



1<sup>st</sup> February 2005

Report to Birmingham City Council

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**M R S A**

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## MRSA Review

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## Preface

**By Councillor Deirdre Alden**

Chairman, Health Overview and Scrutiny Committee



MRSA – Methicillin Resistant Staphylococcus Aureus - is currently the most well known of hospital acquired infections. Sadly, most of us probably know someone who has had it: indeed my own uncle caught it while a patient in an NHS hospital (not in Birmingham) the week before Christmas. As I write, he is still ill.

Staphylococcus Aureus is a bacterium commonly carried on the skin and in the noses of healthy people. In normal circumstances the bacterium is not harmful. However, it can cause infections in people with weakened immune systems, particularly if they have an open wound following an operation. The bacterium has become increasingly difficult to treat, since Staphylococcus Aureus is becoming resistant to various antibiotics. In fact, MRSA accounts for 44% of Staphylococcus Aureus bloodstream infections in the UK compared to just 1% in the Netherlands and Denmark, showing that rates in this country are amongst the highest levels in Europe.

There is an urgent need to address the issue of hospital acquired infections, and in particular MRSA, in order to protect the reputation of the NHS. This review has attempted, in a very small way, to ask what has happened to cause the problem of MRSA to escalate and to find out about the approaches being taken by our local hospitals to address this important matter.

Our overall conclusion is that reducing the incidence and spread of MRSA goes beyond the remit of hospitals alone: much can also be done at an individual and community level.

We need to remember that as users and stakeholders of the National Health Service we have rights - but as patients and as visitors we have responsibilities. As patients I believe we have a right to expect the nurse or doctor who treats us to wash his or her hands between patients, without us having to remind them to do so - but when we are visitors we have a responsibility to do what that same nurse tells us if he or she points out that there are too many visitors at our relative's bed, or that visiting time stopped half an hour ago and we should leave. Unbelievably, health professionals have told us about an increasing number of visitors who flatly refuse to obey the rules which have been laid down for the good of everyone, and who become abusive if challenged. I consider this to be wholly unacceptable. We have a



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right to expect the hospital we attend to be clean - but we also have a responsibility not to drop litter in it when visiting, as sadly people all too frequently do. Finally, when we visit the doctor, we have a right to expect to be given a prescription for the medicine we need - but, in return, we have a responsibility not to demand antibiotics if the doctor doesn't think they are necessary and, when given antibiotics, we have a responsibility to finish the course, not to stock-pile them, and not to share them with friends and relations. It is practices such as these which have helped cause Staphylococcus Aureus to mutate into MRSA.

This report is long – we spoke to many people and collected a lot of evidence - but I do hope you will find it interesting and thought-provoking. Many people have helped us in our investigation and I would like to offer my sincere thanks to them all. Whilst a full list of witnesses and those who attended our meetings is provided at Appendix 3, I would like to acknowledge the specific input of:

- All the members of public who phoned our special hotline or wrote to tell us about their experiences, in particular Mrs. Whittaker, Mr. and Mrs. Powney and Mrs. Yates who attended our meeting on 22<sup>nd</sup> September;
- Ed Doolan of Radio WM;
- Representatives of Public and Patient Involvement Forums and Mr Tony Field from the MRSA Support Group;
- Dr. Iain Blair, Afshan Ahmed and Sue Millward who provided expert witness evidence relating to their individual specialties;
- Dr. Ruth Lockley, Heather May, Dr. Annette Wood from the Health Protection Agency;
- All NHS staff who contributed by producing reports and attending meetings, particularly Chief Executives, Infection Control Nurses, Clinical and Medical Directors and Microbiologists;
- Mrs Lilieth Williams, Head of School, University of Central England, Dr. Faye Wilson and Ms Joanne Cohen.

Finally, I must point out that this report is not a comprehensive or scientific study into MRSA. It is a detailed account of those issues that were of concern to the Committee and members of the public. By describing our findings from a public/patients' perspective, we hope we have given a distinctive insight to assist the local NHS in further developing its approach to tackling MRSA.

*David Alon*



# 1: Summary

- 1.1.1 Public concern about MRSA infection, known commonly as a hospital “superbug”, is growing. This review set out to examine what is being done by the local health economy to reduce the complications, suffering and disability caused by MRSA infection and to assess whether or not the public can be confident that everything that can be done is being done to reduce rates of infection.
- 1.1.2 At any one time around 9% of patients have an infection that has been acquired during their stay in an acute hospital NHS Trust in England. The estimated costs of all of these hospital acquired infections are estimated at £1 billion a year and around 15% could be prevented by better application of good practice releasing £150 million for alternative uses in the NHS<sup>1</sup>.
- 1.1.3 Over the last ten years there has been growing concern about the emergence of new strains of bacteria acquired in hospital which no longer respond to antibiotic treatment i.e. they are multi-resistant, one of these is MRSA - Methicillin Resistant Staphylococcus Aureus. Since 2001 the number and proportion of reported bloodstream infections from MRSA have increased by 5%. MRSA accounts for 44% of all Staphylococcus Aureus bloodstream infections in the UK.
- 1.1.4 Although MRSA accounts for only a small proportion (24%) of all hospital acquired infection, rates in the UK are amongst the worst in Europe. In a typical district general hospital with 300-400 beds, around 10-25 patients might be affected at any one time, but there are considerable variations between NHS Trusts and over different periods<sup>2</sup>.
- 1.1.5 Various factors appear to be contributing to the rise in MRSA, including
- the increased activity in the healthcare environment including more throughput of patients to meet performance targets, increased visitors numbers and poor adherence to visiting rules and regulations;
  - more invasive surgical treatments and procedures being undertaken;
  - the indiscriminate use of antibiotics and patients demanding antibiotics for minor viral infections;

<sup>1</sup> Report by the Comptroller and Auditor General HC 230 session 1999-2000: The management and control of hospital acquired infection in acute NHS Trusts in England.

<sup>2</sup> Dr Iain Blair, Medical Public Health Consultant, Health Protection Agency. Presentation to the Health O&S Committee, 7 September 2004.



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- and an increasing number of patients receiving hospital treatment who are frail, vulnerable or elderly, who have underlying chronic diseases such as diabetes or whose immune systems are compromised.

1.1.6 Efforts to control MRSA lack a good evidence base. The Department of Health Mandatory Surveillance Scheme of infection rates only began in 2000 and data is still patchy; there appear to have been relatively few controlled research trials on the impact of specific, single measures such as screening, presence and use of isolation rooms, or environmental cleaning. Professional guidance and opinion on effective control strategies appears to vary considerably. Over the past four years, 11 sets of Departmental guidance have been issued to managers, professionals and estate heads on the control of Health Care Associated Infections.

1.1.7 Locally there appears to be a growing professional consensus that a combination of measures is important in order to reduce the number and spread of MRSA infection, namely

- Active “real time” surveillance (IT-based) to measure infection rates, examine transmission patterns, target infection control measures and give feedback to management and staff.
- Full compliance with proper hand hygiene, availability and use of alcohol hand gels.
- Effective bed management with cohort nursing, isolation wards and rooms, use of 2-4-bedded bays and ability to decant patients away from contaminated areas when required, and the ability to deep clean contaminated areas.
- Pre-operative screening, cohort nursing and isolation of carefully selected, high risk elective patients in certain specialties.
- Keeping the healthcare environment clean and dust-free –i.e. creating a “culture of cleanliness”.
- Thorough decontamination of basic equipment.
- Increasing public awareness and involvement in good infection control practice and compliance along with the need to reduce the use of antibiotics.

1.1.8 The broad findings and conclusions of our review are that:

- NHS Trusts in Birmingham understand the risks to patients, as well as public confidence in local health care associated with poor infection control and high MRSA rates. However, NHS and Primary Care Trusts appear to be at different stages in the development of effective surveillance systems, strategies for infection



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control, investment in training, investment in Infection Control Teams and managerial or professional commitment to the implementation, monitoring and evaluation of such activity. Overall there is not a whole-system or health-economy wide approach to tackling MRSA.

- Different factors - such as frequency and pattern of surveillance, case mix, bed occupancy, clinical practice, isolation policies, availability of single rooms and design of wards - would appear in part to explain some of the variations in MRSA rates which exist between Trusts. (Range 0.35 per 1000 bed days to 0.09 per 1000 bed days between April 03–March 04).
- The training of nurses in the theory and practice of infection control by Colleges of Nursing appears to be comprehensive. However, in-service experience depends on the rigour and adequacy of the mentoring process, the standards and practice adopted by each Trust and the extent to which mentors themselves are kept up to date in infection control both at an academic and in-service level. The training of medical students and junior doctors does not appear to be so rigorous or mandatory.
- Although there are some examples of good practice, few of the Trusts in Birmingham appear to have a particularly advanced strategy or systematic approach to involving patients, their visitors or carers in infection control. Whilst all Trusts aspire to make infection control “everyone’s business”, the main emphasis so far has been on training staff in hand hygiene and issuing patient information leaflets, rather than on enabling patients, Patient Advice and Liaison Services (PALS), Patient and Public Involvement Forums or user groups to play an active part in the overall system of infection control.
- Patient/carer support or community education about basic hygiene needs a higher profile.
- The role of PCTs, the Health Protection Agency and Strategic Health Authority in relation to surveillance and infection control in the community, residential and nursing homes and performance management of Trusts, including Foundation Trusts, appears to be poorly defined and developed.
- At present PCTs, GPs and primary care staff who work locally appear to have almost no current information or surveillance data available to them on which to make decisions or to help patients make choices.



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- Nonetheless there are examples of good practice beginning to emerge which could be shared between Trusts but which are currently not. For example, the development of IT-based surveillance systems in University Hospital Birmingham Foundation NHS Trust and Sandwell and West Birmingham NHS Trust, the use of volunteers as part of the Patient Advice and Liaison Service (PALS) to talk informally to patients on the wards about their experience at Good Hope Hospital NHS Trust and “hand washing hygiene awareness” weeks held on a regular basis at Heartlands and Solihull NHS Trust.

1.1.9 The issues which caused us most concern and which are covered in our recommendations include:

- Reported differences in attitudes, competencies and management of doctors, nurses and agency staff with respect to infection control.
- Lack of clarity about the leadership, roles, responsibilities and accountabilities of ward sisters/managers with respect to infection control, including management of contracted cleaning staff on their wards.
- Problems of recruitment, retention and turnover of cleaning staff working for either the NHS or their contracting agencies.
- High patient throughput and the impact which this has on staff compliance with hand washing.
- Capacity to decant patients into other beds so that contaminated areas can be deep cleansed.
- Under provision of single rooms in which infectious patients can be isolated.
- Reluctance to engage seriously with patients and their visitors about strict adherence to visiting times, number of visitors per patient and good hygiene practice.
- Difficulties encountered by Infection Control Teams in securing resources for control measures.
- Variations in policy and practice with respect to pre-operative screening for colonisation of patients known to be at a higher risk from MRSA.
- Lack of explanation, information and support - both in hospital and after discharge into the community - for patients who have acquired MRSA infection. There appears to be no clear responsibility to inform patients about infection.



## 2: Introduction

### 2.1 Reasons for the Review

- 2.1.1 In July 2004 the National Audit Office (NAO) published figures about the rates of Hospital Acquired Infection (HAI) in hospitals in England, reporting specifically on numbers of cases of Methicillin Resistant Staphylococcus Aureus (MRSA).
- 2.1.2 Three NHS Trusts in the City were amongst those having the highest number of cases of MRSA. Media attention and public concerns around the release of these figures prompted the Health Overview & Scrutiny Committee to undertake a scrutiny review of the matter.
- 2.1.3 MRSA and HAI present growing challenges to health care, not only at local level but also nationally and internationally. Certain streams of bacteria are becoming resistant to antibiotics, forcing scientific and medical research to keep ahead of a universal game to find new ways of dealing with them.
- 2.1.4 MRSA also presents challenges for community and public health, particularly at frontline service provision: in hospital wards, surgical theatres, health centres, nursing and residential homes and, indeed, even in people's own homes, where treatment and care are often provided by health professionals such as district nurses.
- 2.1.5 Public perceptions about poor cleanliness in hospitals, coupled with surveillance figures such as those published by the NAO, are forcing the health sector to rethink its strategies and look for continuous improvements in management and surveillance techniques for infection control.
- 2.1.6 In December 2003 the Chief Medical Officer published the report "Winning Ways: working together to reduce Healthcare Associated Infections". In July 2004 the National Audit Commission published a report making recommendations for NHS Trusts, as well as other bodies, in key areas relating to the surveillance and management of infection control. An overarching aim of our scrutiny review was to assess whether health provision in Birmingham was really winning the battle against MRSA. More specifically, the purpose of the review was to ascertain:



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- whether the local NHS had robust plans and procedures for controlling and reducing the transmission of MRSA;
- that there was a consistent approach to the application of such plans and procedures, and
- that information about MRSA and infection control was being communicated effectively to members of the public.

2.1.7 It is important to point out that the topic of MRSA is huge and wide-ranging. In the timescale within which we were operating, our investigation was focused particularly on those issues of concern to the public. This report, therefore, is in no way a comprehensive account of the many factors that relate to MRSA. Some issues only came to fore during the course or towards the end of our deliberations, and therefore are not covered in a great amount of detail.

2.1.8 Finally, the Committee was clear about its role and function. Due care and attention was paid to ensure we did not duplicate the work of inspection, audit or regulatory regimes. Wherever appropriate we used existing information made available to us from the NHS or Government bodies.

## 2.2 Terms of Reference

2.2.1 Terms of Reference for the review are attached at Appendix 1.

## 2.3 Membership

2.3.1 The review was carried out by the Health Overview & Scrutiny Committee. Members of the Committee were:

- Councillor Deirdre Alden (Chairman)
- Councillor Carol Jones (Vice Chairman)
- Councillor Keith Barton
- Councillor Rev. Richard Bashford
- Councillor Susan Burfoot
- Councillor John Clancy (served July – November 2004)
- Councillor Emily Cox
- Councillor John Cotton



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- Councillor Paulette Hamilton
- Councillor Jane James
- Councillor Sarah-Jayne Plant
- Councillor Arjan Singh (replaced Councillor John Clancy from November 2004)
- Councillor Margaret Sutton

2.3.2 The Committee was guided in its work by Dr. Jacky Chambers [Director of Public Health, Heart of Birmingham (teaching) PCT], in her capacity as Link Officer to the Committee.

2.3.3 The lead officer for the review was Narinder Saggu from the Council's Scrutiny Office. Additional officer support was provided by Darren Wright, Namita Srivastava and Helen Walker.

2.3.4 Dr. Ruth Lockley, Heather May and Dr. Annette Wood from the Health Protection Agency provided further assistance to the Committee with interpreting technical and scientific information relating to MRSA.

## 2.4 Methodology

2.4.1 In producing its findings, the Committee drew on information obtained from the following sources:

- national and local policy guidance and legislative documents
- presentations from experts on MRSA, bacteriology and infection control procedures
- written submissions from NHS Trusts, PCTs and Patient & Public Involvement Forums (PPI Forums)
- written submissions from patients and patient support groups
- observational visits to hospitals and a nursing home

A list of references and written material submitted to the Committee is attached at Appendix 2.

2.4.2 The Committee held a number of public meetings to gather written and oral evidence from NHS Trusts, PCTs, patients and relatives, patient support groups, representatives from training institutions and GPs. A schedule showing each meeting, the purpose of that meeting and the witnesses who attended it is attached at Appendix 3.



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- 2.4.3 A key part of the investigation was the need to listen to and respond to public concerns. The local media (both newspapers and radio) were used to publicise the review and to invite public participation. Following the Committee Chairman's involvement in a debate on Radio WM on 3<sup>rd</sup> August, a special telephone hotline was set up. 68 calls and 17 letters were logged and analysed. Out of all those people who contacted the Committee, 45 were from Birmingham. Subsequently, approximately 8 families were invited to attend a Committee meeting to share their experiences. Illustrations of the "patient experience" have been used, wherever appropriate, throughout the report.
- 2.4.4 Members of the Committee took part in observational visits to two hospitals and one nursing home in Birmingham - City Hospital, Queen Elizabeth Hospital and St. Clements Nursing Home. These were not inspection visits. The purpose was to provide Members with an "up to date" picture of both hospital and community care environments and infection control facilities within these. We were shown around isolation units, cohort wards, specialty units and long-term residential care accommodation. The Committee is grateful to the two hospitals and the nursing home for their co-operation, which enabled us to gain an important insight into their work.
- 2.4.5 Between April 2003 and March 2004 the Council's Public Protection Committee had maintained an interest in the matter. Reports presented to the Public Protection Committee were made available and used by the Health Overview & Scrutiny Committee in producing its findings.
- 2.4.6 Finally, in some places in this report, abbreviations have been used to identify various Trusts and organisations. For ease of reference these are listed below.

BCH NHS Trust	=	Birmingham Children's Hospital NHS Trust
BH&S NHS Trust	=	Birmingham Heartlands & Solihull NHS Trust
B&S HPU	=	Birmingham & Solihull Health Protection Unit
B&SMH NHS Trust	=	Birmingham & Solihull Mental Health NHS Trust
BWHC NHS Trust	=	Birmingham Women's Health Care NHS Trust
EB PCT	=	Eastern Birmingham Primary Care Trust
GH NHS Trust	=	Good Hope Hospital NHS Trust
HPA	=	Health Protection Agency
HoB PCT	=	Heart of Birmingham Teaching Primary Care Trust
NB PCT	=	North Birmingham Primary Care Trust
PALS	=	Patient Advice & Liaison Service
PPI Forum	=	Public & Patient Involvement Forum
ROH NHS Trust	=	Royal Orthopaedic Hospital NHS Trust
S&WBH NHS Trust	=	Sandwell & West Birmingham Hospitals NHS Trust
SB PCT	=	South Birmingham Primary Care Trust
UCE	=	University of Central England
UHB NHS F Trust	=	University Hospital Birmingham NHS Foundation Trust
WMAS NHS Trust	=	West Midlands Ambulance Service NHS Trust



## 3: Findings

### 3.1 What is MRSA ?

- 3.1.1 The Committee began the review with a series of presentations from health experts who provided an important overview about MRSA, infection control and the hospital environment.
- 3.1.2 The Committee learnt that MRSA is a type of bacterium - Staphylococcus Aureus (SA) - that has become resistant to certain types of antibiotics, in particular Methicillin - a derivative of Penicillin. MRSA stands for Methicillin Resistant Staphylococcus Aureus.
- 3.1.3 Many types of bacteria occur naturally in the environment and SA is one of the most common. It is estimated that, at any one time, at least 30% of the population may be carrying SA in the nasal passages, throat, hands, skin or hair. The Committee was informed that MRSA may also be present in the atmosphere on dust particles. The majority of people may be unaware that they are carrying it or that it is living (colonised) on their body. Under normal circumstances and in healthy people, the bacterium is relatively harmless<sup>3</sup>.
- 3.1.4 Problems occur when the bacterium gets into the bloodstream through a cut or broken skin; it naturally attaches itself to manmade materials, thus patients with internal prostheses are more susceptible to infection. It can cause blood infections and pneumonia. MRSA is therefore particularly problematic in hospital environments, especially when people have had surgery (particularly knee or hip replacements), have some form of open wound, are using an invasive device such as a drip or catheter, or when their immune system is particularly weakened. In these cases it can cause added complications to the recuperation process. In some circumstances it can be fatal.
- 3.1.5 People who become infected with MRSA could end up staying in hospital two and a half times longer than uninfected patients, prolonging their time in hospital on average by about 11 days and at an additional treatment cost of £2,917 per case<sup>4</sup>. It is estimated that MRSA costs the NHS around £1 billion a year. It is also

<sup>3</sup> Dr. Iain Blair, Medical Public Health Consultant, Health Protection Agency: presentation to the Health O&S Committee, 7<sup>th</sup> September 2004.

<sup>4</sup> Plowman R. et al: The socio-economic burden of hospital acquired infection. London Public Health Laboratories Service. 2000.



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estimated that around 15% of MRSA cases could be prevented, releasing resources of £150 million for alternative use in the NHS<sup>5</sup>. The Committee considered that this was a staggering figure and that any investment in the NHS to prevent MRSA infections would provide cost benefits in the long run.

- 3.1.6 People who become infected with SA are normally treated with antibiotics, but in cases where the SA has become resistant to Methicillin, these usually prove to be ineffective. In cases where an infection is identified as MRSA the patient will be treated with Vancomycin. This must be administered intravenously and is known to have strong side effects. There are other alternatives to Vancomycin for the treatment of MRSA if its susceptibility is known. These include Erythromycin, Tetracyclines and Trimethoprim for minor infections, or Linzolid for serious infections. Due to concerns about the SA bacterium developing further resistance, the use of antibiotics is strongly regulated by hospitals<sup>6</sup>.
- 3.1.7 Bacteria, by their very nature, adapt in order to survive. The Staphylococcus Aureus bacterium has shown the ability to resist antibiotics over the last 40 years. Different strains of the bacterium differ in their sensitivity to antibiotics. Some strains of MRSA - known as EMRSA - are more likely to spread. To date, 16 epidemic strains have been identified in the UK. So far, the most common strains to affect hospitals have been EMRSA-15 and EMRSA-16<sup>7</sup>.
- 3.1.8 Presenting evidence to the Committee, Dr. Afshan Ahmad, a bacteriologist working for Vaccine Research International, suggested that it was too simplistic to say that "dirty hospitals" were to blame for the spread of MRSA. We live in a rich "antibiotic environment" where:
- Animals are given antibiotics in order to promote growth and ensure they are free from disease. Antibiotics are therefore present in our food chain.
  - The increased cleanliness in our homes reduces the level of immunity to general infections. Indeed, some bacteria have learnt to survive in clean environments and have developed a resistance to cleaning fluids and disinfectants.
  - Many patients insist on getting antibiotics from their doctor for treating cold and flu viruses; however, antibiotics are ineffective against viruses. Whenever such drugs are taken they kill off the good bacteria as

<sup>5</sup> Report by the Comptroller and Auditor General HC 230 session 1999-2000: The management and control of hospital acquired infection in acute NHS Trusts in England

<sup>6</sup> Dr. Iain Blair, Medical Public Health Consultant, Health Protection Agency: presentation to the Health O&S Committee, 7<sup>th</sup> September 2004.

<sup>7</sup> Royal College of Nursing. Guidance for nursing staff – MRSA. April 2004.



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well as those that cause disease, leaving the way open for new strains of bacteria to enter our bodies.

- For many years doctors have over-prescribed antibiotics, which has both weakened our bodies' own systems to fight bacteria and also led to the bacteria learning to resist different types of drugs.
- Some people who are prescribed antibiotics do not complete the course of treatment, enabling the bacteria to develop a resistance and therefore return.
- Additionally, some people "stockpile" leftover antibiotics and try to self-medicate in future illnesses, whilst others share antibiotics intended for someone else. However, specific antibiotics are prescribed for specific infections and taking old antibiotics could do more harm than good <sup>8</sup>.

- 3.1.9 Dr. Ahmad also set out the work that is being done by Vaccine Research International. The organisation is attempting to create a vaccine for SA. At present Vaccine Research International has managed to secure funding for human trials of the vaccine and these are due to begin in 2005. She also said that similar research was being carried out in the USA, but it was at a slightly more advanced stage.
- 3.1.10 The Committee was concerned to hear about the over-usage of antibiotics and expressed the opinion that there should be more public awareness of this problem.
- 3.1.11 Dr Ruth Lockley advised the Committee that it was possible to control MRSA through more education for the public. She believed it would help if the level of antibiotic prescribing was reduced, and for example, children were given the chance to build up a natural immunity to infections and if patients did not request antibiotics from their General Practitioners (GPs) for viral infections. As regards the latter issue, Dr Lockley advised that GPs were provided with "non-prescription packs" and they were encouraged to use these to explain to patients why drugs had not been prescribed.

<sup>8</sup> Dr. Afshan Ahmad, Bacteriologist, Vaccine Research International Ltd.: presentation to the Health O&S Committee, 7<sup>th</sup> September 2004.



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### 3.2 Transmission of MRSA

- 3.2.1 The Committee heard that the spread of MRSA is dependent on two inter-relating factors: source of the infection and route of transmission. In terms of "source", MRSA usually spreads from person to person via those that are already colonised or infected with the bacterium, or when colonised patients infect themselves. In terms of "route", this can be via the hands, use of equipment (including invasive devices) or when the bacterium is present in the environment.
- 3.2.2 The Committee learnt that both source of infection and route of transmission hide a multitude of complexities and that it is difficult to isolate or pinpoint one single cause. Within a hospital environment, the transmission of MRSA is more acute and heightened for a number of reasons. The personal and invasive nature of some treatments, the number of interactions between patients, visitors and healthcare workers and the various types of equipment or other objects in the hospital environment could all be areas of potential risk. However, in the main, infection was most likely to occur during or after certain clinical or invasive procedures. Patients who were carriers or colonised with the SA bacterium are of greater risk of becoming infected with MRSA.
- 3.2.3 The Committee also heard that there were many areas where research was inconclusive about the transmission of MRSA. This included the presence of MRSA in dust particles, air droplets, through breathing and the carriage of MRSA on clothing, including nurses' uniforms. The Committee probed into these and various other issues relating to the transmission of MRSA, such as screening programmes, the wearing of masks by healthcare workers and effective hand hygiene. Our findings are outlined here and elsewhere in our report.

#### Hand Washing Hygiene

- 3.2.4 We heard that good hand hygiene was the single most important factor in preventing and reducing the risk of infection<sup>9</sup>. Standard Infection Control procedures recommend that health care staff must wash their hands between each patient contact and that protective clothing (such as aprons, gloves and masks) are worn for certain clinical procedures. Additionally, patients and visitors should be encouraged to maintain good hand hygiene, especially on entry and before leaving a ward. The Government had recently launched the "Clean Your Hands" campaign (September 2004) to improve hand hygiene in hospitals. This was complemented by the introduction of alcohol rubs as standard hygiene practice.

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<sup>9</sup> Sue Millward, Independent Infection Control Nurse, presentation to the Health O&S Committee, 7 September 2004.



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- 3.2.5 In relation to hand washing, during observation visits to City Hospital and the Queen Elizabeth Hospital, the Committee was pleased to see alcohol rubs available on entry to wards and also at every bedside. Whilst we were encouraged to use these during our visits, the Committee was unable to ascertain the extent to which all staff and visitors were complying with the messages about hand hygiene. In some wards, posters and patient leaflets were displayed, but the Committee believed that more wide scale publicity was needed, particularly to raise visitor awareness.

### Screening Programmes

- 3.2.6 In relation to screening programmes, the Committee heard that the actual detection of SA or MRSA was not a straightforward process. In some cases it involved nasal and skin swabs being taken and two positive tests in a three-week period being required to establish if a patient was colonised or a carrier. However, some people are intermittent carriers, requiring a series of tests over longer periods of time; this applies to both staff and patients.
- 3.2.7 Furthermore the Committee was informed that the more sites of staphylococcal carriage that are screened, the more likely MRSA would be detected. Once tested, there was an inevitable delay (of approximately 48-72 hours) in getting results due to the need to grow the SA bacterium and to test its antibiotic susceptibility.
- 3.2.8 The Committee agreed that screening programmes were important and considered that all patients had a right to know whether they were colonised or carriers of the bacterium so that they could take the necessary precautions before going into hospital. However, Dr. Iain Blair and Dr. Ruth Lockley both informed the Committee that wide scale programmes would be costly and impractical. Screening for colonisation was worthwhile only when patients were attending surgical wards for invasive procedures.
- 3.2.9 In relation to the screening of patients before surgery, the Committee found that some hospitals in Birmingham were using pre-operative and post-operative screening programmes to test surgical patients for infections. However, this was only possible for patients going into hospital on a planned/elective basis. Unfortunately, many of those hospitals identified as having higher rates of MRSA were acute hospitals where many patients were admitted as emergencies. In these situations it was difficult for hospitals to undertake screening of patients and obtain timely results, even if they required surgery and were at a higher risk of SA infection. In some cases patients were transferred from other hospitals at short notice and again, on these occasions, screening was not possible.



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### Isolation and Cohorting Facilities

- 3.2.10 One of the difficulties in undertaking screening was that once patients had tested positive for SA or MRSA they had to be isolated/disinfected and treated in special units. The Committee was concerned to hear that it was not physically practical for all hospitals in Birmingham to have isolation units or cohort rooms; this could be due variously to the design and condition of the buildings, the size of the hospital and the demands placed on it. In these circumstances, hospitals found it a challenge to implement pro-active “seek and destroy” policies for MRSA infection.
- 3.2.11 The apparent lack of spare capacity in hospitals was reinforced by patient experiences. Some patients who we spoke to confirmed that even though they were suspected of having an MRSA infection they were not moved to an isolation unit or single room, or they were only moved once the infection had been confirmed. Others told us that they were moved to isolation or single occupancy rooms, but that nobody had informed them of the reason for this. It was the Committee’s opinion that such practice has implications for the spread of infection as patients, their visitors and others who come into contact with them are unaware of the risks and therefore do not take the necessary precautions. We also felt that that such practice inadvertently created a culture where there was lack of openness around MRSA i.e. that MRSA was not generally discussed, information was not shared with patients, relatives and carers at the right time and in the right manner. Overall it left patients feeling that MRSA was something to be feared – a taboo subject. This approach also meant patients and visitors were unable to take the necessary precautions to reduce the spread of infection.
- 3.2.12 As regards isolation facilities, the Committee was of the view that isolation units and ‘cohorting’ of patients were an essential part of controlling the spread of infection and that all hospitals should either have single occupancy rooms, isolation wards or spare capacity areas identified within their buildings, both to prevent cross-infection and also to allow for decanting of wards. It is recognised that the physical constraints of many current buildings will not allow for immediate compliance with this recommendation, but it is strongly urged that serious consideration should be given to these facilities whenever plans are formulated for any new-build projects or reconfiguration of existing buildings.

### Screening of Health Care Workers

- 3.2.13 Whilst there appeared to be a general consensus of opinion on the importance of screening in preventing MRSA infections, the Committee noted the concerns of Mr. Tony Field, Chair of the MRSA Support Group. The Support Group is a national organisation, based in Birmingham, and provides information, advice and practical guidance to MRSA sufferers and their families. Mr Field himself suffered from MRSA, which he contracted in a hospital in



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Birmingham.

- 3.2.14 Mr Field suggested that some research had been done which pointed to health care workers presenting a risk as they could be carriers of the bacterium. However, as there was no routine testing it was difficult to ascertain the extent to which they were a contributory factor.
- 3.2.15 Dr Iain Blair informed the Committee that it was rare for health care workers to become infected with MRSA and that they were more likely to be a "conduit".
- 3.2.16 The Committee saw guidance issued by the Royal College of Nursing which stated that:
- "nurses who are colonised or infected with MRSA will probably have acquired the organism through their work. Nasal carriage is most common and usually transient, in some cases lasting only a matter of hours. For this reason routine screening of staff is not recommended."*<sup>10</sup>
- 3.2.17 We also read research articles that suggested that the colonisation of health care workers should not be overlooked in the prevention of MRSA:
- "one crucial measure to control MRSA, which is not evidence based and therefore not necessarily included in recent guidelines is for screening and decolonisation of health care workers. We have known for more than 50 years that nasal self-inoculation of SA by hand to nose transfer happens subconsciously all the time."*<sup>11</sup>
- 3.2.18 Written evidence submitted to the Committee indicated that local NHS Trusts are undertaking staff screening when outbreaks occur or when staff have come into contact with MRSA patients. Staff confirmed as being infected with MRSA are referred to Occupational Health.
- 3.2.19 The Committee was concerned to see an incomplete picture emerging. It was difficult to ascertain the extent to which the screening of health care workers was factored into a hospital's approach to tackling MRSA. Variations and contradictory advice and information from researchers, Government guidance and nursing institutions seemed to be creating confusion and inconsistency about approaches at an operational level and thereby adding to fears amongst members of the public.

<sup>10</sup> Royal College of Nursing, MRSA guidance for nursing staff, April 2004.

<sup>11</sup> Andreas Voss. Preventing the spread of MRSA. BMJ Vol 329, Sept 2004.



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### Use of Soap

- 3.2.20 The Committee had a similar experience regarding the use of soap for hand washing. The Committee heard from trained nurses, infection control nurses and from the Health Protection Agency that antibacterial liquid soap in a dispenser – not bar soap - was essential in getting rid of bacteria during hand washing routines.
- 3.2.21 The Committee also heard from Mr Tony Field and was provided with research evidence suggesting that bar soap could not be relied upon for removing all traces of bacteria. Yet the Royal College of Nursing Guidance on MRSA states:
- “Soap and water is usually adequate, but alcohol hand rub can be used instead, if hands are socially clean<sup>12</sup>.”*
- 3.2.22 Julie Moore, Chief Operating Officer at University Hospital Birmingham NHS Foundation Trust informed us that soap was essential to remove organic matter before alcohol hand gels would work. If used correctly, disinfectant soap and water would adequately decontaminate hands. However, as proper washing with soap and water was time consuming, it was important that both correct hand washing technique (which could be taught and tested for) and hand hygiene compliance (which was improved by hand gels) was used.
- 3.2.23 The Committee considered that there needed to be more consistency and co-ordination of the advice and guidance being produced for health care workers around this issue.

### Wearing of Face Masks

- 3.2.24 Additionally, in presenting evidence to the Committee, Mr. Tony Field said that MRSA may also be transmitted through breathing or air particles and that healthcare workers should be encouraged to wear facemasks to reduce the spread of infection. The Committee was informed by Heather May (Health Protection Agency) that facemasks were used for certain clinical procedures but that they were only effective for a short period.
- 3.2.25 She also stated that some experimental studies and trials<sup>13</sup> had indicated that facemasks contributed little or nothing to the protection of patients in wards against infection, and their routine use for aseptic procedures, including post operative dressings is therefore unnecessary.

<sup>12</sup> Royal College of Nursing: Working Well Initiative. Guidance for nursing staff – MRSA. April 2004.

<sup>13</sup> Taylor. L.J. Are masks necessary in operating theatres and wards? 1980 as referred in Journal of Hospital Infection 1.



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## 3.3 MRSA – Risk Groups

3.3.1 The Committee heard that, on an individual level, certain people or patients are more at risk than others for becoming colonised or infected with MRSA <sup>14</sup>. This includes those having:

- weakened immune systems caused by severe illnesses;
- a previous history of MRSA, colonisation of MRSA or other forms of antimicrobial infections;
- underlying diseases or conditions, particularly chronic renal disease, insulin dependent diabetes, peripheral vascular disease, dermatitis or skin lesions;
- invasive procedures or devices, such as dialysis, heart monitors, urinary catheters;
- repeated contact with the health care system.

3.3.2 We also learnt that the commonest sites of healthcare associated infections (not just MRSA) on the body are <sup>15</sup>:

Urinary	23%
Lung	22%
Wound	9%
Blood	6%

3.3.3 Finally, the Committee was presented with a table of risk categories illustrating guidance issued by the Royal College of Nursing (RCN).

Table 1: Risk categories			
Source: Royal College of Nursing. Working Well Initiative. Guidance for Nursing staff - MRSA. April 2004.			
High	Moderate	Low	Minimal
<ul style="list-style-type: none"> <li>• Intensive care</li> <li>• Special care baby unit</li> <li>• Burns unit</li> <li>• Transplant unit</li> <li>• Cardio-thoracic</li> <li>• Orthopaedic</li> <li>• Trauma</li> <li>• Vascular</li> <li>• Regional, national, international referral centres</li> </ul>	<ul style="list-style-type: none"> <li>• General surgery</li> <li>• Urology</li> <li>• Neonatal</li> <li>• Gynaecology</li> <li>• Obstetric</li> <li>• Dermatology</li> </ul>	<ul style="list-style-type: none"> <li>• Elderly (acute)</li> <li>• General medical</li> <li>• Children (neonatal)</li> </ul>	<ul style="list-style-type: none"> <li>• Elderly (long stay)</li> <li>• Psychiatric</li> <li>• Psycho-geriatric</li> </ul>

<sup>14</sup> Dr. Iain Blair, Medical Public Health Consultant, Health Protection Agency: presentation to the Health O&S Committee, 7<sup>th</sup> September 2004.

<sup>15</sup> Emmerson et al. The second national prevalence survey on infection in hospitals. 1996 as quoted in the report of the Chief Medical Officer: Winning Ways – Working together to reduce healthcare associated infection in England. December 2003.



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- 3.3.4 The Committee was concerned that the information we received about risk groups as presented by the Health Protection Agency and in Government guidance was at variance with information contained in the publication issued by the Royal College of Nursing. The latter indicated that Elderly (acute) and Elderly (long stay) patients were of low and minimal risk. Yet, in the Committee's view, these groups were probably the most likely to have weakened immune systems, repeated contact with the healthcare system and more likely to use invasive devices such as catheters. Furthermore, we were told that urology, renal dialysis units and knee and hip surgery were also high risk areas but in the RCN guidance, urology was listed as medium risk and renal dialysis was not listed at all. Whilst we accept that knee and hip surgery come under the banner of Orthopaedics, we felt they should have been specifically mentioned.
- 3.3.5 It appeared to the Committee this was yet another area where there was inconsistency of advice and guidance between researchers, Government guidance and the Royal College of Nursing. This may be causing confusion at operational level amongst healthcare workers and could also be contributing to a general lack of understanding about MRSA amongst patients and the public. In the Committee's view, it was important that the Department of Health, scientific researchers and healthcare professionals were more co-ordinated in terms of producing a definitive guide about risk groups, so that targeted interventions against MRSA infection were more likely to succeed.



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### 3.4 MRSA - How Much Of A Problem Is It?

- 3.4.1 There is a background level of infection in all hospitals with occasional acute outbreaks when the levels increase.
- 3.4.2 On a general level, it is believed that at any one time 9% of hospital patients have an infection caught in hospital. There are at least 300,000 cases of hospital acquired infections in a year.
- 3.4.3 In a typical general hospital there may be 300-400 people identified as SA carriers, with 10-25 patients affected by the infection at any one time. Approximately 44% of patients tested for the SA bacterium in their blood are now being found to be MRSA positive, compared with just over 2% in 1992<sup>16</sup>. This is the highest figure in Europe, as Table 2 shows.

**Table 2. Proportion of Staphylococcus Aureus blood isolates resistant to Methicillin (MRSA)**

Source: Report of the Chief Medical Officer: Winning ways – working together to tackle hospital associated infection in England. December 2003

Denmark	1%
Netherlands	1%
Austria	11%
Germany	19%
Spain	23%
France	33%
Portugal	38%
Italy	38%
Greece	44%
United Kingdom	44%

- 3.4.4 It is also believed that, nationally, approximately 5,000 people may die annually as a result of hospital acquired infection - of which MRSA is only one. Death certificates mentioning MRSA as a contributory cause increased from 53 in 1993 to 800 in 2002<sup>17</sup>. The rise in figures needs to be viewed in the light of the introduction of Government guidance on recording MRSA on death certificates in 2000. However, the Committee also heard that there were many cases where MRSA infection was not mentioned as a contributory cause of death. The real figures are therefore as yet unknown. In order for hospitals to have a real awareness of the scale of MRSA infection and its impact, the Committee considered that hospitals should be more open about naming MRSA infection where this has been a contributing factor or even present at the time of death. Careful and active naming of MRSA infection on

<sup>16</sup> Dr. Iain Blair, Medical Public Health Consultant, Health Protection Agency: presentation to the Health O&S Committee, 7<sup>th</sup> September 2004.

<sup>17</sup> Dr. Iain Blair, Medical Public Health Consultant, Health Protection Agency: presentation to the Health O&S Committee, 7<sup>th</sup> September 2004.



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death certificates would assist in providing more realistic data about how much a problem MRSA is in our hospitals and would also assist in creating a culture of openness and awareness about MRSA amongst the public.

- 3.4.5 As regards the lower rates of MRSA in Scandinavian countries, reasons given for this were that the hospital environments in these countries were different to the UK: they had more capacity, more single rooms, no large wards and generally did not experience the same pressures around throughput of patients. Additionally their hospital buildings were said to be newer and modern<sup>18</sup>.

### **MRSA In The Community**

- 3.4.6 The Committee was informed that the levels of MRSA in the community can only be estimated or based on research studies as there is no mandatory national surveillance scheme to measure its prevalence in the community. It was suggested that MRSA is present at a very low level in the community: usually, people who have the bacterium will have recently come out of hospital. MRSA is also estimated to be present in small levels in nursing homes. The Committee discussed issues relating to the transmission of infections between nursing and residential homes and the acute hospital sector due to the transfer of patients, sometimes at short notice.
- 3.4.7 During a Committee visit to the St. Clements Nursing Home, the statement was made that normally their residents were free from major infections: however, a significant proportion of them were found to be infected with MRSA upon discharge from hospital, requiring subsequent barrier nursing. It was noted by the Committee that the modern design of this purpose-built unit created exceptionally good facilities for such care and that staff and visitors were all aware of and followed carefully the required procedures.
- 3.4.8 The Committee was informed by Heather May of the Health Protection Agency, that under national guidance and local policy, barrier nursing of patients in nursing homes is not advised. The guidance states that patients with MRSA should not share a room with other patients who have wounds or invasive devices, however, they could socialise in communal areas providing wounds were covered with a permeable dressing.
- 3.4.9 The Committee agreed that there should be consistency of practice and approaches for dealing with MRSA patients both in hospital environments and in other nursing/residential care establishments in order to minimise risks of transmitting infections during the transfer of patients.

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<sup>18</sup> Dr Iain Blair, Medical Public Health Consultant. Health Protection Agency: presentation to the Health O&S Committee, 7<sup>th</sup> September 2004.



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### Surveillance And Audit Systems

3.4.10 The Committee heard that for hospitals there are currently one surveillance and two audit systems that provide a picture of MRSA infection rates and infection control measures. These are:

- **The Department of Health MRSA Bacteraemia Surveillance Scheme**

Under this system, data is collected quarterly from each Acute NHS Trust in England. Trusts are categorised into specialist Trusts, Single Specialty Trusts and General Acute Trusts. The rate of MRSA is calculated using a formula based on bed occupancy rates.

- **The Commission for Health Improvement (CHI) Star Rating System**

This is an annual system where the performance of Trusts is judged against certain indicators. Improvement in MRSA is one of the clinical indicators.

- **The Patient Environment Action Team (PEAT) Traffic Light System**

This is a programme whereby teams of inspectors, which include members of the public, assess the cleanliness of the hospital environment using 18 criteria, e.g. wards, corridors, A&E, etc.. Hospitals are awarded a traffic light colour to denote good (green), acceptable (amber) and poor (red) performance. In 2003-04, this system was changed. Hospital cleanliness can now be graded excellent, good or acceptable. This cleanliness scoring is now also linked to the star ratings system.

Performance data relating to Birmingham hospitals under each system is provided in appendix 4.

3.4.11 When discussing this statistical data, Dr. Ruth Lockley from the Health Protection Agency advised the Committee that the figures should be interpreted with caution, for the following reasons:

- Data systems for collecting information on MRSA are relatively new. The Department of Health's two-year, mandatory bacteraemia surveillance programme came into effect in 2000. Therefore figures published in 2004 are only the second set to be produced.
- Data on MRSA rates are not straightforward indicators of the robustness of a Trust's infection control procedures, but are there to enable Trusts to undertake further local investigations.
- An infection reported by an Acute Trust might not have been acquired in that hospital, e.g. because of patient transfer between hospitals. In this way



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Trusts may import MRSA from other hospitals or from the community.

- Some bacteraemia will be acquired in other Trusts and diagnosed / recorded in both the transferring and receiving Trust, thereby contributing to over counting nationally.
- There is no straightforward way of comparing NHS Trusts as they are categorised depending on the type of patients they treat and the services they offer. Some hospitals have specialist units which receive referrals from other Acute Trusts (e.g. renal or cancer units). A Trust with a higher ratio of patients vulnerable to MRSA - such as specialist surgical units, organ transplants, heart surgery, etc. - might have a higher rate than a Trust with lower risk units (e.g. maternity or paediatric wards) or without major specialist surgical, intensive care or renal units.
- The formula for assessing an Acute Trust's MRSA rates is dependent on bed occupancy figures (per 1,000 bed days). However these figures pre-date the MRSA data collection and surveillance programme and bed occupancy is therefore not a reliable denominator. The disparity in the timing of the data collection also has an effect on a Trust's rates if there has been a significant change in activity in that Trust. This may occur when there has been a merger of Trusts or the closing of a specialist unit.
- Furthermore, the denominator figures do not include day cases. Thus MRSA bacteria in these patients may make a Trust's figures look falsely high, as these patients will feature in the numerator but not in the denominator<sup>19</sup>.
- A hospital may appear to have a high number of cases of MRSA because the doctors there are more diligent in testing for MRSA. Where more specialised procedures are being performed, blood tests taken on a consequently more regular basis will therefore increase the chance of identifying infections.
- The data takes no account of the prevalence of bacteria strains in the community<sup>20</sup>.

3.4.12 The Committee was also informed that there are a number of

<sup>19</sup> MRSA surveillance and control in Birmingham Healthcare Establishments. Health Protection Agency October 2003. Report submitted to the Birmingham City Council's Public Protection Committee 21 November 2003.

<sup>20</sup> Dr. David Pitches. Rates of MRSA infection in Birmingham Hospitals. October 2002. Report to Birmingham City Council's Public Protection Committee 15 November 2002.



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difficulties with collating appropriate and relevant MRSA surveillance data both nationally and locally and that within these constraints Trusts do their best to collect appropriate data.

- 3.4.13 In the Committee's view the data collection systems did not appear to give us an accurate and up-to-date picture of MRSA, infection control and cleanliness across Birmingham hospitals. There appeared to be no straightforward or consistent method for collecting statistics on Trusts, because of the disparities in the nature of patients and the way in which individual hospitals were categorised. The Department of Health Mandatory bacteraemia rates seemed to be the only formally recorded surveillance system, however this was reliant on bed occupancy figures and also reporting of blood culture samples testing positively for MRSA.
- 3.4.14 Whilst we understood that the bed occupancy figure was not a reliable denominator, the Committee was concerned to learn that blood culture samples were not routinely carried out by all hospitals to test high risk patients for MRSA. We noted that blood cultures are routinely taken in all hospitals in all patients where the doctors consider that the patients are sufficiently ill with any suspected infection to have a bacteraemia, but that unless the patient was systemically unwell, no blood cultures would be taken. We also noted that Single Specialist Trusts (e.g. Royal Orthopaedic Hospital NHS Trust and the Birmingham Women's Healthcare NHS Trust) which had very low or nil rates for MRSA would need to weigh up the need for all patients to be sampled with the actual risk of infection.
- 3.4.15 The Committee heard that those hospitals that were more diligent in collecting blood samples of all high risk patients e.g. following major surgery, risked being criticised for having higher levels of MRSA than those hospitals not collecting or recording such data. In the Committee's view there seemed to be an incentive for Trusts not to collect the data in order to keep their MRSA figures low. We considered that if this was happening, it was unhelpful and should be addressed. Trusts needed to develop other ways of collecting real-time data and identifying the actual scale of the problem in their hospitals if they were to start tackling MRSA in a proactive way.
- 3.4.16 In addition to blood culture sampling for all surgical and high risk patients, the Committee believed that other measures could also be initiated such as the taking of wound swabs and urine samples. Such testing would begin to give a clearer indication of actual MRSA rates, its transmission within the hospital environment, where outbreaks occur and how patterns are changing over time. Whilst initially the availability of such data may show a Trust as having higher rates of MRSA, it was better to have this data and develop ways of dealing with it than not to be aware of it all.
- 3.4.17 Furthermore, the Committee had reservations about the adequacy



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and reliability of some of the audit and inspection systems and how useful they were to Trusts in enabling them to ascertain their performance around hygiene and infection control. In the Committee's view, the annual PEAT inspection for all the local hospitals indicated that these Trusts were doing very well (see appendix 4). However, this was not reflected in the experiences relayed to us by patients and the public, nor in hearsay. Section 3.6 of our report describes some of the stories we heard and suggests there is a level of concern around many hospitals in Birmingham.

- 3.4.18 The Committee was also uncertain about the extent to which PEAT inspections audited public areas in the hospital or whether they focused largely on patient areas. This was particularly important in relation to the roles and responsibilities of visitors and members of the public who also need access to hygienic facilities (e.g. toilets) and therefore can help reduce the risk of bringing infections into hospital wards.
- 3.4.19 Finally, from the evidence provided to the Committee and our discussions with various healthcare professionals there seemed to be a lack of consistent understanding about:
- The role of PEAT inspectors, who they were and how they were appointed;
  - To what extent they had a good knowledge of the hospital environment and risk areas for that particular organisation;
  - Whether they were focussed enough on tackling infection control or whether their purpose was to concentrate on aesthetic matters relating to the hospital environment;
  - Knowledge of the type of patients being treated at a particular hospital, the number and type of high risk categories being treated and where these patients were within the hospital;
  - Whether they assessed the availability of isolation and cohorting facilities;
  - Whether when auditing the cleanliness of the hospital environment sufficient regard was given to other aspects of hygiene, e.g. minimum bed spaces, patient and visitor responsibilities, information for patients and visitors and staff compliance with infection control procedures.
- 3.4.20 From the information available to us, the Committee was of the view that PEAT inspections seemed to more about feeding back observations about the visual cleanliness and tidiness of patient areas rather than testing for cleanliness of the patient environment. In the fight against MRSA, actual testing for cleanliness was more



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important and therefore PEAT inspections needed to be strengthened or replaced by a more effective system.

### 3.5 MRSA - Why Is It A Problem?

3.5.1 In February 2000 the National Audit Office published their report "The Management and Control of Hospital Acquired Infection in NHS Acute Trusts in England". This showed that hospital acquired infection was not seen as a priority within the Health Service and made two main points:

- The NHS did not have a grip on the extent and cost of hospital acquired infection.
- A root branch shift towards prevention was needed at all levels of the NHS, requiring commitment from everyone, and a philosophy that prevention should be everybody's business, not just specialists.

3.5.2 In July 2004 the National Audit Office published a subsequent report examining whether the management and control of hospital acquired infection in the NHS Acute Trusts had improved and whether there were any changes to patient outcomes. The overall conclusion of the most recent report is that some progress has been made at Trust level in putting systems and procedures in place and in strengthening Infection Control Teams, but wider factors impede good infection control practice. The report makes specific recommendations to NHS Trusts around:

- Clarifying and explaining infection control accountability at Trust level.
- Actively demonstrating commitment from Trust Board level and senior management, including ways of ensuring compliance with infection control practice through staff appraisals.
- Reviewing Infection Control Team staffing and resources.
- Participation in all mandatory surveillance schemes.
- Making better use of data to gain a wider perspective of the extent of hospital acquired infection and antibiotic prescribing.
- Addressing staff training and induction issues.
- Requiring consultation with Infection Control Teams to be a mandatory step in the contract tendering procedure for new-build projects, cleaning, laundry and catering services.
- Demonstrating that Infection Control Nurses are



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included in patient and public consultations.

- Increasing public awareness of and compliance with good infection control practice and encouraging their active participation in improving staff and visitor compliance.

3.5.3 During the course of our review the Committee was able to obtain a snapshot of the extent to which the above measures were being implemented in local hospitals and whether there were any “wider impeding” factors which needed to be addressed. Infection control measures that were in place in Birmingham hospitals are described in Appendix 5, along with examples of good practice.

3.5.4 As pointed out earlier in this report it was too simplistic to say that dirty hospitals were to blame for the spread of MRSA and there were other contributory factors. As regards some of these, the Committee spoke to patients, members of the public and Patient & Public Involvement Forums. Much of the information we gathered seemed to indicate that concerns continued to exist around:

- Hygiene and cleanliness
- Bed management and capacity/resources issues in hospitals
- Patient and visitor education
- Accountability and surveillance

3.5.5 Information received about the above areas is detailed below.

### 3.6 Hygiene And Cleanliness

3.6.1 Cleanliness and infection control are closely linked in the public mind. Patients rightly expect hospitals to be clean and safe environments where they can be assured of high quality treatment and care. Infection control is, therefore, a key indicator of the quality of care. When infections are acquired, questions are usually raised about hygiene standards, the sterilisation of surgical equipment and general cleanliness of the hospital environment.

3.6.2 However, we heard various stories from patients and relatives describing their experiences of hygiene, practice and approaches to MRSA in many hospitals including University Hospital Birmingham NHS Foundation Trust, Birmingham Heartlands and Solihull NHS Trust, Sandwell and West Birmingham Hospitals NHS Trust, The Royal Orthopaedic Hospital NHS Trust and Good Hope Hospital NHS Trust. A selection of those experiences are described below:

- “Relative caught MRSA when a tube in her lungs fell out and was replaced without being cleaned.”
- “Father died of MRSA but family not told about this or



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reason why he was in an isolation unit.”

- “Mother admitted to hospital and moved to an isolation ward. Mother’s dirty linen – heavily soiled - was put in cubicle beside bed. It should have been put into a plastic bag”.
- “I picked up Staphylococcus Aureus bacteria during abdominal surgery – not resistant. Never saw staff wash hands after handling curtains. In the old days, cleaners used to raise bed and clean underneath. Matron used to have to give permission for visitors – now sometimes you see 6-10 visitors per bed bringing and sharing food”.
- “I had a hip replacement and was in hospital for nine days, but cleaners did not clean underneath the beds; one blood stain was there for nine days.”
- “I went in to have two artificial knees. One leg healed, the other didn’t. Wasn’t told it was MRSA but found out from one of the drugs I was prescribed that I’d got MRSA.”
- “I was put in an isolation ward and told I had an unidentified illness. I wasn’t told I couldn’t leave the room and wandered out to the horror of the nurses. Hygiene was also inconsistent, staff delivering meals came in without wearing aprons. One day I found someone’s colostomy bag left in the shower room.”
- “Mother died from infection due to operation for broken hip. I wasn’t told at the time that it was MRSA but saw a note next to the bed to say apron/ gloves had to be worn. Also saw clinical waste (i.e. cotton wool, syringe) on the floor.”
- “I’m waiting for a hip replacement but have been told, following tests, that I’m colonised with MRSA. The test was carried out some months ago, since then the GP prescribed nasal ointment and anti-bacterial wash in order to get rid of the colonisation. It cleared up and then returned again. I’m pleased the hospital is testing patients and am pleased with the level of information provided.”
- “I was admitted to hospital for a bowel operation and caught MRSA as a result of a poorly dressed wound and unchanged dressing. One doctor told me I didn’t have MRSA, then they swapped around and another doctor told me I did have MRSA. It took 5 courses of antibiotics to clear it up. I’m scared stiff of having surgery again. It’s not the doctor’s fault, it’s down to cleanliness – dirty floors, no proper cleaning under the beds, dirty toilets. Surgical wards should have a



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cleaner there the whole day.”

- “Mother-in-law went into hospital for a hip operation and caught MRSA and died. She was given massive doses of antibiotics which made her skin go brown. Cleanliness was appalling. No one washed their hands. I wasn’t given any information on it.”

3.6.3 These stories were voluntarily relayed to us by members of the public. Following the Committee Chairman’s involvement in a debate on Radio WM on 3<sup>rd</sup> August, a special telephone hotline was set up and 68 calls and 17 letters were logged and analysed. From the calls and letters we received, there was an overall perception amongst members of the public that standards of hygiene and cleanliness in hospitals had fallen over the last 10-15 years. This was blamed on factors such as: beds and bed areas not being cleaned properly; not enough cleaning of communal areas, such as toilets, baths and showers; wash bowls, lockers and bedside equipment not being cleaned between patient usage; nurses wearing their uniforms outside the hospital; poor adherence to hand washing policies by nurses and doctors; lack of rigour in some nursing procedures; and poor adherence to visiting regulations.

3.6.4 The Committee acknowledged that there had been extensive media coverage of MRSA on a national and regional level which contributed to increased awareness and concerns raised by the public in relation to cleaning matters. More specifically, the Committee was also aware of a recent investigation conducted by the Evening Mail which raised concerns about cleanliness at Heartlands Hospital. Whilst we cannot validate the methodology used for this investigation, it is inevitable that the publicity surrounding it may have heightened public anxiety about cleanliness in hospitals.

3.6.5 The Committee was pleased to receive an inspection report produced by Eastern Birmingham PCT PPI Forum examining cleanliness at Heartlands Hospital. Overall, the inspection report contained positive observations about hygiene at the hospital. However, it also raised concerns about procurement of cleaning contracts, standards of pay of conditions and high vacancy levels of staff employed under such contractual arrangements.

### **Nurses Uniforms**

3.6.6 In relation to nurses wearing their uniforms out of hospital, the Committee was informed that not all hospitals provide changing or laundry facilities for nurses. Where changing facilities are not available, nurses are only supposed to wear their uniforms while travelling to and from work and not anywhere else. Julie Moore, Chief Operating Officer at University Hospital Birmingham NHS Foundation Trust, said nurses who were found to be wearing their uniforms in areas where they were not supposed to should expect to be challenged.



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- 3.6.7 During a visit to the Royal Orthopaedic Hospital the Committee Chairman found that new wards in the hospital had changing facilities for nurses to change into their uniforms and that uniforms were also laundered by the hospital. The Committee considered that all hospitals should have some changing facilities that would mean nurses did not have to wear their uniforms outside the hospital environment. All hospitals should also provide laundering facilities for nurses' uniforms, not least because there is no guarantee that uniforms laundered at home are always washed at the correct temperature.
- 3.6.8 The concern over nurses' uniforms was extended to include doctors. It was reported that doctors no longer routinely wore white coats, as part of efforts to be seen to be closer to their patients. However, there was a risk that they could carry bacteria on their clothes as they visited patients.

### **Aseptic Technique And Nurses Training**

- 3.6.9 In sharing her experiences with the Committee, Ms. Joanne Cohen - a State Registered Nurse who had been trained in the 1980s and who had recently been re-trained following a career break - said she believed current nurse training did not focus enough on the use of aseptic technique. This was an essential part of nurse training, where students were taught how to maintain personal, patient and clinical hygiene for a range of procedures. This applied to all patients - not just those at greatest risk of infection. In the 1980's, without passing an exam in aseptic technique, nurses would not have qualified for registration. Unfortunately, this core module seemed to be missing from the current training curriculum. Additionally, Ms. Cohen believed that there was great benefit in nurses being trained on a ward under the close supervision of a ward sister. This provided day-to-day practical experience of ward procedures, routines and interaction with patients and created an imperative for nurses to "get it right". However, current nurse training was delivered in educational establishments in simulated environments and lacked some of the advantages of hospital-based experience.
- 3.6.10 The Committee heard from Lilieth Williams, Head of the School of Nursing at the University of Central England. She disputed that standards had fallen in hospitals due to current nurse training. She explained that student nurses received a high level of academic and practical training in a range of disciplines and that infection control was a core subject in the nursing curriculum. Students had to pass a series of progressive competencies over the course of three years and were assessed during work placements by a hospital-based mentor. The competencies were centred around the inter-relationship between various staff members, patients and visitors. Students were encouraged to challenge poor practice, including poor hand hygiene and staff/visitors sitting on beds.



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- 3.6.11 As regards student nurses being able to challenge poor practice of nurses and doctors or their work—based mentors, the Committee was not convinced that this was an easy thing to do. Whilst we accepted that students were encouraged to confront bad practice, we also acknowledged that they were also dependent on their mentors and work-based colleagues for obtaining a qualification. Additionally, the Committee was unable to identify how mentors and health care practitioners were themselves assessed for suitability and that they themselves were exemplifying best practice standards.

### **Cleaning Routines And Issues Relating To Contractual Arrangements**

- 3.6.12 In relaying her recent experiences, Ms. Cohen also told us that she was aware that ward-based hygiene routines sometimes skimped some crucial areas. She also stated that ward staff, particularly ward cleaners needed to be given the right tools and equipment to do their job properly. Ward cleaners in particular would benefit from training in infection control and methods to deep clean patient areas effectively. Such cleaning routines, primarily the remit of the ward cleaner should cover the following:
- thorough cleaning of beds when patients are discharged or transferred;
  - thorough cleaning of beds and mattresses;
  - cleaning of the head and foot of the bed areas;
  - cleaning of cotside, bedside lockers, bedside table, chairs and footstools.
  - Patient washbowls should be removed and thoroughly cleaned and dried before being replaced in the bedside locker.
  - Baths, showers and toilets should be routinely cleaned at least twice during the day. Appropriate cleaning solution/ materials should be provided in all bathrooms and should be made available at all times to enable patients/ nurses to clean the bath facilities before and after each use.
  - Side rooms being used for infected/ isolated patients should be deep cleaned and aired before being used for the next patient, with specific attention paid to cleaning of all contents e.g. bed, mattress, cotside, locker, bedside table, chair, footstool, washbasin, sink, taps, toilet, door, door handles, windowsill and floor.
  - Oxygen, suction, masks and other equipment should also be checked, cleaned and replaced as required



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- 3.6.13 Ms Cohen also pointed out that the use of side rooms for isolated patients would be more effective if they were more self-contained with the provision of sink, toilet and shower facilities and oxygen, suction and observation equipment reducing the need to share these facilities with other patients. In her view any new-build programmes should incorporate such facilities.
- 3.6.14 The Committee agreed that the sharing of facilities between isolated patients and those on a general ward presented a risk and that separate facilities should be available for people with infected wounds. It also considered the scope for introducing the practice used in some American hospitals, whereby each patient was provided with their own bowl, toothbrush and mug to use when in hospital. Upon discharge, these were wrapped up and given to them to take home.
- 3.6.15 The Committee was also made aware that for various reasons e.g. shift patterns, staff change-overs, new intake of patients etc. it was sometimes difficult for staff and patients to know whether certain equipment or items were clean or needed to be disinfected. Another good practice that was shared with us involved the use of a labelling system whereby the person who had cleaned the item, equipment or patient area put a tag on it to say when it had been cleaned and by whom and thereby informing others that it was ready for use. Where appropriate, equipment and items were also covered in protective packaging to keep them sterile. The Committee felt that such approaches were helpful in creating a culture of cleanliness in our hospitals and there should be more sharing of best practice across all hospitals in the City.
- 3.6.16 Regarding hygiene issues, Mr. Tony Field, Chair of the MRSA Support Group, stated that in his view, the issue of cleanliness in hospitals became a problem when domestic staff and auxiliary nursing were subjected to Compulsive Competitive Tendering and were contracted out. This created a disparity of workers' pay and conditions and staff were given much more to do than could possibly be achieved. Standards and staff morale had therefore fallen. Furthermore, the abolition of the post of Matron meant a clear chain of command was lost and that no one member of staff had authority to direct hygiene matters. Tasks were split between Ward Managers, Ward Sisters, Staff Nurses and contract cleaning companies. As a result hygiene discipline was lost and there was confusion at ward level. Furthermore he reported to the Committee that there were concerns over the use of cleaning materials and disinfectants in hospitals and that these were not strong enough to get rid of bacteria such as MRSA. Similarly, there were concerns about the decontamination and sterilisation of invasive equipment and that procedures were not as rigorous as they should be.
- 3.6.17 In probing some of the issues with NHS Trusts, Infection Control Nurses and the Nursing Training institutions, the Committee heard that programmes and procedures were in place to monitor



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standards of cleanliness and hygiene. These include audits under the NHS Estates Initiative and PEAT inspections which monitored various aspects of the hospital environment. Infection Control Teams also provided training and undertook audits to ensure correct implementation and application of infection control procedures. The Committee's concerns over the adequacy of PEAT inspections and surveillance systems are covered in section 3.4 of this report.

- 3.6.18 Independent Infection Control Nurse, Sue Millward, pointed out to the Committee that eliminating bacteria such as MRSA does not require strong disinfectant in order to clean an area. It is more important that processes are in place to ensure that areas are cleaned thoroughly and frequently rather than the type of cleaning product used. She also described some of the training and audit methodologies used by infection control nurses to ensure processes were being adhered to and how this compliance was being measured. In her view, there was a wide variation between nurse management arrangements in small and large hospitals. Having one person responsible at ward level – the role of the old fashioned matron- was essential in ensuring infection control was both implemented and monitored at clinical level.
- 3.6.19 The Committee found that in most hospitals, cleaning was undertaken by "in-house" teams of cleaners. However, contractual arrangements were sometimes complex and vacancy levels were high in some areas, such as in the north of the City. The Trusts also pointed out to the Committee that it was notoriously difficult to recruit cleaning staff in areas with substantial retail development. Hospitals often had to compete with other businesses, many of which required less rigorous cleaning standards, offered higher rates of pay and flexible hours. Furthermore, the contractual arrangements often meant that line management responsibility for cleaning staff was not held by anyone within a particular ward. Therefore ward sisters or managers could not ensure compliance or accountability of cleaning standards. We heard that some hospitals, such as University Hospital Birmingham NHS Foundation Trust, reverted back to having in-house teams of cleaners, enabling the Trust to have greater financial and managerial control over standards of hygiene. The Committee also learnt that following Government requirements, all hospitals had employed housekeepers and modern matrons to maintain and oversee hygiene standards.
- 3.6.20 Furthermore, the Committee discussed the importance of cleaning staff feeling valued and understanding how their role fitted in with the hospital environment. The latest medical and technological equipment and practices were no good if they were not explained to and understood by the cleaners and were therefore not maintained or decontaminated to the standards required.
- 3.6.21 Overall the Committee's conclusion was that hospital hygiene was



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an important priority for local NHS Trusts. However, there were serious issues around cleaning arrangements. It was more difficult for hospitals in affluent areas to recruit cleaners and this caused some hospitals to have high vacancy levels. Furthermore, the responsibility for cleaning standards was fragmented and uncoordinated at an operational level. There was a need for cleaning and domiciliary staff to be directly managed and to be accountable to a ward manager or ward sister so that they belonged to a ward team and had a day-to-day knowledge of the tasks that needed to be performed. The Committee considered that the management and structure of key functions such as cleaning, microbiology and equipment decontamination were not sufficiently integrated with each other and therefore did not appear to come together on a routine basis. As a result, the monitoring of standards around cleaning and hospital hygiene appeared disparate and unconnected. Finally, the Committee found no evidence that infection control and hygiene practice was part of the overall criteria for staff appraisals and the mechanisms available for staff and supervisors to challenge poor hygiene practice.

### 3.7 Bed management Capacity/Resource Issues

- 3.7.1 In discussing aspects of the hospital environment that inhibited hygiene and infection control procedures, the Committee heard that hospitals were currently operating to full capacity in terms of bed spaces. In efforts to meet a range of Government targets and performance indicators and live up to public expectations, hospitals were dealing with heavy workloads and a huge turnover of patients. The result was that there was inevitably more throughput of patients and extra demand on bed spaces.
- 3.7.2 The Committee heard that European countries with low rates of MRSA operated stringent policies on bed management whereby there was deep cleaning of beds and bed spaces prior to each patient admission. In some cases entire wards were shut down on a rotational basis to allow for thorough airing and cleaning of beds. In the Committee's view if other countries could do it, the United Kingdom should strive to do the same.
- 3.7.3 A recent research article circulated to the Committee about the prevention of MRSA and hospital workloads, points out that

*"Non-performance bias cannot be excluded from any study. This refers to failure to perform all that someone agreed to do to prevent hospital infection, under pressures such as lack of money, scarcity of hospital staff and overcrowding of hospitals<sup>21</sup>."*

<sup>21</sup> Andreas Voss. Preventing the spread of MRSA. BMJ vol 329. September 2004.



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- 3.7.4 The author further points to concerted efforts being needed in a range of areas to prevent MRSA, including screening and decolonisation of healthcare workers as well as the presence and quality of isolation units. However, the Committee acknowledged that nurses and clinicians face significant pressures during the course of their work.
- 3.7.5 Information obtained from a recent conference on Tackling Hospital Acquired Infection was shared with the Committee. This demonstrated the reality of the hospital environment and the pressures faced by healthcare workers.
- 3.7.6 Table 3 provides a detailed description of clinical nursing procedures and hand washing routines required for one patient, for one day, post operation. This shows that there is a minimum of 73 clinical procedures requiring health staff to wash their hands at least 130 times. The hand washing routine itself is very specific, involving 11 steps<sup>22</sup>. In total this meant that there were 1430 points of control i.e. where things need to be exactly right or where there was a risk that something could go wrong.

<b>Table 3. Nursing Procedures for 1 patient for 1 day in a post-operative ward</b>	
<b>Clinical nursing procedures</b>	<b>Hand washing steps</b>
<ul style="list-style-type: none"> <li>• IV fluids x3</li> <li>• IV checks x8</li> <li>• Blood pressure x2</li> <li>• Temperature x4</li> <li>• BB x1</li> <li>• PAC x12</li> <li>• Post-op bloods x1</li> <li>• Physio x2</li> <li>• Nursing movement x2</li> <li>• Catheter emptying x2</li> <li>• Dressing checks x2</li> <li>• Medication administration x4</li> <li>• 30 mls hly x15</li> <li>• bed making x1</li> <li>• pulse oxy x4</li> <li>• decontamination equipment x10</li> </ul> <p>73 clinical procedures, requiring minimum 130 hand washes</p>	<ul style="list-style-type: none"> <li>• Turn on taps</li> <li>• Get right temperature</li> <li>• Wet hands</li> <li>• Apply soap</li> <li>• Manoeuvre for 15 seconds in correct fashion</li> <li>• Rinse off all soap</li> <li>• Dry hands</li> <li>• Turn off taps with paper towels</li> <li>• Discard paper towels in bin by foot-operated pedal</li> <li>• Do not contaminate hands pre next patient</li> <li>• Decontaminated hands</li> </ul>
130 X11 = 1430 points of control	

- 3.7.7 This shows that even in a hospital containing a minimum of 1,000 patients, there are significant pressures on nurses time. The task of

<sup>22</sup> Evonne Curran, Lead Nurse, Infection Control, Glasgow Royal Infirmary. Presentation to Conference – Tackling Hospital Acquired Infections, organised by Harrogate Management Centre. September 2004.



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controlling the spread of MRSA and other hospital acquired infections requires precise and exacting methods integrated at a variety of levels, both internally and externally of the hospital environment.

- 3.7.8 Further research articles were shared with the Committee that showed that the ring fencing of elective surgical beds, combined with the introduction of simple infection control measures, significantly reduced the incidence of post-operative infections and led to the eradication of MRSA.<sup>23 24</sup>
- 3.7.9 However, what these studies also reveal is that isolation alone is not enough and that such measures work when they are part of an overall culture of cleanliness with approaches at different levels involving staff, patients and visitors. In the research study by Leela C. Biant et al, they describe a strategy for creating a “culture of cleanliness” which successfully led to the eradication of MRSA in an elective orthopaedic ward. Along with standard procedures for testing and surveillance of SA and MRSA – both before admission to hospital and post operation - they also established a strict ward policy and operational practices covering a number of areas e.g. ring fencing of beds, controlled admissions to the ward, raising awareness of the infection control policy amongst patients and visitors, minimal use of bank and agency staff and strict adherence to infection control measures by staff, patients and visitors. Infection control precautions that staff, patients and visitors were expected to follow are described in more detail in table 4.
- 3.7.10 Another important factor highlighted in the study is the identification of one person to ensure adherence and compliance to ward and infection control policies. The nursing sister-in-charge was given responsibility for ensuring implementation of infection control standards amongst nurses, cleaning staff and doctors visiting the ward. Additionally, infection control policies were also shared at an early stage with patients and visitors so they were aware of what was expected of them. The hospital also minimised the use of bank and agency staff and expected all hospital personnel to comply with the same standards as regular staff on the ward. Where agency staff had to be used, nursing agencies were informed of the ward policy, so that these workers were aware of what was expected of them before the start of their shift. Leela C Biant et al state that it was this adherence to standards by all nursing and medical staff within the unit and those working with the unit, that led to a general change in culture.

<sup>23</sup> Leela C. Biant et al. Eradication of MRSA by ring fencing of elective orthopaedic beds. BMJ vol 329. 17<sup>th</sup> July 2004.

<sup>24</sup> Cooper, B.S. Stone, SP et al. isolation measures in the hospital management of MRSA: a systematic review of literature. BMJ Volume 329 4 September 2004.



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**Table 4: Creating a culture of cleanliness:**

**Precautions taken to prevent infections**

**Staff**

- Hands to be decontaminated at ward entrance on entry and when leaving the ward;
- Hands to be decontaminated before and after each patient contact by use of alcohol rubs based at each patient bedside;
- Clean uniforms to be worn daily at start of new shift for staff on ward;
- Clean uniforms to be worn for staff from other clinical areas or those coming over from a previous shift;
- Clean white ward coat to be worn by orthopaedic doctors for the purpose of ward rounds and by visiting staff. Medical staff to leave their jackets at the door. White ward coats to be taken off on the ward and laundered daily;
- Disposable aprons and gloves to be worn for each direct patient contact;
- Minimal jewellery to be worn: wedding ring or small earrings only. No wrist watches, nail varnish, nail polish or false nails;
- Antibiotics to be strictly prescribed according to hospital guidelines;
- Urinary catheters to be placed on patient's non-operated side of the floor.

**Visitors and patients**

- Ward policy and infection control policy to be explained to patients during pre-admission consultation;
- Ward policy and infection control policy explained to visitors during first visit to ward;
- Visiting hours restricted and only maximum of two visitors per bed;
- Visitors to use chairs provided and not to sit on the bed;
- Visitors to bring minimum number of presents for example flowers, food drink etc.

**Premises**

- Infection control and ward policy to be displayed at ward entrance;
- General hospital cleaning schedule to be strictly enforced (kitchen, doors, sinks, toilets, bathrooms etc);
- Cleaning of visitors chairs and foot stools to be undertaken once a day;
- Cleaning of bed frames to be carried out three times a week;
- Cleaning of nurses stations to be carried out once a day;
- Bed linen to be changed once a day.

**Operational policies, procedures and bed management**

- Testing for SA and MRSA both before admission to hospital and post-operation;
- Ring fencing of beds;
- Controlled admissions to ward;
- Minimal use of bank and agency staff;
- Strict adherence to infection control measures and policies within the ward by staff, patients and visitors.

Source: compiled from material contained in research article by Leela C Biant et al: Eradication of MRSA by "ring fencing of elective orthopaedic beds". BMJ. Volume 329. 17 July 2004.



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- 3.7.11 Having a culture of cleanliness in our hospitals is not a new thing. Cleanliness of the general environment, and particularly good bed management, is the cornerstone of guidance issued by the Royal College of Nursing (see table 5) and equally emphasised by Florence Nightingale, many years ago.

*"Upon her return from the War, she embarked on a painstakingly meticulous analysis of mortality data which enabled her to identify the underlying cause: poor sanitation. She created new statistical diagrams to persuade the Government to carry out fundamental health reforms. Florence Nightingale applied her methods to civil hospitals in Britain, tackling the problems of overcrowding, poor ventilation and lack of cleanliness with similar rigour and influence<sup>25</sup>."*

- 3.7.12 The Committee was of the view that precautions outlined in table 4 along with those outline in table 5 could enable a culture of cleanliness and good hygiene practice to develop in all hospitals in the City and as such, should be an ideal that the local NHS should aim to achieve.

**Table 5: Standard Infection Control Precautions**

Royal College of Nursing Guidance for nursing staff - MRSA. April 2004

- Cover all cuts, abrasions and lesions
- Maintain hand hygiene:
  - before and after each patient
  - after handling bodily fluids and items contaminated with bodily fluids
  - after removing protective clothing
  - before handling invasive devices
  - before handling food
- Maintain cleanliness
  - of general environment: horizontal surfaces, sinks and baths
  - patient related equipment: beds, furniture, monitors, IV pumps
  - soft furnishings including curtains and beddings
  - use disposable gloves and aprons when handling bodily fluids
  - dispose of waste safely
  - maintain staff to patient ratio
  - avoid overcrowding of patients
  - avoid unnecessary patient transfers between wards
  - isolate patients with known or suspected infection

- 3.7.13 In relation to ventilation of wards, during a visit to the Royal Orthopaedic Hospital, the Committee Chairman was shown round some wards where each bed had a French window behind it. The Hospital had been built in the early 20<sup>th</sup> Century and the wards had been designed so that the windows could be opened and the beds

<sup>25</sup> Quote from the Florence Nightingale Museum as illustrated in the National Audit Office report, July 2004.



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pushed out onto a terrace. This enabled the patient to get fresh air to aid recuperation, as well as allowing fresh air to enter the building. Unfortunately, due to current health and safety reasons the windows now have to be kept locked and patients are unable to benefit. Additionally, during a visit to the Bone Marrow Unit at the Queen Elizabeth Hospital, the Members of the Committee noted the provision of air conditioning which was of benefit to the patients being treated there. The Committee considered that, on the whole, currently hospitals seemed to have poor facilities for airing wards and were often over crowded creating a greater risk of cross infection.

- 3.7.14 The Committee heard evidence that the risks of cross-infection were substantially reduced when patients were treated in single rooms. However, a further consideration is that the use of single rooms can cause feelings of isolation within patients, as well as placing considerably more pressure on nursing and ancillary staff.
- 3.7.15 Evidence provided by University Hospital Birmingham Foundation NHS Trust showed that in an attempt to maintain infection control procedures, infected patients and those most at risk from MRSA were treated in single rooms wherever possible. However, they did sometimes experience conflict when patients were moved out of single rooms in order to make way for someone at risk of infection. The Trust stressed that the PFI development of the new hospital in South Birmingham would allow more single rooms and, hopefully, an environment that would make infection control more manageable.
- 3.7.16 The Committee was also informed about the "seek and destroy" policy in operation, for example in Sandwell and West Birmingham NHS Trust. This involved proactive measures being in place to identify MRSA patients, isolate them as quickly as possible through the use of single rooms or isolation units, and therefore minimise the risk of any outbreaks.
- 3.7.17 The Committee heard evidence that many of the processes that involved isolating patients were more applicable to infections other than MRSA. For example, E coli infection and gastro-enteritis are more easily transmitted through the air, and thus require more stringent isolation procedures. Hospitals are therefore juggling and prioritising the different categories of infection and how and when to use isolation facilities.
- 3.7.18 Overall the Committee concluded that further work was needed by individual Trusts to explore good bed management practice and allow for ways in which beds and bed spaces could benefit from deep cleaning. The Committee was also of the view that creating a culture of cleanliness did not require vast amount of resources and that such a culture should permeate in all hospitals. The approach was one of planning, integrating and connecting activity around hygiene and infection control and ensuring there was consistency



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amongst everyone on a ward: staff, patients and visitors and cleaners. In effect, making hygiene “everyone’s business”.

### 3.8 Patient And Visitor Education

3.8.1 The Committee listened to the views of patients and members of the public and their experiences of acquiring MRSA whilst in hospital. Families of MRSA victims provided detailed accounts of what had happened and the nature of the support they received.

3.8.2 The Committee was concerned to hear that for many of these patients, hospitals had not kept them or their families informed when MRSA infection was suspected or even diagnosed. The variation in practice and lack of information meant that families were often left confused, unsupported and unable to take the necessary precautions themselves.

3.8.3 Both patients and health professionals that we spoke to indicated that patient and visitor education was an important factor in helping to reduce the risk of hospital acquired infection. The Committee heard stories about unhygienic visitor and patient behaviour, for example

- someone cycling in a hospital corridor;
- visitors sitting, lying and even standing on patients’ beds;
- too many visitors around the beds, sometimes ignoring visiting times and restrictions;
- visitors using toilets and facilities intended only for patients;
- visitors/relatives bringing in food and eating it/ sharing it with patients whilst standing and sitting around bed areas;
- patients bringing in too many belongings and storing bags etc. underneath the beds;
- patients/visitors dropping litter in corridors or wards.
- patients demanding antibiotics for minor viral infections.

3.8.4 The Committee felt that such behaviour was totally unacceptable and was concerned to learn that healthcare staff felt unable to challenge these actions due to the threat of abuse or violence. The Committee agreed that this was obviously inappropriate and that healthcare workers needed to be protected whilst undertaking their duties. To this end, the assistance of security staff should be available to deal with inappropriate visitor behaviour and in ensuring that visitors comply with hospital regulations.



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- 3.8.5 Whilst the Committee accepted that Trusts had policies on visiting regulations, we were unable to find any evidence that these were being applied systematically and that programmes were in place to ensure visitor/patient compliance. We also learnt that Trusts were having to balance the need for flexibility in visiting regulations with the cultural needs of certain communities. However in our view, visiting regulations were there for a purpose and stricter adherence to these would be beneficial as regards controlling and reducing the spread of infection. The Committee was unable to ascertain whether any work was being undertaken with specific communities to publicise and raise awareness about the relationship between hygiene, infection control and inappropriate visitor behaviour.
- 3.8.6 The Committee accepted that there needed to be a balance between information sharing and publicity. It was concerned that recent media attention into MRSA had resulted in some people being afraid to go into hospital in case of MRSA infection. It was believed that by raising awareness and empowering people, significant efforts could be made to reduce infections being imported and spread within hospital settings. The type of education that was needed included:
- General information for everyone on hand hygiene, together with specific information relating to hospital visits (e.g. hand washing before entry and upon leaving, reducing visitor numbers, visitors not sitting on beds, not dropping litter, not taking in food etc.).
  - Information for patients going into hospital for surgery, including advice about both pre-operative and post-operation hygiene, restricting the amount of belongings they took into hospital etc.
  - General information about infection control procedures and responsibilities that everyone had to challenge poor practice.
- 3.8.7 Whilst the Committee found evidence of patient literature and leaflets on MRSA being available in Trusts, it was disappointing that much of this work seemed to be newly introduced and at an early stage. It was therefore difficult for the Committee to ascertain whether this information was having any impact. The Committee considered that this issue would need to be revisited.
- 3.8.8 Additionally, during our visits to local hospitals the Committee found that not all wards had sufficient notices or posters on display or that they were not put in places prominent enough to attract public attention.
- 3.8.9 In terms of patient feedback, the Committee noted that many patients, visitors and carers were afraid to challenge poor practice or issues about hospital hygiene, largely because they felt they were in a vulnerable position and did not want to do anything that might adversely affect their care. All the Trusts that we spoke to



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said that all health professionals could expect to be challenged for poor practice and that the patient experience was an important factor in shaping organisational improvements. Patients had a range of avenues for feeding in their views, such as the Patient Advice and Liaison Services (PALS). Some hospitals had set up special telephone hotlines, as well as raising patient awareness through a dedicated channel on the bedside TV system. The Committee was pleased to hear about the good practice adopted by Good Hope Hospital NHS Trust whereby volunteers worked with PALS by visiting wards, gathering patient views on their stay in hospital and helping to resolve any immediate matters of concern to patients. Other examples of good practice in local hospitals are described in Appendix 5.

- 3.8.10 The Committee accepted that if cleanliness and hygiene was everyone's business, then patients must be encouraged to raise their concerns. However, this should not mean that healthcare staff failed to discharge their responsibilities until they were challenged. The onus was on everyone to play their part and do so to the highest standards at all times.
- 3.8.11 The Committee concluded that whilst some efforts were being made by Trusts to raise patient awareness about hygiene and infection control, the practice was not consistent across Trusts. Furthermore, insufficient regard was being paid to the use of Trusts' own patient user groups and Patient and Public Involvement Forums as mechanisms for harnessing information about patient experiences. The Committee considered that it would be worthwhile exploring some way of collecting and evaluating patient views of their hospital stay prior to them being discharged.

### 3.9 Accountability And Surveillance

#### Accountability

- 3.9.1 Monitoring of standards is central to ensuring high hygiene levels and the effective implementation of infection control strategies. The Committee heard that the NHS has a number of tools to monitor standards of cleanliness and for the surveillance of MRSA. Some of these have already been outlined elsewhere in this report.
- 3.9.2 Written submissions and verbal evidence provided to the Committee indicated that all NHS Trusts in Birmingham were complying with clinical audits and infection control surveillance through a range of data collection systems. Each NHS Trust had a dedicated Infection Control Team made up of Infection Control Nurses who provide day-to-day advice and guidance to ward-based staff. Additionally, Trusts also had Infection Control Committees bringing together a range of hospital disciplines in order to develop and monitor progress against plans and strategies.



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- 3.9.3 However, membership of Infection Control Committees and the numbers of Infection Control Nurses employed varied between local hospitals. Some Trusts had only two nurses, whilst others had teams of up to five. Bearing in mind the size of some Trusts and that hospitals were often located on different sites, the Committee decided that there appeared to be an under-investment in this area and that Trusts needed to ensure an adequate ratio of Infection Control Nurses in relation to the size of their hospital. Having more Infection Control Nurses and strengthening their role as guardians of all aspects of hospital hygiene should be aimed for and might also address issues of fragmentation. However, we were also mindful that there was currently a national shortage of trained Infection Control Nurses. It was reported to us that attracting students into Infection Control training was difficult. The Committee considered that Trusts should explore opportunities provided by "Agenda for Change" to address this where possible.
- 3.9.4 The Committee was provided with plans and strategies for Infection Control by Trusts. However, it found that each hospital was at a different stage of dealing with this issue. It seemed that many Trusts had only recently produced their plans, strategies and patient information leaflets. Likewise, the reporting of surveillance information to Trust Boards on a quarterly basis also appeared to be a newly introduced practice. Whilst the Committee welcomed these developments, some concerns remained about the interpretation of data and how effective it was in identifying "hot spots" within an organisation.
- 3.9.5 The Committee heard that whilst each Trust had an identified Board Member with Executive responsibility for Infection Control, there were some disparities in the way Infection Control Committees and Teams linked in with the array of healthcare workers at ward level, e.g. ward managers/sisters, modern matrons, housekeepers, cleaners, ward nurses. The Committee was unclear as to the distinction between the different roles and who had overall responsibility for ensuring that high standards of hygiene were maintained and poor practice addressed.
- 3.9.6 In different hospitals, different titles and roles were allocated for infection control at ward level. In our view it has not helped that the title "Modern Matron" had been introduced, as this gave the impression that the historical role of Matron had been revived - in the public perception, someone with overall authority. However, as some hospitals could employ up to 20 "Modern Matrons", clearly they were serving a different function.
- 3.9.7 Additionally, the role of Housekeeper was discussed. Unfortunately not all hospitals had employed Housekeepers, but where they had been appointed, hospitals reported that there was a more coordinated approach to ward hygiene. The Committee considered this important role should be established in all hospitals and would assist hospitals in establishing a culture of cleanliness as discussed



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in section 3.7 of this report.

- 3.9.8 Overall the Committee believed that, in terms of accountability, there was a degree of fragmentation at operational level and that this made it difficult for hospitals to establish a uniform “culture of cleanliness” throughout the hospital.

### Surveillance

- 3.9.9 The Committee noted that the report of the Chief Medical Officer: Winning Ways – working together to reduce healthcare associated infection in England” (December 2003) stated that:

*“evidence-based counter measures of known effectiveness are not being implemented consistently and rigorously in the majority of hospitals [and that] insufficient past emphasis on surveillance has meant that good information (the cornerstone of infection control) has not been available to clinical teams and patients.”*

- 3.9.10 In probing the nature and effectiveness of data dissemination, the Committee found that currently hospitals and PCTs do not have well developed systems in place for comparing trends and patterns and disseminating information about hospital acquired infection either within their own organisation or across the local health economy. Data collected through the various audit tools and under the Department of Health Mandatory Bacteraemia Surveillance Scheme provided an overview but did not provide comparative analysis on a ward by ward or institutional basis. The lack of such data meant that Trusts could not tell us whether MRSA and infection control was a problem in all wards or just surgical wards. There was no routine information available about MRSA infection in nursing homes or other community settings.
- 3.9.11 Trusts explained to us that whilst Infection Control Nurses and individual wards would be aware of specific MRSA cases, currently there was no system for comparing infection rates between wards over time and giving regular feedback to operational managers on how effective certain control measures had been. The Committee was informed that the Health Protection Agency was currently piloting a new IT system which might assist NHS Trusts with the collection and dissemination of data enabling better management of infection control issues at ward level.
- 3.9.12 The Committee also probed into the relationship between Infection Control Teams and how they interfaced with patient user groups as a source of information about hospital hygiene. Some Trusts had patient representatives on their Infection Control Committees, whilst others shared information with their patients’ groups. None appeared to have articulated a particular role or provided training for patient representatives to play a more active, and continuing role in patient education feedback, monitoring and observation, inspection and performance management of infection control. The



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Committee considered there was a role here for Patient and Public Involvement Forums in feeding-in patient experiences to Infection Control Teams and ward management.

- 3.9.13 Dr Faye Wilson, a local GP and member of the Local Medical Committee said that in her view the majority of patients referred to hospital did not ask about rates of MRSA infection. However growing patient awareness of MRSA together with the recent emphasis on offering patients a choice of hospitals could very well mean that GPs will need more information in the future. At present there was no information available to local GPs about MRSA rates in local hospitals and there were no standard patient leaflets supplied which could be routinely handed out at GPs surgeries.
- 3.9.14 Questions and concerns about MRSA were mostly raised by patients and carers after they had become infected. The chronic and serious complications of MRSA which require long term care of patients in the community usually fell to District Nurses, most of whom received little training, support or managerial guidance about how to deal with such situations.
- 3.9.15 The Committee considered that more should be done by PCTs and NHS Trusts to train and support community based staff in Hospital Acquired Infection, to provide routine information on local infection rates, and to develop a "gold standard" patient leaflet on MRSA infection, which could be printed off GP computer systems.
- 3.9.16 In picking up surveillance matters with PCTs, the Committee noted the infection control policies and plans provided by South Birmingham PCT and that the PCT had a role both as a provider of services as well as a commissioner. On the whole, the Committee was of the view that PCTs needed to clarify their responsibilities for MRSA surveillance and infection control in primary care and community settings such as residential and nursing homes. They also needed to develop a co-ordinated "whole systems" approach to infection control with NHS trusts and the Health Protection Agency.
- 3.9.17 The commitment of PCTs to ensuring common standards in infection control in community settings such as general practice surgeries, patients home, nursing and residential homes should also be strengthened. The evidence supplied to the Committee indicated that more action was required to improve infection control in the community and that there was not yet an infection control team dedicated to taking forward this programme of work in PCTs.
- 3.9.18 The Committee was made aware that the Strategic Health Authority had initiated the establishment of a citywide group to develop a coherent approach to performance management of infection control. This move was welcomed and should provide much needed leadership and direction to NHS Trusts and PCTs. However the Committee felt that there may be an additional need for a local forum in which professionals and patients could share good



## MRSA Review

practice, develop and agree consistent local policies, and raise public awareness – and that this was something which should be considered by Directors of Infection Control.

- 3.9.19 On the whole the Committee concluded that whilst surveillance measures were being put in place in local Trusts, there was a mixed picture of the developments taking place. Further work was needed in order to ensure that information was actually being used to make a difference to infection control at ward level.



## 4: Conclusions and Recommendations

### 4.1 Conclusions

- 4.1.1 Public concern about MRSA infection, known commonly as the hospital “superbug”, is growing. This review set out to examine what is being done by the local health economy to reduce the complications, suffering and disability caused by MRSA infection and to assess whether or not the public can be confident that everything that can be done is being done to reduce rates of infection.
- 4.1.2 At any one time around 9% of patients have an infection that has been acquired during their stay in an acute hospital NHS Trust in England. The estimated costs of all of these hospital acquired infections are estimated at £1 billion a year and around 15% could be prevented by better application of good practice releasing £150 million for alternative uses in the NHS.
- 4.1.3 Over the last ten years there has been growing concern about the emergence of new strains of bacteria acquired in hospital which no longer respond to antibiotic treatment i.e. they are multi-resistant, one of these is MRSA - Methicillin Resistant Staphylococcus Aureus. Since 2001 the number and proportion of reported bloodstream infections from MRSA have increased by 5%. MRSA now accounts for 44% of all Staphylococcus Aureus bloodstream infections in the UK.
- 4.1.4 Although MRSA accounts for only a small proportion (24%) of all hospital acquired infection, rates in the UK are amongst the worst in Europe. In a typical district general hospital with 300-400 beds, around 10-25 patients might be affected at any one time, but there are considerable variations between NHS Trusts and over different periods.
- 4.1.5 Not all patients who have MRSA on their skin become infected. Around 30% of people will have Staphylococcus Aureus present on their skin and suffer no harm. This presence on the skin is known as colonisation. MRSA can also colonise patients without causing harm, although such patients can be a source of infection for others if admitted to hospital.
- 4.1.6 However, infection with MRSA can be extremely serious for hospital patients. MRSA infection is difficult to treat, complicates surgery,



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prolongs illness, delays recovery and occasionally leads to death. Nationally, the number of death certificates reporting MRSA as a contributory cause has risen from 53 in 1993 to 800 in 2002. Though Department of Health guidance in 2002 stipulated that MRSA must always be recorded on death certificates where infection is present, this was previously not the case.

- 4.1.7 Various factors appear to be contributing to the rise in MRSA, including
- the increased activity in the healthcare environment including more throughput of patients to meet performance targets, increased visitors numbers and poor adherence to visiting rules and regulations;
  - more invasive surgical treatments and procedures being undertaken;
  - the indiscriminate use of antibiotics and patients demanding antibiotics for minor viral infections;
  - and an increasing number of patients receiving hospital treatment who are frail, vulnerable or elderly, who have underlying chronic diseases such as diabetes or whose immune systems are compromised.
- 4.1.8 Patients undergoing certain types of invasive procedures - particularly elective surgery, dialysis and urinary catheterisation - are more likely to become infected with MRSA, especially if their immune system is weakened.
- 4.1.9 Efforts to control MRSA lack a good evidence base. The Department of Health Mandatory Surveillance Scheme of infection rates only began in 2000 and is still patchy; there appear to have been relatively few controlled research trials on the impact of specific, single measures such as screening, presence and use of isolation rooms, or environmental cleaning. Professional guidance and opinion on effective control strategies appears to vary considerably. Over the past four years, 11 sets of Departmental guidance have been issued to managers, professionals and estate heads on the control of Health Care Associated Infections.
- 4.1.10 The recent report from the Chief Medical Officer, called "Winning Ways: working together to reduce Healthcare Associated Infections", set out seven areas for action by local NHS Trusts (December 2003). This report was followed by further guidance and action plans for NHS Hospital Trusts, issued in July 2004.
- 4.1.11 Locally there appears to be a growing professional consensus that a combination of measures is important in order to reduce the number and spread of MRSA infection, namely:
- Active "real time" surveillance (IT-based) to measure



## MRSA Review

infection rates, examine transmission patterns, target infection control measures and give feedback to management and staff.

- Full compliance with proper hand hygiene, availability and use of alcohol hand gels.
- Effective bed management with cohort nursing, isolation wards and rooms, use of 2-4 bedded bays, the ability to decant patients away from contaminated areas when required and the ability to deep clean contaminated areas.
- Pre-operative screening, cohort nursing and isolation of selected, high risk elective patients in certain specialties.
- Keeping the healthcare environment clean and dust-free - creating a "culture of cleanliness".
- Thorough decontamination of basic equipment.
- Adequate staffing and resourcing of infection control teams.
- Increasing public awareness and involvement in good infection control practice and compliance and the need to reduce the use of antibiotics.

#### 4.1.12 The broad findings and conclusions of our review are that:

- NHS Trusts in Birmingham understand the risks to patients, as well as public confidence in local health care associated with poor infection control and high MRSA rates. However, NHS and Primary Care Trusts appear to be at different stages in the development of effective surveillance systems, strategies for infection control, investment in training, investment in Infection Control Teams and managerial or professional commitment to the implementation, monitoring and evaluation of such activity. Overall there is not a whole-system or health-economy wide approach to tackling MRSA.
- Different factors - such as frequency and pattern of surveillance, case mix, bed occupancy, clinical practice, isolation policies, availability of single rooms and design of wards - would appear in part to explain some of the variations in MRSA rates which exist between Trusts. (Range 0.35 per 1000 bed days to 0.09 per 1000 bed days between April 2003 – March 2004.)
- The training of nurses in the theory and practice of infection control by Colleges of Nursing appears to be comprehensive. However in-service experience depends on the rigour and adequacy of the mentoring



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process, the standards and practice adopted by each Trust and the extent to which Mentors themselves are kept up to date in infection control both at an academic and in-service level. The training of medical students and junior doctors does not appear to be so rigorous or mandatory.

- Although there are examples of good practice, few of the Trusts in Birmingham appear to have a particularly advanced strategy or systematic approach to involving patients, their visitors or carers in infection control. Whilst all Trusts aspire to make infection control “everyone’s business”, the main emphasis so far has been on training staff in hand hygiene and issuing patient information leaflets, rather than on enabling patients, the Patient Advice and Liaison Services, Patient and Public Involvement Forums or user groups to play an active part in the overall system of infection control.
- Patient/carers support or community education about hygiene needs a higher profile.
- The role of PCTs, the Health Protection Agency and Strategic Health Authority in relation to surveillance and infection control in the community, residential and nursing homes and performance management of Trusts, including Foundation Trusts, appears to be poorly defined and developed.
- At present PCTs, the GPs and primary care staff who work locally appear to have almost no current information or surveillance data available to them on which to make decisions or to help patients make choices.
- Nonetheless there are examples of good practice beginning to emerge which could be shared between Trusts but which are currently not. For example, the development of IT-based surveillance systems in University Hospital Birmingham Foundation NHS Trust and the use of volunteers as part of the Patient Advice and Liaison Service to talk informally to patients on the wards about their experience at Good Hope Hospital NHS Trust.

4.1.13 The issues which caused us most concern were:

- Reported differences in attitudes, competencies and management of doctors, nurses and agency staff with respect to infection control.
- Lack of clarity about the leadership, roles, responsibilities and accountabilities of ward sisters/managers with respect to infection control,



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including management of contracted cleaning staff on their wards.

- Problems of recruitment, retention and turnover of cleaning staff working for either the NHS or their contracting agencies.
- High patient throughput and the impact which this has on staff compliance with hand washing.
- Capacity to decant patients into other beds so that contaminated areas can be deep cleansed.
- Under-provision of single rooms in which infectious patients can be isolated.
- Reluctance to engage seriously with patients and their visitors about strict adherence to visiting times, number of visitors per patient and good hygiene practice.
- Difficulties encountered by Infection Control Teams in securing resources for control measures.
- Variations in policy and practice with respect to pre-operative screening for colonisation of patients known to be at higher risk from MRSA infection.
- Lack of explanation, information and support - both in hospital and after discharge into the community - for patients who have acquired MRSA infection. There appears to be no clear responsibility to inform patients about infection.



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## 4.2 Recommendations

- 4.2.1 MRSA is a huge area and our review covered many issues. However, we recognise that the local NHS Trusts are working within government defined targets and guidelines around tackling MRSA and other hospital acquired infections. In order not to duplicate the work of other bodies, the Committee concentrated its recommendations in 4 key areas: the need for overall co-ordination and consistency in policy and practice in infection control, patient information and education, improved surveillance and improved approaches to bed management. We feel that significant changes in these areas will deliver benefits to patient, visitors and members of the public in general.

	<b>Recommendation</b>	<b>Responsibility</b>	<b>Completion Date</b>
1	<p><b>Co-ordination and consistency of policy and practice in infection control</b></p> <p>Directors of Infection Control of all NHS Trusts and PCTs in the City, with support from their Chief Executives, should agree and produce consistent policies with respect to the following:</p> <ul style="list-style-type: none"> <li>• categorisation of high risk patients;</li> <li>• pre—operative screening and cohort nursing of high risk patients;</li> <li>• standards for the procurement and management of cleaning contracts;</li> <li>• roles, responsibilities, accountabilities and operational standards for staff with infection control responsibilities, infection control teams and Service Level Agreements;</li> <li>• recording of MRSA on death certificates where this been a contributory factor or present at the time of death;</li> <li>• laundering of nurses uniforms;</li> <li>• patient education, information about MRSA and infection control precautions;</li> <li>• visiting regimes and ensuring compliance.</li> </ul>	Directors of Infection Control in all NHS Trusts and PCTs	February 2006
2	<p><b>Patient information and education</b></p> <p>Common information for patients about MRSA and infection control precautions (as referred to in R1) should be made available to all NHS patients, hospital visitors and residents and staff in nursing and residential homes.</p>	Chief Executives of the 4 PCTs Cabinet Member for Social Care and Health	December 2005
3	<p>Public education about hand hygiene, antibiotic usage and reducing the spread of infection should be improved, including regular publicity campaigns to raise awareness.</p>	Directors of Public Health (4 PCTs) and Directors of Infection Control	September 2005



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4	NHS Trusts and PCTs should involve and enable Patient Advice and Liaison Services and patient user groups to play a direct, active part in infection control, patient and visitor education, observation and inspection.	Chief Executives – all NHS Trusts	December 2005
5	<b>Surveillance</b> The Health Protection Agency should recommend to the Strategic Health Authority priorities for improving surveillance of MRSA in the local health economy.	Health Protection Agency	December 2005
6	All NHS Trusts establish processes to ensure GPs and District Nurses are immediately informed about the discharge of MRSA patients and the precautionary measures required.	Chief Executives – all NHS Trusts	September 2005
7	<b>Bed management</b> NHS Trusts should review their current bed management policies and assess what can be done within current constraints to provide cohort nursing in high risk specialities; to provide more isolation beds; and release spare capacity to allow for deep cleaning of clinical areas.	Chief Executives – all NHS Trusts	September 2005
8	<b>Tracking</b> Progress towards achievement of these recommendations should be reported to the Health Overview and Scrutiny Committee on a regular basis until all recommendations are achieved. The first report should be made in September 2005.	Chief Executive – Birmingham and Black Country Strategic Health Authority (recommendations involving the NHS)  Cabinet Member for Social Care and Health (recommendations involving Birmingham City Council)	September 2005



## 5: Appendices

### Appendix 1: Terms of Reference

#### Title of Review

MRSA

#### Reasons/ rationale for review

- To respond to public concerns about the growing incidences of MRSA, as reported in the media.
- To seek reassurance that local NHS bodies are effectively managing and reducing the spread of MRSA and that information about this is being communicated to the public at large.

#### Overarching review question/s or aim of investigation

How effectively is the local NHS communicating and responding to public concerns around the growth of incidences of MRSA?

What progress have the Trusts made in implementing the latest guidance regarding control of MRSA infection?

How do Trusts manage the competing interests of performance management of cleaning contracts and effective infection control and what surveillance systems are employed by the Trusts to ensure that both processes work effectively?

#### Detailed areas for Inquiry/Investigation

Meeting date / timescale	Area	Methodology	Responsibility/ witnesses
End July – early August	<b>Public Views</b> What is the “patient experience” of MRSA and what do they think could have been done to prevent the spread of the infection?	Invite public views by issuing general press release  Target particular aspects of the media (e.g. radio stations) to seek public views  Collect and analyse written submissions	Narinder Saggu  Chairman  Darren Wright
7 <sup>th</sup> Sept all day	<b>Member Awareness</b> Initial briefing for Members to enhance general	Invite expert(s) on <ul style="list-style-type: none"> <li>• micro biology,</li> </ul>	Narinder Saggu/ Helen



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Meeting date / timescale	Area	Methodology	Responsibility/ witnesses
	understanding of MRSA <ul style="list-style-type: none"> <li>• What is MRSA and how is it transmitted?</li> <li>• What are local rates for MRSA?</li> <li>• How have these changed over time?</li> <li>• What is the current legislative and policy guidance on the matter?</li> <li>• What is "good practice around this issue and how can we learn from this</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• infection control at Trust level</li> <li>• provide policy/ legislative perspective and DoH standards and expectations</li> </ul> Undertake visits to selection of Trusts and/or Nursing homes	Walker Dr Afshan Ahmed Sue Millward Dr Iain Blair
22 Sept a.m.	<b>Issues for patient care</b> <ul style="list-style-type: none"> <li>• How much do patients, carers, visitors know about MRSA?</li> <li>• How informed are they about hospital hygiene routines and health care?</li> <li>• What level of information is provided to patients before and after treatment?</li> <li>• How much information is being shared with patients about the hospital's responsibilities around hygiene and infection control and patients', carers' and visitors' responsibilities?</li> </ul>	Hear evidence on these matters from MRSA support group PPI Forums from Heartlands & Solihull, Sandwell & West Birmingham., Good Hope and University Hospital Birmingham Hold drop-in session for Members of the public/patients Invite written submissions from PALS in all Trusts	Tony Field PPI Forum Chairs Committee
22 Sept p.m.	<b>Issues for Communities</b> <ul style="list-style-type: none"> <li>• What level of general information is available for the public on MRSA?</li> <li>• What are the processes and practices for sharing information about MRSA and infection control with the public at large?</li> <li>• Who is responsible for this, how is it undertaken and how often?</li> <li>• Are there any issues around discharge arrangements and the provision of community-</li> </ul>	Hear evidence from front line staff : District nurses Hospital liaison discharge nurses Infection control nurses PCT reps with responsibility for Elderly Care services Selection of Nursing Home managers	



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Meeting date / timescale	Area	Methodology	Responsibility/ witnesses
	based services? <ul style="list-style-type: none"> <li>• Are there any risks to members of the public when a patient with MRSA is discharged?</li> <li>• Comparison of "old and new" standards of hygiene</li> </ul>	Communication leads from Trusts  Evidence gained from witnesses with long term experience of the hospital environment.	Mrs Cohen
19 October all day	<b>The health care environment</b> <ul style="list-style-type: none"> <li>• What control measures are in place in each Trust (acute and specialist)?</li> <li>• What management arrangements, local infrastructure and systems are in place for active surveillance and measures to reduce infection risk?</li> <li>• Specific issues for presentations by trusts               <ul style="list-style-type: none"> <li>- What Information is given to patients and visitors on general infection control?</li> <li>- What efforts have been made to raise patient and public awareness?</li> <li>- What information and advice is given to patients who acquire MRSA infection?</li> <li>- What information is handed over between professionals at and after discharge?</li> <li>- How does the routine surveillance of MRSA in a Trust influence the management of hospital cleaning contracts?</li> <li>- Are patients and visitors encouraged to report actively poor hygiene practice and make</li> </ul> </li> </ul>	Submission of existing Trust reports for CHI/ PEAT/ Board/ Infection Control Committees  Assess reports against checklist from DoH guidance –probe for gaps or omissions  Invite consultants, microbiologists, Director responsible for infection control, infection control nurses and Chief Execs of NHS Acute Trusts to provide information and answer queries.  Invite evidence from other clinicians ( consultants, junior doctors, nurses), contracted companies, cleaning staff and trade unions  Interviews with community-based staff including institutional care	



# MRSA Review

Meeting date / timescale	Area	Methodology	Responsibility/ witnesses
	<p>recommendations for improvements?</p> <ul style="list-style-type: none"> <li>- What are the benefits and costs of routine testing of patients on entry into hospital?</li> <li>• Responsibilities of PCTs, and awareness and action plans in response to DoH guidance</li> </ul>	<p>Written submissions from Directors of Public Health or other relevant colleagues/ plus presentation by lead DPH</p>	
<p>1<sup>st</sup> November p.m.</p>	<p>Deliberations of the Committee and preparation of draft report</p>		<p>Narinder Saggu</p>



## Appendix 2: List of References

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7. Birmingham Women's Health Care NHS Trust
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12. Birmingham Women's Health Care NHS Trust PPI Forum
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14. Birmingham Heartlands and Solihull NHS Trust PPI Forum
15. Royal Orthopaedic Hospital NHS Trust PPI Forum
16. Sandwell and West Birmingham NHS Trust PPI Forum
17. University Hospital Birmingham NHS Foundation Trusts PPI Forum
18. Eastern Birmingham PCT PPI Forum
19. Heart of Birmingham PCT PPI Forum
20. North Birmingham PCT PPI Forum
21. South Birmingham PCT PPI Forum
22. PALS



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## Appendix 3: Witnesses

People who gave evidence to the Committee – written and oral		
Date of Meeting Subject of Meeting	Organisation/Specialty	Witness Attending or Author of Written Report
7 <sup>th</sup> September Member Awareness	Medical Public Health Consultant	Dr. Iain Blair
	Bacteriologist - Vaccine Research	Dr. Afshan Ahmad
	Independent Infection Control Nurse	Sue Millward
	HPA Consultant in Communicable Disease Control	Dr. Ruth Lockley
22 <sup>nd</sup> September Issues for Patient Care and Communities	B&S HPU Health Protection Nurse	Heather May
	MRSA Support Group Chairman	Tony Field
	'Retrained' Nurse	Ms. Joanne Cohen
	BCH NHS Trust PPI Forum	Written report
	B&SMH NHS Trust PPI Forum	Written report
	BWHC NHS Trust PPI Forum	Written report
	WMAS NHS Trust PPI Forum	Written report
	EB PCT PPI Forum	Tom McLoughlin Chris Rose Mark Oley (written report)
	HoB PCT PPI Forum	Written report
	NB PCT PPI Forum	Written report
	SB PCT PPI Forum	John Barnes (Chairman) Trish Hardslip Ken Norton
	BH&S NHS Trust PPI Forum	Roy Lowndes Trish Hardslip June Brand
	ROH NHS Trust PPI Forum	Tony Field
	S&WBH NHS Trust PPI Forum	John Cash
	UHB NHS F Trust PPI Forum	Derek Woodward-Sheath
PALS	Consultant Microbiologist	Dr. Savita Gossain
	Patient's parents	Mr. & Mrs. Powney
	Patient	Mrs. Gillian Whittaker
	Patient	Mrs. Gillian Yates
	BCH NHS Trust PALS	Gill Brook (written report)
	BH&S NHS Trust Consultant Microbiologist	Dr. Savita Gossain
	BH&S NHS Trust PALS	Kathryn Gunn (written)
	ROH NHS Trust Director of Nursing	Vicky Morris
	S&WBH NHS Trust Head of Infection Control Nursing	Rebecca Evans
S&WBH NHS Trust PALS	Pauline Richards (written)	



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	UHB NHS F Trust Infection Control Doctor Infection Control Nurse Deputy Chief Nurse, Professional Standards UHB NHS FT PALS & CX reports	Dr. Martin Gill Jane Kirk Helen Moss Jenny Dodds (written)
	Pan Birmingham Community Infection Control Nurses	Kath Hughes Sam Lonnen
	EB PCT Head of Older People & Therapy Services Manager, John Taylor Hospice EB PCT PALS	Rosemary Cripps Liz Parsons Pat Rouse (written)
	NB PCT Modern Matron Primary Care	Linda Szaroleta
	SB PCT Acting Nurse Consultant (Older People) Clinical Site Manager, West Heath Hospital Matron, West Heath Hospital Nurse Lead, Selly Oak Local Health Group District Nurse Clinical Lead, Dental Hospital Head of Clinical Governance Clinical Governance Manager	Wendy Hopwood Julie Ravenhall Sandra Farmer Chris Thompson Marie Hensen Roy Pinson Julie McCoy Fiona Waide
19 <sup>th</sup> October The Health Care Environment	HPA Consultant in Communicable Disease Control	Dr. Ruth Lockley
	UHB NHS F Trust Infection Control Doctor Chief Nurse Chief Operating Officer UHB NHS F Trust PALS	Dr. Martin Gill Dame Catherine Elcoat Julie Moore (+ written) Jenny Dodds (written)
	BH&S NHS Trust Chief Executive Director of Nursing Facilities Director Consultant Microbiologist BH&S NHS Trust PALS	Mark Goldman Dame Jill Ellison Roger Tonkinson Dr. Savita Gossain (+ written) Kathryn Gunn (written)
	S&WBH NHS Trust Chief Executive Head of Infection Control Nursing S&WBH NHS Trust PALS	John Adler Rebecca Evans (+ written) Pauline Richards (written)
	GH NHS Trust Director of Nursing GH NHS Trust PALS	Linda Bower (written) Barbara Beal (+ PALS written) Rosemary Thorpe
	BCH NHS Trust Consultant Medical Microbiologist Assistant Director of Nursing BCH NHS Trust PALS	Dr. Clive Graham (+ written) Rosie Rogers Gill Brook (written)
	BWHC NHS Trust Chief Executive	Caroline Wigley (+ written) Dr. Jim Gray



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	ROH NHS Trust Chief Executive Director of Nursing Consultant Orthopaedic Oncologist ROH NUS Trust PALS	Christine Miles Vicky Morris (+ written) Rob Grimer  Vicky Morris (written)
	EB PCT Infection Control Nurse EB PCT PALS	Sam Lonnen Pat Rouse (written)
	HoB PCT	Sam Lonnen
	NB PCT	Sam Lonnen
	SB PCT Chairman, Control of Infection Committee HPA Clinical Governance Committee Head of Clinical Governance Public Involvement Manager Clinical Site Manager, West Heath Hospital Deputy Director Elderly Services Infection Control Nurse	Dr. Martin Goodman  Dr. Annette Wood Janet Upward Julie McCoy Linda Foxall Julie Ravenhall  Michelle Pillay Sam Lonnen
1 <sup>st</sup> November Training Standards of Nurses and a GP's Perspective of MRSA	Head of School of Nursing Studies, UCE	Lilieth Williams
	General Practitioner	Dr. Fay Wilson

BCH NHS Trust	=	Birmingham Children's Hospital NHS Trust
BH&S NHS Trust	=	Birmingham Heartlands & Solihull NHS Trust
B&S HPU	=	Birmingham & Solihull Health Protection Unit
B&SMH NHS Trust	=	Birmingham & Solihull Mental Health NHS Trust
BWHC NHS Trust	=	Birmingham Women's Health Care NHS Trust
EB PCT	=	Eastern Birmingham Primary Care Trust
GH NHS Trust	=	Good Hope Hospital NHS Trust
HPA	=	Health Protection Agency
HoB PCT	=	Heart of Birmingham Teaching Primary Care Trust
NB PCT	=	North Birmingham Primary Care Trust
PALS	=	Patient Advice & Liaison Service
PPI Forum	=	Public & Patient Involvement Forum
ROH NHS Trust	=	Royal Orthopaedic Hospital NHS Trust,
S&WBH NHS Trust	=	Sandwell & West Birmingham Hospitals NHS Trust
SB PCT	=	South Birmingham Primary Care Trust
UCE	=	University of Central England
UHB NHS F Trust	=	University Hospital Birmingham NHS Foundation Trust
WMAS NHS Trust	=	West Midlands Ambulance Service NHS Trust



# MRSA Review

## Appendix 4: Surveillance and audit data

Department of Health Mandatory Bacteraemia Surveillance Scheme 2003/04 MRSA bacteraemia rates for NHS Trusts in Birmingham			
Trust name	Trust category	Number of MRSA bacteraemia reports	MRSA per 1000 bed days
B'ham Children's Hospital NHS Trust	Single specialty	8	0.11
B'ham Heartlands & Solihull NHS Trust	General acute	106	0.26
B'ham Women's Health Care NHS Trust	Single specialty	0	0.00
Good Hope Hospital NHS Trust	General acute	26	0.14
The Royal Orthopaedic Hospital NHS Trust	Single specialty	3	0.09
Sandwell & West B'ham Hospitals NHS Trust	General acute	82	0.20
University Hospital B'ham NHS Trust	Specialist	123	0.35

CHI scoring for Infection Control Procedures Assessment: 2002/03		
Trust	Indicator Value (Benchmark 50)	Improvement
B'ham Children's Hospital NHS Trust	84	Average
B'ham Heartlands & Solihull NHS Trust	85	Average
B'ham Women's Health Care NHS Trust	85	Data not available
Good Hope Hospital NHS Trust	66	Average
The Royal Orthopaedic Hospital NHS Trust	94	Data not available
Sandwell & West B'ham Hospitals NHS Trust	78	Average
University Hospital B'ham NHS Trust	78	Above average

PEAT hospital cleanliness programme results 2001 – 2004					
<b>NB: the monitoring system was revised in 2003/04</b>					
<b>Key for 2001-2003 Green= good, Amber= acceptable, Red=poor</b>					
Trust	April 2001	Sept 2001	2002	2003	2004
B'ham Children's Hospital NHS Trust	Green	Green	Green	Green	Good
B'ham Heartlands & Solihull NHS Trust	Amber	Amber	Green	Green	Excellent
B'ham Women's Health Care NHS Trust	Green	Green	Green	Green	Excellent
Good Hope Hospital NHS Trust	Amber	Amber	Amber	Amber	Good
The Royal Orthopaedic Hospital NHS Trust	Amber	Amber	Green	Green	Good
Sandwell & West B'ham Hospitals NHS Trust	Amber	Amber	Amber	Green	Good
University Hospital B'ham NHS Trust	Green	Green	Amber	Green	Acceptable
Queen Elizabeth Hospital	Amber	Amber	Green	Green	Acceptable
Selly Oak Hospital					



## Appendix 5: Infection Control measures in Birmingham NHS Trusts and examples of good practice

The following describes general infection control measures along with examples of good practice found in NHS Trusts in Birmingham. This information has been compiled from a report of the Health Protection Agency submitted to Birmingham City Council's Public Protection Committee in November 2003 ("MRSA Surveillance and Control in Birmingham Healthcare Establishments". Health Protection Agency. October 2003) and from information submitted to the Health O&S Committee during the course of the review.

### 1. Policy

- 1.1 Two principal national documents guide MRSA infection control in Birmingham's NHS Trusts:
  - Guidelines on the control of methicillin-resistant *Staphylococcus Aureus* in the community (1995).
  - Revised guidelines for the control of methicillin-resistant *Staphylococcus Aureus* infection in hospitals (1998).
- 1.2 These documents form the basis of MRSA policies across the City. NHS Trust-based MRSA policies are reviewed on a regular basis to provide up-to-date evidence-based information. They can be found in clinical areas and on the individual Trust's intranet sites for easy access.
- 1.3 Each Trust has its own Infection Control Committee, which meets at regular intervals throughout the year to advise the Trusts on all aspects of infection control and to introduce, maintain and modify policies. Surveillance of infection is a major role of infection control teams within all Trusts.
- 1.4 All the acute Trusts have a variety of robust initiatives in place to deal with the fight against MRSA, all of which originate from National Guidelines for both hospital and community.
- 1.5 An educational programme is in place in all Trusts and is embedded in the clinical governance infrastructure, which is the quality framework of the NHS.

### 2. Prevention of MRSA

- 2.1 Prevention of MRSA depends on:
  - Infection control policies, co-ordinated and monitored by an infection control team
  - Compliance with basic control measures such as hand washing, aseptic techniques, cleaning of equipment, ward cleaning, dust control, handling of waste, use of disposable gloves and aprons, handling potentially contaminated dressings, catheters and linen



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- Protecting wounds and pressure sores on patients
- Requesting appropriate specimens for microbiological testing when infection is suspected
- Sound antibiotic policies and practices
- Effective surveillance systems

### 3. Identification of a Case

3.1 MRSA causes infection or colonisation in the same way as *Staphylococcal Aureus* does. Both MRSA and *Staphylococcal Aureus* can be detected by microbiological examination of appropriate specimens e.g. wound swab, blood or sputum. In hospital all patients with clinical signs of infection are sampled. Nasal and skin swabs are carried out routinely on patients who are admitted to high-risk areas of the hospital such as ITU. MRSA will then be readily detected by alert organism surveillance.

3.2 During an outbreak of MRSA infection in a ward or department a search is undertaken for infected cases and carriers. This includes the screening of staff and patients in contact with the index case, as appropriate, to detect carriers who may be the source of infection. Environmental sampling is also carried out to detect the level of environmental contamination.

### 4. Management of a Case

4.1 Following the identification of a MRSA positive patient, the following action is undertaken:

- Patients transferred into isolation (where practicable)
- Microbiological screening is performed
- Bathing with antibacterial washes is commenced and nasal carriage is treated as appropriate. To improve compliance, record sheets are issued to staff with MRSA screening results. These sheets outline instructions for the application of antibacterial and nasal cream, together with a re-screen date. Once these sheets have been completed, they are put in patients' notes as an ongoing record of treatment given.
- Regular microbiological screening monitors levels of skin colonisation, and the effectiveness of topical treatment. Three negative screens are required before precautions are discontinued.
- Whenever possible, patients with MRSA are nursed in isolation in a side room and the clinician caring for the patient informed. Topical and nasal treatments are prescribed and information is available for staff on the treatment regime. Where side rooms are not available or suitable patients may be nursed in an open ward. In these instances barrier nursing is advocated, with the correct use of aprons and the promotion of hand washing compliance.



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### 5. Prevention of Transmission

#### 5.1 Prevention of transmission involves:

- Screening of other patients in contact with the index case is undertaken as appropriate. The extent of screening undertaken depends upon the area/environment in which the patient is being cared for, i.e. ITU, cardiac, renal and liver units, surgical wards, medical wards and elderly care, and the risks to the patient population
- All patients with MRSA are screened on a regular basis and are treated in accordance with policy guidelines
- Detailed guidelines have been drawn up by the ICTs in consultation with clinical colleagues, identifying the level of response required in relation to the risk of acquiring the organism in each of those clinical settings
- Admission screening of patients for MRSA is undertaken in the Orthopaedic, cardiac and liver units, pre-admission clinic, and critical care units
- Hand washing is promoted throughout all the Trusts as an effective means of preventing cross infections. Trusts have recently installed alcohol hand gel at every bed space (excluding Paediatrics, Poisons Unit, individual cubicles on A&E) to facilitate better compliance with hand hygiene. In clinical areas where alcohol is not placed at bed spaces, it is put in key clinical areas where its use can be monitored
- Hand washing posters are sited at every clinical hand wash basin.
- Infection Control Teams have a number of ultra-violet hand washing 'boxes' which are used as a visual aid to hand hygiene compliance. These boxes are used by infection control with wards and departments. The Clinical Skill Laboratories, used for the practical training of student nurses and student doctors, have their own, which can be used trainers, as part of individual training packages. The boxes have been used well by staff on wards and departments throughout the Trusts
- Hand hygiene leaflets are available on all of the Trusts' intranet websites

5.2 Throughout all the NHS Trusts, infection control practices are promoted and the correct use of protective clothing (including the use of aprons and gloves) is advocated when caring for patients with known or suspected infections. These practices are particularly reinforced on critical care, cardiac, liver and renal units. In addition to this, staff for each bed space on the critical care units wears different coloured aprons, to promote compliance with infection control practices.

5.3 All isolation rooms are cleaned following the discharge or transfer of a MRSA positive patient, which also involves the washing of curtains. Patient equipment is disinfected with Hypochlorite (bleach) or alcohol as appropriate.



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### **6 Infection Control Teams**

- 6.1 The Infection Control teams within the Trusts carry out the following education/training initiatives:
- Mandatory/induction training for all staff
  - Ad hoc lectures on specific areas of infection control to both clinical and non-clinical staff (including porters, domestics, catering, transport, security staff), as appropriate
  - Infection control slot in the medical staff induction road show
  - Infection control training for nurses pertaining to their specialist areas e.g. Intensive Therapy Units, Theatres, Neonatal Units, Coronary Care Units, Liver and Renal Units
- 6.2 The Infection Control Teams work closely with the Facilities Departments to undertake environmental audits in line with Patient Environment Action Teams and National Standards of Cleaning. Regular multi-disciplinary team meetings continue between Infection Control, Domestics, Catering Departments, Quality Manager, Estates Departments Transport Departments and Matrons. There is regular feedback to the clinical areas and Trust Boards on audit findings.

### **7 Good Practice Examples**

- 7.1 Since 1997, the Children's Hospital has had an MRSA cohort ward with 17 beds. The use of a ward dedicated to the care of MRSA patients has meant better utilisation of beds in side rooms throughout the hospital and the isolation unit. It has also facilitated rehabilitation for those who need it. All staff on the ward receive intensive training on the care and management of patients with MRSA, therefore providing them with greater knowledge.
- 7.2 Information Technology has enabled the infection control service at Children's Hospital to identify MRSA patients on the 'Patients information System (PiMs). This allows for instant identification of patients with MRSA and avoids the delay, of finding case notes on admission. The Children's Hospital has also introduced a wound proforma to complete in the event of a patient developing a wound infection. In addition it is planned to send the proforma to local GPs to complete if their patient develops a wound infection in the community.
- 7.3 Sandwell and West Birmingham NHS Trust also has a robust IT system in place to identify patients with MRSA. All patients known to the Infection Control team are clearly identified on the Patient Administration System and categorised according to their current status i.e. positive, negative etc. The IT information is used extensively by wards and bed management teams.
- 7.4 University Hospital Birmingham NHS Foundation Trust has developed



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and distributed hand-washing leaflets, aimed at patients and distributed to all wards. They have also trialled the use of an antibacterial cream.

- 7.5 Hand-washing leaflets, aimed at patients have also been developed by Birmingham Heartlands and Solihull NHS Trust. The Trust also undertakes hand hygiene awareness weeks on a regular basis. One of their Infection Control Nurses is involved in a hand washing initiative on the renal unit, which includes staff wearing badges to prompt patients to ask staff if they are washing their hands. This was commenced on the Renal Unit to reduce the number of *Staphylococcus Aureus* bacteraemia associated with dialysis lines. Birmingham Heartlands and Solihull NHS Trust is also taking part in a national trial of the use of alcohol hand gel in clinical areas.
- 7.6 Most of the Trusts in Birmingham provide patient information through free channels available on bedside TV systems.
- 7.7 Both Birmingham Heartlands and Solihull NHS Trust and the Children's Hospital are working with their domestic contractor to implement the standards recommended in the Association of Domestic Managers and Infection Control Nurses Association (1999) document '*Standards for Environmental Cleanliness in Hospitals*'.
- 7.8 University Hospital Birmingham NHS Foundation Trust holds Cleaning Strategy Group meetings – Consultants, Heads of Nursing, Infection Control Nurses and Hotel Service Managers meet to advise Trusts on all aspects of cleaning and to introduce, maintain and, modify policies. Involving patients in infection control. We have well-established patient councils and have actively involved patients in our infection control campaigns. Members of the patient councils contributed to writing the patient and visitor information leaflets.
- 7.9 University Hospital Birmingham NHS Foundation Trust and Sandwell and West Birmingham Hospitals NHS Trust are both involved with the annual training of domestic staff.
- 7.10 The infection control nurses at University Hospital Birmingham NHS Foundation Trust run an Infection Control Link Nurse Course, in association with the University of Central England. This provides a "link nurse" responsible for infection control in their ward/clinical area who reports to the Infection Control Nurses. They are also involved with the induction training for Senior House Officers and Pre-registration House Officers and are involved with Operating Department Personnel Training at the University of Central England
- 7.11 University Hospital Birmingham NHS Foundation Trust has also employed a nurse to undertake MRSA surveillance and to educate ward staff on caring for patients for MRSA. This has resulted in the production of a MRSA audit tool to monitor the treatment patients with MRSA.



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- 7.12 Birmingham Heartlands and Solihull NHS Trust Infection Control Team are committed to an annual audit of the implementation of the Trust MRSA Policy in clinical areas.
- 7.13 The infection control teams at University Hospital Birmingham NHS Foundation Trust has developed a hand-washing audit to monitor how well wards are conforming to the current infection control policy for hand washing, with a proposed target of 100%.
- 7.14 Birmingham Heartlands and Solihull NHS Trust currently carry out hand hygiene audits on a quarterly basis.
- 7.15 University Hospital Birmingham NHS Foundation Trust has recently been granted substantial European Union Monies to study MRSA in the community. This will lead to the development and application of modern molecular techniques to type MRSA. Its application to patient care will allow close monitoring of the prevalence and spread of organisms throughout the Hospital and community. This work will provide the essential links required monitoring levels of MRSA in the target community areas and the hospital, thus potentially reducing the morbidity and mortality in the population at risk, and hospital admissions due to MRSA. It will enable targeting of patients predisposed to infection with MRSA e.g. the elderly and diabetic patients. Further education of in both the prevention and treatment of MRSA infection will then follow.

### 8. Non-acute hospital areas

- 8.1 It is acknowledged that MRSA may be imported into hospital from community settings. Initiatives in place with in the community to prevent the control and spread of MRSA, include policy documents, control of infection meetings, additional training and the following:

### 9. Initiatives in Primary Care Trusts (PCTs) include:

#### 9.1 Staff Training

- Induction training for all grades of staff including doctors
- An infection control teaching session within the tissue viability link nurse course aimed at all community nurses and podiatrists
- Infection Control Link Nurse Course run jointly with University Hospital Birmingham NHS Foundation Trust
- Auxiliary Nurse infection control study day
- Training of nurses from University of Birmingham, and University of Central England, whilst on community placements
- National Vocational Qualification competency training for Health Care Assistants

#### 9.2 Hand washing

- Adaptation of the University Hospital Birmingham NHS Foundation



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Trust patients' hand washing leaflet for use in the primary care setting

### 9.3 Audit

The following areas are audited using the West Midlands Infection Control Nurses Association Audit tools :

- Child Development Centres
- Podiatry
- Genito-urinary Medicine Clinics
- Vasectomy Clinics
- Birmingham Dental Hospital
- NHS Walk-in Centre
- Health Centres
- PCT Owned Hospices
- All-community In-patient Areas

### 10. Initiatives in Care Homes Include:

#### 10.1 Training

- An Infection Control Link Nurse Course is run as a rolling programme with the aim of training an Infection Control Link Nurse within every nursing home. This was set up during December 2002 and to-date 43 link nurses have been trained, so far
- Infection control updates for managers of Social Service care homes and Managers of home care assistants
- An infection control study day for managers of Residential Homes
- A quarterly infection control newsletter for Care Homes, starting November 2003
- Infection control policy document

#### 10.2 Hand Washing

- Hand washing posters and guidance are included in the infection control policy pack

#### 10.3 Audit

- An audit programme aimed at Nursing Homes
- 
- Other community areas, which receive input from the Community Infection Control Nurses and Health Protection Nurses, include schools and day nurseries and HM Prison Birmingham.