

Practice Forum

Adopting a 'Whole Trust' infection prevention approach to reduce MRSA bacteraemia rate

Tracey Cooper and TatShing Yam

Southampton University Hospitals NHS Trust, Hampshire, United Kingdom

Int J Infect Contr 2007, **3**:1 doi:10.3396/03-01-03-007 Available from: <http://www.theIFIC.org/ijic/03-01-03-007>

Abstract:

Set against a background of rising methicillin-resistant *S. aureus* (MRSA) infection rates, poor public image and recent staff reorganisation, the infection control team at Southampton University Hospitals NHS Trust has rallied to facilitate change in the infection prevention perceptions and practices throughout the Trust, adopting a 'Whole Trust' approach.

By encouraging and facilitating local ownership of infection prevention initiatives and addressing specific infection control issues in key areas, with senior leadership from the Director of Nursing and Trust Board the Trust's MRSA bacteraemia rate has been successfully reduced.

Introduction

Southampton University Hospitals NHS Trust (SUHT) is a large teaching trust serving the local population and a larger area via the provision of tertiary services. It has approximately 1200 beds across 4 hospital sites, employing 7,500 staff (plus staff and students from the University of Southampton). The Trust has five intensive care units, supported by five high dependency units, a cancer centre and a bone marrow transplant unit. Like many hospitals in the UK, the Trust has recently faced major financial challenges.

April 2006 saw a major restructuring of the infection control team following the departure of the Senior Nurse. The Consultant Nurse stepped into the role of managing the service. At the same time, the Trust appointed a new Consultant Microbiologist. These changes led to substantial reorganisation of the core team (Table 1) and left a trained infection control nurse (ICN) vacancy.

In addition, the Director of Nursing is also the Director of Infection Prevention and Control (DIPC), and provides strong executive leadership.

Table 1. SUHT Infection Control core team (whole-time equivalents)

- Consultant Nurse Infection Prevention and Control (1.0)
- Infection Control Doctor (0.5)
- Specialist Infection Control Practitioners (1.8 plus 1.0 vacancy)
- Infection Control Sister (2.53, undergoing training)
- Clinical Practice Facilitator (1.0)
- Administration staff (2.0)
- Data analyst time (0.4)
- Project co-ordinator support for the Consultant Nurse (0.4)

The extended team includes Consultant Microbiologists, and laboratory staff from the Health Protection Agency laboratory. The Trust has recently appointed a Consultant Pharmacist in anti-infective agents, who will be a key part of the core infection control team.

Challenges

In 2006/7 the Infection Control Team (ICT) at SUHT faced its most difficult year to date, with major infection prevention challenges and significant pressure from the Department of Health, the Strategic Health Authority and the local press to deliver improvements.



The major challenges were identified as:

Local ownership

Historically infection prevention at the Trust was a programme of work for the ICT and there was little to encourage local ownership. It was realised that there needed to be a culture change within the trust in order to ensure infection prevention was embedded as a core principle of care.

MRSA bacteraemia rates

In 2005/2006 SUHT recorded 92 methicillin-resistant *S. aureus* (MRSA) bacteraemias, (compared to a national target of no more than 49) and the Trust was rated as the fourth worst in the country. This resulted in scrutiny by the Department of Health, a national Performance Support Team, and the SHA. This level of scrutiny and monitoring placed significant pressure on the ICT and the Trust.

Clostridium difficile diarrhoea

The Trust has also seen increasing rates of *Clostridium difficile* diarrhoea. Plans to reduce the number of cases were included in the Trust plan, but publication of the Healthcare Commission report into Stoke Mandeville Hospital prompted review and identification of additional actions. Though responsibility for many of these actions is allocated to clinical and managerial staff, the ICT remains responsible for some, and for monitoring and reporting.

Public image

The Trust regularly receives adverse attention from the local media, and the ICT works with the media team when requested. The trust has also been singled out nationally.

In response to the adverse media attention, public confidence in the trust was low. The ICT aims to restore public confidence through work with the Patient and Public Involvement Forum, and by providing clear information on improvements.

Actions

The 2006/07 Trust Infection Prevention/MRSA Reduction Improvement Plan was developed following critical review by the ICT, realising that previous ways of working were not achieving improvements. A radically different plan was developed, incorporating a whole trust approach. Responsibility for most actions rests with clinical staff, with the ICT having a supportive role. The ICT retains some responsibility for delivery and monitoring/reporting progress to the Board.

General infection prevention and control activities:

- All divisions are required to implement a local infection prevention plan, based on the Trust plan. Implementation is monitored, and activity supported, by the ICT.

- The Trust has implemented the **NPSA** ‘cleanyourhands’ campaign. In addition, corporate hand hygiene posters are displayed and the visibility of posters and availability of alcohol gel is monitored regularly. There is a co-ordinated programme of hand hygiene audits, performed by link staff, including the audit of hand hygiene on medical ward rounds.
- Annual practical hand hygiene training has been made mandatory for all staff. The ICT has trained link staff to deliver this. Results are monitored and reviewed quarterly with the Director of Nursing.
- The Trust has implemented ‘Saving Lives’ via a co-ordinated programme of audit performed by link staff. Results are collated and reviewed at divisional review meetings and progress is monitored.

Specifically addressing MRSA bacteraemia rates:

- All divisions have been given an internal reduction target. The ICT monitors this via a monthly traffic light scoring system (Table 2), reviewed by Trust Management Board. When a case is identified, the consultant and ward manager receive a letter from the ICT, requesting adverse event reporting, root cause analysis and implementation of an action plan. A copy is returned to the ICT, and is collated and forwarded to the Chief Executive. All cases are reviewed at a monthly meeting with the ICT, Chief Executive and senior managers. Additional themes are identified, and action taken.
- The ICT developed specific guidelines relating to the management of central and peripheral vascular devices. An ‘IV Device Week’ was held to launch these. The ICT visits clinical areas, discussing the guidelines and device care with nursing and medical staff. Laminated posters, highlighting key points, have been attached to notes trolleys.
- A monitoring tool has been implemented for ward leaders and medical staff to promote the review and removal of IV devices. In addition, a Visual Infusion Phlebitis (VIP) scoring system has been implemented, and a Trust sticker created to facilitate easy documentation.
- Focussed project work has been supported or led by the ICT in MRSA hotspot areas, such as the general ICU which had high rates of MRSA transmission and bacteraemia.

Table 2: SUHT Performance Monitoring MRSA Trajectory: December 2006

	GREEN: Number of MRSA bacteraemia is below the target figure (or zero, in the case of care groups with a zero target). Action required to maintain control measures.
	AMBER: Number of MRSA bacteraemia has reached the target number, but not exceeded it. Action required to prevent further increase.
	RED: Number of MRSA bacteraemia has exceeded the maximum target figure. Urgent action required to reduce the number.



Communication with patients and the public:

- The ICT receives calls from the public and works with the Patient and Public Involvement (PPI) Forum.
- Information on MRSA and *Clostridium difficile* is available on the Trust internet site, including local rates of infection. This is updated monthly.
- Patients and visitor leaflets are under review, involving members of the PPI Forum. These will be re-printed and made available on the internet site.

Outcomes

Trust wide initiatives

Local ownership of infection prevention

- All divisions are actively engaged in infection prevention activities and infection prevention is a core item at all governance meetings.

Hand hygiene

- Hand hygiene initiatives are highly visible, with all areas participating in the hand hygiene audit.
- The percentage of staff trained to perform hand hygiene has increased to 78% across the trust.
- Compliance with correct technique has increased to 96% for using alcohol gel and 93% for hand washing. Hand hygiene compliance is 85%.

Saving lives audit programme

- All areas are involved in the regular audit of key issues, with senior nurses actively supporting areas to improve. Local data collection reinforces local ownership.

MRSA bacteraemia rates

- All divisions know whether they are red, amber or green on a monthly basis. This generates drive to improve.
- Individual leaders and managers understand their responsibility to investigate cases, and prevent recurrences.

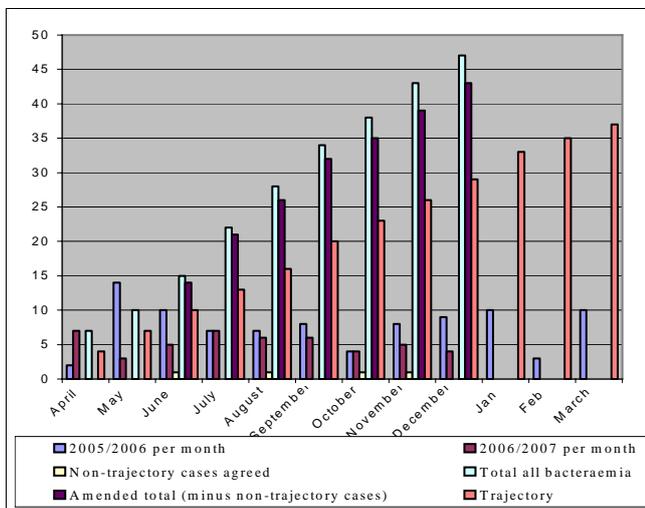


Figure 1: SUHT MRSA Bacteraemia Comparison and Against Trajectory

- Numerous actions have been implemented following root cause analysis, including implementation of policy for care of CVC and peripheral cannulae; introduction of 2% chlorhexidine for CVC insertion; and improved documentation of IV devices.
- Implementation has led to a 35% reduction in MRSA bacteraemia compared to the same time last year. (Figures 1 and 2)
- The number of IV-device related MRSA bacteraemia has decreased. An audit of VIP scoring demonstrates few peripheral cannulae are now left in once signs of phlebitis develop. More cannulae are removed promptly within the 72 hours as required.
- Since early 2006, with the exception of a long-term patient who had unavoidable and repeated MRSA bacteraemia (pt X), the general ICU has only had 1 case of MRSA bacteraemia, and the rate of MRSA transmission has decreased dramatically. This is despite sustained workload and a constant background level of MRSA positive admissions to the unit (Figure 3).

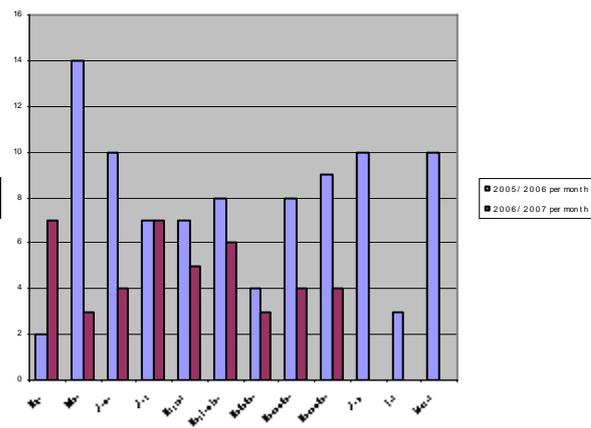


Figure 2: SUHT Number of Avoidable MRSA Bloodstream Infections Per Month (Trajectory Cases)

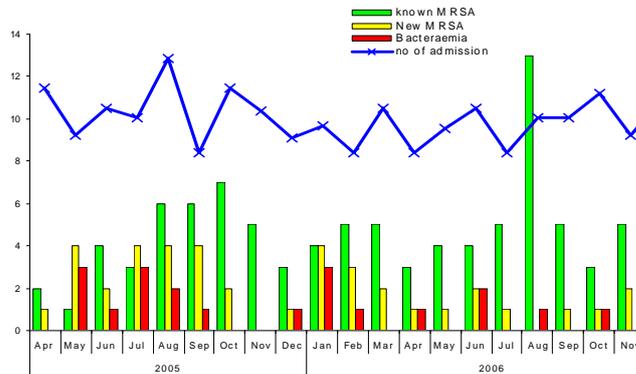


Figure 3 MRSA on General ICU 2005-06



Conclusion

The driving force for the ICT at SUHT has been a determination and belief that the team can make a difference to patients, with changes designed to deliver improved care. Despite recent role changes and reorganisation within the team, significant improvements have been experienced across the Trust, including a reduction in the MRSA bacteraemia rate. These improvements, combined with local ownership of infection prevention issues and improved attitudes, will contribute to restoring public confidence in the Trust.

There is much work still to do, but it is clear that infection prevention is becoming embedded as a core principle within the Trust as a result of this work.



This publication has been adapted from the original submission by the authors for the Oxoid Infection Control Team of the Year Awards 2006/2007 (www.oxid.com) and is being reproduced with permission of Oxoid Ltd.