

Infection Prevention and Control Team

Annual Report April 2009 – March 2010



Plymouth Hospitals NHS Trust

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Key achievements

The key achievements for the year April 2009-March 2010 were as follows:

- MRSA bacteraemias – 15 cases (85% reduction from the baseline of 98 cases in 2003-04 and 9 under the target of 24 cases). Of these, 8 were hospital-apportioned
- New cases of MRSA – 62 cases (55% reduction on the previous year)
- *Clostridium difficile* - 77 ‘hospital- apportioned’ cases (55 under the target of 132 and a reduction of 52% on the previous year)
 - lowest mortality in the South West
- Norovirus – 24 ward closures with mean ward-closure time of 5.2 days
- Hand Hygiene compliance – increase to 98% from 92% the previous year
- Excellent compliance with Saving Lives High Impact Interventions
- Expansion of surgical site surveillance with post-discharge follow up. Wound infection rates below the national mean for most procedures
- Full compliance with the Code of Practice and unconditional registration with the Care Quality Commission
- Delivery of a Postgraduate Certificate in Infection Prevention and Control in collaboration with the Peninsular School of Medicine and Dentistry.

Executive summary

The Infection Prevention and Control Team (IPCT) at Plymouth Hospitals NHS Trust (PHNT) has made significant progress towards modernising the service it provides and meeting the challenging new agenda being set at both local and national levels. This has led to improvements in clinical practice, with concomitant reductions in healthcare-associated infections. Since the baseline target year, 2003-04, new clinical cases of Methicillin-Resistant *Staphylococcus aureus* (MRSA) have fallen by 90%, MRSA bacteraemias have been reduced by 85% and there has also been a fall in the number of cases of Methicillin-Sensitive *S. aureus* bacteraemias. The Trust already has one of the lowest *Clostridium difficile* rates in the country and last year achieved a further 52% reduction. It also had the lowest mortality from *C. difficile* in the South West. There were 24 ward closures due to viral gastroenteritis with a mean ward-closure time of 5.2 days. The ‘Five Moments’ hand hygiene awareness campaign was launched across the Trust and hand hygiene compliance improved from 92% to 98%. Improvements in the management of medical devices were reflected by excellent compliance with the Saving Lives High Impact Interventions. Considerable work has gone into meeting compliance with national guidelines and standards, including the Code of Practice for the Prevention and Control of Healthcare Associated Infections, Clinical Negligence Scheme for Trusts (CNST) and Standards for Better Health. In January 2010, the Trust was inspected by the Care Quality Commission and found to be fully compliant with the areas of the Code of Practice examined. The Trust can be justifiably proud of its achievements in reducing infection rates and improving clinical practice. Considerable Trust-wide effort is required to sustain these improvements and achieve the new challenging targets for further MRSA bacteraemia and *C. difficile* reduction, as well as achieving zero tolerance of preventable healthcare-associated infections.

Progress towards achieving Key Targets, April 2009 – March 2010

- To reduce MRSA bacteraemias in line with agreed local and national targets. **Between April 2009 and March 2010, there were 15 MRSA bacteraemias (Target: less than 24).**
- To reduce cases on *Clostridium difficile* in line with agreed local and national targets. **Between April 2009 and March 2010, there were 77 cases of post-72 hour *C. difficile* (Target: less than 132).**
- To achieve a 10% reduction in all cases of MRSA. **Between April 2009 and March 2010, there were 62 new cases of MRSA compared to 116 in the same period last year (a reduction of 55%).**
- To maintain the mean ward closure time due to epidemic gastroenteritis below 7 days. **Between April 2009 and March 2010, there were 24 ward closures, with a mean ward closure time of 5.2 days.**
- For all wards to perform at least a monthly Hand Hygiene audit with compliance of at least 95%. **Between April 2009 and March 2010, the overall Trust hand hygiene compliance was 98%.**
- For all wards to perform monthly Saving Lives High Impact Intervention audits for in use medical devices and score 100%. **Data available on Balanced Scorecard.**
- For all wards to achieve an average infection control clinical audit score of 90%. **Average infection control clinical audit score of 88%.**
- For the availability of alcohol hand gel in clinical areas to be maintained as close to 100% as possible. **Between April 2009 and March 2010, the availability of alcohol hand gel in clinical areas was 98%.**
- To continue to expand continuous surgical site surveillance, including post-discharge surveillance, to cover all major procedures. **Majority of procedures now covered.**
- In collaboration with the Peninsula School of Medicine and Dentistry, to obtain approval for and deliver a Postgraduate Certificate in Infection Prevention and Control. (this will be the only postgraduate professional qualification in infection control available in the peninsula). **Approval granted by the Universities of Plymouth and Exeter. First modules ran in Autumn 2009 and Spring 2010.**
- To develop the infection control website. **New pages developed and updated monthly.**

- To comply with national legislation and guidance including the Health and Social Care Act (Code of Practice for the NHS on the prevention and control of healthcare associated infections and related guidance), NHS Litigation Authority, Standards for Better Health, Winning Ways and national guidance on the management of MRSA and *Clostridium difficile*. **Compliance reviewed and evidence folders updated.**

Introduction

This Annual Report details the activities undertaken by the Infection Prevention and Control Team (IPCT) during the period 1st April 2009 to 31st March 2010 and should be read in conjunction with the Infection Control Annual Programme of Work and quarterly reviews for the same period. The report has been compiled according to guidelines issued by the Department of Health (<http://www.dh.gov.uk/assetRoot/04/10/25/52/04102552.pdf>) and will be presented to the Trust Board, Infection Control Committee (ICC) and the Clinical Governance Steering Group in May 2010.

The aim of the IPCT, through the compilation and achievement of a robust Annual Programme of Work, is to devise, implement and evaluate strategies to reduce hospital-associated infection by working in collaboration with each Directorate. The Annual Programme of Work is also now supplemented by individual Action Plans that are agreed by the Ward Manager, Matron, Director of Infection Prevention and Control (DIPC), Lead Nurse in Infection Control, Directors of Nursing and the Medical Director. The IPCT performs a number of activities that minimise the risk of infection to patients, staff and visitors, including:

1. Providing advice on all aspects of infection control
2. Managing outbreaks of infection
3. Conducting programmes of education
4. Undertaking audit and targeted surveillance
5. Formulating policies and procedures
6. Interpreting and implementing national guidance at local level
7. Involvement with refurbishment, new building and equipment projects.

The IPCT now has a far more proactive approach, with a greater emphasis on clinical work and the direct management of patients with hospital-associated infections. The enhanced presence of the IPCT in the clinical environment has greatly increased their accessibility for guidance and advice and has improved the management of hospital-associated infection across the Trust.

Reporting line to the Trust Board

The IPCT meets on a weekly basis to discuss current infection control issues and formulate the day-to-day working programme for the team. The ICC meets bimonthly, is chaired by the DIPC, and reports via the Clinical Governance Steering Group to the Board. There is representation on the ICC from members of each Directorate and senior management, as well as external groups such as the Health Protection Agency (HPA), Primary Care Trusts and patient and public involvement groups. External links are well maintained with the Consultants for Communicable Disease Control for Devon and Cornwall, who are also members of the ICC. The IPCT collaborates extensively with other Trusts across the South-West Peninsula and participate in the activities of local and national groups (e.g. Hospital Infection Society, South West Infection Control Forum and Infection Prevention Society). The

lead Consultant Medical Microbiologist for antimicrobial stewardship is a member of the Drugs and Therapeutics Committee.

Significant infection control issues are also dealt with at the monthly Infection Prevention Board, which is chaired by the Chief Executive. All MRSA bacteraemias, cases of *C. difficile* and other serious Healthcare-Associated Infection (HCAI), as well as recent audit results are reviewed at this meeting. The results of RCAs are reported to the Board and appropriate recommendations made. Action Plans arising from RCAs are reviewed at subsequent meetings. Matrons report on infection control to the Infection Prevention Board on a quarterly basis.

The Board member with responsibility for infection control is the Medical Director, Dr Alex Mayor, and the non-executive member is the Chairman, John Bull. The DIPC meets monthly with the Medical Director, and the DIPC and Lead Nurse also meet regularly with the two Directors of Nursing. The Department of Health document 'Winning Ways' states that the DIPC will 'report directly to the Chief Executive and the Board and not through any officer'. The DIPC meets regularly with the Chief Executive and reports to the Trust Board as required.

Trust-wide reporting of HCAs is through a balanced scorecard of reporting that is produced and circulated to all clinical areas, Directorates and the Trust Board. This includes surveillance and outbreak data, audit results, compliance with policy, link practitioner activity and information on antimicrobial prescribing. The scorecard is produced on a monthly basis for Directorates and quarterly for Departments, and is incorporated into the Trust Board and Directorate performance management process.

The IPCT is represented on the following committees:

- a) Clinical Governance Committee
- b) Clinical Governance Steering Group
- c) Legionella and Safe Hot Water Group
- d) Decontamination and Sterilisation Group
- e) Patient Environment Action Team
- f) Clinical Leaders Forum
- g) Daily Operational Team Meeting
- h) South West Infection Control Forum
- i) Devon Health Advisory Group
- j) Cornwall and IOS Community Infection Control Meeting
- k) Devon Community Infection Control Meeting
- l) Plymouth Cross-Community Infection Control Committee.

Infection control arrangements

1. Budget and staffing

The IPCT provides an infection control service for PHNT (~1050 beds) and last year had annual pay and non-pay budgets of £463,593 and £13,379 respectively. Income of £76,626 was generated through service level agreements with other local healthcare providers (approximately 500 community beds).

2. Team development

The IPCT has expanded over recent years and the compliment of staff now includes Staff Nurses and Health Care Assistants (HCAs). Over the last 12 months the following replacement appointments have been made: Sally Fletcher (previously a staff nurse in Theatres) as a staff nurse and Gemma Parker as a Band 2 HCA in the Surgical Site Infection Surveillance Service.

The increase in the establishment reflects the change in both workload and increased focus on the prevention of infection. This approach to workforce development has led to unique skill mix within the Team, which has allowed effective working at different levels across the Trust. This approach also permits personal development and succession planning within the Team. The latter has been illustrated by the promotion of members of staff within the Team. The revised and innovative establishment has broadened the scope of opportunity to specialise in infection control, whilst enhancing the IPCT performance through an increased range of knowledge, skills and experience. The IPCT is been divided into three teams to effectively cover the Directorates, with each team consisting of a Sister, Staff Nurse and a HCA.

Given the expansion of the Team and the different training requirements, the personal development of individual team members remains a key priority. The IPCT at PHNT is unusual in the skill-mix it and developing training programmes for all members of the Team is led by the Education Lead for the Team, Gill Sargeant and Dr Peter Jenks. These include diploma- and degree-level infection control modules for post-registration healthcare professionals and a Level 2 course for Healthcare Assistants. In addition, the Team runs a Postgraduate Certificate in Infection Prevention and Control, which provides the only post-graduate infection control training in the region. All members of the Team received Individual Performance and Development Reviews last year. Over the next 12 months, personal objectives will be integrated into the Annual Programme of Work to develop ownership of Trust objectives and facilitate achievement of key outcomes.

Over the last year, Marie Whitley obtained a Postgraduate Certificate in Management from the Open University. Marie Whitley and Claire Hail attended Module 1 of the Postgraduate Certificate in Infection Prevention and Control. Sophie Reid undertook course on An Introduction to Public Health Intelligence run by the South West Public Health Observatory and the University of Bristol. She also attended the Department of Health Healthcare Associated Infections Mandatory Surveillance Stakeholders Meeting, the Surgical Site Surveillance Service C-Section Pilot training day and a ICNet User Group meeting. Dilys Hill completed the HCA level 2 module in Infection, Prevention and Control. Linda Mole and Lynne Sugg attended the HPA Surgical Site Infection training day at their headquarters in London. Cathy Ford attended the Infection Prevention Society's Conference, held at Harrogate. Members of the Team are actively involved with the Infection Prevention Society, with regular attendance at conferences. Dr Peter Jenks is a member of the Department of Health Expert Advisory Group on MRSA and *C. difficile*. These groups have produced national guidelines on MRSA screening and surveillance, as well as on *C. difficile* reduction. He is a member of the Council and Grants Secretary of the Hospital

Infection Society and is a Clinical Advisor to the Department of Health Healthcare Associated Infection Improvement Team. He was also a member of the Hospital Infection Society Working Party for Facilities for Minor Surgical Procedures

Surveillance

1. Background

Surveillance of healthcare-associated infection can be defined as the systematic recording of infections using agreed definitions, with analysis, interpretation and dissemination of the results so that appropriate action can be taken. Surveillance is necessary to monitor trends in infection rates over time, detect outbreaks, provide information for the planning of services and allocation of resources, and to evaluate the impact of any interventions aimed at reducing infection risks. By targeting appropriate interventions, surveillance contributes significantly to reducing rates of infection and is recognised as an important contributor to good infection control practice.

In October 2000, the Department of Health announced that some aspects of surveillance would be compulsory. In April 2001, a mandatory scheme for reporting Staphylococcal bacteraemias (including MRSA) commenced and the results of that surveillance are published regularly. In an attempt to account for variations in hospital activity, absolute numbers of MRSA bacteraemias are converted into a rate using the bed availability and occupancy (KH03) annual return. From 1st September 2003, Acute Trusts have also had to report bacteraemias due to glycopeptide resistant enterococci (GRE) and since January 2004, alert organism surveillance was extended to *C. difficile*. The national surveillance scheme also includes orthopaedic surgical site infections and the reporting of 'serious untoward incidents associated with infection'. The infection rates for PHNT are published in comparison with other Acute Teaching Trusts.

2. Mandatory surveillance reporting

Plymouth Hospitals NHS Trust complies fully with the mandatory surveillance system for healthcare-associated infections including staphylococcal (including MRSA) and GRE bacteraemias, *C. difficile* and orthopaedic surgical site infections. All 'serious untoward incidents associated with infection' are reported to the Strategic Health Authority (SHA) and HPA. Monthly surveillance reports are circulated to all clinical areas, Directorates and the Trust Board, and reports are also produced on a quarterly basis for Departments. The reports include surveillance and outbreak data, audit results, compliance with policy, link practitioner activity and information on antimicrobial prescribing. As well as being incorporated into the Trust Board and Directorate performance management process, they are also reviewed at the Infection Prevention Board via the ICC and Clinical Governance Steering Group. In addition, the IPCT also produces monthly reports that include surveillance data on new cases of MRSA, MRSA bacteraemias, all other hospital-acquired bacteraemias, *C. difficile*, gentamicin- and quinolone-resistant gram-negative infections, GREs and ESBL-producing coliforms.

3. New clinical cases of MRSA

As well as mandatory reporting of MRSA bacteraemias, all new cases ('first isolates') of MRSA are also recorded. These can be divided into 'infections', where MRSA is isolated from clinical specimens, and 'colonisation', where MRSA is isolated from screening swabs from patients who are harmlessly carrying the organism. Many hospitals use such data as a useful marker of the overall burden of MRSA.

Patients admitted to PHNT who are known to be colonised with MRSA are identified by an alert on their electronic record and in their clinical notes. These patients, as well as all newly identified inpatient cases, are visited by the IPCT who instigate appropriate infection control measures and prescribe topical MRSA suppression therapy through a Patient Group Direction.

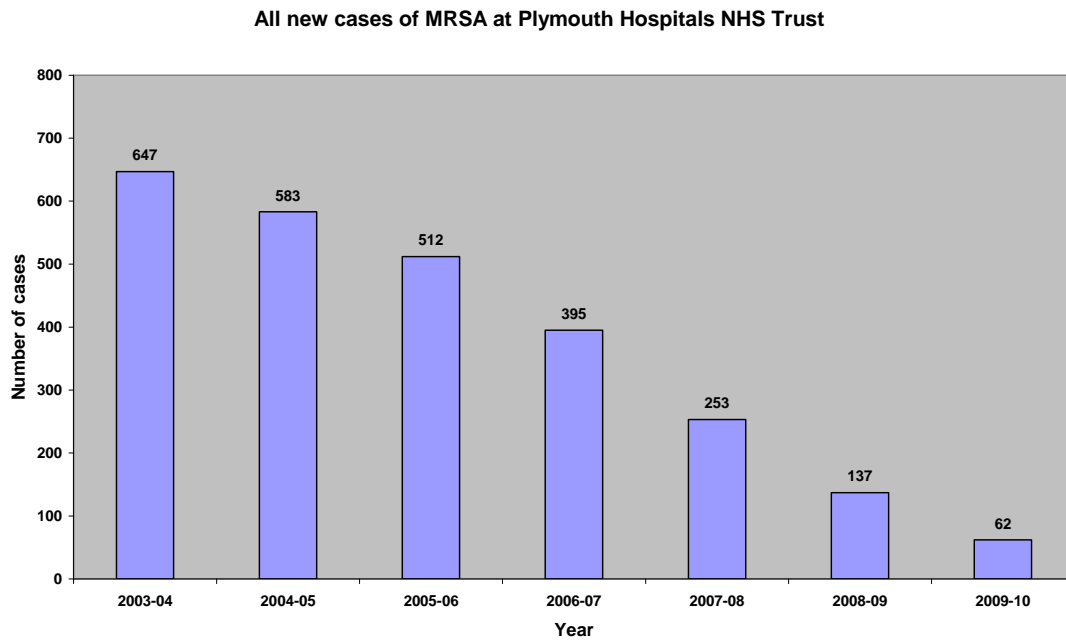
Over the last year targeted screening and suppression of MRSA currently occurs in the following high-risk patient groups:

1. Patients transferred from other hospitals or long term healthcare facilities, including nursing homes
2. Patients known to be previously colonised with MRSA
3. All elective admissions
4. Admissions to the Critical Care Unit
5. Orthopaedic trauma patients
6. All admissions to the renal, haematology and oncology wards
7. Haemodialysis patients every three months
8. All emergency admissions over the age of 60 years.

The Code of Practice for the Prevention and Control of Healthcare Associated Infections makes it a legal requirement for Trusts to introduce MRSA screening of all emergency admissions as soon as possible, but no later than by March 2011. The Trust expects to be fully compliant with these requirements.

Plymouth Hospitals NHS Trust reported a total of 62 new 'infections' due to MRSA between April 2008 and March 2010, compared to 137 the year before. This represents a fall of 90% since 2003-04 and 55% over the last 12 months (Figure 1).

Figure 1. New cases of MRSA, April 2003 – March 2010



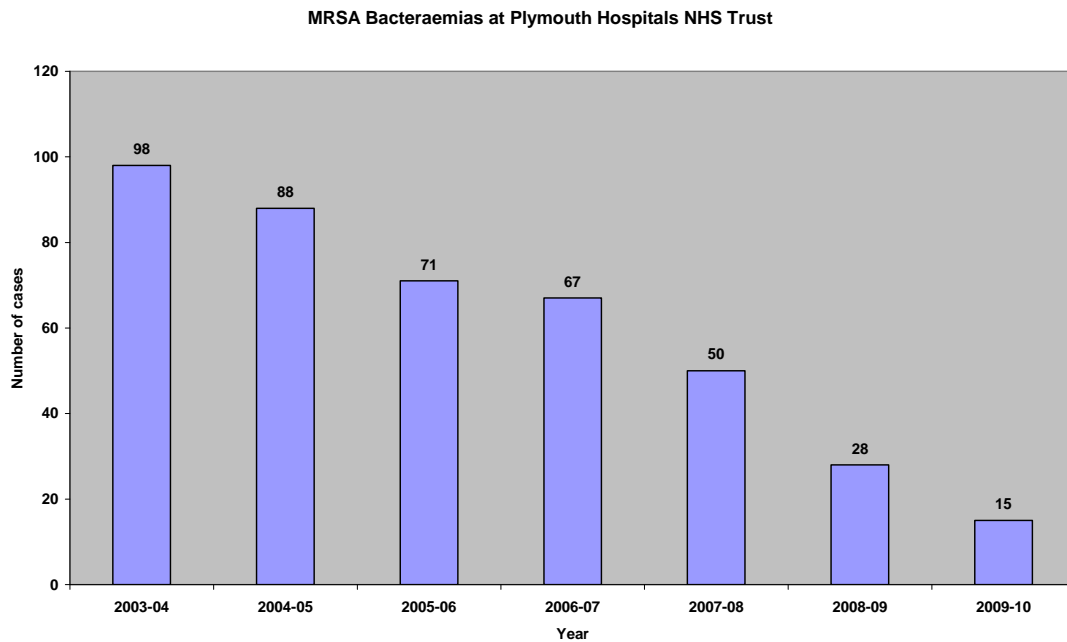
The total number of new MRSA isolates (i.e. those isolated from screening samples as well as clinical specimens) was 446, compared to 703 cases recorded during the previous year. A much higher proportion of cases, 566 (86%), were identified by screening patients on admission to hospital.

4. MRSA bacteraemias

The target for PHNT for 2009-10 was to record fewer than 24 MRSA bacteraemias. The Trust is also expected to achieve year-on-year reductions in MRSA.

Plymouth Hospitals NHS Trust reported a total of 15 MRSA bacteraemias between April 2009 and March 2010 (Figure 2), which is equivalent to a rate of 0.8 bacteraemias per 10,000 bed-days. This is 9 cases under target, is a year-on-year reduction, is the lowest number recorded by the Trust and represents a 85% reduction against the baseline year of 2003-04.

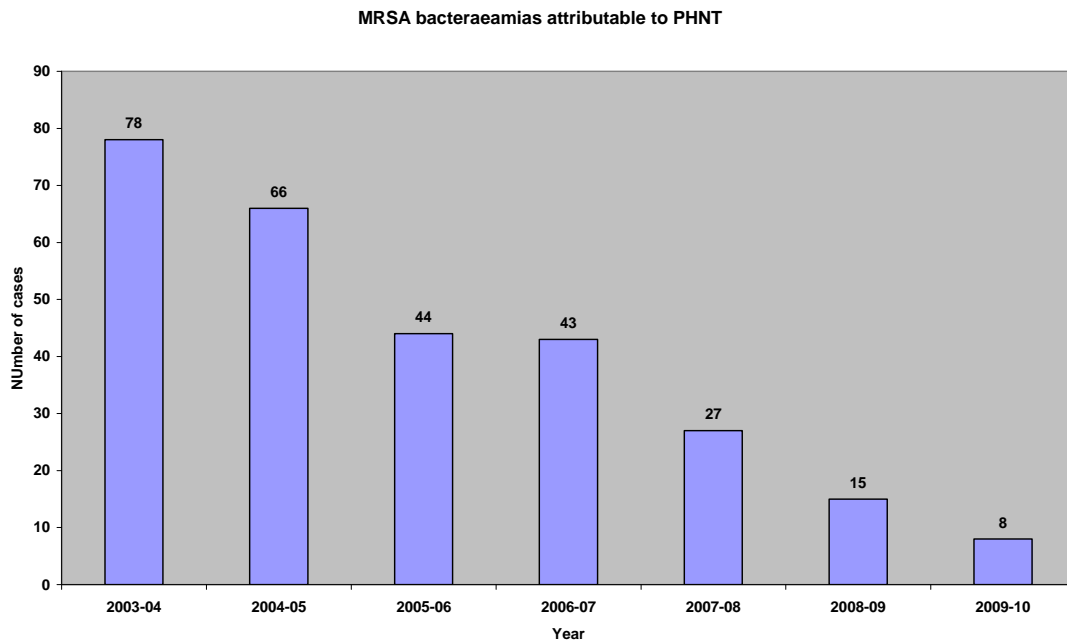
Figure 2. MRSA bacteraemias, April 2003 – March 2010



Root Cause Analysis is carried out on all MRSA bacteraemias at PHNT and is performed by the clinical team caring for the patient with support from the IPCT. The results of these RCAs are reported to the Infection Prevention Board and series of recommendations made. Monitoring of actions arising from RCAs is also monitored by the Infection Prevention Board.

One MRSA bacteraemia was from a patient in a Community Hospital to which PHNT provides Microbiology services. Although these cases were not sent from this Trust, the rules of reporting mean that they contribute towards the overall figure for PHNT. 'Community-acquired' bacteraemias are defined as those occurring in patients who have been in hospital for less than 48 hours. Many patients fulfilling this criterion will have acquired MRSA through previous contact with the healthcare system. Using this definition, a further 6 of the 15 reported MRSA bacteraemia episodes would be classified as 'community-acquired'. Of these, 5 patients had not been admitted to PHNT for at least the previous 3 months. From April 2010, only cases occurring 48 hours or more after admission to PHNT will be attributable to the Trust. Since 2003-04, there has been a 90% reduction in the number of such cases attributable to PHNT (Figure 3):

Figure 3. MRSA bacteraemias attributable to Trust, April 2003 – March 2010

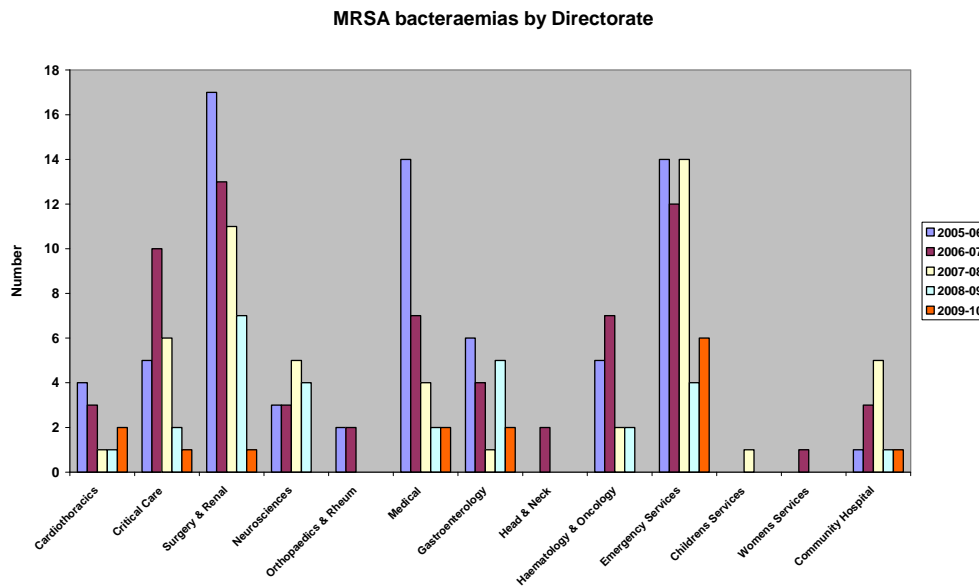


Of the 15 cases of MRSA bacteraemia reported, 12 (80%) were in male patients. The mean age of affected patients was 68 years, with a range of 27 – 90 years. In total, 73% of patients were over 60 years and 67% were over 70 years.

Of the 15 cases reported, 4 (27%) were in patients who were not previously known to be MRSA-positive (i.e. the bacteraemia was their first MRSA-positive isolate). This is a similar figure to last year, but a reduction on previous years, suggesting that screening and suppression programme has been successful in identifying and decolonising carriers prior to development of a bacteraemia. Prevention of further cases may be possible by the expansion of the current MRSA screening and suppression programme to cover all emergency admissions. Two patients accounted for four MRSA bacteraemia episodes.

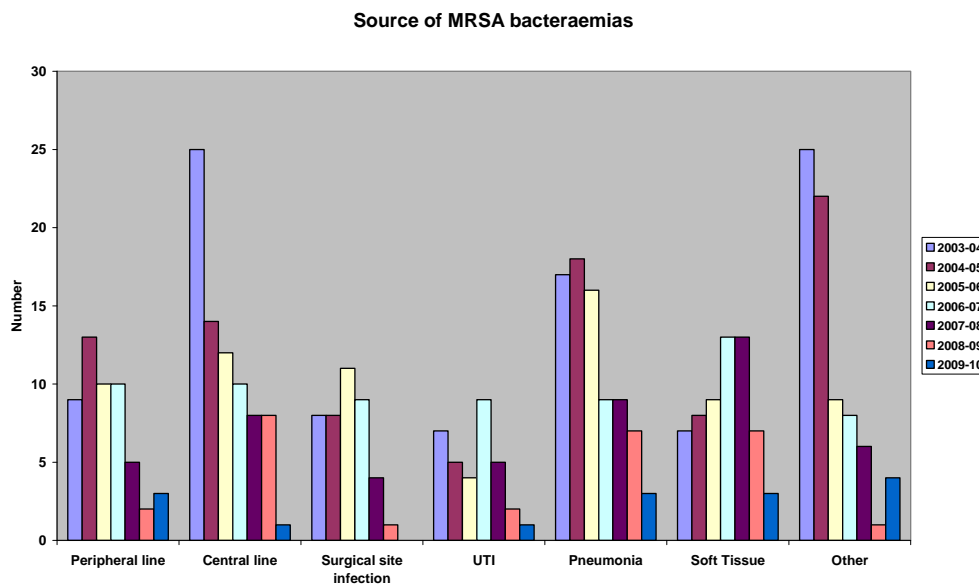
The 'source' clinical area is defined as the speciality from which the blood culture was sent and does not mean that MRSA was acquired in this area. The distribution of cases by Directorate over the last four years is given in Figure 4. Changes to Directorate structures means that comparison to figures from earlier years is not possible. Of the 8 cases attributable to PHNT, 2 cases occurred in each of the Gastroenterology, Cardiothoracic and Medical Directorates and one each in Critical Care and Surgery and Renal Services.

Figure 4. Distribution of MRSA bacteraemias by Directorate



The distribution of cases over the last 5 years by underlying condition or source is shown in Figure 5. Of the 15 total recorded MRSA bacteraemias, one was associated with infection of a central vascular catheter and 3 with peripheral lines (2 episodes were linked to the same patient). Although the number of bacteraemias due to underlying soft tissue infection was similar, there were no cases arising from surgical site infections. This is likely to be due to an increase in screening pre-operative patients for MRSA and the expansion of the Surgical Site Surveillance Service, with feedback of infection rates to Directorates and individual surgeons. Three of the MRSA bacteraemias were secondary to pneumonia. The single bacteraemia that was secondary to infection of the urinary tract was associated with an indwelling urinary catheter. Of the 8 cases attributable to PHNT, 3 were associated with peripheral lines, one with pneumonia, one with a central line and in 3 cases the source was unclear.

Figure 5. Distribution of MRSA bacteraemias by source



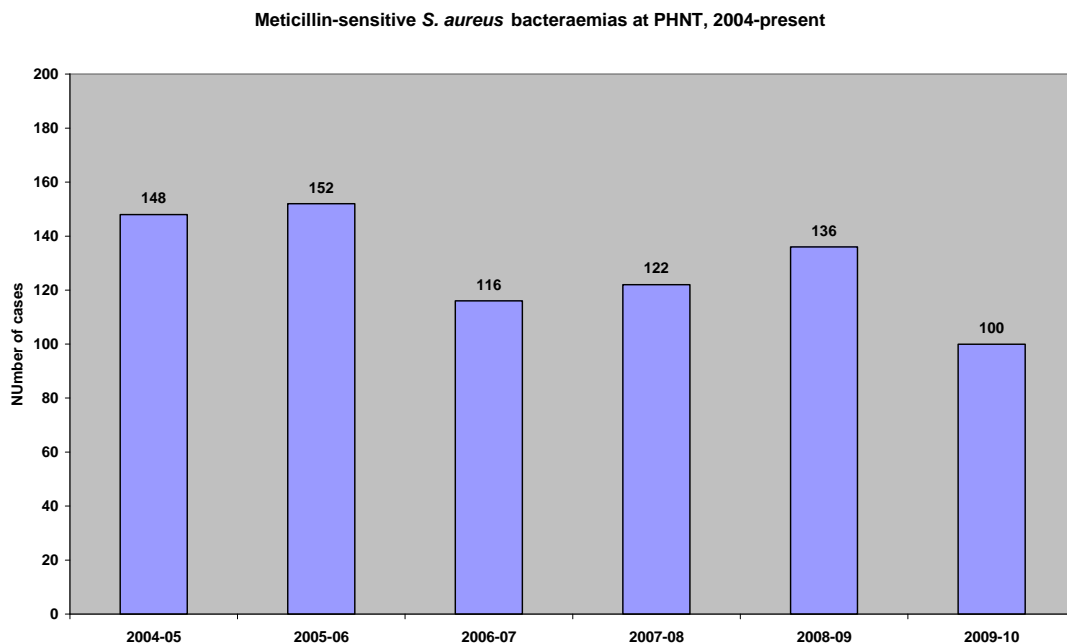
In order to further reduce MRSA at PHNT, the following strategies are planned:

1. Universal screening of all Emergency Admissions for MRSA will be implemented by March 2011
2. There will be continued effort to reduce the number of infections associated with medical devices, including intravascular and urinary catheters. This will include use of a Daily Peripheral Line and Urinary Catheter Management Tool, supporting the 'Saving Lives' programme across the Trust and working in collaboration with the Vascular Access Team
3. The surveillance of post-operative wound infections, including post-discharge follow up, will continue for most surgical procedures performed at PHNT
4. Root Cause Analysis (RCA) will be performed on all MRSA bacteraemias and hospital-acquired cases of MRSA, with the results of these investigations and their recommendations will be monitored by the Infection Prevention Board

5. Meticillin-Sensitive *S. aureus* (MSSA) bacteraemias

There was a reduction in the number of bacteraemias due to Meticillin-Sensitive *S. aureus* (MSSA) from 136 to 100, which is the lowest number on record (Figure 6). The interventions that have been implemented to reduce cases of MRSA are also effective against MSSA and this is likely to explain this fall.

Figure 6. MSSA bacteraemias, April 2004 – March 2010



6. Hospital-Acquired Bacteraemias

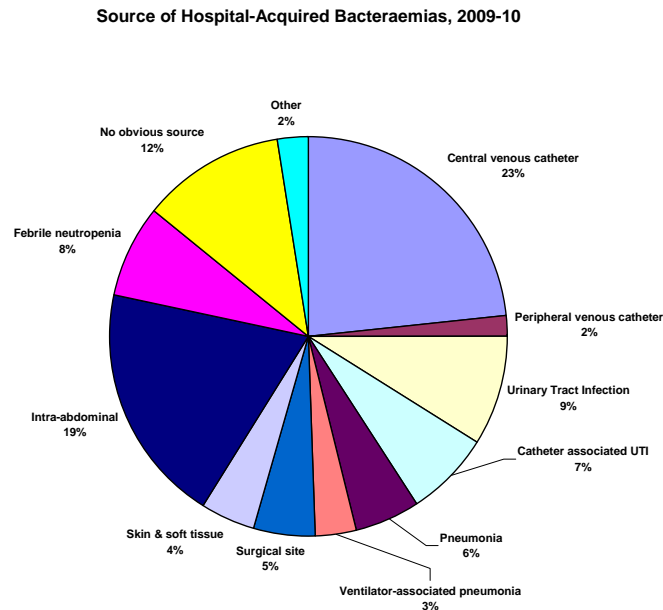
Over the last 12 months, there has also been surveillance of all hospital-acquired bacteraemias. Patients with a bacteraemia were identified by daily review of all positive blood cultures, followed by clinical confirmation using standard definitions. The main criterion for a bacteraemia to be recorded as hospital-acquired is that it was taken more than two days after admission. Information from patients with bacteraemia was collected by the IPCT, reviewed by a Consultant Microbiologist and included demographic, infection and risk factor data.

Between April 2009 and March 2010, 16,410 blood culture sets were taken at PHNT. Once repeat isolates were removed, 253 patients were considered to have developed one or more episodes of hospital-acquired bacteraemia, which is equivalent to 2.2 patients per 1,000 admissions (compared to 2.6 and 2.8 per 1,000 admissions for the last two years). Over the 12-month period, 187,540 patient-days were reported for the Trust, giving a mean pooled rate of 1.35 bacteraemia per 1,000 patient-days (compared to 0.85 bacteraemia per 1,000 patient-days last year). A national surveillance study of hospital-acquired bacteraemias in English hospitals covering 3 million patients between 1997 and 2002, reported 3.5 patients with bacteraemias per 1000 admissions and a mean rate of 0.6 bacteraemias per 1,000 patient-days.

The majority of hospital-acquired bacteraemias occurred in the Critical Care, Haematology and Oncology, Gastroenterology, and Cardiothoracic Directorates. This is likely to reflect factors that influence risk of bacteraemia such as severity of illness, immunosuppression and invasive devices.

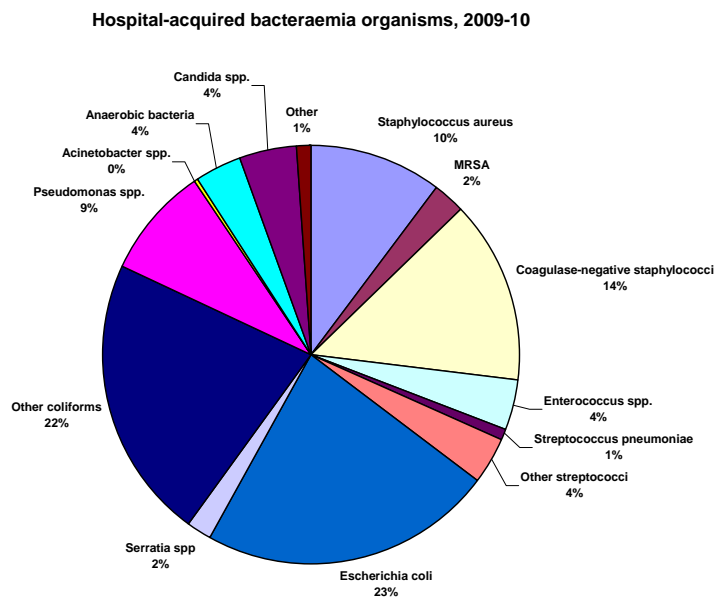
The underlying sources of hospital-acquired bacteraemias for the whole hospital are shown in Figure 7. Central venous catheters remained the commonest source and the number of cases was similar to that recorded the previous year. There was a significant reduction in the number of bacteraemias secondary to peripheral lines, reflecting the work done to improve the management of these medical devices. Although the number of bacteraemias due to underlying soft tissue infection was virtually unchanged, there were fewer cases secondary to surgical site infections than the baseline year of 2007. This is likely to be due to the expansion of the Surgical Site Surveillance Service, with feedback of infection rates to Directorates and individual surgeons.

Figure 7. Sources of hospital-acquired bacteraemia



Information on the micro-organisms causing hospital-acquired bacteraemias is given in Figure 8. The commonest individual species was *Escherichia coli*, which accounted for 23% of cases. Other coliforms and *Serratia* spp. were responsible for a further 24% of cases. Staphylococci accounted for 26% of cases, with 10% due to Meticillin-Sensitive *Staphylococcus aureus*, 2% due to MRSA and 14% due to coagulase-negative staphylococci.

Figure 8. Micro-organisms causing hospital-acquired bacteraemia

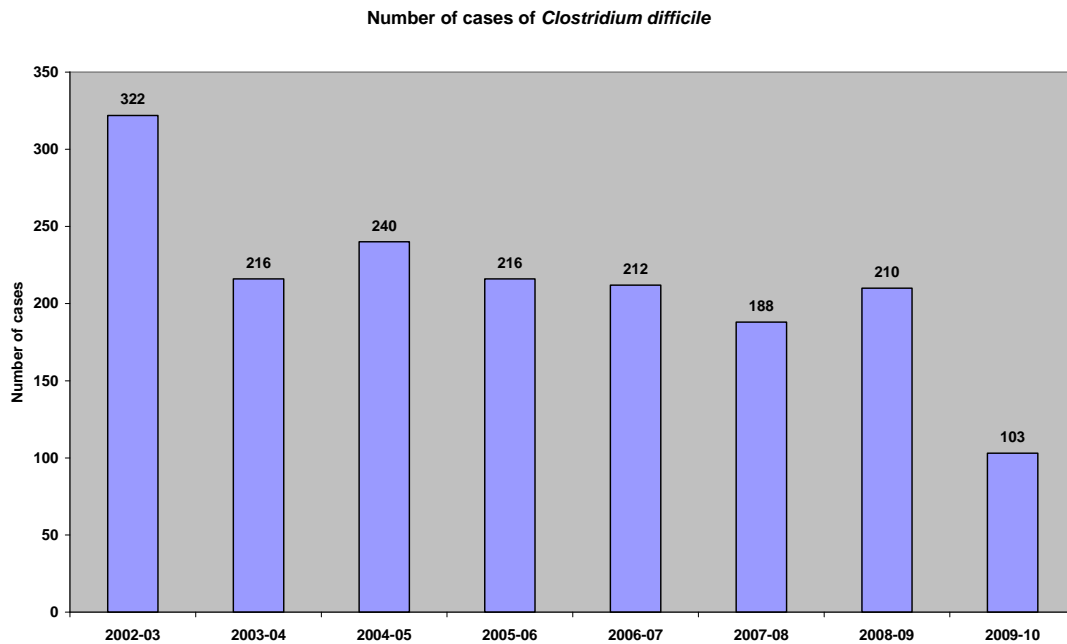


7. Cases of *Clostridium difficile*

For the year 2009-10, PHNT was set a target to record fewer than 132 post-72 hour cases of *C. difficile*. The Trust recorded 77 cases, 55 under trajectory and a 52% reduction on the 160 cases that had been recorded the year before.

The IPCT also records all cases of *C. difficile* occurring at any time during admission to PHNT and this allows comparison with a longer historical period. Between 1st April 2009 and 31st March 2010, there were 103 cases, which was the lowest figure on record and represented a reduction of 51% on the previous year (Figure 9). This is likely to be due to the significant efforts to reduce *C. difficile* that were introduced in March 2009, including multidisciplinary review of all cases, joint management with Gastroenterology, improved diagnosis, RCA of all cases and continuing antibiotic controls.

Figure 9. Cases of *Clostridium difficile* infection, 2002-10



8. Mortality from *C. difficile*

In the last 12 months, NHS South West undertook an audit of deaths from *Clostridium difficile* in 2008. Trusts in the South West were asked to return outcome data on cases, including whether the patient had survived or not. Other sources of information included Serious Untoward Incident reporting to the Strategic Health Authority, as well as data from the Office of National Statistics and the South West Public Health Observatory.

The outcome at PHNT was significantly better than any other hospital in the South West, with a mortality of 2.1/100,000 compared to mean mortality across the South West of 12.1/100,000. Likewise, the case mortality was significantly lower at 2.8%, compared to the average case mortality for the region of 12.8%.

These figures are a reflection of the intense focus on the management of all patients with active or previous *C. difficile* disease. This includes:

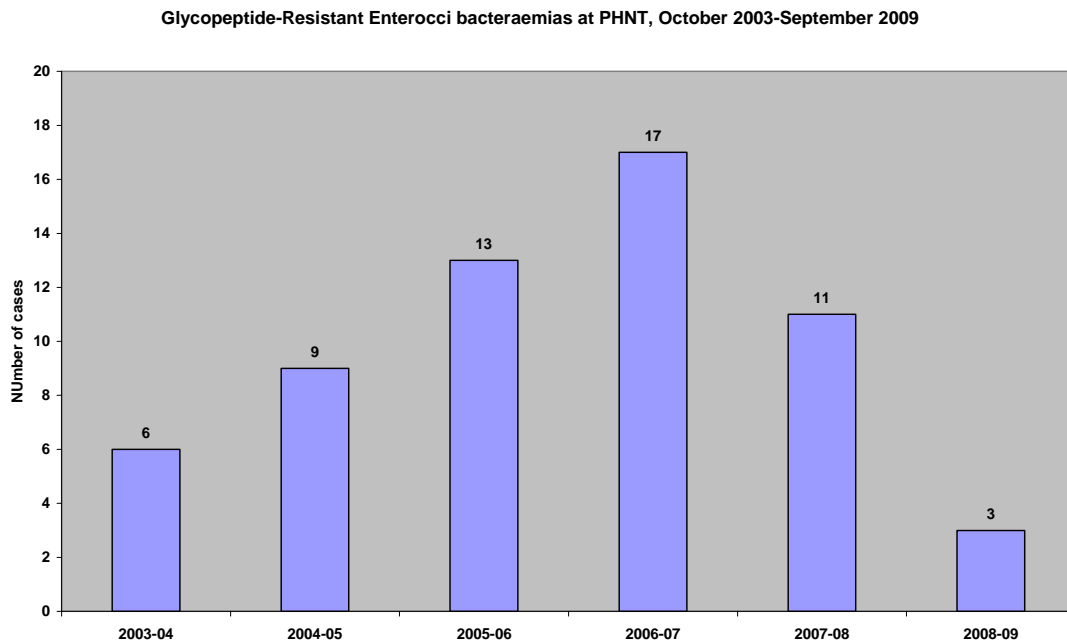
- a) Joint management of cases by the named Consultant and the Gastroenterology team
- b) All cases reviewed daily by the Infection Prevention and Control Team
- c) Daily multidisciplinary operational meeting to review all inpatients with *C. difficile*, including a senior nurse representative from the ward, infection control, dietician and antimicrobial pharmacist
- d) Incident meeting and Root Cause Analysis of all new cases, with defined management plan for each patient and learning outcomes from each case
- e) Feedback of antibiotic prescribing to all clinical areas
- f) Treatment algorithm to optimise therapeutic management of severe cases

The low mortality from *C. difficile* at PHNT is also likely to reflect the intense efforts to prevent more virulent strains, such as ribotype O27, becoming established within the hospital. Although the Trust has had a number of instances when this strain has been imported, control measures have prevented secondary spread. There have been no recorded cases of the O27 strain within the Trust in the last 12 months.

9. Glycopeptide-Resistant Enterococci bacteraemias

GRE bacteraemias occur mainly in specialist clinical areas, particularly transplantation, renal, haematological malignancy and critical care units. Between October 2008 and September 2009, PHNT reported 3 GRE bacteraemias, compared to 11 the previous year (Figure 10). This was the lowest number of cases on record. The numbers of GRE reported by any Trust is small and caution should be used when comparing individual Trusts.

Figure 10. Glycopeptide-Resistant Enterococci bacteraemias at PHNT, 2002-09



10. Orthopaedic and other surgical site infections

The Surgical Site Infection Surveillance Service (SSISS) assesses speciality-specific surgical site infections on a quarterly basis. Plymouth Hospitals NHS Trust has participated with this scheme since its introduction in 1997. Standard case definitions and surveillance methodology are provided to enable comparable rates to be produced. Although the reporting of orthopaedic surgical site infections has recently become compulsory, other components of this scheme remain voluntary.

Over the last year surgical site surveillance has been performed on all major surgical procedures carried out at PHNT. Post-discharge surveillance is carried out for all procedures using a standard questionnaire that is returned 28 days after the procedure with telephone follow up of selected cases. Reports are produced and fed back to individual surgeons and Directorates on a quarterly basis. Feeding back infection data is a crucial component of a quality improvement programme and is known to reduce post-operative wound infection rates. Significant reductions in surgical site infections have been achieved at PHNT in those surgical procedures for which surveillance has been established for some time (notably in cardiac and vascular surgery). There were no MRSA bacteraemias associated with surgical site infections and there have been reductions in all hospital-acquired bacteraemias (i.e. not just due to MRSA) attributable to surgical site infections since the service commenced. The cumulative infection rates at PHNT for all surgical specialities are compared with the cumulative national rates in Table 1.

Table 1. Surgical site infection rates during initial admission or on readmission

Operation	PHNT rate	National rate
Coronary Artery Bypass Graft	2.2.	5.0
Vascular surgery	0.8	3.8
Limb amputation	2.5	7.1
Total Hip Replacement	1.3	1.1
Total Knee Replacement	0.5	0.9
Hip hemiarthroplasty	3.1	3.9
Repair of neck of femur	1.1	2.0
Reduction of long bone fracture	0.6	2.3
Open reduction long bone fracture	1.5	1.9
Large bowel surgery	6.4	10.5
Small bowel surgery	5.1	9.0
Cholecystectomy	0.5	1.7
Bile duct, liver, pancreatic surgery	5.6	10.5
Gastric	1.5	8.2
Abdominal hysterectomy	1.5	2.3
Lower Segment Caesarean Surgery	0.9	5.0
Breast Surgery	4.3	NA

Because so few hospitals performed post-discharge surveillance, benchmarking all infections (inpatients, readmits and post-discharge) is more difficult. However, the rates at PHNT for all procedures are similar to or lower than the national rate. Of note the PHNT rate for Total Hip Replacement is 1.5% and the national rate is 1.8%

Untoward incidents including outbreaks

1. Outbreaks of Diarrhoea and Vomiting

Between April 2009 and March 2010, 24 wards were closed due to outbreaks of vomiting and diarrhoea at PHNT (Table 2). The operational impact of this was well managed and in contrast to other hospitals in the South West there was relatively little disruption. A total of 410 patients and 123 healthcare workers were affected. Stool samples from all 24 wards were positive for norovirus. These outbreaks accounted for 124 ward-closure days (defined as one ward closed for one day) with a mean period of ward closure of 5.2 days (range 1-8 days). A further 13 wards had a bay restricted or closed for periods that ranged from 1-7 days.

Table 2. Outbreaks of diarrhoea and vomiting, April 2009 – March 2010

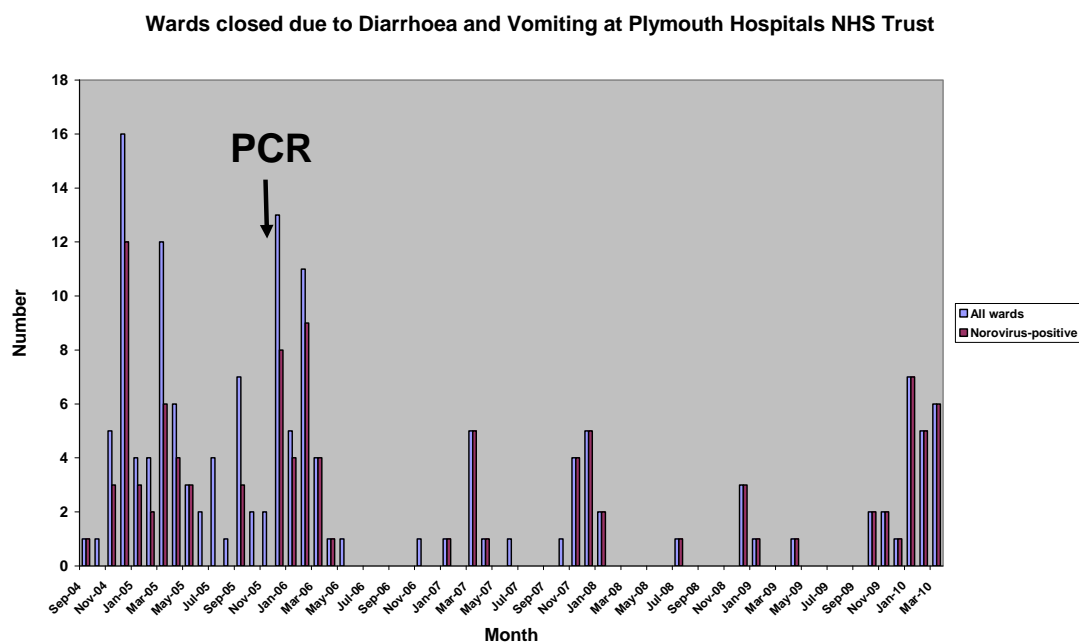
Month	Wards	Patients	Staff	Norovirus positive	Days
April 2009	1	17	21	1	8
May 2009	0	0	0	0	0
June 2009	0	0	0	0	0
July 2009	0	0	0	0	0
August 2009	0	0	0	0	0
September 2009	0	0	0	0	0
October 2009	2	24	5	2	9
November 2009	2	31	14	2	11
December 2009	1	16	12	1	9
January 2010	7	122	17	7	40
February 2010	5	95	27	5	24
March 2010	6	105	27	6	23
Total	24	410	123	24	124

The management of outbreaks by the IPCT has been greatly facilitated by the introduction of rapid diagnostic technology (Polymerase Chain Reaction, PCR). Whereas previously wards were closed as a precaution as soon as patients developed symptoms of diarrhoea and vomiting, it is now possible to determine on the same day whether norovirus is implicated or not. When the PCR test is positive, wards are normally closed and standard control measures put in place (see below). When the test is negative, it has been safe to leave wards open. Consequently, the number of unnecessary ward closures has been dramatically reduced, with substantially less disruption to the operational running of the hospital (Figure 11).

The outbreaks were controlled by containment, enhanced infection control procedures, and environmental cleaning and decontamination. The following control measures were taken:

1. Outbreak meetings were convened and were generally attended by ‘key players’, including representatives from the cleaning contractor, affected wards, the operational team as well as the IPCT. The IPCT regularly attends the daily operational meetings
2. Information was disseminated throughout the Trust via daily ‘Ward Closure’ and ‘Outbreak Update’ emails.
3. Symptomatic patients were isolated or cohorted
4. Staff movements were restricted
5. Enhanced infection control measures were implemented
6. Symptomatic staff remained off work until 48 hours after their last symptoms
7. Enhanced environmental cleaning and decontamination was implemented in affected areas. Wards were deep-cleaned 48 hours after the last symptoms were reported.

Figure 11. Monthly ward-closure before and after the introduction of norovirus PCR.



A comparison with other years is given in Table 3.

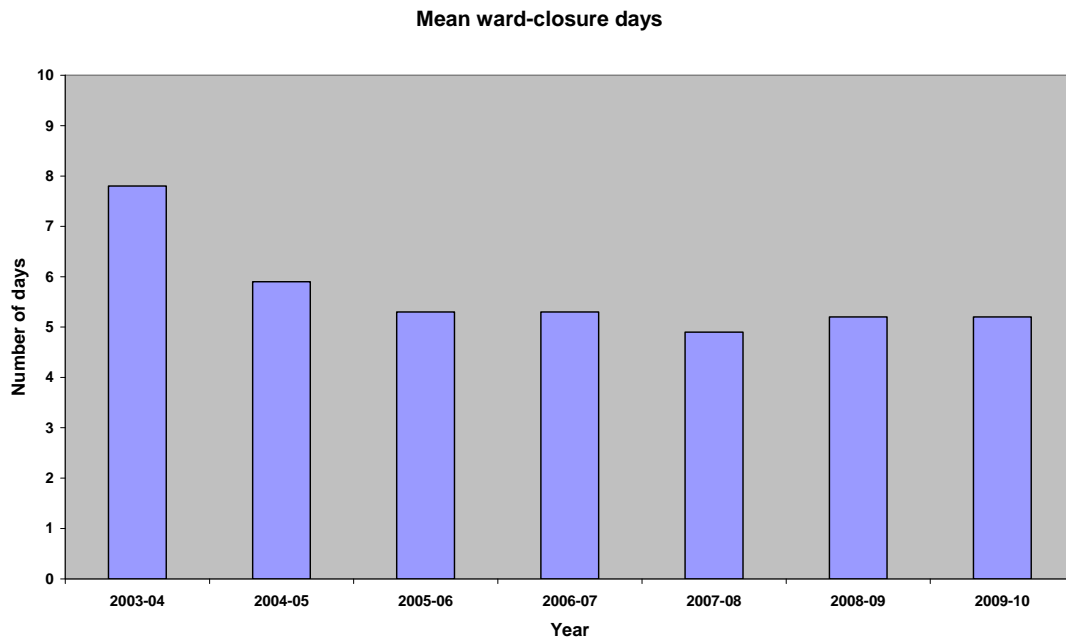
Table 3. Outbreaks of diarrhoea and vomiting, September 2004 – March 2010

Year	Wards	Patients	Staff	Norovirus positive	Days	Mean days
2004-05*	43	658	208	28	252	5.9
2005-06	60	878	168	35	320	5.3
2006-07	9	150	52	7	48	5.3
2007-08	14	204	36	12	69	4.9
2008-09	5	84	25	5	26	5.2
2009-10	24	410	123	24	124	5.2

* Note this is a part year (September 2004 – March 2005)

The mean period of ward closure has fallen from 7.8 days in 2003-04 to 5.2 days (Figure 12). Data from the 2003-04 norovirus outbreak indicate that across the South-West Region, wards were closed for a mean of 15 days (range 5-23 days).

Figure 12. Mean ward-closure days for PHNT, 2003-10.



The epidemiology of the outbreaks is highly suggestive of multi-focal outbreaks with the virus being brought into the hospital on numerous different occasions. Similar outbreaks were observed over the same period in other Trusts in the region and also in the community.

During the year, there continued to be effective collaboration between the Operational and IPCT which led to prompt and successful containment. All wards that were closed or restricted remained closed to discharges and/or admissions as recommended by the IPCT.

All ward closures and other Serious Untoward Incidents are reported to the HPA and SHA.

2. Other infection-related incidents

There were 38 other infection-related incidents dealt with by the IPCT between April 2008 and March 2009 and these are outlined in Table 4. All ward closures and other Serious Untoward Incidents are reported to the Health Protection Agency and Strategic Health Authority as part of the mandatory surveillance of Healthcare Associated Infection. Reports on these incidents are available from the IPCT.

Table 4. Infection-related incidents, April 2009 – March 2010

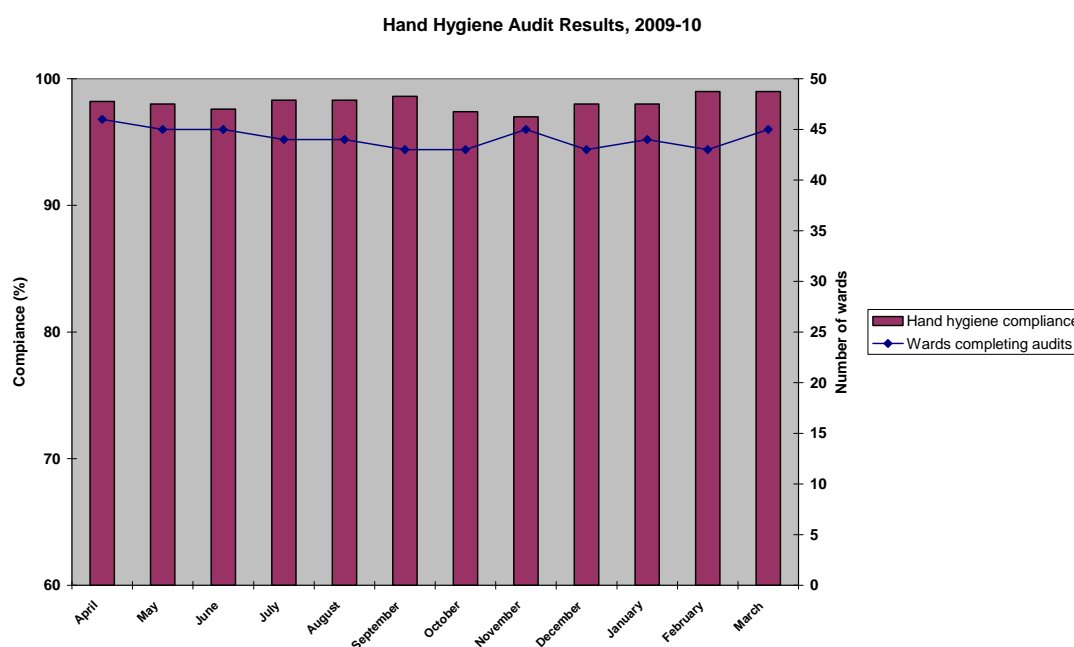
Month	Incident
April 2009	Review of case of sporadic CJD
February-March 2009	VRE on Carey Ward
February -March 2009	<i>Clostridium difficile</i> on Hartor Ward
January-March 2009	<i>Clostridium difficile</i> on Wolf Ward
March 2009	MRSA on Moorgate Ward
May 2009	Shingles on Argyll Ward
April 2009	<i>Clostridium difficile</i> on Stonehouse Ward
May 2009	<i>Clostridium difficile</i> on ASU
May 2009	VZV on TCW
January 2009	MRSA on Pencarrow Ward
June 2009	<i>Clostridium difficile</i> on Monkswell Ward
June-July 2009	<i>Clostridium difficile</i> on Hound Ward
April-June 2009	<i>Clostridium difficile</i> on Stonehouse Ward
April 2009	MRSA on Stonehouse
June-July 2009	<i>Clostridium difficile</i> on Birch Ward
September 2009	<i>Clostridium difficile</i> on Hound Ward
August-September 2009	<i>Clostridium difficile</i> on Honeyford Ward
July-August 2009	<i>Clostridium difficile</i> on Braunton Ward
July-August 2009	MRSA on Pencarrow Ward
September 2009	<i>Clostridium difficile</i> on Carey Ward
August 2009	<i>Clostridium difficile</i> on Stonehouse Ward
August-October 2009	<i>Clostridium difficile</i> on Hembury Ward
June-October 2009	<i>Clostridium difficile</i> on Hartor Ward
June-August 2009	MRSA on Crownhill Ward
October-November 2009	<i>Clostridium difficile</i> on Hound Ward
July-October 2009	MRSA on Lynher Ward
July 2009	MRSA on Penrose
July-September 2009	MRSA on Stonehouse
September 2009	MRSA on Wolf
Dec 2009-January 2010	<i>Clostridium difficile</i> on Hembury Ward
October-December 2009	<i>Serratia marcescens</i> on Critical Care
January 2010	<i>Clostridium difficile</i> on Monkswell Ward
January 2010	<i>Clostridium difficile</i> on ASU/Burrator
January-February 2010	<i>Clostridium difficile</i> on Bracken
February 2010	Rotavirus on NICU
February 2010	<i>Pseudomonas aeruginosa</i> in cardiac surgery
Nov 2009-January 2010	MRSA on ASU/Burrator
March 2010	MRSA case on Torrington CICU

Hand hygiene and aseptic protocols

1. Audit of compliance with hand hygiene

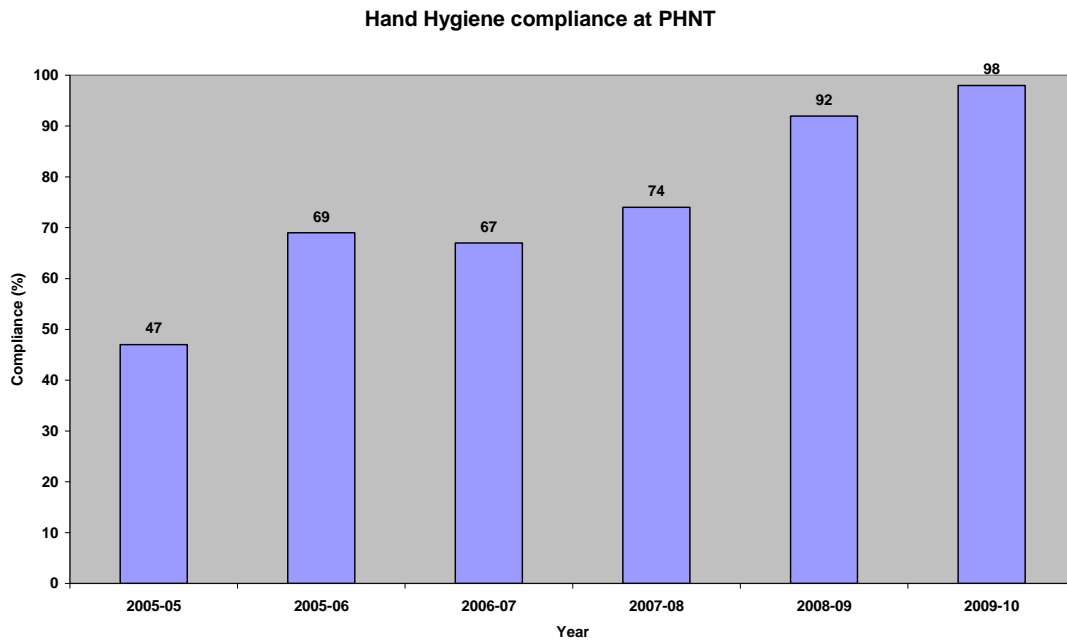
During the year, all clinical areas were audited on a monthly basis. The ward Infection Control Link Practitioner performs 2 audits per quarter with the third being carried out by a member of the IPCT. Each audit involves observation of the frequency and quality of hand hygiene in clinical areas. The pass mark for hand hygiene audits was 95% and wards failing to achieve this are expected to perform weekly audits until they consistently achieve this standard. Between April 2009 and March 2010, the overall Trust compliance was 98% (Figure 13).

Figure 13. Monthly hand hygiene compliance, April 2009-March 2010



The Trust's overall mean Hand Hygiene compliance for the year compared to previous years is shown in Figure 14. This sustained improvement in hand hygiene compliance reflects the high priority given to hand hygiene by the IPCT as well as the impact of the cleanyourhands, 'Five Moments' and other campaigns (see below).

Figure 14. Annual hand hygiene compliance, 2004-10



Each clinical area also received a qualitative audit that examines hand-washing technique the GloBox. These training sessions have also been used to raise staff awareness of contact dermatitis. In addition, hand hygiene audits are performed in Departments on a quarterly basis, with two per year performed by the IPCT. All audit results have been reported back to medical and nursing staff working in the areas in order to improve practice and are also included on the balanced scorecard of reporting and on the IPCT display cabinet in the main foyer. Immediate verbal feedback is given at the time of the audit and areas also receive a written report. Wards are encouraged to display the results of hand hygiene and other audits at their entrance or on a dedicated infection control notice board.

2. Cleanyourhands and ‘Five Moments’ campaign (report by Susan Hunt)

The Cleanyourhands campaign was launched by the National Patient Safety Agency (NPSA) following Patient Safety Alert 04 (2nd September 2004). The programme is designed to improve hand hygiene compliance and reduce hospital-acquired infection. The NPSA reissued the Patient Safety Alert in September 2008 at the Cleanyourhands Summit ‘All hands to the Pump’. The Alert applied to all providers of NHS care in all healthcare settings throughout England and Wales.

The NPSA announced their support for the World Health Organisation (WHO) campaign ‘Five Moments’ and adopted it as the theme for the fifth year of the Cleanyourhands campaign. The Five Moments approach has been developed to reduce unnecessary hand hygiene, to stress the importance of the correct location and time for hand hygiene, and to ensure the chain of transmission is broken by hand hygiene and thus prevent the transmission of infection. ‘Five Moments’ linked with the cleanyourhands campaign in the following ways:

- The WHO guidelines on hand hygiene in healthcare formed the central clinical source for the campaign
- Within the campaign, the 'Five Moments' approach to hand hygiene formed the framework for informing staff when and why hand hygiene should be performed
- This will ensure other information, about how to perform hand hygiene for example, will have an impact on practice

National workshops were rolled out based on a resource pack that provides a range of resources to support training to staff on 'Your Five Moments for Hand Hygiene'. They were designed to enable individual Trusts to interact and support and share experience. The IPCT sent a representative to the June workshop in Bath.

The *cleanyourhands* campaign has historically been quite prescriptive and led by the NPSA. The 'Five Moments' campaign has been designed so that individual Trusts take ownership and develop their own strategy for cascading responsibility for raising awareness and training. The IPCT developed an extensive action plan by August 2009 and on Monday 19th October the Cleanyourhands year five campaign 'Five Moments' was successfully launched on the main concourse. Plymouth Argyle footballers, Chris Clark and Karl Duguid, a local publicist, Lorie Reid, and children from the Happy Days Nursery, helped support the launch, and the local press and our own press and communications team were there to take photographs. Hospital Radio also interviewed members of the IPCT. Chief Executive, Paul Roberts, and Director of Nursing and Midwifery, Julie Hendry, also came along to support the campaign and lend support to the 'Five Moments' message. Throughout the rest of the week the IPCT held twice daily workshops for one hour, offering teaching/instruction on the 'Five Moments' and provided materials for staff to display in their areas. It was also 'International Infection Control Awareness Week' so it was a great opportunity to invite Medical Product Representatives who manned stands on the concourse every day.

Since the launch, the IPCT have continued to roll out the 'Five Moments' message, setting up teaching with Infection Prevention and Control Link Practitioners (IPCLP's) from Wards and Departments, who are cascading the message in their own clinical areas. 'Five Moments' is included in Statutory Update Education Training, Trust Induction, Doctors Induction and F1 Doctors assessments. Professional groups such as the porters, SERCO Supervisors and Dieticians have received teaching from the IPCT with more groups being targeted. This will continue to be a rolling programme of work.

3. 'Five Moments' 2010 Calendar

The IPCT calendar for this year has focused on the 'Five Moments' message. It deliberately makes a feature of a number of link practitioners from a variety of Wards and Departments. Each month demonstrates one of the 'Moments' for hand hygiene and has proved to be a useful teaching aid.

The NPSA asked permission to use the calendar in a 'Five Moments' workshop they were running for the Royal College of Nursing (RCN) to demonstrate it as an example of good practice in promoting the 'Five Moments at the Point of Care' message. Their January 2010 monthly e bulletin featured the PHNT 'five Moments' action plan, launch, training programme and calendar as a national example of 'pulling out all the stops' to highlight the clean *your* hands message.

4. Annual Staff Poster Competition

Our annual poster competition was run throughout October 2010 and was open to all members of Trust Staff. The brief was to design a poster promoting good infection control practices supporting the 'My 5 Moments for Hand Hygiene' campaign. The winning poster was submitted by Neonatologist Consultant Julian Easton and can be seen in the 'Talking Signs' around the hospital. Drs Rosasham Browne and Dr Ceri-Jo Edwards, SHOs in Neurosurgery, came second and third place went to Ms Di Brimacombe, who works in the Planning Department. The prize-giving ceremony was held in the Derriford Health and Leisure Centre and they were presented by Mrs Lesley Darke our acting Chief Operations Officer. Representatives from our Press and Communications Team and the Evening Herald also attended.

5. Talking poster frames

To further raise awareness of the importance of hand hygiene, talking poster frames have been installed at the main entrance and outside all wards in the hospital. The frames contain a hand-washing poster and are triggered by a motion sensor that immediately plays an audio track, reminding staff and visitors to decontaminate their hands. They are designed to grab the attention of the passer by, making sure they take notice of the poster and also use the gel which is also available at the ward entrances. Signs have been installed in the hospital reception, outside wards and in other key locations across the Trust reminding staff, patients and visitors of the importance of hand hygiene and asking them to use the alcohol gel outside the ward areas. The signs are activate intermittently to maximise the effect of their impact.

6. Management of medical devices and Saving Lives

A key strategy to reduce hospital-associated infection is to reduce the infection risk associated with the use of catheters, tubes, cannulae, instruments and other medical devices. 'Saving Lives: a delivery programme to reduce Healthcare Associated Infection including MRSA' was published by the Department of Health in July 2005. This document includes a self-assessment toolkit and a series of High Impact Interventions (HII) designed to focus staff on core clinical practices that impact on reducing Healthcare Associated Infections. A pilot scheme to implement the HII was performed in June 2006 and a Trust-wide roll-out began in January 2007. As from April 2008, all clinical areas completed monthly audits, with close monitoring by the Matrons. Audits returned from wards with patients with peripheral and central lines and urinary catheters are reported Trust-wide in monthly balanced scorecard and most areas display these results at the ward entrance. Considerable improvements in the

management of these devices have occurred and there has been a reduction in the number of infection-related complications associated with these devices.

Audit

1. Audit of clinical areas

Regular audit of clinical areas is performed using a standardised tool supplied by the Infection Prevention Society, which examines aspects of the environment, facilities, individual staff knowledge and clinical practice. As well as covering specific areas, such as hand hygiene, decontamination of patient equipment, sharps, linen, waste management, clinical practice, the environment and ward/department kitchens, the tool can also be used to focus on specific policies, procedures and practice. All clinical areas are audited over a 12-month period. A score of 75% or more is required to pass these audits. If a clinical area fails to reach this score a plan of action is drawn up and the area is re-audited to check compliance with recommendations.

Over the last year, the audit programme was altered to obtain a Trust-wide approach for the process. This was done by:

- auditing one element for each clinical area per month
- the IPCT auditors meeting monthly to ensure a consensus approach was applied by the Team
- sending the audit tool and explanatory notes to each Matron prior to the audit being undertaken
- presenting a monthly written summary report to the ICC and the Infection Prevention Board including an approved action plan with progress of actions formally monitored at subsequent meetings.

The IPCT completed the audit programme, presented monthly audit reports of the findings and the agreed action logs were monitored until completed. The co-ordinated approach taken over the last year provided a robust process that facilitated the engagement of the ward managers and matrons. Frequently, the IPCT were contacted by the ward managers to discuss the audit or to request to be present when the audit was performed. The Matrons began to include audit results and outcomes of actions in their quarterly reports to the Infection Prevention Board. Issues that were noted to affect several areas were reported by the IPCT and managed through the most appropriate department at the request of the Chief Executive.

The ICT audited 100% of all Trust areas. All wards passed and the average infection control clinical audit scores for wards across the Trust was 88%, compared to 85% and 81% from the last two years.

2. Compliance with policies and procedures

A number of audits have been performed to assess compliance with the comprehensive range of infection control policies and procedures, including:

- a) Hand Hygiene compliance
- b) Availability of alcohol hand gel in clinical areas
- c) Compliance with MRSA policy
- d) Compliance with *Clostridium difficile* policy
- e) Compliance with Resistant Gram-Negatives policy
- f) Compliance with Glycopeptide-Resistant Enterococci policy
- g) Management of intravascular catheters
- h) Management of urinary catheters
- i) Management of Sharps
- j) Decontamination of endoscopes
- k) Management of Diarrhoea and Vomiting in a Clinical Area/Outbreak Policy
- l) Linen services
- m) MRSA screening
- n) Antibiotic use
- o) Use of isolation facilities.

The results of these audits are available from the IPCT. The programme of audit for the next 12 months is outlined in the Annual Programme of Work for April 2010 – March 2011.

Training and education

1. Education (report by Claire Hail)

Education is essential to promoting safe practice, and is integral to the overall delivery of an effective infection control service. Each year, an Annual Education Programme is produced to outline Trust-wide training programmes for medical and nursing, allied health professional, cleaning and estates, as well as administrative, clerical and managerial staff. The Plan includes an assessment of the training needs of different staff groups and is designed to meet local and national educational needs and requirements

Infection control was included as an integral part of Induction Training, as well as Statutory Education Update Training. Links with the Trust's Education Department continues with the inclusion of the subject of infection control in the Trust Preceptorship and HCA Level 1, 2, and 3. The IPCT also delivered education sessions to ISS Mediclean staff and Serco supervisors on infection prevention and control, with special reference to cleaning the environment.

The increase in linking practice to academic recognition has resulted in more healthcare professionals completing University partnership Degree-level courses (The University of Plymouth Level 2 'HEAB 236' course 'Practice and Principles of

Infection Control' and the University of Plymouth Level 3 'HEAC 334'). Last year also saw the development of a Post Graduate Certificate in Infection Prevention and Control, which was run in partnership with the Peninsula School of Medicine and Dentistry.

The NHS Core Learning Unit (National Infection Control Training Programme) had been re-instated and available to all NHS staff. continued and had 290 users logged on with a total of 1041 modules studied.

The IPCT continues to provide education in different ways to meet the needs of a very busy organisation. It is often difficult to release staff from their duties and to this end the IPCT are increasingly delivering training at ward level. The Gastroenterology, Health Care of the Elderly and Critical Care Directorates were supported to run Infection Control Weeks to increase awareness of infection control issues and practices.

The Annual Infection Control Study day was held in held May 2009 and was attended by 135 participants. The IPCT also held open forums throughout the year in the main concourse and ran school and staff poster competitions. Information for relatives and visitors is also provide on a notice board in the concourse and on the infection control website

2. Infection Control Link Practitioners (ICLPs – report by Cathy Ford)

Infection prevention and control link practitioners (ICLP's) are nominated by each clinical area to be the link between the IPCT and that clinical area. Many areas have chosen to have more than one staff member sharing the role. A range of different clinical disciplines are now represented as ICLP's, thus successfully reinforcing the message that infection control is everyone's responsibility.

The link practitioners are a vital resource for the trust in the overall strategy to reduce infection. A requirement of the role is that protected time of at least 2 hours per week is allocated to them in order that they are able to carry out their infection control related duties.

The ICLPs play a key role in informing, educating and supporting their colleagues in the clinical areas. They also undertake frequent audits of key aspects of clinical practice. Where audit scores are less than optimal the link practitioner will instigate an action plan to address the areas needing improvement.

Many ICLP's have organised infection control awareness events in their own areas over the last year, with many excellent and novel ideas for raising awareness of key issues and for introducing new concepts such as the 'Five Moments' for hand hygiene.

The IPCT designate specific team members to link with individual clinical areas so that a consistent level of support can be provided to them. As well as this individual support, bi-monthly ICLP meetings are held. These serve both an educational purpose and are a means to help ensure that the ICLPs are kept up to date with IPCT issues.

They also provide a forum for exchanging ideas and for discussion around key issues. The ultimate goal is for ICLPs to cascade infection control education and training to peers in their clinical areas.

In October 2004, a Professional Portfolio for the ICLPs was produced with the assistance of commercial sponsorship and has now been disseminated Trust-wide. It is the responsibility of the ICLP to maintain their portfolio as evidence of their commitment to the prevention and control of infection. This will enable the ICLPs to document and reflect upon their activities and develop within the role. As well as providing guidance and support for the ICLPs, the portfolio will also allow the IPCT to audit individual effectiveness and activity, providing information for evaluation of the network.

Compliance with National Guidance and Standards

1. Code of Practice for the Prevention and Control of Health Care Associated Infections (report by Madeleine Jephcott)

The Health Act approved by Parliament in October 2006 contains a Code of Practice for the Prevention and Control of Health Care Associated Infections (HCAI). The Code places a statutory duty on Trusts to 'ensure patients are cared for in a clean environment, where risk of HCAI is kept as low as possible' and was updated in January 2009.

Under the Code of Practice, the Trust must ensure that:

1. so far as is reasonably practicable, patients, staff and other persons are protected against risks of acquiring HCAI, through the provision of appropriate care, in suitable facilities, consistent with good clinical practice
2. patients presenting with an infection or who acquire an infection during treatment are identified promptly and managed according to good clinical practice for the purposes of treatment and to reduce the risk of transmission.

The Trust is expected to have systems in place sufficient to apply evidence-based protocols and comply with the relevant provisions of the basic Code so as to minimise the risk of HCAI to patients, staff and visitors. The systems for the prevention and control of HCAI are expected to address:

- management arrangements to include access to accredited microbiology services
- clinical leadership
- application of evidence based protocols and practices for both patients and staff
- the design and maintenance of the environment and medical devices
- education, information and communication.

Until March 2009, compliance with the Code was monitored and assessed by the Healthcare Commission. From April 2009, this function was performed by the Care Quality Commission. Failure to observe the Code may result in recommendations for action or an Improvement Notice being issued to the Trust. As from April 2009, Trusts may also be fined or have restrictions on practice placed upon them.

In July 2008, the Healthcare Commission undertook an inspection of PHNT and the report that followed this visit highlighted breaches of eight sub-duties of the Code. The Healthcare Commission undertook a re-inspection in February 2009. At this inspection they found satisfactory improvement in five of the sub-duties but despite an Action Plan implemented by the Trust following the July inspection, it was found to be unsatisfactory in three. As a result of this ongoing breach of the Hygiene Code, the Trust received 'Conditional Registration' with the Care Quality Commission (CQC) in March 2009.

Following this, considerable effort was invested in making significant improvements. Ward Managers and department leads are required to inspect their areas daily using a simple checklist. Matrons and Heads of Service are required to undertake a detailed weekly inspection of all patient areas, and all Executive Directors undertake unannounced inspections of wards and departments twice-weekly, supporting staff in making improvements. The Trust also has a Cleanliness Action Group, chaired by the Chief Executive, with a number of work streams:

- Ward and Department Cleanliness inspections
- Improving ward and department fabric
- Contract cleaning
- Cleaning and standardisation of equipment
- Compliance with Decontamination standards
- Risk Register issues
- Human Resource issues
- Communication

In addition, Internal Audit undertook regular quarterly inspections during 2009-10 which entailed following the process which the CQC would undertake if they visited the trust and undertook an unannounced inspection. The results of these improved throughout the year and in January 2010 the CQC re-visited the Trust and inspected a number of clinical areas. They reviewed 15 measures and found no evidence to suggest that the Trust had breached any of the regulations. This demonstrated the hard work that had been invested in improving compliance from all grades of staff. The CQC were particularly impressed by staffs' knowledge of their individual responsibilities. As a result of this, the Trust now has full, unconditional registration with the CQC.

The IPCT has collated documentary evidence for the assessment of compliance for the infection control elements of the Code of Practice and these files are available for external assessment when required.

2. Clinical Negligence Scheme for Trusts (CNST)

The documentary evidence for the assessment of compliance of infection control within the CNST standards (level 1) achieved the required standard during the external review. These evidence files will be updated as required for any future assessments.

3. Healthcare Commission ‘Standards for Better Health’

Throughout the year the, the IPCT has been collating documentary evidence for the assessment of compliance of infection control within the Health Care Commission ‘Standards for Better Health’ (core standard C4a). Feedback from the Trust Lead for ‘Standards for Better Health’ has indicated full compliance with this standard. These evidence files are ready for external assessment when required.

4. Saving Lives

As part of the process of assessing compliance with the Code of Practice, the self assessment tool of Saving Lives has been completed. The IPCT has the required policies, procedures and processes in place to meet the required standards.

Decontamination (report from Richard Best, Decontamination Lead)

Richard Best, Director of Operations, chairs the Decontamination Steering Group (DSG) and reports to Dr Alex Mayor, Medical Director as Executive Lead. The DSG oversees the programme of improvements for the decontamination of medical devices for the trust. The DSG until April 2010 reported directly to the Safety and Quality Board but from May 2010 will report to the Performance Board.

The decontamination of medical instruments at PHNT is carried out by the Sterilisation and Decontamination Unit (SDU) and centralised services within the Trust. The Endoscopy Department currently decontaminate their own endoscopes using automatic washer-disinfectors within their department.

Highlights of the last year have been:

- Adoption of Endoscope storage cabinets across theatre areas, ENT and Endoscopy. This has lengthened 'shelf life' from 4 to 72 hours of endoscopes following decontamination and increased assurance of compliance. This has also reduced unnecessary cleaning
- ENT have moved processing of scopes to SDU allowing a standard process and improved workplace in ENT
- Ultrasound probes now have an end of list clean in SDU reducing risk for department

- Derriford Site, Royal Eye Infirmary and Child Development Centre all had audits on outpatient areas with significant improvements to standards
- Capture of incoming theatre non-compliance to tray sheet recording into SDU is now measured on a daily basis
- Inclusion of £330k for 2010 to improve the processing of endoscopes in SDU. This work should be complete for October and assure JAG compliance
- Review of pre-operative questions to improve awareness of potential risk for vCJD
- Inclusion of 'decontamination risk register items' into quarterly meeting to ensure actions are taken
- Appointment of supplier for instrument tracking software in SDU which should go live in Autumn 2010. This is a major step forward in our control of risk associated with vCJD and inventory management of theatre equipment.

Work continues this year on all aspects of the decontamination programme.

Cleaning services

1. Contract Arrangements

The last year saw a major change in the provision of Hotel Services to Plymouth Hospitals NHS Trust and the end of the 15-year contract provided by ISSMediclean. The first half 2009-10 was spent on the tendering procedures and competitive dialogue stages for the letting of a new contract, concluding in May with the final presentations and evaluation of the two short-listed companies, OCS and Serco. Members of the IPCT, as well as clinical and facilities staff, formed part of the Contract Working Group and were fully involved in the compilation of specifications, tendering, competitive dialogue and evaluation processes to determine the new provider. The focus was on improving services in ward and departments, and changing the way services are delivered. The successful bidder, Serco was selected and formally awarded the new contract to commence 1st October 2009. There was to be an intensive 3-month mobilisation period prior to the official contract commencement date.

The specification for the housekeepers and cleaning services was to provide the trust with dedicated housekeeping cover on all wards, 12.5 hours per day/7 days per week with dedicated cleaners undertaking the majority of cleaning tasks leaving ward hostesses to carry out all food service related tasks. Ward housekeepers were to carry out light cleaning tasks in and around the patient bedside.

The new cleaning service provides each area with a Service Level Agreement detailing the housekeeping and domestic establishment and the required cleaning

frequencies for all elements. Cleaning frequencies have been set according to the guidance contained within the National Specifications of Cleanliness, April 2007.

Cleaning tasks are carried out using a semi disposable microfibre cleaning system, all microfibre cloths and mops having a 50-wash life span. During outbreak situations, the cleaning equipment is changed to a fully disposable system. Each system is based around a durable, readily cleansable cleaning trolley with storage for all the required tools and associated equipment.

2. Monitoring arrangements and results

During the period from April to October 2009, the final months of the ISS Mediclean contract, the Facilities team conducted a total of 168 formal audits of wards, departments and public areas. Matrons and Ward Managers were asked to accompany these audits where possible. The scores required to pass each audit under the ISSMediclean contract arrangements were:-

Very High Risk	-	95%
High Risk	-	92%
Significant Risk	-	85%
Low Risk	-	85%

The overall average audit score for this period was 92%.

Under the new contract arrangements, Serco are required to carry out an audit programme based around the audit frequencies laid down in the National Specifications for Cleanliness:-

Very High Risk areas	-	Weekly
High Risk areas	-	Monthly
Significant Risk areas	-	Quarterly
Low Risk areas	-	Six monthly

A total of 116 formal audits are carried out each month, a number of which are accompanied by a member of the Facilities team in order to give assurance that the audit process is robust.

The scores required to pass each audit are now set above those required of the ISSMediclean contract and above those laid down in the National Specifications of Cleanliness:-

Very High Risk	-	98%
High Risk	-	95%
Significant Risk	-	93%
Low Risk	-	90%

The overall average audit score for the period November to March was 95%

3. Enhanced/Deep Cleaning

Once again, the year has proven to be challenging for the domestic teams from both ISSMediclean and Serco in order to respond to the trust's heightened infection control protocols and the number of enhanced cleans requested. During the first six months of the year, ISSMediclean carried out a total of 22,636 enhanced and deep cleans of single rooms and bed spaces.

The new contractual arrangements require a base number of enhanced cleans to be provided within the contract costs but records are showing that the Trust is requesting in excess of this amount with Serco currently providing in the region of 3000 enhanced cleans every month.

4. PEAT 2010

The annual PEAT (Patient Environment Action Team) self assessment was conducted in February 2010. The NPSA lay down strict criteria regarding the make-up of audit teams, the percentage of the site and selection of areas to be audited. This year, the assessment teams were led by Madelaine Jephcott and Liz McGuffog and included members of the IPCT, Cathy Ford and Jill Horn and Matrons Bet Leppard and Gwyn Birkitt. Patient representation was provided by the Link Stewardship group and Plymouth Advisory Partnership for Older People. The two assessment teams visited wards, departments and public areas in order to assess cleanliness, catering and environmental standards from the patients perspective.

An external validator from the NPSA joined the teams for the day to ensure the assessment took place according to guidance and was a thorough process.

Although the trust has not yet been formally advised of the assessment results, preliminary scoring suggests that, once the relevant weightings have been applied, the trust will comfortably retain 'Good' status for the Cleanliness and Environment sections of the assessment.

5. Improving the Patient Experience - Hospital Cleanliness, Catering and the Environment (report from Madeleine Jephcott)

The work of the Patient Environment Action Team (PEAT) has continued throughout the year and have supported projects related to the patients environment. These included:

- 1) Support for Way Finding Policy and Naming of Wards Policy
- 2) Development of Policies which enhance the patient experience including the Privacy and Dignity Policy and Nutrition and Mealtimes Policy
- 3) Road shows for staff in respect of the new Hotel Services Contract

- 4) Improving Linen services
- 5) Demonstration of patient food including a tasting session.

A new role for PEAT in the new financial year will be to assist in the development and audit of the Annual PEAT Inspection Action Plan which is currently under development.

Over the next 12 months the group will remain the main forum for discussion of changes to the patient environment and coordination of appropriate work schedules.

Other activities

1. Policies and procedures

The IPCT recognises the importance of evidence-based policies and procedures in ensuring effective compliance with national infection control standards. All policies comply with the Trust Policy on Policies and are available in all clinical areas in paper format as well as on the trust email system. At renewal, all policies are examined to ensure compliance with the National Service Framework for Children and the Trust's Equality and Diversity Policy.

The following new policies have been produced:

- a) Policy on Viral Haemorrhagic Fevers

Other policies have been updated in accordance with the continuous process of rolling policy review:

- a) Guidelines for the Management of MRSA
- b) Hot Spot Strategy
- c) Guidelines for the handling of cadavers
- d) Management of scabies
- e) Pets in hospital
- f) Management of peripheral lines
- g) Management of diarrhoea and vomiting
- h) Outbreak policy
- i) Management of Transmissible Spongiform Encephalopathies
- j) Control of tuberculosis
- k) Control of tuberculosis – Occupational Health issues
- l) Management of SARS
- m) Management of avian influenza
- n) Management of seasonal influenza
- o) Management of sharps
- p) Control of blood-borne virus/inoculation in injuries.

2. Communication with staff, patients and relatives

Communication with staff at PHNT is facilitated by a quarterly IPCT Newsletter, 'Infectious'. Updates on ward closures due to outbreaks is provided through Trust-wide emails and on the main infection control notice board in the main concourse. All infection control policies are now available on the Trust email system and the infection control website has been developed over the last year. The display on the main infection control notice board is changed on a regular basis and includes education and surveillance data. There is a regular infection control contribution to the weekly electronic newsletter (Vital Signs) and the quarterly magazine (Cascade) that are distributed to all staff at PHNT.

The DIPC has attended meetings of the Health Overview and Scrutiny Panels of Plymouth City Council, as well as the Hospital Medical Staff Committee. A representative of the recently disbanded Plymouth Hospitals Patient and Public Involvement Forum is a member of the ICC.

This year, members of the IPCT taught hand washing technique at local schools using the GloBox.

3. Design, construction and renovation (report by Claire Hail)

The IPCT continues to contribute to the design, construction and renovation projects across the Trust, particularly the significant environmental initiatives including the replacement of clinical wash hand basins, Kitchen Refurbishment Programme, Ward Moves Project and the Productive Ward Project advising on product approval and room specifications. For each project, method statements have included dust control measures as advised by IPCT and compliance has been monitored throughout the works. Surveys of the clinical environment have been undertaken prior to works commencing and have been most successful when performed together with clinical staff, the Estates Department and planning teams.

The successful reconfiguration and new building works on the Emergency Department to provide a dedicated children's unit was completed without significant disruption to the day-to-day running of the Emergency Unit, reflecting the effective working relationship with the Project Team, which included contractors, the Estates Department, Matron and staff from the Emergency Department and ISS Mediclean as well as the IPCT. The planned up-grade and extension of the Macmillan centre was successfully completed according to programme. Moorgate and Lyhner wards have been re-furbished and a further two wards have been assessed ready for refurbishment during 2010. The Urodynamic Clinic now has improved facilities for decontaminating equipment following concerns raised through the Infection control audit.

The IPCT advised on the Level 4 Theatre Project group and performed microbiological testing for a further 18 theatres included in the Theatre Annual Closure Programme at Derriford and Royal Eye Infirmary.

The IPCT continues to advise and monitor dust controls during the refurbishment of the sluices across the Trust and work with Estates on their pre-planned maintenance programme.

The policy for Infection Control Input into Design, Construction and Renovation Projects will be reviewed in April 2012.

The IPCT have been involved with the design specification and risk assessment process for the refurbishment of the Children's wards on level 12 and the scheduled works with-in the interventional X-Ray rooms level 6, and have been involved at the design stages of the proposed satellite Renal Unit in Ivybridge.

4. Antibiotic management (report by Dr J Greig)

The Antibiotic Control Team (ACT) consists of the lead Microbiologist for antimicrobial prescribing (Dr J. Greig) and the antimicrobial pharmacist (Nicola Joyce). Herein is described the activities of the ACT for the year to March 2010

4.1. Training and Education

The ACT has led varying training and educational sessions. These include structured delivery of talks on the use of antibiotics to various professional groups including Senior Doctors on the annual update programme, F1 Doctors as part of their programmed training, ad hoc training at ward level and directorate specific educational sessions for Junior and Senior Doctors. An Antibiotic Newsletter is periodically produced and brief Email messages containing information on prudent antibiotic use distributed every 1-2 months. There has also been some ward pharmacist training on antibiotic use and the ACT intends to hold more regular sessions in the future.

4.2. Prospective audit with intervention and feedback

The ACT carries out prospective audit with intervention and feedback to individual directorates. These results are incorporated into the Trust Infection Control Balanced Score Card and fed back to Directorates on a quarterly basis. In the last year nearly 2800 patients were audited of which one third were on antibiotics. Compliance with guidelines was consistently 80-85% with the majority of non compliances being of a minor nature. Fewer than one prescription in 20 had a serious omission. The results of the audits are used to identify areas of poor practice and allow targeted interventions and education.

4.3. Review of use of restricted antibiotics

The ACT continues to be informed on a daily basis of new prescriptions of certain restricted antibiotics, which were reviewed on twice weekly ward rounds. Other problems with the use of antibiotics are highlighted by Ward Pharmacists and these

patients are also regularly reviewed. In the past year over 1800 prescriptions have been reviewed and on 50% of occasions this led to an intervention, usually to stop the antibiotic or convert to the oral route. The more targeted approach to quinolone use has led to an 88% compliance with Trust guidelines. Areas using quinolones contrary to guidelines have been identified and further controls instituted.

4.4. Guidelines

General treatment guidelines (full and abridged) are freely available on Trustnet and are in the process of being reviewed and updated after consultation. Abridged versions of the guidelines are available as handy laminated cards which were distributed at induction, at scheduled educational sessions and opportunistically on the wards. Directorate specific guidance has been updated and expanded upon. Use of Surgical antibiotic prophylaxis has been audited in Orthopaedic and General/Colorectal surgery and the results used to highlight areas of sub optimal practice.

4.5. *Clostridium difficile*

The ACT reviews all hospitalised patients with *C. difficile* and advises on the antibiotic management of this disease in particular advising on stopping or changing precipitating antibiotics and advising on which treatment antibiotics to use. The antibiotic pharmacist attends the daily *C difficile* management meetings. The antibiotic causes of all *C. difficile* cases was reviewed and the information has been used to identify possible further preventative strategies.

5. Vascular Access Team (report by Carol Pollard)

The Vascular Access Team (VAT) advise and support healthcare professionals in the Trust to care for patients with a Central Venous Access Device (CVAD) safely and effectively with the aim to reduce infections and other complications.

5.1. Training and assessment

The VAT continue to provide an education programme for Trust staff which is competency-based. We plan to:

- Continue to monitor compliance with CVAD training and maintain a record of those assessed as competent. A report will be sent to wards and departments monthly, and to the Infection Prevention Board quarterly
- All new Registered staff to the Trust now undergo CVAD assessment. Aseptic technique assessment will be required for staff in areas who do not have these devices. This will be undertaken by the Clinical Skills Department.

5.2. Advise and co-ordinate line insertions Trust-wide

A nurse delivered PICC line service was introduced in May 2009 and there has been a steady increase in referrals. Although this is currently limited to a single operator, an additional nurse from the Critical Care Outreach Team will be trained in line insertion from April 2010.

The main aims of this aspect of the service are:

- To replace short-term lines with PICC or midline catheters, which are associated with a reduced risk of infection.
- To reduce the numbers of tunnelled lines (Hickman lines) placed for medium term intravenous therapy. PICC lines have a number of advantages over Hickman lines, including fewer resources required for insertion (staff and theatre time), a less invasive insertion technique, fewer potential complications, and no requirement for minor surgery to remove the line when treatment completed.

5.3. Matching Michigan and Safer Patient Initiative

The standard measure of CVAD-related infections is a rate reported as the number of infections per 1000 catheter days. This dataset is now being reported for Critical Care as part of the Matching Michigan Project and Safer Patient Initiatives. Collection of this data set for ward areas is challenging. A process of self-reporting of central lines in situ on a daily basis by wards to the team is currently being established. This will allow collation of line day numbers against central line infections to establish the Trust CVAD-related infection rate per 1000 line-days.

5.4. Review of line infections – using lessons learnt to inform practice

The Vascular Access Lead Nurse aims to review all CVAD-related blood stream infections in order to establish any areas for improvement to inform future practice. These reviews have led to a number of changes in practice.

6. Influenza Pandemic Planning Group (report from Miriam Smith and Claire Hail)

Last year, it was reported that the Pandemic Influenza Planning Group was responsible for overseeing plans and preparations for an influenza pandemic. In light of worldwide and local events, these were put into action across the year, in response to demands of treating patients and in providing assurance that the Trust was prepared and ready to respond to such an event.

The IPCT were actively involved in supporting the Pandemic Influenza Planning Group in the co-ordination of arrangements, whilst ensuring that the potential spread of infection was minimised, including:

6.1. Plans and Guidance

- Reviewing plans and latest national guidance
- Providing clinical advice on the implementation of algorithms provided by the Health Protection Agency
- Working with partner agencies to ensure consistency of advice to NHS Plymouth, MoD, Serco and Plymouth City Council

6.2. Patient Care

- Approving departmental plans, with a focus on the areas receiving more severely affected patients e.g. paediatrics, maternity and critical care
- Contributing to the weekly Flu Bulletin to ensure staff were kept abreast of the changing situation and the appropriate action to take when caring for patients suffering from flu
- Providing clinical training, enabling staff to work in priority designated areas

6.3. Supporting Staff

- Ensuring that staff exposed to the virus at work who then became symptomatic, were able to immediately access anti-virals
- Developing a vaccination programme for staff, which saw 42% of front line staff being vaccinated – a significant improvement on the 10% that take up the seasonal flu vaccination
- Providing briefing packs for wards caring for affected patients, together with 24/7 clinical advice
- Providing personal protective equipment (PPE) to all front line areas that may come into contact with affected patients
- Supporting PPE training and developing a DVD as a resource to effectively cascade the training to large numbers of staff in a short period of time
- Providing local diagnostic testing, in order that early decisions on the management of individual patients could be made

6.4. Communication

- Providing weekly Flu Bulletin up-dates on how the virus was emerging and providing clinical up-dates on how the virus was impacting locally
- Supporting the increasing demands for reporting information

Although there has been a significant decrease in the number of people affected by H1N1 pandemic influenza and in media coverage, the importance of flu plans and arrangements remains a priority for the Trust.

Although the Pandemic Influenza Planning Group has now been stood down, the Trust's Emergency Planning and Liaison Officer continues to oversee the monitoring of cases, review of response to date and the development of future arrangements.

In response to the H1N1 Pandemic Flu status this year the IPCT were instrumental in leading and supporting the clinical teams with information and clinical advice. All 48 wards received at least one teaching session concerning the care and management of a patient with suspected or confirmed H1N1 Flu. Written information in the form of care plans and instruction on 'how to take a viral swab' were prepared and provided on a case-by-case basis, providing support to the staff who were delivering direct patient care. IPCT provided information for the weekly staff Flu bulletin published by the Communication Office, produced an educational DVD in-conjunction with Practice Education Team and Medical Photography relating to infection control practices and personal protective equipment for staff. The IPCT collected surveillance data on behalf of the Trust to support the daily situation reports.

7. Tissue Viability Report (report by Pia Prince)

The Skin and Wound Care Team have made nearly 1200 visits to patients with complex wounds over the past 12 months. The input required ranged from simple advice and support for ward staff to be able to manage the wound to implementing complex wound care plans using specialist knowledge and techniques. In addition, a range of work has been carried out to support staff with preventing pressure damage and managing pressure sores.

Some of the areas of work completed this year have been:

- Establishing a monthly pressure damage prevalence audit
- Agreement and distribution of a trust policy for the Prevention and Management of Pressure Ulcers
- Providing a resource file for all areas and a Pressure Ulcer Hotline.
- Establishing a link nurse network
- Review of wound care formulary and introduction of alternative negative-pressure therapy treatment.
- Formal and informal education to areas (pressure areas and wound care)
- Completing a trial of air mattresses.

The next 12 months will be about consolidating some of this work and expanding on other areas. There is work currently planned in the following areas:

- Provision of education through a rolling programme for study sessions and days
- Review of heel pressure damage and preventative measures
- Review of static pressure relieving seating.
- Submission of revised wound care formulary for agreement
- Improve the reporting of pressure damage as a clinical incident.

8. Infection Control ward round

Since November 2004, all new patients with MRSA, *C. difficile* and norovirus have been reviewed individually on the Infection Control Ward Round. The approval and implementation of a Patient Group Direction allows prescribing of MRSA eradication therapy by the Infection Control Nurses. Parallel to this, new documentation and care plans for the management of MRSA, norovirus and *C. difficile* diarrhoea have been introduced. All patients with MRSA are subsequently reviewed once a week and those with *C. difficile* every day. The ward round also reviews patients colonised with GRE, *Serratia* spp, *Acinetobacter* and ESBL-producing coliforms. This approach has improved the management of these patients as well as compliance with infection control policies and procedures. In addition, the enhanced presence of the IPCT in clinical areas greatly increased their availability for advice and guidance and improved communication with patients and relatives.

9. Infection Control Nurse Directorate working

The IPCT has worked hard to move towards providing a more clinically-orientated service, with each Directorate having a designated team of Infection Control Nurses. This system facilitates communication between the IPCT and Directorates and allows a 'tailor-made' service to be developed for each area. By working closely with the ward manager and ICLP to improve practice and feedback of surveillance data, it is hoped that individual area will develop 'ownership' of infection control. The programme has been extremely successful in improving practice and reducing rates of hospital-associated infection areas. Infection control is a standing item on the Agendas of most Directorate meetings which are now attended by the IPCT.

10. Research

The IPCT has been involved in the implementation and assessment of the impact of rapid diagnostic tests for MRSA and norovirus. Two research papers have been published on this and one further article is in preparation.

The following articles have been published by the IPCT in the last five years:

Jog S, Cunningham R, Cooper S, Wallis M, Marchbank A, Vasco-Knight P, Jenks PJ. Impact of preoperative screening for MRSA by real-time PCR in patients undergoing cardiac surgery. *Journal of Hospital Infection* 2008; 69: 124-130.

Cunningham R, Dial S. Is over-use of proton pump inhibitors fuelling the current epidemic of *Clostridium difficile* associated diarrhoea? *Journal of Hospital Infection* 2008; 70: 1-6.

Greig J, Edwards C, Wallis M, Jenks P, Cunningham R, Keenan J. Carriage of meticillin-resistant *Staphylococcus aureus* among patients admitted with fractured neck of femur. *Journal of Hospital Infection* 2007; 66: 187-189.

Cunningham R, Jenks P, Northwood J, Wallis M, Ferguson S, Hunt S. Effect on MRSA transmission of rapid PCR testing of patients admitted to critical care. *Journal of Hospital Infection* 2007; 65: 24-28.

Brown NM, Lee SD, Duerden BI, Gillanders SA, Cookson B, Neville L, Jenks P, Catchpole C, Wright P, Spencer RC. MRSA in non-clinical areas of hospitals. *Journal of Hospital Infection* 2006; 64: 402-403.

Greig J, Jenks P. Treatment of MRSA in community acquired pneumonia. *British Medical Journal* 2006; 332: 1334.

Cunningham R. Antibiotic prescribing in the ICU. *Anaesthesia and Intensive Care Medicine* 2006; 7: 147-8.

Cunningham R. Proton pump inhibitors and the risk of *Clostridium difficile*-associated disease: further evidence from the community. *Canadian Medical Association Journal* 2006; 175: 757-8.

Conclusions and priorities for 2010 -11

The infection prevention and control service at PHNT has made significant progress towards modernising the service it offers and meeting the challenging new agenda being set at both local and national levels. The IPCT has dramatically changed the way it has worked in order to deliver a more clinically-orientated and relevant service. This approach has been effective in both improving clinical practice and reducing rates of hospital-associated infection. There have been significant improvements hand hygiene compliance and clinical practice audit scores, such as the Saving Lives HII, have also improved. Infections due to MRSA, MSSA and *C. difficile* have fallen, as have rates of surgical site infection. Considerable Trust-wide effort is required to maintain and continue these improvements, particularly if the Trust is to continue to the MRSA bacteraemia and *C. difficile* reduction targets.

Priorities for the following year include:

- Achieve the local and national targets as outlined in the Annual Programme of Work, April 2010-March 2011
- Implement universal MRSA screening of all emergency admissions
- Continue to deliver a high-class Surgical Site Surveillance Programme
- Ensure continued compliance with Code of Practice and other national guidelines
- Perform RCAs on all serious HCAs
- Sustain the use of the 'Saving Lives' HII across the Trust
- Continue to embed infection control at all levels across the Trust
- To continue to provide up-to-date information available on the Infection Control website
- To continue to develop the Postgraduate Certificate in Infection Prevention and Control.