



1st

Report to Birmingham City Council

M R S A

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MRSA Review

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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 NHS¹.
- 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 (A..e. tl propm are (A..e4(f)-





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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





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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







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estimated that around 15% of MRSA cases could be prevented, releasing resources of £150 million for alternative use in the NHS⁵. The Committee considered that this was a staggering figure and





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3.2 Transmission of MRSA

3.2.1



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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



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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



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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."*¹⁰
- 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."*¹¹
- 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.

¹⁰ Royal College of Nursing, MRSA guidance for nursing staff, April 2004.

¹¹ 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 clean¹².”*
- 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 trials¹³ 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.

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

¹³ 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 ¹⁴. 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 ¹⁵:

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"> • Intensive care • Special care baby unit • Burns unit • Transplant unit • Cardio-thoracic • Orthopaedic • Trauma • Vascular • Regional, national, international referral centres 	<ul style="list-style-type: none"> • General surgery • Urology • Neonatal • Gynaecology • Obstetric • Dermatology 	<ul style="list-style-type: none"> • Elderly (acute) • General medical • Children (neonatal) 	<ul style="list-style-type: none"> • Elderly (long stay) • Psychiatric • Psycho-geriatric





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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



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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



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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 sample3.4.13



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and reliability of some of the audit and inspection systems and how





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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 3rd 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



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3.6.7



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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



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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 assured.
- 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.



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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



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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
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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 me]T]meS6emuSurn from Tc.6many wod be.66t71-.



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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



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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 identify any specific work being undertaken to publicise and raise awareness of visiting regulations.



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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



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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* (D

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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



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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



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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



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4.2 Recommendations

4.2.1



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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	Surveillance 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	Bed management 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	Tracking 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







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Meeting date / timescale	Area	Methodology	Responsibility/ witnesses
	based services? <ul style="list-style-type: none"> • Are there any risks to members of the public when a patient with MRSA is discharged? • Comparison of "old and new" standards of hygiene 	Communication leads from Trusts Evidence gained from witnesses with long term experience of the hospital environment.	Mrs Cohen
19 October all day	<p>The health care environment</p> <ul style="list-style-type: none"> • What control measures are in place in each Trust (acute and specialist)? • What management arrangements, local infrastructure and systems are in place for active surveillance and measures to reduce infection risk? • Specific issues for presentations by trusts <ul style="list-style-type: none"> - What Information is given to patients and visitors on general infection control? - What efforts have been made to raise patient and public awareness? - What information and advice is given to patients who acquire MRSA infection? - What information is handed over between professionals at and after discharge? - How does the routine surveillance of MRSA in a Trust influence the management of hospital cleaning contracts? - Are patients and visitors encouraged to report actively poor hygiene practice and make 	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	



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





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15. Winning ways - working together to reduce Healthcare Associated Infection in England. *Report from the Chief Medical Officer, Department of Health Dec 2003*
16. First report of the Department of Health's mandatory MRSA bacteraemia surveillance scheme in acute NHS Trusts in England: April to September 2001. *CDR Weekly Vol. 12 No 6, 8 Feb 2002*
17. Standards of cleanliness in the NHS - A framework in which to measure performance outcomes. *NHS Estates Aug 2003*
18. The socio-economic burden of hospital acquired infection. *Plowman R. et al: London Public Health Laboratories Service 2000*
19. Rates of MRSA infection in Birmingham Hospitals. *Dr. David Pitches Oct 2002*
20. MRSA Surveillance and Control in Birmingham Health Care Establishments. *Birmingham and Solihull Unit, Health Protection Agency Oct 2003*
21. Healthcare Associated Infection - A briefing: following two recent reports. *Health Protection Agency July 2004*
22. Revised guidelines for the control of methicillin resistant Staphylococcus Aureus infection. *Hospital Infection Society. Working Party report. Journal of Hospital infection (1998) 39: 253-290*
23. Patient Safety Alert leaflet: Clean hands help to save lives. *Clean your hands campaign. National Patient Safety Agency. September 2004*
24. MRSA - Information for patients. *Health Protection Agency April 2004*
25. New head nurse to lead fight against hospital superbugs. *Annie Kelly, The Guardian Oct 19 2004*
26. Hospitals need a good scrub. *Claire Rayner, The Guardian 11 Oct 2004*
27. Could pine cones hold MRSA cure. *Helen Beighton, Sunday Mercury 26 Sept 2004*
28. Tabloids' MRSA tests found wanting. *Ian Lloyd, Health Service Journal 16 Sept 2004*
29. Full Text: Michael Howard's MRSA speech. *The Guardian 2 Sept 2004*
30. Howard vows to tackle 'superbug'. *Matthew Tempest, The Guardian 2 Sept 2004*



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31. Dirt police to tackle superbug. *John Carvel, The Guardian 5 Nov 2004*

Written evidence

1. South Birmingham Primary Care Trust
 - Control of Infection Annual Report 2003. *Clinical Governance Dept*
 - Hand Washing Audit. *Elderly Services Directorate Jan 2003*



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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 th 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
	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



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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 SB PCT Acting Nurse Consultant (Older People) Clinical Site Manager, West Heath Hospital	Linda Szaroleta







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



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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:
-





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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



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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 *Staphylococcm r011w0patie007c901al Twt5*



