1.

Compliance with The Health and Social Care Act 2008: Code of Practice for Health and Adult Social Care on the Prevention and Control of Infections and Related Guidance is as follows:.

Compliance Criterion One

Systems to manage and monitor the prevention and control of infection: these systems use risk assessments and consider how susceptible service users are and any risks that their environment and other users may pose to them.

The Trust Board of Directors recognises its responsibilities for overseeing infection prevention and control arrangements across the hospital, guided by compliance criterion one.

Risk Assessment

During 2011-12:

- The Trust Board received monthly Infection Prevention and Control (IPAC) performance reports, quarterly updating on compliance with the Health Act and this annual report via the Quality and Risk Committee.
- Compliance with the Health and Social Care Act and any action plans pertaining to infection prevention and control (IPAC) were monitored through the Hospital's IPAC Committee.
- IPAC performance was discussed and monitored through the Divisions' Governance meetings.
- IPAC had its own entries on the risk register maintained by the associate DIPC and considered at the IPAC committee. This was reviewed at least quarterly to ensure it remained relevant.

Director of Infection Prevention and Control

- The DIPC role has been undertaken by the Medical Director since May 2011.
- The DIPC is a member of the Trust Board and reports at each meeting, including taking questions at the public board meetings.

- The DIPC directly manages the associate DIPC, including at least monthly one to one meetings, and chairs the IPAC Committee.
- This is the sixth annual report presented by the DIPC to the Trust Board. It is also published on the Internet and therefore made available to the public.

Assurance Framework

- IPAC is a standing agenda item for the Trust Board and is included in the public board meetings.
- Root cause analysis is undertaken on all cases of *Clostridium difficile* infection and MRSA and MSSA bacteraemias that are associated with a spell of care in hospital.
- The assurance process includes both internal and external measures. Internally the accountability is exercised via the IPAC Committee ensuring that there is internal scrutiny of compliance with national standards, local policies and clinical practice. External assurance is obtained through the Care Quality Commission (CQC) registration, assessment by the National Health Service Litigation Authority (NHSLA) against their standards for infection prevention and control and the Patient Environment Action Teams (PEAT). The hospital is also subject to an unannounced visit from the (CQC) who assess the compliance with the Health Act 2008.

Infection Prevention and Control Programme

- The infection prevention and control programme was published in last year's annual report and several areas of the audit programme are monitored through the monthly performance report.
- A review of the programme for 2011-12 is attached at Appendix 3.
- The annual programme for 2012-13 is attached at Appendix 2 and includes details of audit and policy revision.

Infection Prevention and Control Infrastructure

- The DIPC has overall responsibility for the IPAC team. Day to day responsibility is delegated to the Consultant Nurse IPAC (also associate DIPC) for the management of a further two infection control nurses (1.8 whole time equivalent (WTE)), one WTE Senior Health Care Assistant and administrative support for seven hours per week.
- There are two Consultant Microbiologists, one of whom is also an Infectious Diseases physician who has the lead responsibility for managing the patients on the *C. difficile* isolation ward.

Movement of Service Users

- A review of all patients being cared for in single rooms is undertaken Monday to Friday by the IPAC Assistant Practitioner and the information shared with the bed managers to facilitate the optimum use of resources.
- The information is also used to identify those rooms that require additional environmental and equipment decontamination.
- Communication to patient's GPs following MRSA identification is undertaken by the IPAC team.

- All patients with diarrhoea associated with *Clostridium difficile* are managed on Stanhoe isolation unit.

Compliance with criterion one progressed from 93% to 99% during 2011-12.

Compliance Criterion Two

Provide and maintain a clean and appropriate environment in managed premises that facilitates the prevention and control infections.

Policies on the Environment

- The Manager of Estates is a member of the IPAC committee.
- Other policies are in development in line with the requirements of the revised Health and Social Care Act 2008.

Cleaning Services

- All inpatient areas are now compliant with the recommended cleaning frequencies as set out in The National Specifications for Cleanliness in the NHS: a framework for setting and measuring performance outcomes (April 2007).
- The standards in these areas are monitored by the Matrons responsible for the areas.
- Annual environmental audit is carried out in all patient care areas by a member of the IPAC team.
- A review of the cleaning service for the hospital in line with the guidelines published by the British Standards Institute in June 2011[1] was commenced during 2011-12. This is an ongoing project with further developments expected during 2012-13.
- Cleaning schedules are available on the internet.

Decontamination

- The Director of Clinical Services is the Trust's decontamination lead.
- All reusable surgical instruments (excluding only flexible endoscopes) are reprocessed through the hospital's centralised sterilisation unit.
- Flexible endoscopes are decontaminated locally at the point of use. The Endoscopy Department has been audited against the National Endoscopy Programme's Decontamination Standards for Flexible Endoscopes during 2011-12.

Compliance with criterion two progressed from 86% to 92% during 2011-12.

Compliance Criterion Three

Provide suitable and accurate information on infections to service users and their visitors.

Provision of Information on HCAI to Patients, the Public and Other Service Providers

- The Infection Prevention and Control Annual Reports are made available to the public on the hospital's internet site.

[1] British Standards Institute (2011) PAS 5748:2011 Specification for the planning, application and measurement of cleanliness in hospitals.

- More access to the IPAC policies will be included on the public internet as they are reviewed and updated.
- Information about infection control precautions is available for visitors and is also on the internet site.
- Alcohol hand gel is available at the entrance to all departments and visitors and patients are encouraged to use it by both posters and reception staff as appropriate.
- In the case of an outbreak signs are used to inform visitors of the problem and patients' relatives are kept informed by telephone if visiting is suspended.

Compliance with criterion three remained at 100% during 2011-12.

Compliance Criterion Four

Provide suitable accurate information on infections to any person concerned with providing further support or nursing/medical care in a timely fashion.

- Information on infections specific to an individual patient are included in their discharge summary.
- Letters are sent to GPs identifying those patients who have been diagnosed with *C. difficile* whilst in-patients, giving advice regarding avoiding specific antibiotics if possible.

Compliance with criterion four remained at 100% during 2011-12.

Compliance Criterion Five

Ensure that people who have or develop an infection are identified promptly and receive the appropriate treatment and care to reduce the risk of passing on the infection to other people.

- All patients identified with MRSA are "flagged" on their electronic patient records so that they are easily identified to all staff on subsequent admissions to facilitate their appropriate care. Hard copies of their medical notes are also marked.
- Microbiology results are available to staff with access to the intranet and an appropriate password. In addition, results can also be sourced directly through the electronic system used by the laboratory.
- Policies regarding the management of patients with specific infections are available on the intranet to all staff to ensure that patients are managed appropriately to reduce the risk of transmission to other patients and/or staff.
- Outbreaks, or suspected outbreaks, are communicated to the PCT and the local Health Protection Unit (HPU).

Compliance with criterion five remained at 100% during 2011-12.

Compliance Criterion Six

Ensure that all staff and those employed to provide care in all settings are fully involved in the process of preventing and controlling infection.

- All permanent staff are required to attend an induction session which includes a session on infection prevention and control based on the Standard Principles for Preventing Healthcare Associated Infections in Hospital Policy.

- Infection prevention and control is part of the annual mandatory training required by all permanent hospital staff and monitored through the training department. The target set by the Trust Board in 2011-12 for compliance with mandatory training was 70% and this was achieved for IPAC in March 2012.
- All policies and guidelines are published on the Intranet to which all staff have access.

Compliance with criterion six remained at 100% during 2011-12.

Compliance Criterion Seven

Provide or secure adequate isolation facilities.

Isolation Facilities

- Approximately 15% of the available in-patient adult beds within the hospital are single rooms. Fewer than half of these have en-suite lavatory or washing facilities and the distribution of these is not even across the hospital, with only two wards having the majority of the single rooms with en- suite facilities. Most of the wards have only single rooms with shared facilities. The lack of lavatory facilities causes particular difficulty when isolating patients with diarrhoea or an infection transmitted through the air-borne route.
- Priority for single rooms is given to patients requiring isolation for infection control purposes.

Compliance with criterion seven remained at 100% during 2011-12.

Compliance Criterion Eight

Secure adequate access to laboratory support as appropriate.

Laboratory Support

- The Microbiology laboratory provides seven day processing of samples, including faecal samples where *C. difficile* is considered a risk.
- The laboratory was assessed by the Clinical Pathology Accreditation during 2011-12.
- Collaborative working between the laboratory staff and the IPAC team is essential for investigation of potential outbreaks with valuable epidemiological information produced by the laboratory chief.
- Standard operational policies (SOP) are used for processing samples within the laboratory.
- Assistance from the laboratory was also essential in carrying out commissioning of theatres after refurbishing and investigations following potential outbreaks.
- The impact on the laboratory of the increase in screening of patients for MRSA can be seen in the following graph. The numbers of samples being processed remained relatively stable between 2010-11 and 2011-12, but had previously increased dramatically since 2007-08.

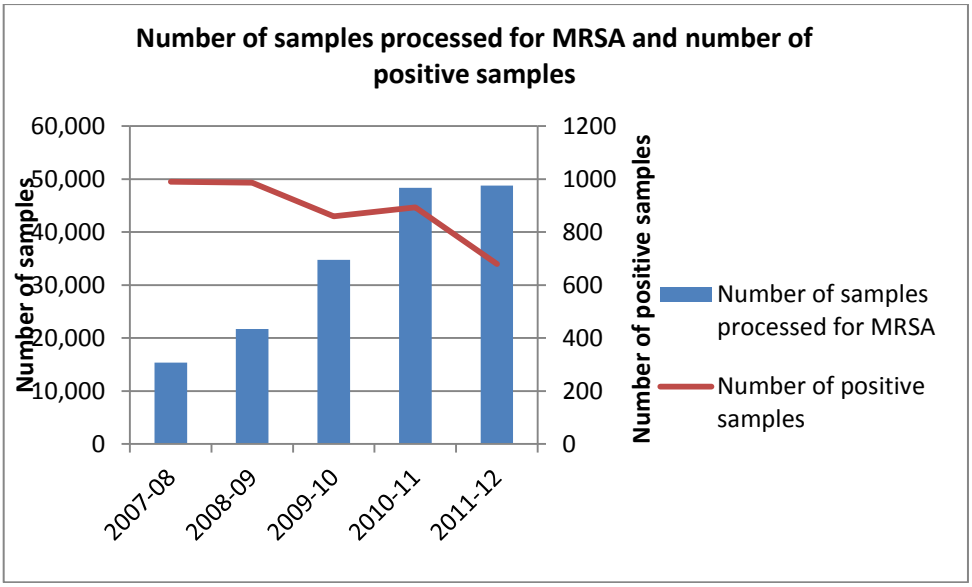

Figure 1: Number of Samples processed for MRSA and Number of Positive Samples

Both the total number of faecal samples submitted for testing and the number of *C difficile* tests carried out have remained quite stable over the year, with a small increase during January to March which may reflect increased diarrhoea in the local community due to Norovirus. This increase in sampling did not see a similar increase in the number of *C. difficile* positive cases. This is summarised in the chart below.

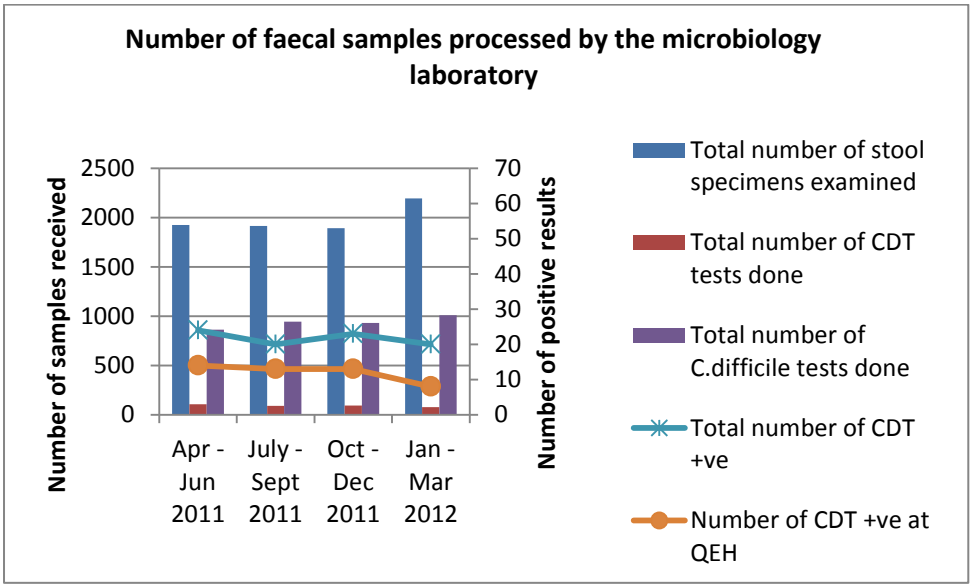

Figure 2: Number of Faecal Samples per Quarter 2011-12

Compliance with criterion eight progressed from 89% to 100% during 2011-12.

Compliance Criterion Nine

Have and adhere to policies, designed for the individual's care and provider organisations, which will help to prevent and control infections.

Policies

- The following table shows the policies that have been reviewed and published in 2011-12.

Policy	Implementation date
Glycopeptide resistant Enterococcus (GRE)	September 2011
Hand Hygiene Policy	September 2011
Outbreaks of Diarrhoea & Vomiting (Norovirus)	January 2012
Varicella Zoster Virus (VZV) Exposure Policy	March 2012
Group A Streptococcus Policy - Management of Sporadic Cases & Outbreaks	March 2012

- Timely policy review was a challenge for the IPAC team during 2011-12. This is being urgently addressed with a plan to submit a minimum of two policies for review to each meeting of the Infection Control Committee (meeting six times per year).

Demonstration of compliance with IPAC policies is demonstrated through audit.

Hand Hygiene Audit

Hand hygiene is the single most important measure for reducing transmission of HCAIs in hospital. To ensure that the profile of this vital precaution remains high, compliance with the Hand Hygiene Policy is audited monthly, based on the World Health Organisation's "five moments for hand hygiene". The performance is reported in the infection prevention and control monthly performance report and the results for the year are shown below.

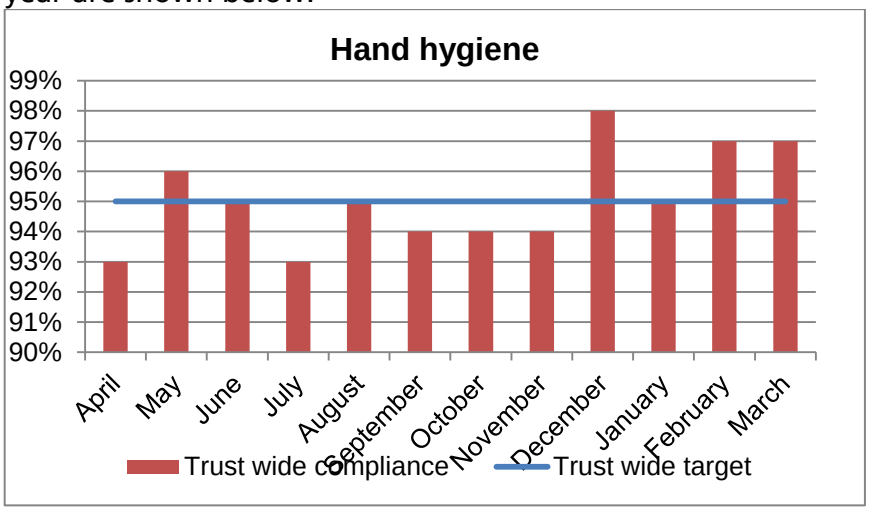

Figure 3: Compliance with hand hygiene

High Impact Intervention Audits

High Impact Interventions (HIIs) are based on the care bundle model and published by the DH as part of the Saving Lives: reducing infection, delivering clean and safe care programme (revised edition published October 2007). The HIIs are specifically aimed at reducing the risks of acquiring a HCAI.

The HIIs form part of the Trust's monthly audit schedule for infection prevention and control. The following tables show the level of Trust wide compliance along with the targets set by the Trust Board.

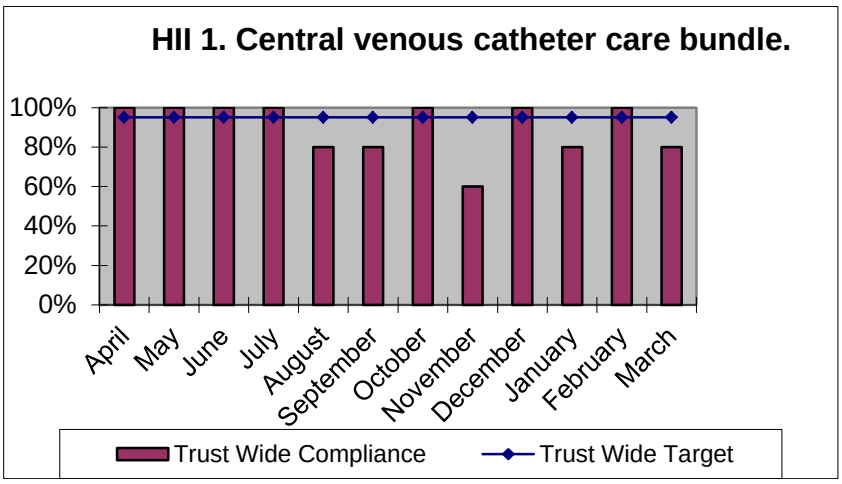

Figure 4: Compliance with HII 1

The use and monitoring of guidelines for central venous catheter care has been shown to reduce catheter related blood stream infections.

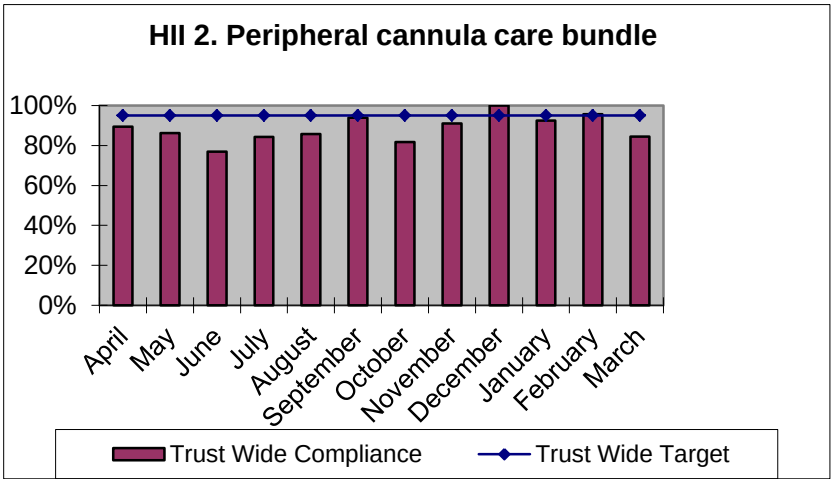

Figure 5: Compliance with HII 2

Safe and effective peripheral cannula care is essential to reduce the risk of blood stream infections. The most common compliance failure is completing appropriate documentation. This can lead to cannulae being left in situ longer than recommended in policy and it is recognised that infective risks increase with time.

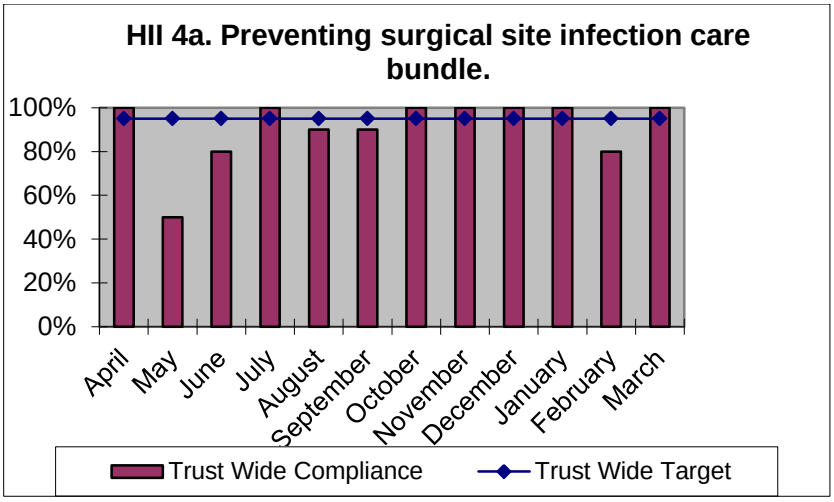

Figure 6: Compliance with HII 4a

HII 4a is focussed on whether patients undergoing surgery have been appropriately screened for MRSA.

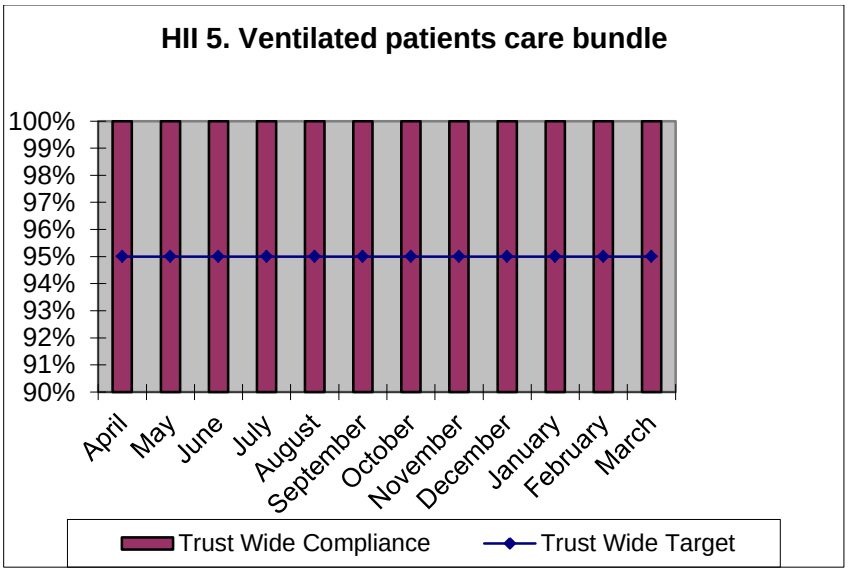

Figure 7: Compliance with HII 5

HII 5 is undertaken in few areas since most patients do not require mechanical ventilation. The care bundle is designed to reduce the risk of ventilator associated pneumonia - a common complication in vulnerable patients requiring critical care.

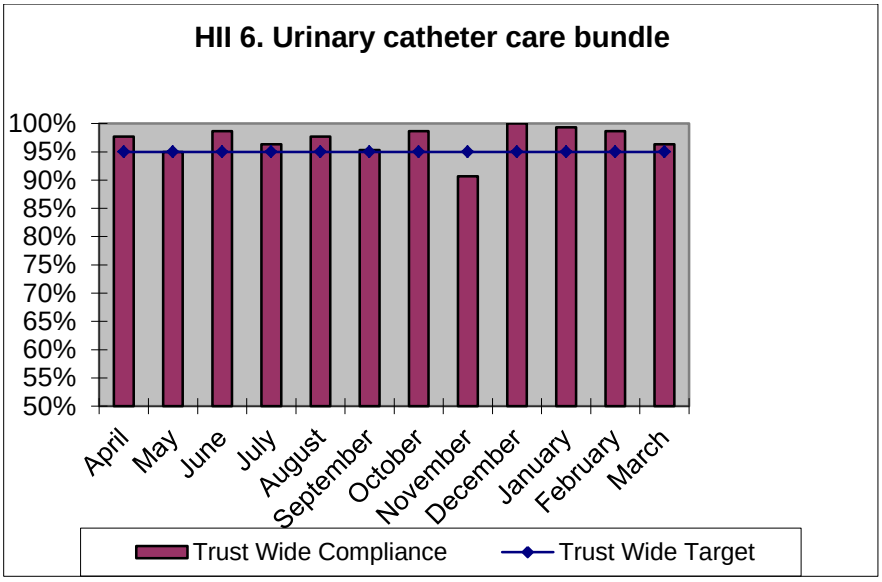

Figure 8: Compliance with HII 6

The care bundle audited through HII 6 is designed to reduce the incidence of catheter-associated urinary tract infection (UTI). UTI is the second most common health care associated infection in hospitals. Many of these infections are linked to the use of urinary catheters.

Compliance with criterion nine progressed from 91% to 93% during 2011-12.

Compliance Criterion Ten

Ensure, so far as is reasonably practicable, that care workers are free of and are protected from exposure to infections that can be caught at work and that all staff are suitably educated in the prevention and control of infection associated with the provision of health and social care.

Occupational Health Services

- All new staff are screened for communicable diseases and their general health assessed before commencing employment at the hospital.
- Vaccinations against communicable diseases are offered at pre-employment screening and updated as required.
- Emergency treatment for exposure to blood and body fluids is provided in line with the Management of Blood and Body Fluid Exposure Incidents in Healthcare Staff Policy.
- Staff who are to undertake exposure prone procedures are screened for blood borne viruses in line with DH guidelines.

The Occupational Health Department works closely with the Infection Prevention & Control Team and Public Health to control the spread of hospital acquired (and other) infections. The services available include a comprehensive vaccination programme and contact tracing with advice and follow up e.g. following inoculation injury or exposure to tuberculosis. The immunisation and screening programmes (in relation to blood borne viruses) are offered in line with Department of Health Guidelines and given in accordance with Trust Infection Control Policies, including staff who perform exposure

prone procedures.

Clinical staff are selectively screened for MRSA using identified criteria and only 3 were found to be positive and subsequently treated and cleared.

For immunisations such Hepatitis B, Measles/Mumps/Rubella, Tuberculosis and Chickenpox a total of 827 were given.

The department also runs a well established Flu vaccination programme with improvements year on year. In 2011-12 a total of 44.2% of frontline health care workers and 35.2% of non-clinical staff received a jab. The Trust has been recognised nationally by NHS Employers, as an exemplar case study for the programme.

Education Strategy

Training needs analysis identified that all staff employed at the Queen Elizabeth Hospital are required to undertake education in Infection prevention and control at the beginning of their employment (usually as part of their induction to the Hospital) and have annual updates during their employment. These sessions are similar in content concentrating on those issues essential to reducing health care associated infections in hospital. Within these boundaries the content of the sessions is tailored to the group receiving it.
At the end of 2011-12 71% of all staff employed at the Trust were compliant with this target.

IPAC Link Nurse Summary 2011/12

The IPAC link nurses have a vital role as spokespersons for their wards and clinical areas, and attend bi-monthly meetings to keep updated with changes in policies and procedures and new infection control guidance and information. The link nurses are committed to their role, and each clinical area has at least one member of staff designated as a link nurse. The link nurses act as liaison between their clinical area and the IPAC team, and are closely involved with staff education and promotion of best practice, as well as being a role model for colleagues.

Holding regular meetings gives an opportunity for issues to be raised and discussed, and an education session is included in each meeting. In addition, a study day is held each year, which gives the link nurses the opportunity to learn about specific topics, and new developments in infection prevention and control. The 2011 study day had a decontamination theme, with guest speakers from the trust and external speakers, as well as input from companies who bring along samples of their products and information stands.

Compliance with criterion ten remained at 100% during 2011-12.

Section Three: Performance against National Targets

Mandatory Reporting

All Trusts in England are required to carry out mandatory surveillance of all cases of MRSA, MSSA and E. coli bacteraemia and all cases of *C. difficile*. Surveillance of surgical site infection is also mandatory for hip and knee replacement surgery.

The Trust is set reduction targets by the PCT for both MRSA bacteraemia and *C. difficile* cases; during 2011-12 these targets were set at no more than one case and 37 cases respectively.

The following charts show the performance of the QEH compared to that for the other hospitals in the East of England region. In order to provide some level of comparability, each hospital's performance is provided as a measure per 1,000 occupied bed days using the figures provided as part of the KH03 returns to the DH.

MRSA Bacteraemia

Meticillin resistant *Staphylococcus aureus* (MRSA) is a problem in healthcare because of the reduced choice of antibiotics that can be used against it if it is causing infection. Whilst it can cause a wide variety of infections only bacteraemia (e.g. found in the bloodstream) require reporting to the Department of Health. A Root Cause Analysis (RCA) investigation is undertaken for all MRSA bacteraemia cases either within the hospital or within the PCT as appropriate.

During 2011-12 there was one case of hospital associated MRSA bacteraemia which was equal to the limit set by the PCT. A case is considered hospital associated if the sample was taken more than two days after admission. There were an additional five cases that were considered not to be associated with hospital care, i.e. the samples were taken within the first two days of the patient's admission. One patient had two episodes of MRSA bacteraemia.

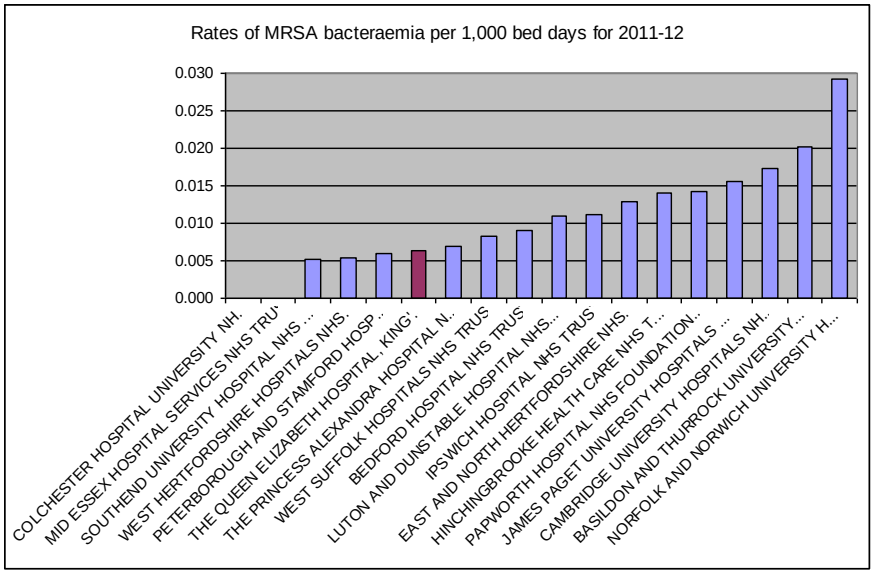

Figure 9: Rates of MRSA Bacteraemia per 1,000 Bed Days across the East of England

The target for MRSA bacteraemia for The Queen Elizabeth Hospital in 2012-13 is no more than 1 case. The achievement of this reduction requires a continuing focus on four essential measures of infection prevention and control:

- Hand hygiene
- Isolation of all patients with MRSA colonisation or infection
- High Impact Interventions related to invasive devices
- Early identification of patients with MRSA colonisation or infection

Clostridium difficile

Reporting of all cases of *C difficile* infection identified in the laboratory in people aged over two years is mandatory for all hospitals in England. During 2011-12 the QEH exceeded the reduction target of 37 cases and, by year end, the hospital had reported 41 cases.

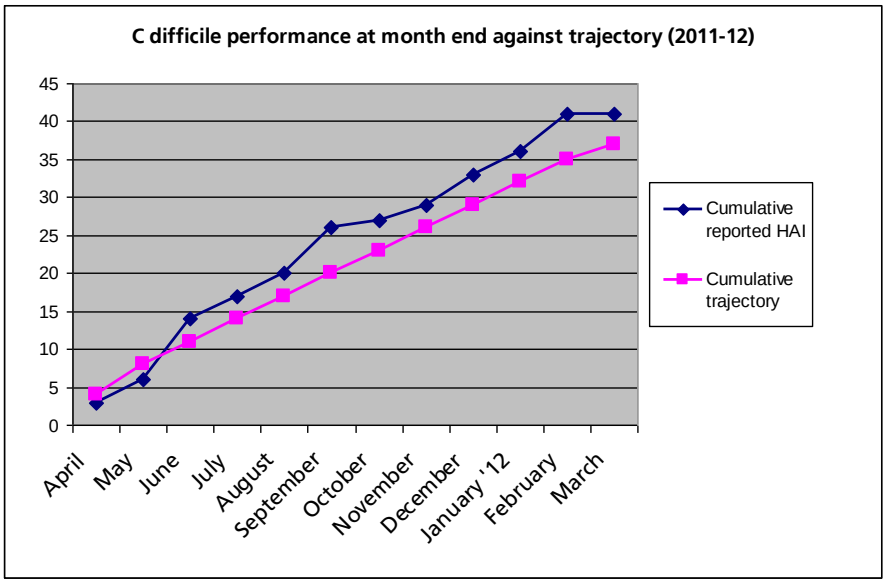

Figure 10: C difficile Performance of QEH against HCAI Reduction Target

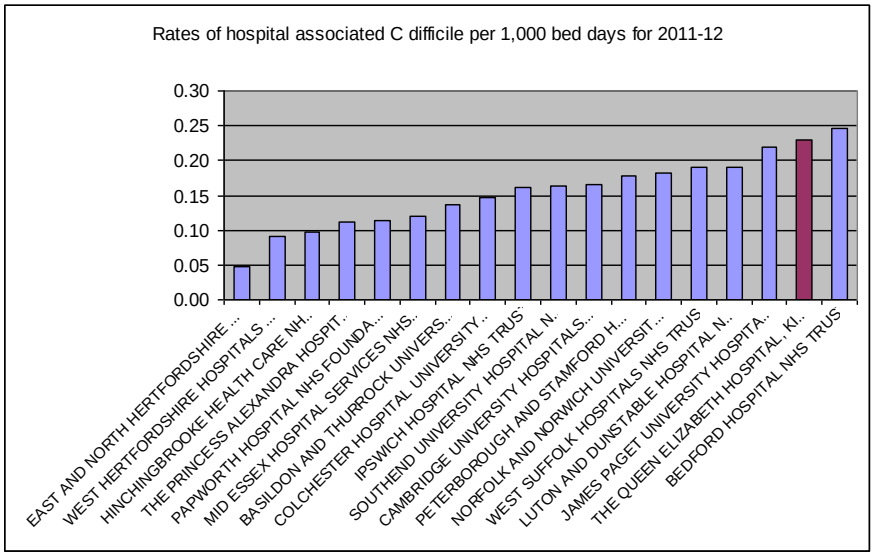

Figure 11: Rates of C. difficile per 1,000 Bed Days across the East of England

This chart shows the performance of the QEH compared to that for the other hospitals in the East of England region. In order to provide some level of comparability each hospital's performance is provided as a measure per 1,000 occupied bed days using the figures provided as part of the KH03 returns to the DH.

The target for *C difficile* for the QEH in 2012-13 is no more than 30 cases - a further 19% reduction on the total this year. The achievement of this reduction requires a continuing focus on:

- Appropriate and prudent antibiotic use
- Appropriate isolation of all patients with diarrhoea
- Hand washing
- Effective decontamination of equipment and the environment

Periods of Increased Incidence of *C. difficile*

The hospital did not maintain the trend in reduction of *C. difficile* cases seen in previous years in 2011-12. During the year there were four periods of increased incidence (PII) as defined by the DH as "two or more new cases (occurring >48 hours post admission, not relapses) in a 28-day period on a ward." Each of these incidents were investigated and actions taken as per the DH guidance. In each of these cases the samples were ribo-typed and there was no evidence of transmission between the patients who were linked either geographically or in time.

Meticillin Sensitive *Staphylococcus Aureus*(MSSA) Bacteraemia

Reporting of all cases of MSSA bacteraemia is mandatory for all Trusts in England. There is no HCAI reduction target set for this infection.

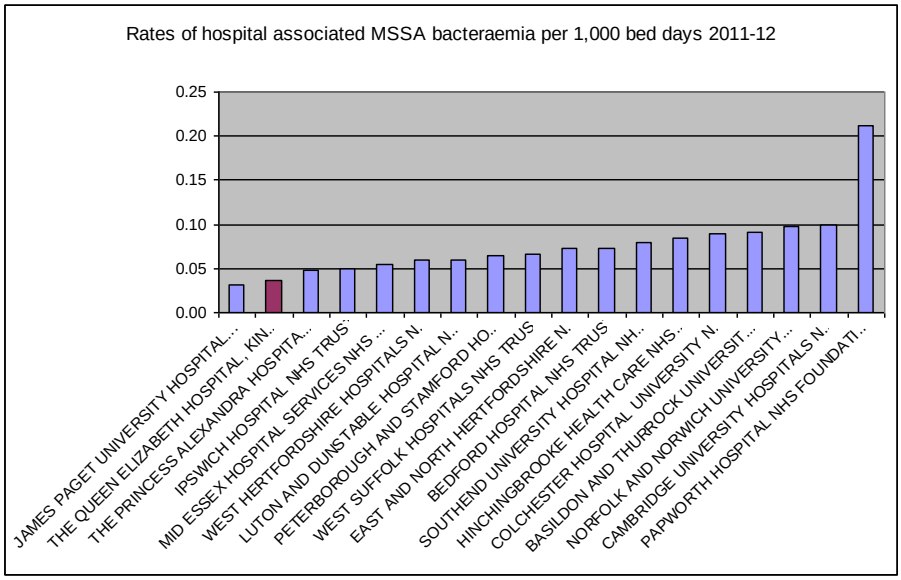

Figure 12: Rates of MSSA Bacteraemia per 1,000 Bed Days across East of England

This chart shows the performance of the QEH compared to that for the other hospitals in the East of England region. In order to provide some level of comparability each hospital's performance is provided as a measure per 1,000 occupied bed days using the figures provided as part of the KH03 returns to the DH.

***Escherichia coli* Bacteraemia**

Reporting of all cases of E. coli bacteraemia is mandatory for all Trusts in England. There is no HCAI reduction target for this infection.

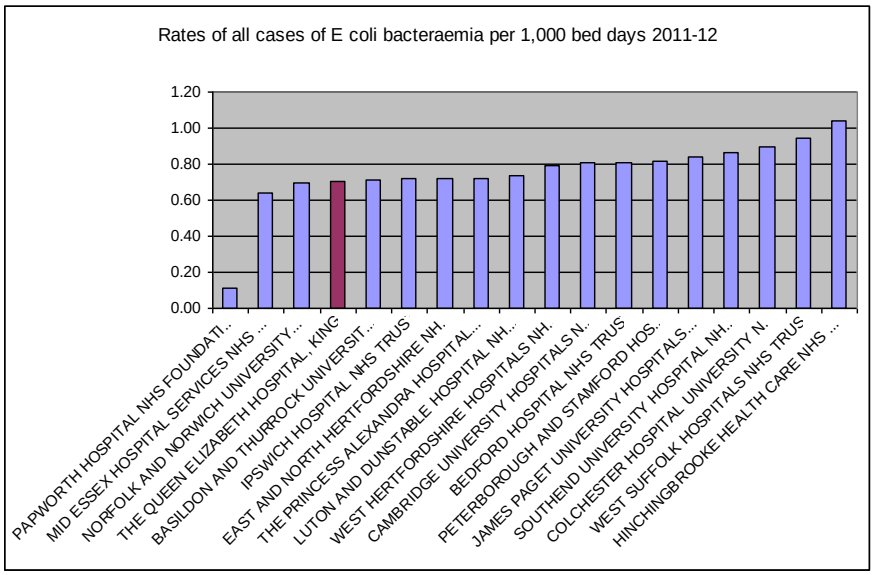

Figure 13: Rates of E coli Bacteraemia per 1,000 Bed Days across East of England

This chart shows the performance of the QEH compared to that for the other hospitals in the East of England region. In order to provide some level of comparability each hospital's performance is provided as a measure per 1,000 occupied bed days using the figures provided as part of the KH03 returns to the DH.

Surgical Site Infection Surveillance (SSI)

A national surveillance system for Surgical Site Infections (SSI) was established in 1997 and eventually evolved into the Surgical Site Infection Surveillance Service (SSISS). Surveillance of SSI in orthopaedic surgery became mandatory for all NHS Trusts in England in April, 2004.

The aim of SSI surveillance is to enhance the quality of patient care by encouraging hospitals to use data obtained from surveillance to compare their rates of SSI over time and against a benchmark rate, and to use this information to review and guide clinical practice. Each Trust is required to participate for a minimum of one surveillance period (three months). Most Trusts choose to undertake the total hip and knee prosthesis category. The number of participating Trusts has increased year on year.

The Queen Elizabeth Hospital has participated in the mandatory reporting of total hip replacements, repair of neck of femur, knee replacement prosthesis and also contributed to surveillance on large bowel surgery surgical site infections since April, 2004. The collection and reporting of this data has been undertaken by the Clinical Audit and Effectiveness Department, using the Health Protection Agency (HPA) Surgical Site Infection System. The annual results have been reported to the Trust Board through the Infection Prevention and Control Annual Report.

The Trust participated in all four quarters in 2011/12 but at the time of writing this report, the figures were not available for Jan-Mar 2012 due to the SSI Surveillance still being in progress for Jan-Mar 2012.

The infection rates in the three orthopaedic procedures and large bowel surgery have consistently been below the national average but this year showed an increase in the percentage rate of infection following a Knee Replacement, which was above the

national average. This relates to five cases of post-operative infection identified after discharge, none of the patients required readmission for management of the infections. The reporting of infections identified in this way is optional in the national scheme. Investigations into the infections have identified no connections between the cases. Since the number of operations performed at the QEH is comparatively small comparisons between the rates of infection at the Trust and those nationally need to be made with caution.

Apr 11-Dec 11:

	The Queen Elizabeth Hospital NHS Foundation Trust		All Hospitals
Procedure	**Operations Apr 11- Dec 11**	**% Infected**	**% Infected**
Total Hip Replacement	212	0.9	1.1
Repair of Neck of Femur	136	1.5	1.8
Knee Replacement	155	3.2	1.4
Large Bowel Surgery	131	1.5	11.9

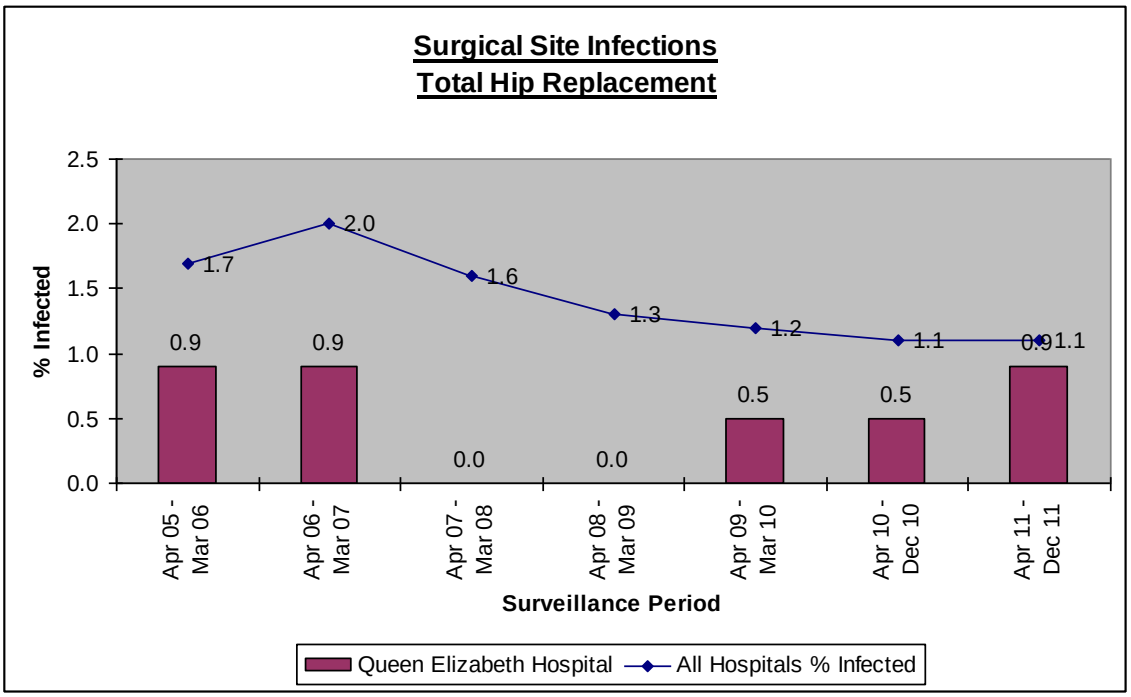

Figure 14: SSI Total Hip Replacements

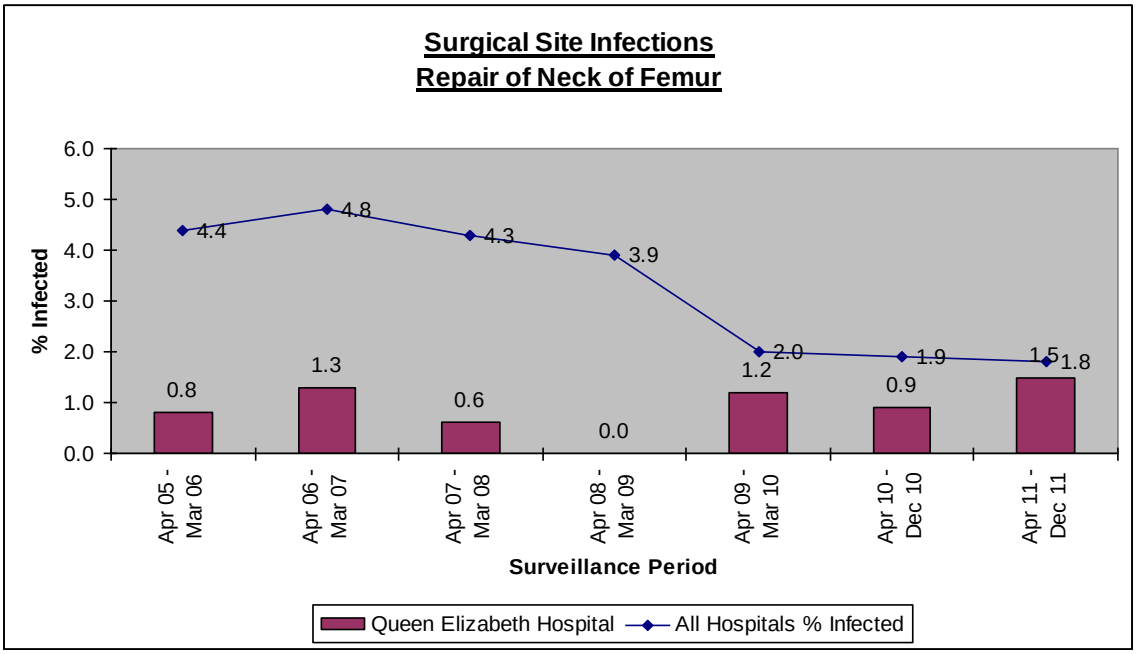

Figure 15: SSI Repair Fractured Neck of Femur

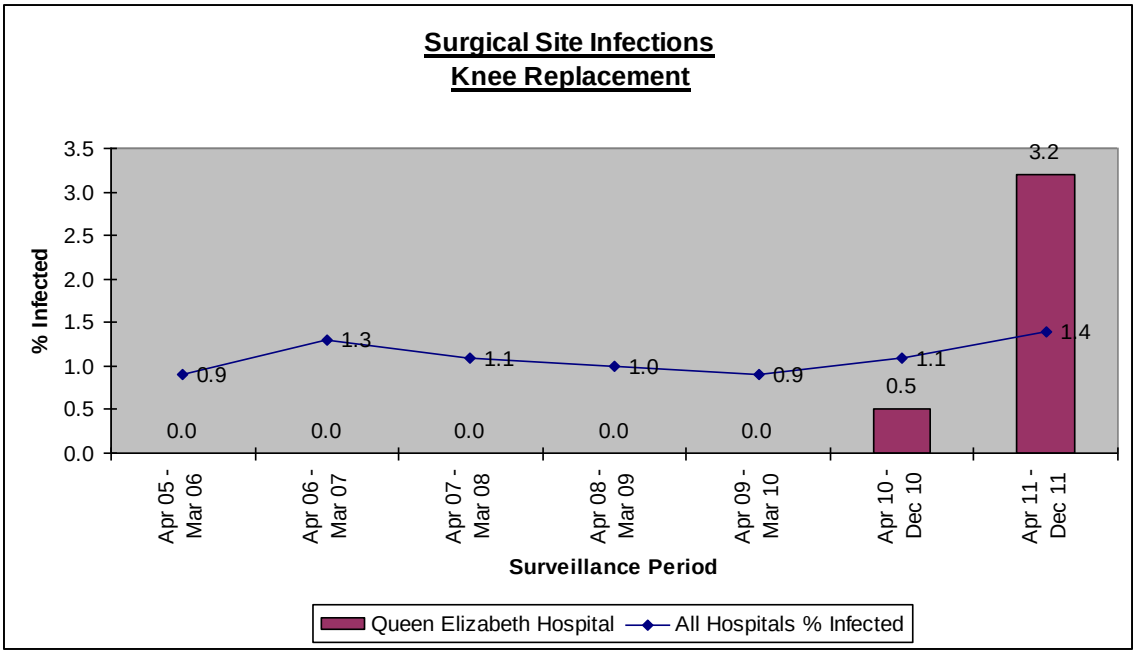

Figure 16: SSI Knee Replacements

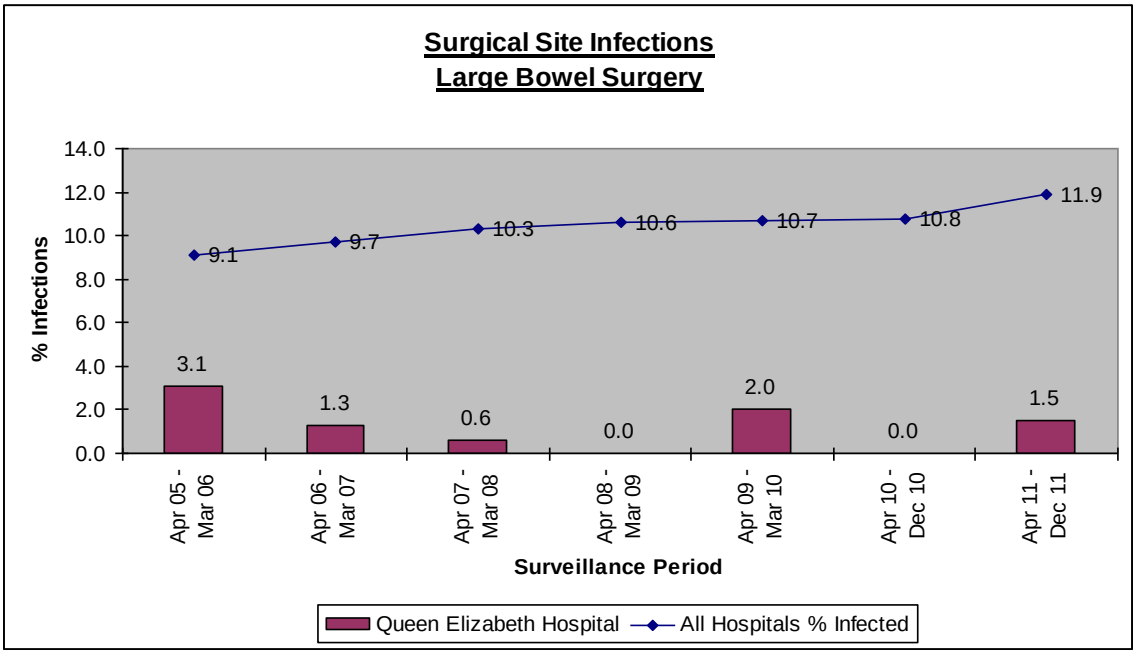

Figure 17: SSI Large Bowel Surgery

Outbreaks and Untoward Incidents

An outbreak is defined by the Health Protection Agency as:

"an incident in which two or more people, thought to have a common exposure, experience a similar illness or proven infection".

In hospital, there may be patients who fit this criteria and are exhibiting similar symptoms but for different reasons. Diarrhoea is the most common sign of an outbreak but also a common symptom in hospital which is not necessarily due to an infective cause. Early action is necessary to prevent transmission, followed by careful investigation of an apparent outbreak which may identify a different cause to these common symptoms. However, the approach of the hospital is to be cautious in the event of doubt and review the situation frequently.

Norovirus

During 2011-12 there were 24 outbreaks identified as likely to be due to Norovirus.

Ward	Date started	Date finished (re-opened)	Number of patients affected	Number of staff affected	Number of bed days closed	Laboratory confirmed as Norovirus?	Number of days closed	Ward or bay closed
Gayton	23/11/2011	29/11/2011	11	5	6	No	6	Bay
Feltwell	27/11/2011	02/12/2011	5	5	6	Yes	5	Bay
Oxborough	29/11/2011	09/12/2011	19	5	47	Yes	10	Ward
Pentney	18/12/2011	21/12/2011	9	2	13	No	3	Ward
Oxborough	18/12/2011	22/12/2011	13	1	11	Not tested	4	Ward
Pentney	22/12/2011	03/01/2012	16	7	25	Yes	12	Ward
Stanhoe	25/12/2011	30/12/2011	11	2	2	Not tested	5	Ward
West Newton	01/01/2012	04/01/2012	4	0		No	3	Bay
Gayton	01/01/2012	04/01/2012	10	0		No	3	Ward

Necton	09/01/2012	16/01/2012	15	2	12	Yes	7	Ward
Tilney	10/01/2012	11/01/2012	1	0	0	Yes	1	Bay
Oxborough	14/01/2012	17/01/2012	5	0	0	Yes	3	Bay
Pentney	25/01/2012	02/02/2012	21	0	42	Yes	8	Ward
Tilney	09/02/2012	21/02/2012	19	1		Yes	12	Bay
Pentney	11/02/2012	17/02/2012	14	1	11	Yes	6	Ward
Oxborough	13/02/2012	22/02/2012	4	0	4	Yes	9	Bay
Terrington	22/03/2012	23/03/2012	3	0	0	Yes	1	Bay
Pentney	25/03/2012	31/03/2012	11	1	31	Yes	6	Ward
Elm	26/03/2012	29/03/2012	3	0	3	Yes	3	Bay
Feltwell	26/03/2012	29/03/2012	2	0	0	Yes	3	Bay
Marham	09/04/2012	18/04/2012	15	1	18	Yes	9	Ward
MAU	13/04/2012	13/04/2012	2	0	0	No	0	Bay
Pentney	10/05/2012	17/05/2012	14	1	27	Yes	7	Ward
Necton	15/05/2012	17/05/2012	4	0	0	No	2	Bay
Total	**24**		**231**	**34**	**258***	**16**	**128**	

*The number of bed days closed is not available in three of the incidents, so this figure is likely to be an underestimate.

The number of bed days closed is the total number of days that beds were unoccupied and not used because of the outbreak. This varies substantially depending on the volume of patient flow through the affected ward. Every effort is made to reduce the number of closed bed days by careful reviewing of the ongoing situation and minimising the impact on the running of the hospital whilst maintaining the safety of the patients in line with the guidance published by the DH in November 2011.

There were five separate incidents on Pentney ward which were investigated in case of environmental reservoir or some other persistent issue. There were two outbreaks in December when the second may have been caused by a patient with unrecognised symptoms. Otherwise no link was identified between the outbreaks and it seems likely that this may have been due to the admission to the ward of new patients who had previously been exposed.

Post-Operative Eye Infections

During October there were two cases of endophthalmitis following eye surgery. Investigations were undertaken into the ventilation of the theatres, the sterility of the equipment used and the pre and post operative care. No links were identified and the organisms isolated from the patients were different. There have been no further cases.

C. difficile

There were four periods of increased incidence of *C difficile* during the year. The detail is within this report under *C difficile* in section three.

Finance

Budget Allocation and Financial Investment

The 2011-12 budget allocated to the Infection Prevention and Control team is managed by the Consultant Nurse IPACS and was for £159,939. Additional funding for outbreaks was provided as necessary.