

Infection Control Annual Report 2006/2007

**Prepared by
Director of Infection Prevention and Control**

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1. EXECUTIVE SUMMARY

- 1.1 This report summarises the work of the Infection Control Team during 2006/7, the progress made and the significant infection control and prevention challenges that face Good Hope Hospital as it moves forward to full integration with Heart of England Foundation Trust Infection Control Team during 2007/8. It has without doubt been a significantly challenging year with pressures of intense media scrutiny, increasing rates of MRSA bacteraemia against trajectory, *Clostridium difficile* associated diarrhoea and outbreaks.
- 1.2 The Trust Chief Executive invited the Department of Health (DoH) Infection Control and Prevention Performance Improvement Team to visit the Trust to advise on what further action could be taken to reduce MRSA bacteraemia. This resulted in the development and implementation of a robust action plan that has strengthened the focus on accountability, action and acceleration. During April 2007, following the integration of GHH with Heart of England Foundation Trust, the DoH considered and approved the progress made, and withdrew the performance management requirements. Despite this the pace and focus on infection control and prevention remains a significant risk and the momentum will increase pace during 2007/08 through the HEFT Strategy for Infection, Prevention and Control (2006 – 2009), and the Infection Control Work Programme, monitored by the Executive Infection Control Committee, chaired by the Chief Executive and the HEFT Trust Board.
- 1.3 The Department of Health has set a target for the reduction of MRSA bacteraemia. A reduction by 50% in the mandatory surveillance scheme is to be achieved by the end of 2007/8. The target set for the GHH site for 2007/8 is 12. The Trust failed to achieve the target for bacteraemia in 2006/7 despite an increased focus; therefore this will require a large, increased and sustained focus on improvements in infection control practices, accountability, action and acceleration during 2007-08.
- 1.4 There has been a significant increase in *C.difficile* associated diarrhoea (CDAD) compared to 2005/06. In response to this a sustained focus has been placed on reviewing the antibiotic policy, changes in cleaning products/methods and staff levels, and the launch of the clinical guideline for the management of CDAD.
- 1.5 **The Operational Infection Task Force** has through the leadership of the Consultant Chair strengthened the level of clinical engagement, partnerships with key stakeholders such as BEN PCT, Health Protection Agency and operational focus in the prevention and control of hospital acquired infection. This will continue during 2007/08.

- 1.6** The **Cleanyourhands campaign** and the implementation of the **Six Golden Hand Rules** has assisted the Trust in ensuring a sustained focus on the usage of alcohol hand gel and other hand washing products. However despite this there is limited evidence to suggest that there has been an improvement in compliance with the hand hygiene policy and this remains a key performance target.
- 1.7** The Department of Health mandatory surveillance of healthcare associated infections includes MRSA bacteraemia, Glycopeptides Resistant Enterococcus (GRE) bacteraemia, Clostridium difficile associated diarrhoea (CDAD) in adults >65 years and orthopaedic surgical site infection (SSI) surveillance. Data for MRSA, GRE and CDAD are submitted directly by the Microbiology laboratory to the Regional Surveillance Unit and thereon to the Department of Health. The Trauma & Orthopaedics directorate undertakes orthopaedic SSI.
- 1.8** The Infection Control Team has despite significant shortfalls in the nursing resource provided a comprehensive training programme. Nonetheless this has placed pressures on the team, and the recent appointment of a Senior Infection Control Nurse and Infection Control Nurse Practitioner will strengthen the existing infection control team during 07/8.
- 1.9** The Infection Control Team ran a very successful stand as part of Infection Control Week challenging staff to develop their knowledge of infection control through the use of quizzes, displays and other activities.

The ICT continues to provide a service to South Staffordshire Healthcare Foundation NHS Trust (community mental health Trust based in Stafford).

There was further IT development on the PaWs system this year with surgical site surveillance being extended to knee surgery and electronic nurse handover now includes peripheral venous line management.

The home IV antibiotics project together with BEN PCT is being strengthened with an admission avoidance pathway.

2. REVIEW OF INFECTION CONTROL WORK UNDERTAKEN DURING 2006/07 AND ACTIONS TAKEN FORWARD INTO 2007/08

During this year there were significant vacancies in the Infection Control Nursing team and an increase in reactive work due to outbreaks that placed increasing pressures on an already stretched resource.

2.1 Update on Actions completed

- The vacant Senior Infection Control Nurse post has been recruited and the post holder will commence on the 8th May 2007.
- Trust wide Hand Washing Audits were carried out in September 2006 and January 2007 identifying a lack of compliance particularly from the medical staff within the Trust. This resulted in a Hand Hygiene campaign that was carried out throughout February 2007 involving the Infection Control Team visiting wards for a day, teaching all staff on the individual wards the correct technique and demonstrating good and poor practice with light boxes.
- Implementation of Root Cause Analysis has been implemented with regard to MRSA bacteraemia reporting throughout the trust. Training was offered to all essential staff to ensure that they were familiar with the forms and had a good understanding of the processes and expected outcomes.
- Integration of Infection Control Policies is ongoing. Several policies have been reviewed by both infection control teams and are now awaiting approval by the committees.
- Adoption of HEFT Strategy for Infection, Prevention and Control 2006-9
- Implementation of Six Golden Hand Rules, Talking Posters, 'Beat the Bugs Leaflet'. These have made a significant impact on the public awareness of infection control within Good Hope.
- Combined MRSA decolonisation, norovirus, and *C.difficile* leaflets have been produced throughout the start of 2007, ensuring that patient information across the Trust is correct and appropriate.
- Approval of HEFT PVC guidelines. These Guidelines will be launched at Good Hope on 14 May 2007, combining the launch of the new policy and the introduction of a new dressing that will allow insertion data to be printed on the dressing, promoting adherence to the appropriate removal of cannulae after 72 hours.
- Infection Control Infonet Site has been developed <http://infonet/departments/infectioncontrol/index.htm>
- Infection Control Internet site has been developed http://www.goodhope.org.uk/infection_control/default.asp
- DH Infection Control Improvement Team Recovery Plan – outstanding actions are included in work programme for 07/8.
- Considerable work has been undertaken to revise and formulate the new protocols to make them congruent across HEFT sites, some of which have now progressed into practice within the directorates.
- Successful DH Capital Bid. Final planning for this development is currently taking place.
- The information department has commenced monthly divisional reporting of Infection Control. The reporting systems on the GHH site need to be further strengthened to ensure a systematic, focused and standard approach to infection control reports to clinical directorates. This is being

given the highest level of attention by the DIPC and is a key priority for April 2007.

- Integration of audit programmes for all HEFT sites for 2007/08 is underway.

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Between February and May 2006 the Infection Control team participated in the third national prevalence survey of healthcare associated infections (HCAI) organised by the Hospital Infection Society and Infection Control Nurses Association. Data was collected on all HCAI using standardised methods and definitions. A total of 345 patients from Good Hope were included. The number of patients with HCAI was 63 (prevalence rate 18.3%). The data was collected during a period of norovirus and *Clostridium difficile* outbreaks, the number of gastro-intestinal infections N = 23. Urinary tract infections 14 (4.1%) and pneumonia 11 (3.2%) were the other common reported types of HCAI. The peripheral intravenous catheter usage was 31 % (109/345) and 31% of patients were on systemic antibiotics. The full results are available on a secure web database.

2.2 Audits

Audits on MRSA protocol, peripheral venous line care, and urinary catheter care were performed using the national ICNA tools, (see 11.). Some audits were not undertaken in 2006-7 due to reactive workload and staff shortages. The Trust does not have recent Central Venous Catheter Care, Waste management, Handling and disposal of linen and Management of Patient equipment audits completed for this year. These have been incorporated into the HEFT Infection Control Work Programme for 2007/08.

2.3 Infection Control Surveillance and Information Systems

The Trust Infection Control and Information Management Teams have over the last year made significant progress in improving the Trust's surveillance and information systems. Real time surveillance of MRSA, ESBL and *C.difficile* is available at ward level. This is to be strengthened with the addition of statistical process charts.

2.4 Outstanding Infection Control Work to be taken forward to improve practice

- Improve understanding as to causes and extent of infection
- Improve accountability and ownership
- Ensure that the existence of practice and policy is followed
- Review of training
- Capacity to manage outbreaks
- Review of capital programme to support improvement in compliance with Isolation Policy

3. INFECTION CONTROL TEAM STAFF STRUCTURE

Director of Infection Prevention and Control (DIPC)

The Good Hope Hospital DIPC the Director of Nursing has, as part of the integration with HEFT, handed over responsibility for the DIPC role to the HEFT DIPC Dr Savita Gossain. Additional support was provided to the GHH DIPC and Infection Control team through a one session per week/management contract with HEFT, from November 2006 to March 2007.

Current Team Structure (April 2007)

The Infection Control Team consists of two Consultant Microbiologists – Dr Papu De and Dr Das Pillay and one Infection Control Nurse, Avril Hamilton. (One ICN left the Trust in March 2007). Clerical support is provided as part of the duties of the Microbiology Secretary.

Infection Control Nurses

The post of Senior Infection Control Nurse has been filled and the post holder takes up post on the 8th May 2007. During 2006-07 the HEFT Lead Infection Control Nurse on a consultancy basis has provided support one day per week, as did a six-month secondment of an additional Band 5 Infection Control Nurse post.

Infection Control Nurse Practitioner Post

Following the departure of one ICN in March 2007 approval was sought and given to the appointment of the first Infection Control Nurse Practitioner on the GHH site. This post is currently out to advert.

4. INTEGRATION OF GHH AND HEFT INFECTION CONTROL TEAM

Over the last eighteen months GHH has had a management contract with Heart of England Foundation Trust and in April 2007 became the first Trust to be acquired by a Foundation Trust. Over this time as part of the integration process the Consultant Microbiologists, infection control team and DIPC worked in partnership with the HEFT Infection Control Team, DIPC and project manager to ensure a smooth transition and the sharing of best practice. The new structure, reporting and decision-making structures came into place on the 8 April 2007.

5. INFECTION PREVENTION AND CONTROL – PERFORMANCE MANAGEMENT CHANGES

As part of the integration with HEFT the risks associated with Infection Control and Prevention on the Good Hope Hospital Site have been identified as significant by HEFT and MONITOR. Therefore in order to mitigate and manage the risks a robust performance management process and system has been agreed and monitored through the Executive Infection Control Committee by the Chief Executive, DIPC and Managing Director. The Operational Board,

through the Clinical Governance Committee and Risk Management Committee on a quarterly basis, will monitor progress.

The Trust will utilise the following tools to support performance review:

- Healthcare Standards C4a
- Annual Infection Control Report
- Directorate Infection Control Audit programs
- Incident Management Information System
- Internal Audit Review
- NAO reports and publications

6. BUDGET ALLOCATION TO INFECTION CONTROL ACTIVITIES

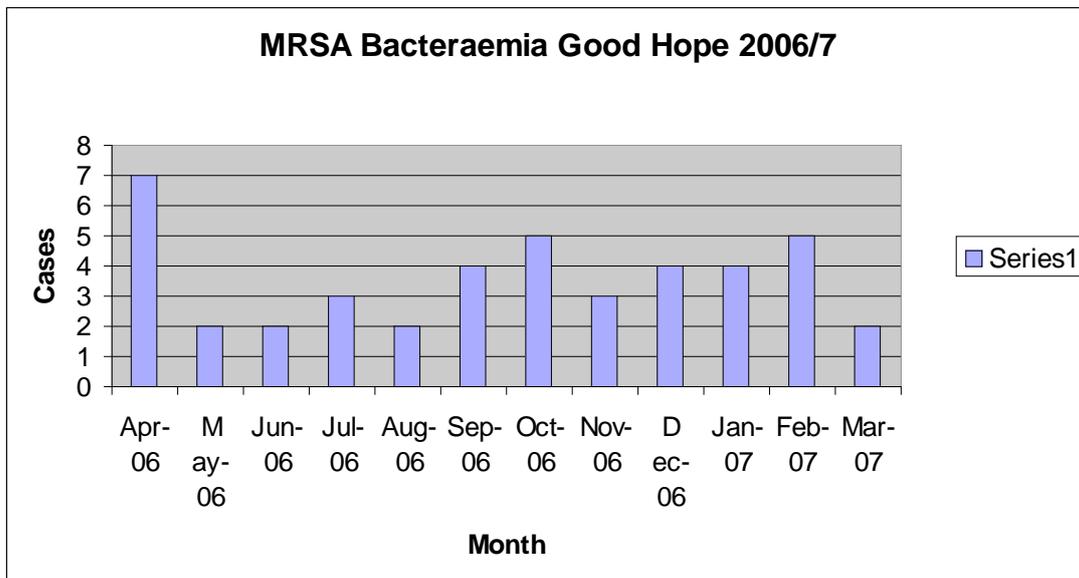
The GHH Trust Infection Control team budget for 2006/07 was set within the overall budget for Group 3. This has now been integrated within the HEFT microbiology/pathology budget. Monies were set-aside during 2006/07 for the management of outbreaks if required. Additional financial training and support for the team will be required to ensure that there is an understanding of service level economics and reporting during 2007/08.

The Trusts Infection Control service for 2006/07 was budgeted at £118k for non-pay.

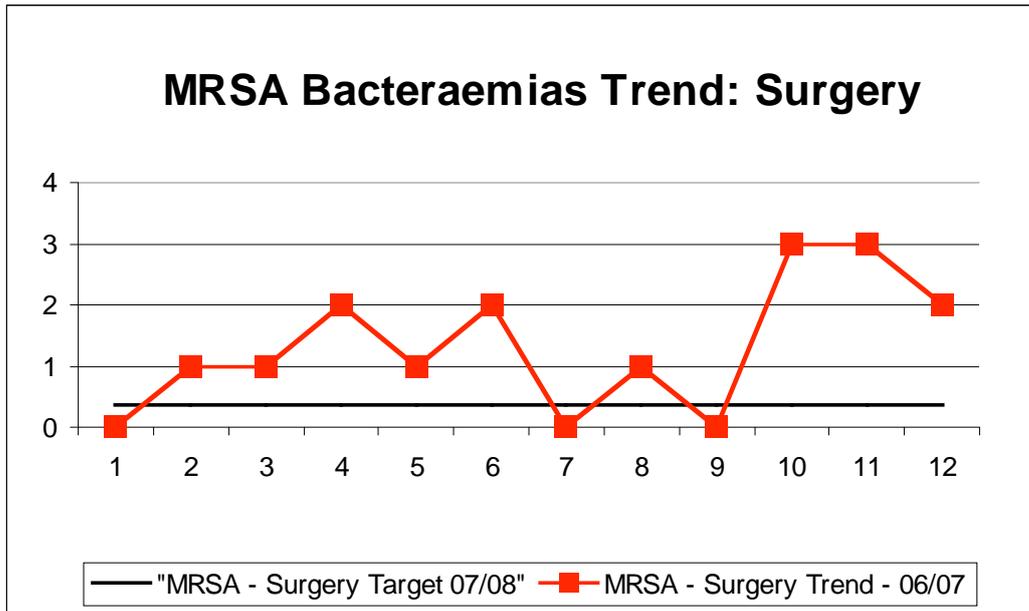
7. SURVEILLANCE OF HEALTHCARE ASSOCIATED INFECTION (HCAI)

7.1 MRSA bacteraemia 2006/07

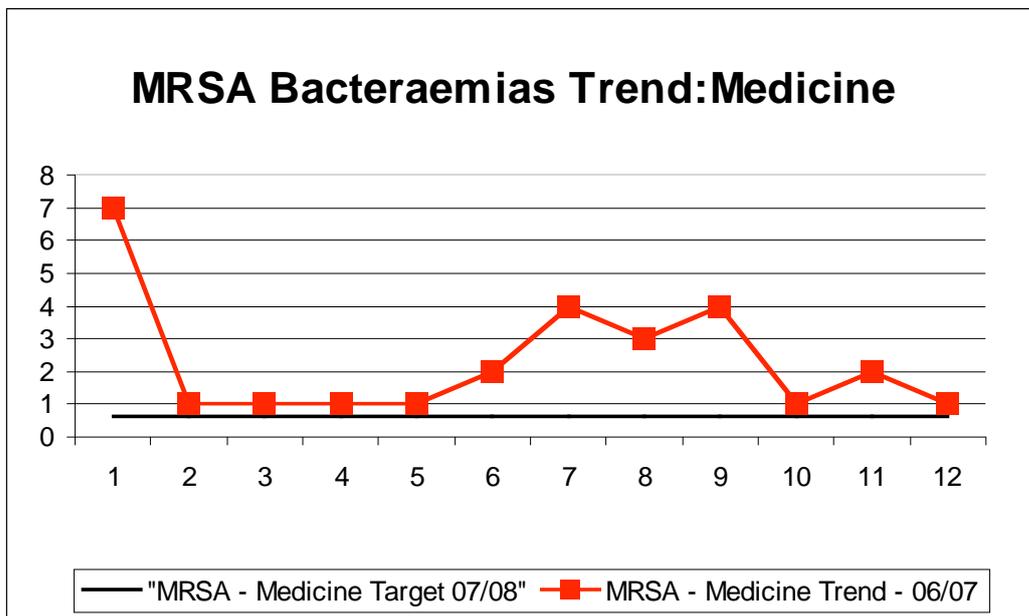
Mandatory reporting of MRSA bacteraemia began in April 2001. In October 2005 an enhanced surveillance system was introduced (MESS). The system records all positive blood cultures in the laboratory, whether acquired in the hospital or community. There were 44 cases of MRSA bacteraemia in 2006/07.



7.2 MRSA bacteraemia 2006/7, GH Surgery vs DoH target



7.3 MRSA bacteraemia 2006/7, GH Medicine Vs DH target



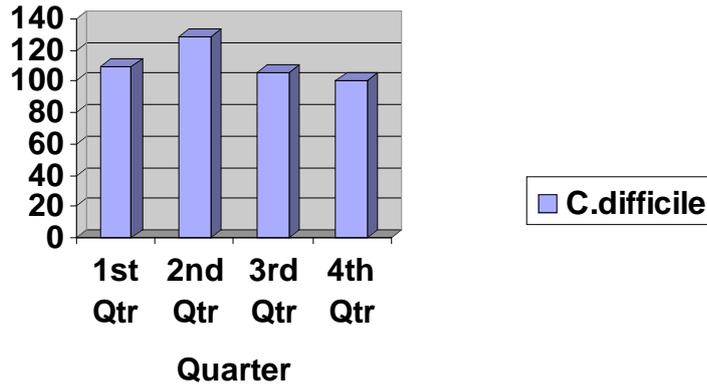
7.4 Glycopeptide resistant Enterococci 2006/7:

There was only one case of GRE bacteraemia detected in the 3rd quarter.

7.5 Clostridium difficile 2006/7:

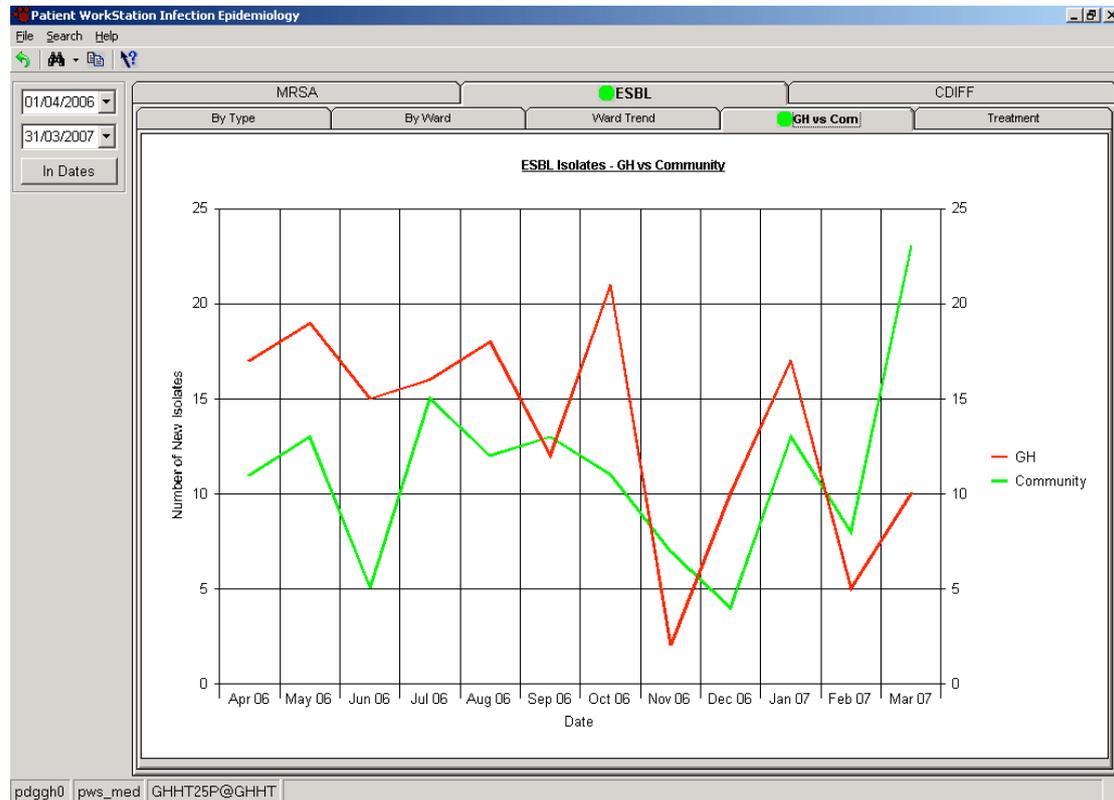
NHS Trusts are required to report all cases of CDAD in patients >65 years. The reporting criteria is being changed in April 2007 to included all cases > 2 years and a new page has been inserted in the MESS website. There were 444 cases of *C.difficile* in 2006/7.

C.difficile 2006/7



7.6 ESBL

There is no mandatory reporting of extended spectrum beta-lactamase producing organisms at present. These gram negative bacteria are important causes of hospital associated infection and are resistant to many antibiotics.



8. THE 'SIX GOLDEN RULES'

Following poor hand washing audit compliance and the recommendations made by the DH Healthcare associated infection / MRSA Performance Improvement team in November 07, the Infection Control team and Trust implemented the HEFT 'Six Golden Rules'. Copies were distributed to all staff and are posted in all areas across the Trust. They have also been incorporated into all training programmes provided by the Infection Control Team.

Six Golden Rules of Infection Control

Simple steps that ALL STAFF MUST follow at all times



Good Hope Hospital 

These simple rules cannot cover everything. Further details are available in the Trust Infection Control Policies. IF IN DOUBT, ASK THE INFECTION CONTROL TEAM ON 2284 or bleep 229 or 228

9. HAND HYGIENE AND CLEANYOURHANDS CAMPAIGN

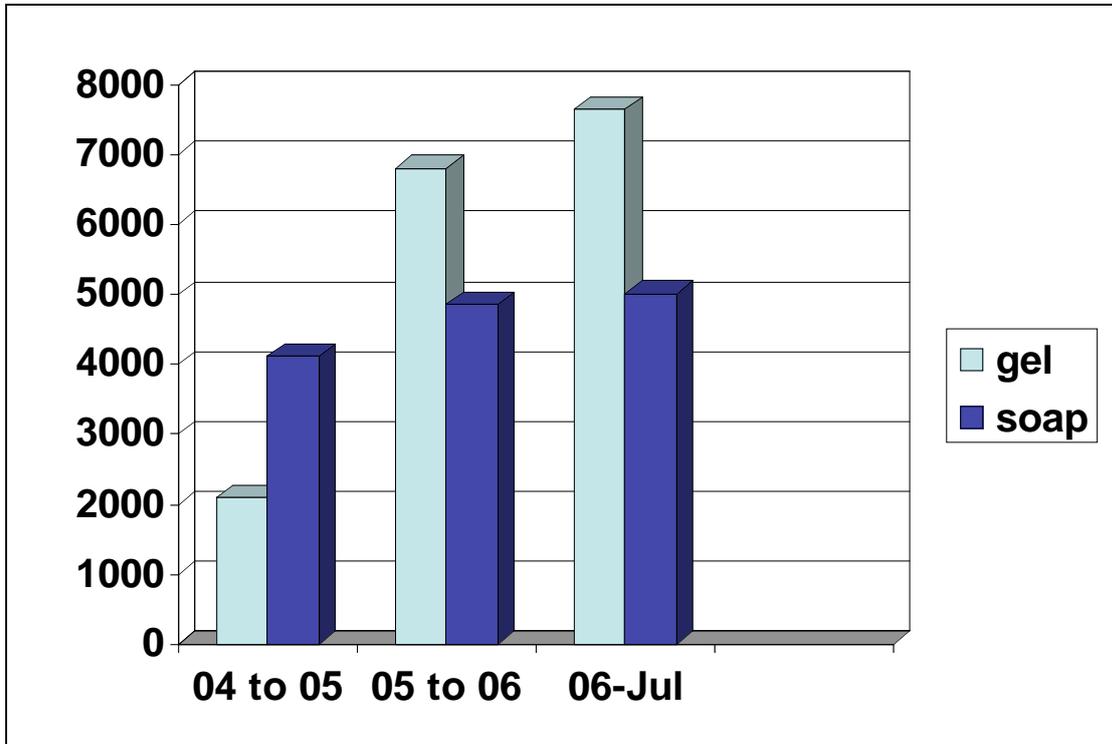
Adherence to good hand hygiene practices is the cornerstone of reducing healthcare associated infections. With this in mind the Trust participated in the National Patient Safety Agency campaign to raise awareness of hand hygiene across the organisation. It is also considered a cornerstone to the DoH HCAI / MRSA Recovery Plan monitored through the IC Operational Task Force.

- The IC team and front line staff has undertaken a Trust wide audit of Hand Hygiene. The level of compliance was generally poor and there has been a significant focus on raising the importance of hand hygiene through increased accountability, action and acceleration. A repeat Trust wide audit is planned for May 2007, but soft intelligence, observation of practice and review by the Patient forum suggest that the level of compliance is variable and not to the standard required. This is being given the highest level of priority during 2007/08 and if necessary remedial action will be considered.
- Communications have been central to the process with key publications such as Good Hope News and Managing Director brief focusing on Infection Prevention and Control as a key lever to improve awareness and compliance
- Patient and staff information and leaflets such as the 'Beat the Bugs' Campaign and the introduction of 'Talking Posters'.
- Use of alcohol gel has increased.

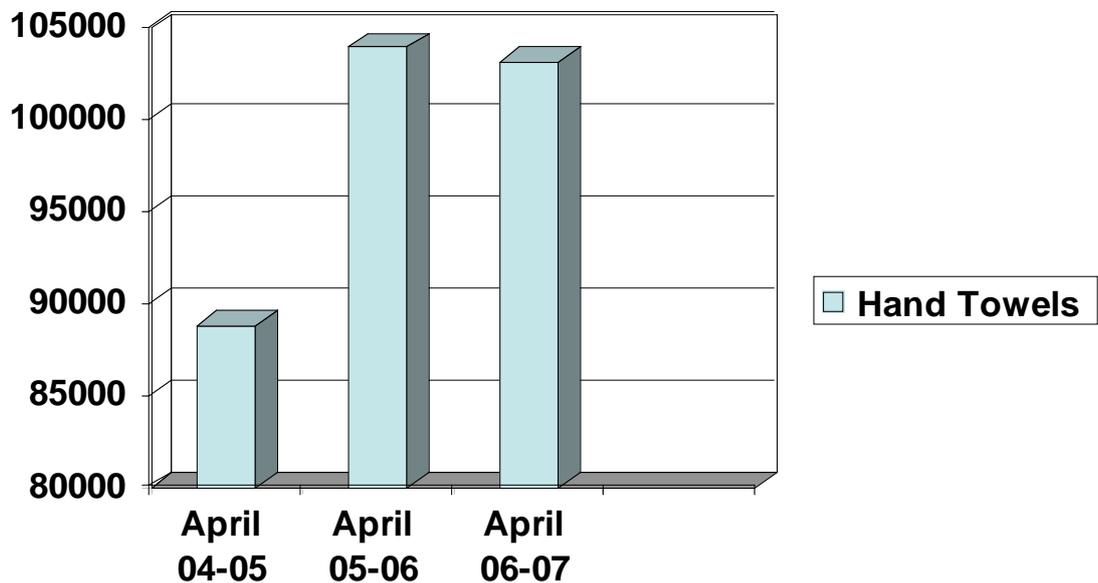
Hand hygiene product usage

April 2004 until March 2007

As a result of hand hygiene campaigns and education a significant increase in the use of alcohol gel can be demonstrated since 2004. This increase is also mirrored by an increase in liquid hand soap and paper hand towels. The consistent increase in all hand hygiene products over the time period indicates a general increase in compliance in hand hygiene rather than a move towards one product or another, ie a move to ward the use of gel rather soap and water.



The use of Liquid soap and Alcohol hand Gel
From April 2004 to March 2007



10. RESEARCH AND DEVELOPMENT

The infection control team have established a close link with Aston University studying the epidemiology of community MRSA. A selection of 2006/07 publications include:

- 1 Therapy-driven selection of carbapenem resistance in CTX-M-producing *Klebsiella pneumoniae*. DG Pillay, P.De, JWT Dallow, ME Kaufmann, RLR Hill, DM Livermore N Woodford .ECCMID. P1621. 2006
- 2 Assessing spatial clustering of MRSA with stochastic simulations, kernel estimation and spatial scan. L. Bastin, J. Rollason, A. Hilton, D. Pillay, C. Corcoran, J.Elgy, P.Lambert, P.De, T.Worthington and K.Burrows. International Journal of Geographical Information Science. (in press)
- 3 Compliance with MRSA Hospital Control Guidelines in a district General Hospital. M Abba. S Raja. DG Pillay. Infectious Dis Journal of Pakistan. Mar 2006. p3-5.

11. AUDIT

The Audit Projects for 2006/7 completed by the ICT were:

MRSA Compliance Audit

After the third attempt of enhanced interventions from the Infection control Nurses through on the ward teaching and guidance of staff with the MRSA Policy, there is poor compliance generally throughout the hospital to the Trust's MRSA guidelines. Only a few wards seem to be adhering to the policy. Effort and support to all staff regarding this policy is continuing.

Urinary Catheter Care point Prevalence Audit

The overall score for the areas audited, using the ICNA Audit Tool, was 86% with a Compliance Rating of Partial Compliance throughout the Trust. The prevalence of catheters within this Trust is 12%, which is considerably below the national average. Compliance with correct urethral catheter management is generally good throughout the trust. Areas of concern are the lack of correct catheter securing which would lead to trauma, the lack of correct catheter positioning which increases the infection risk to the patient, which could then impact on their length of stay, and the incorrect storage of sample pots which could give false laboratory results.

Peripheral Venous Catheter Care Point Prevalence Audit

18 wards were audited with the ICNA Audit Tool; the total number of beds was 521. The total number of patients with peripheral IV cannulae was 94. This gives an in-hospital point prevalence of 18% of patients with peripheral IV cannulae. The overall compliance score for the areas audited was 73%.

Areas of concern are directly related to the poor quality and lack of documentation relating to all aspects of cannulation.

The introduction of a local policy is to take place on the 14 May 2007 to be inline with Heart of England Foundation Trust; this will enable the issues around lack of compliance of national guidelines to be addressed.

Hand Hygiene Audits

A total of 14 audits were undertaken using the Hand Hygiene ICNA tool. The overall Score was 89%. On the whole ward based staff had good knowledge and skills relating to hand hygiene, however a lack of compliance to the uniform policy was highlighted in several areas. The direct observational parts of the audit picked up some basic problem with certain groups of staff relating to their knowledge and compliance with guidelines/policy.

Hand Hygiene education has been enhanced across the trust and use of the hand hygiene campaign along with the introduction of new posters and other initiatives have helped to increase staff awareness of hand hygiene.

Ward Environment Audits

These audits were carried out using the ICNA Audit tool; they highlighted a general lack of maintenance and refurbishment across the whole trust. Several wards have now been refurbished however there is still a lot of work to be carried out over the coming year.

Audits performed by Wards for Infection Control

- Hand hygiene
- The use of protective equipment
- Short-term urethral catheter management
- Enteral feeding
- Care of peripheral intravenous lines
- Isolation Precautions
- Theatre Environment - RSU and Ground Floor

These audits using the ICNA Audit Tools have provided a base line for future audits within the hospital. All results have been fed back to the individual ward managers and Matrons for action.

12. OUTBREAKS OF INFECTION

For the year April 2006 – March 2007 there have been a total of 25 partly closed or completely closed wards due to diarrhoea and vomiting outbreaks at Good Hope Hospital. This included a major outbreak continuing from the end of 2005 to the end of April 2006. Identified organisms at this time included both *Clostridium difficile* and norovirus, sometimes both found in the same patient. *C.difficile* has remained the most important cause of further outbreaks throughout the year.

13. KEY PERFORMANCE INDICATORS

The KPI used during 2006/07 were MRSA and Clostridium Difficile associated diarrhoea (CDAD).

In 2005 the Department of Health set targets for cases of MRSA bacteraemia to be achieved by 2007/08 with a 20% yearly reduction to be monitored by the Healthcare Commission. The target for MRSA bacteraemia for 2006/07 was not achieved by the Trust and as referred to earlier in the report poses a key risk for the Trust during 2007/08.

For CDAD a RADAR plan was developed and internal target of 30% reduction on 2005/06 was set. The GHH Trust Board monitored both targets during 2006/07 and neither was achieved.

14. TRAINING ACTIVITIES

Throughout the year the infection control team have continued to support mandatory training between 1 and 5 times a week as part of the hospital mandatory training day organised by the Back Care team.

Induction training has been carried out fortnightly as part of the Trust Induction Programme.

A continuing study programme for Infection Control Link Workers on a quarterly basis has had a successful attendance and positive influence on the wards.

Training for medical staff has been introduced via the Infection Control Task Force on the Doctors Grand Round and some departmental audit days.

Domestic staff annual updates were carried out in the summer of 2006.

Various individual requests for training were carried out throughout the year on an ad hoc basis.

15. NHS INFECTION CONTROL TEAM PROFESSIONAL DEVELOPMENT AND TRAINING

Avril Hamilton completed the second year of her BSc (Hons) Degree course in Clinical Nursing Studies Infection Control Pathway with Specialist Practitioner Award, and is now a Qualified and Registered Infection Control Specialist Practitioner.

Elizabeth Blackham completed the First Year of her BSc and commenced her second year.

The Consultant Microbiologists have attended various local, national and international conferences.

The GHH Infection Control Committee met for the last time in March 2007. The work of Infection Control Prevention and Control will now be taken forward through integration with HEFT and embedded in the Executive Infection Control Committee.