LONDONASSEMBLY

MRSA In London

Health and Public Services Committee

October 2005

Rapporteur's Foreword

We are fortunate in London that we have some of the biggest and best hospitals in the country, treating, with world-renowned specialists, thousands of patients from both London and other parts of the country. We are, however, unfortunate that some of these hospitals have the highest rate of hospital-acquired infections (HAIs). In this report we have looked at the MRSA (methicillin resistant *Staphylococcus aureus*) infection and have endeavoured to demystify what it is, how it can be acquired and what factors influence the rates of infection in London.

The MRSA is multi-factorial and there are many related explanations for the rise and spread of the infection, therefore many different methods must be used to reduce its spread. What is very apparent is that diligent admission screening; risk assessment and ward surveillance programmes are essential. All hospital staff must be committed to high standards of cleanliness in our hospitals and personal hygiene when physically dealing with patients.

Hospitals owe it to their patients to provide a safe and infection-free environment. Cases of MRSA are increasing and the problem must be tackled. This Committee has made a number of recommendations to record, reduce and stamp out MRSA

We found that data collected on MRSA is not sufficient to give us, or the people of London, a clear picture of the rates of MRSA acquired in London compared to the rest of the country.

Reducing the rates of MRSA in Hospital Trusts is not given sufficient priority in the performance management framework for the NHS (the current 'star ratings' system); and that where the Trusts are assessed in relation to factors, such as cleanliness, that influence MRSA rates, this assessment is not sufficiently integrated into the overall performance management framework.

It must be remembered, that thousands of patients are treated and made well in our hospitals without contracting infections.

I would like to express my deep gratitude to all the people who gave so generously of their time to inform the Committee during the evidence sessions. I would also like to extend my thanks to the GLA staff.

Elizabeth Howlett AM
MRSA Rapporteur

The Health and Public Services Committee membership & terms of reference

The membership and terms of reference for the Committee were agreed at the meeting of the Assembly on 11 May 2005. Geoff Pope replaced the original Liberal Democrat Member from 15 June 2005.

Joanne McCartney **Chair**	Labour
Elizabeth Howlett **Deputy Chair**	Conservative
Angie Bray	Conservative
Jennette Arnold	Labour
Geoff Pope	Liberal Democrat
Darren Johnson	Green

Terms of reference

1. To examine and report from time to time on -
    - the strategies, policies and actions of the Mayor and the Functional Bodies
    - matters of importance to Greater London as they relate to the promotion of health in London and the provision of services to the public (other than those falling within the remit of other committees of the Assembly) and the performance of utilities in London.
2. To liaise, as appropriate, with the London Health Commission when considering its scrutiny programme.
3. To consider health matters on request from another standing committee and report its opinion to that standing committee.
4. To take into account in its deliberations the cross cutting themes of: the achievement of sustainable development in the United Kingdom; and the promotion of opportunity.
5. To respond on behalf of the Assembly to consultations and similar processes when within its terms of reference.

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Comments on the findings and recommendations of this report are welcomed. Any comments will be considered as part of the review and evaluation of the work on this issue.

Contents

1 Introduction

1.1 **In the last several years, there has been considerable concern about MRSA, the 'hospital superbug'. This concern has been expressed by patients, their families, and organisations that represent them, within the NHS and by health Ministers. It has been widely reported by the media with headlines such as 'Hospital patient safer at home'[1]. We wanted to find out what was known about the impact in London of MRSA. Is enough information being collected to understand how MRSA is acquired and spread? Does London's role as a centre of excellence in healthcare and clinical specialisms create particular problems? How much evidence is there about the underlying causes of MRSA and what examples of good practice in tackling MRSA exist in London? Could healthcare organisations and those who monitor and manage them, staff, patients themselves and their relatives, do more?**

1.2 **To help us answer these questions we brought together existing information and statistical data and talked to experts and practitioners in London hospitals. We held evidentiary sessions with the MRSA Support Group, and the Royal College of Nursing, and went on fact-finding visits to the University College London Hospital's Trust and The Royal Marsden NHS Trust. We also requested and received information from a large number of Trusts in London, as well as other bodies such as the Health Protection Agency and Department of Health (see Annex B).**

What is MRSA?

1.3 A lot of the common misconceptions about MRSA start with the name and to what it actually refers. Put simply, MRSA is a bacterium that causes infections. It is called a 'superbug' because it is resistant to several antibiotics. This makes it less easy to treat. The acronym, MRSA, stands for methicillin resistant *Staphylococcus aureus*. Methicillin is an antibiotic.

1.4 **MRSA is one of many hospital acquired infections, but MRSA is the focus of this report because of its resistance to antibiotics and its rapid spread over the past 10 years**. A number of the findings will be generally relevant to all infections prone to being acquired during health care. The investigation concentrated on the MRSA in hospitals, but we recognise that infections also spread through other aspects of health care, such as during hospice stays.

1.5 There are different strains of MRSA. Most have died out or are very rare, but variants MRSA-15 and MRSA-16 have become more established, becoming widespread in the UK and London since 1993. The variant does make a difference medically, but when the Department of Health statistics are published, they are all grouped together.

[1] BBC News world edition, 17 August 2005

1.6 Another phrase sometimes used is 'community-acquired MRSA'. This phrase refers to cases of MRSA where the patients picked it up without having been in a hospital or other healthcare setting. In relation to community-acquired MRSA, The Health Protection Agency has concluded, 'there is no immediate cause for concern'.[2]

1.7 When the Department of Health releases figures concerning MRSA, they relate entirely to cases of bacteraemia (blood infections), and not any of the other cases (wound infections, lung infections and so on). Overall, blood infections only account for 6% of all hospital acquired infections[3]. This is one reason why there is much argument about the exact level of MRSA. In the United Kingdom, 42.9% of *Staphylococcus aureus* blood infection is methicillin resistant. This is the fourth highest in Europe after Greece, Portugal, and Romania. By way of contrast, only 0.9% *Staphylococcus aureus* blood infection is methicillin resistant in Denmark.[4] It is important to note, however, that it is an increasing problem in many countries, including Denmark.

What does MRSA do?

1.8 For most people, most of the time, MRSA does very little because the body's natural defences protect them. It is important to get the terms 'colonised' and 'infected' clear here.

1.9 About 3% of people are colonised by MRSA[5]. This means it lives on their bodies (particularly in the nose, armpits and groin), but causes no harm. MRSA can enter the body of healthy people without causing infection. Where MRSA really becomes a problem is when people become infected after it enters the blood stream or wound. There are a range of ways in which people become infected. MRSA can infect wounds, ulcers, abscesses, catheter entry points and cause inflammations, pus, and prevent the wound from healing. These can lead to bacteraemia/septicaemia, which is blood poisoning and can kill. This kind of blood poisoning comes from a conjunction of (a) a susceptible patient (someone whose normal immunity is insufficient to cope, probably because of another illness), (b) a penetration or bypassing of the normal skin/blood barrier, and (c) exposure to the bacterium, MRSA. Where these conditions occur frequently, high rates of MRSA infection are likely to be found. It is important to bear this in mind when considering explanations for rates of MRSA in London.

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[2] Parliamentary written answer, Hansard, 5th April 2005, PQ 223904.
[3] House of Commons Committee of Public Accounts, *Improving patient care by reducing the risk of hospital acquired infection: a progress report. HC 554, 23rd June 2005.*
[4] *European Antimicrobial Resistance Surveillance System (EARSS) 2002 and 2003*
[5] Department of Health*, personal communication*

2 The Situation in London

What do we know about MRSA in London?

2.1 The following table gives the basic data provided by the Department of Health on MRSA in London's Hospitals for the last year, 2004-05. A fuller table, giving information for earlier years can be found in Annex C.

MRSA Surveillance Results April 2004 - March 2005 Trust Name	Apr 04 - Mar 05 Number of MRSA Bacteraemia reports	 MRSA rate (per 1000 bed-days)
	Column A	Column B
Barking, Havering & Redbridge Hospitals NHS Trust	98	0.2
Barnet & Chase Farm Hospitals NHS Trust	102	0.3
Barts & the London NHS Trust	64	0.18
Bromley Hospitals NHS Trust	16	0.09
Chelsea & Westminster Healthcare NHS Trust	47	0.28
Ealing Hospital NHS Trust	26	0.18
Epsom & St. Helier NHS Trust London	58	0.22
Great Ormond Street Hospital for Children NHS Trust	7	0.09
Guy's & St. Thomas' NHS Trust London	104	0.29
Hammersmith Hospitals NHS Trust London	81	0.24
Hillingdon Hospital NHS Trust London	30	0.17
Homerton Hospital NHS Trust London	4	0.03
King's College Hospital NHS Trust London	64	0.2
Kingston Hospital NHS Trust London	50	0.27
Lewisham Hospital NHS Trust London	60	0.32
Mayday Healthcare NHS Trust London	40	0.17
Moorfields Eye Hospital NHS Trust London	0	-
Newham Healthcare NHS Trust London	17	0.13
North Middlesex Hospital NHS Trust London	29	0.18
North West London Hospitals NHS Trust London	54	0.19
Queen Elizabeth Hospital NHS Trust London	42	0.27
Queen Mary's Sidcup NHS Trust London	41	0.3
Royal Brompton & Harefield NHS Trust London	7	0.06
Royal Free Hampstead NHS Trust London	69	0.24
Royal Marsden Hospital NHS Trust London	1	0.02
Royal National Orthopaedic Hospital NHS Trust London	5	0.1
St. George's Healthcare NHS Trust London	63	0.2
St. Mary's NHS Trust London	48	0.22
University College London Hospitals NHS Trust London	45	0.15
West Middlesex University NHS Trust London	30	0.23
Whipps Cross University Hospital NHS Trust London	48	0.2
Whittington Hospital NHS Trust London	24	0.16

2.2 As can be seen, the MRSA statistics give two different figures for each Trust. For this last year they are also provisional. The publication of the figures was brought forward to coincide with the publication of a House of Commons

report[6] and the data is provisional due to the way bed occupancy is calculated, and may change slightly.

2.3 Column A, 'Number of MRSA bacteraemia reports', is simply the total of patients admitted to a Trust who have been found to have MRSA as a blood infection. Being an absolute figure, it is not a useful one by which to compare different Trusts.

2.4 Column B, 'MRSA rate, per 1000 bed days', is a number derived from the number of MRSA blood infections, the percentage of beds that have patients in them at any one time, and the number of patients admitted to that hospital Trust over a year. Superficially, the higher the rate, the worse the MRSA situation in that hospital is. Giving more of a context, this is the fairer set of figures by which to compare Trusts.

2.5 Both sets of figures are very useful, but there are some provisos that must be borne in mind:

- The MRSA rate is determined by dividing the number of cases into a number derived from the volume of patients staying overnight, whereas some patients with MRSA may be seen on an outpatient only basis. Also, the figure given for the volume of patients staying overnight is an average based on figures for the previous year.
- Different hospitals and departments within a Trust are not distinguished, leading to a lack of clarity for both patients and staff. Some Trusts do collect more precise data, **but it is not mandatory.**
- **The main problem is that the figures do not give any detail as to where the MRSA was acquired[7].** For the year April 2004 to March 2005, adding up all the MRSA bacteraemia figures in London gives a total of 1374 across London. This does not mean that 1374 new cases of MRSA have been contracted in London's hospitals in this time period.

2.6 A proportion of any given hospital's cases of MRSA will be people who have become infected or colonised by MRSA in another hospital or in the community at large. If the patient transferred from elsewhere is already infected then it is inappropriate to hold the receiving hospital responsible. But if the patient is simply colonised and later becomes infected in the receiving hospital, the question of how this change has occurred could be legitimately raised with the receiving hospital.

2.7 St. George's Healthcare NHS Trust[8] estimate that about 1/3 of patients identified as having MRSA in some form (colonised or infected, but not bacteraemia) had it before they were admitted.

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[6] House of Commons Committee of Public Accounts, *Improving patient care by reducing the risk of hospital acquired infection: a progress report. HC 554, 23rd June 2005.*

[7] We understand from the Department of Health that enhanced surveillance of MRSA will commence in October 2005.

[8] Evidence submitted by St. George's Healthcare Trust by letter 10th March 2005.

2.8 Royal Brompton and Harefield NHS Trust[9] give a more detailed breakdown. About half of those admitted were colonised with MRSA at the time of admission; another 40% of those with MRSA were previous in-patients known to have it from previous visits.

2.9 Many of the hospitals that submitted evidence echoed this trend and it would be fair to say that the MRSA situation in London is complicated by the fact that a lot of patients in London are sent from other hospitals, both in and outside of London, as a result of referrals.

2.10 It is possible that there is double counting of MRSA taking place, with patients being tested and counted in both referring and receiving hospitals. However, there is no real hard evidence that this is occurring and it is likely to only make a small contribution to rates in London. Due to the length of time taken to diagnose MRSA, it is more likely that it is diagnosed where a patient will receive the bulk of their treatment. This may minimise double counting, but it still means the figures are not detailed enough to give an accurate picture of how many people actually *contract* MRSA in a specific hospital.

Recommendation 1

We recommend that the Patient Safety Agency and the Strategic Health Authorities require MRSA surveillance data to include wider information about MRSA infections that are not blood borne. Trusts should collect and publish MRSA records broken down by the presence of MRSA on admission, at a later date, by department and by hospital site.

The situation in London - analysis

2.11 Bearing all the provisos about the data in mind, is the situation in London better or worse than the rest of the country? On the face of it, the answer is that the situation in London is worse. Hospitals in London dealt with 15% of all hospital admissions in England for 2003/04[10], and a little over 20%[11] of all MRSA cases were reported by London's hospitals for the same year.

2.12 Similarly, a glance at the latest annual figures[12] shows that out of the 20 Trusts with the highest MRSA rates in England, 7 are in London. The average rates of MRSA are higher across most of the five Strategic Health Authorities in London compared to other Strategic Health Authorities outside London. Average rates are not a precise indictor, but do support the underlying argument that London has a worse problem with MRSA than other regions. However, there is an ambiguity in the evidence in that it is unclear whether

[9] Evidence submitted to scrutiny by Royal Brompton and Harefield NHS Trust by letter 31st March 2005.
[10] Hospital Episode Statistics, 2003/04. www.hesonline.nhs.uk/Ease/servlet/DynamicPageBuild?siteID=1802&categoryID=212&catName=Hospital%20providers.
[11] www.dh.gov.uk/assetRoot/04/11/40/15/04114015.pdf
[12] ibid.

the hospitals in London are in some way responsible for this situation, or if they just find themselves dealing with a worse situation for various reasons.

2.13 Therefore, despite this appearance that the rates of MRSA in London may be higher than in the rest of the country, we want to emphasise the point highlighted in our first recommendation: the way in which the data is collected does not give us a clear picture of where MRSA is first acquired. We need to know more about the MRSA rates among people transferred to London hospitals from other hospitals outside London before we can make accurate comparisons.

2.14 **Rather than being some kind of 'killer bug', it is generally more accurate to say that MRSA is a contributory factor to people dying, affecting people who are ill or have a serious condition already. Between 1993 and 2002, the number of deaths that MRSA contributes towards increased 15-fold. This meant that in 2002, 800 deaths were due in part to MRSA[13]. However, only 365 of these deaths can be attributed to patients in specific hospitals (due to reasons of patient confidentiality, hospitals are not named where there are less than five deaths). Thirty-nine of these deaths can be located as having happened in London hospitals[14]. This means that 11% of deaths contributed by MRSA, that can be geographically located, happened in London. As London sees 15% of all the hospital patients in England and Wales[15] this would seem to suggest that patients are less likely to die as a result (direct or indirect) of MRSA. However the total number of deaths in London hospitals could not be ascertained, so no definitive answer can be given on this issue.**

2.15 Whatever the difficulties in making comparisons, it is clear that things are not all bad for London. Of the 20 Trusts with the lowest rates of MRSA, four are in London. One of these is Moorfields Eye Hospital, which has never had a recorded case. Also, if one compares the MRSA rates for the first year of surveillance with the most recent, 51% of Trusts in England have higher rates after four years. In London, 41% of Trusts had a higher rate, indicating that the difference, if there is one, is perhaps narrowing.

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[13] Office of National Statistics and Health Protection Agency, *Trends is MRSA in England and Wales: analysis of morbidity data for 1993-2002. Health Statistics Quarterly 21*.

[14] House of Commons Committee of Public Accounts, *Improving patient care by reducing the risk of hospital acquired infection: a progress report. HC 554, 23rd June 2005. Annex D*.

[15] Hospital Episode Statistics, 2003/04. www.hesonline.nhs.uk/Ease/servlet/DynamicPageBuild?siteID=1802&categoryID=212&catName=Hospital%20providers

3 What factors influence rates of MRSA?

Introduction

3.1 The reasons for the spread of MRSA and the related topic of how MRSA can best be tackled are not simple. There are many related explanations for the rise and spread of MRSA, and many different methods must be used if it is to be reduced. In short, it is multi-factorial. This and the following section cover a number of these factors.

3.2 What follows is an examination of some of the variety of factors that may be considered to play a part in higher rates of MRSA. This should provide some pointers to measures that might be taken to reduce MRSA.

Bed occupancy

3.3 Bed occupancy is a term used by the NHS to indicate the proportion of beds in a hospital that are filled at any one time. A representative from the Royal College of Nursing, echoing the findings of the National Audit Office[16], stated that 'Anything above 85% is associated with higher [MRSA] infection rates'[17] It is not easy to isolate bed occupancy as a factor in individual cases. This can be seen by the contrasting cases of West Middlesex Hospitals Trust and Newham Healthcare Trust. As can be seen from the table below, for the first three years of MRSA surveillance (those that bed occupancy rates are available for), the number of MRSA cases follows the rise and fall of bed occupancy at Newham, but goes in the opposite direction for West Middlesex.

		Newham Healthcare NHS Trust London	West Middlesex University NHS Trust London
No. MRSA Reports	Apr 01-Mar02	25	32
No. MRSA Reports	Apr 02-Mar03	33	41
No. MRSA Reports	Apr03-Mar04	24	34
Bed Occupancy[18]	Apr 01-Mar02	84.1%	96.9%
Bed Occupancy	Apr 02-Mar03	87.9%	87.8%
Bed Occupancy	Apr03-Mar04	81.4%	93.3%

3.4 The National Audit Office has suggested that hospitals aim for a bed occupancy of no higher than 82%[19]. In 2003/04, the average for all Trusts in England was 85% (up from 83.1% in 1999-2000), 7 out of 10 of Trusts in England had bed occupancy rates above 82%[20]. In London for 2003/04, just over 8 out of 10 Trusts had higher than 82% bed occupancy, and many go over 90%. Of the five Trusts that had occupancy rates below this (Newham Healthcare, Guy's and St. Thomas', Great Ormond Street, Royal National

[16] National Audit Office, *Improving patient care by reducing the risk of hospital acquired infection: a progress report,* report by the Comptroller and Auditor General, HC 876 Session 2003-2004.
[17] Ros Wallace, Royal College of Nursing, evidentiary meeting, 18th May 2005.
[18] www.performance.doh.gov.uk/hospitalactivity/data_requests/index.htm
[19] National Audit Office, op cit
[20] www.performance.doh.gov.uk/hospitalactivity/data_requests/download/beds_open_overnight/bed_04_detail.xls

Orthopaedic, and Moorfields), three also had the three lowest rates of MRSA in London and another was in the bottom third. Only Guy's and St. Thomas' broke the trend, with fourth lowest bed occupancy and highest MRSA rate for the year, perhaps due to the nature of their patients' illnesses and treatment history.[21]

3.5 The National Audit Office indicated that it believes bed occupancy rates may be a factor in impeding good infection control in its progress report on reducing hospital acquired infection, as mentioned above. The House of Commons Public Accounts Committee, in its report published in April 2005 also believes that 'Trusts need to reduce bed occupancy levels and to adopt more effective bed management practices which avoid patients moving too frequently[22]'.

3.6 In short, given the higher rates of bed occupancy in London compared with the rest of the UK; the National Audit Office's recommendation of keeping bed occupancy rates at 82% or below; the concerns expressed to us by expert witnesses; and the findings of recent inquiries, we believe that London NHS Trusts should give high priority to reducing bed occupancy rates in line with suggested targets.

Recommendation 2:

We recommend that London Strategic Health Authorities set ceiling targets for London NHS Trusts of bed occupancy rates at 82% or below and should performance manage these targets. London Primary Care Trusts should take bed occupancy rates into account in their commissioning strategies.

Trust Type – general, specialist, single specialty

	All	General Acute		Specialist		Single Specialty	
		Number	% Trusts	Number	% Trusts	Number	% Trusts
England /173	173	110	63.5	45	26	18	10.5
London /32	32	17	53	10	31	5	16
London's % share	18.5%		15.5%		22%		28%

3.7 As the above table demonstrates, London's 32 Trusts consist of 17 General Acute Hospitals, 10 Specialist Hospitals, and 5 Single Specialty Hospitals.

3.8 Hospital Trusts in London and elsewhere come in many sizes and forms[23]. Single specialty Trusts focus on one branch of medicine, for instance the Royal

[21] Written comments NE London SHA officer, September 2005.
[22] House of Commons Committee of Public Accounts, *Improving patient care by reducing the risk of hospital acquired infection; a progress report*, The Stationery Office, April 2005
[23] Hospital Trusts in London are grouped by Trust type in Annex C.

Marsden provide specialist cancer care. A specialist trust like the University College of London Hospital (UCLH) Trust provides general hospital care, accident and emergency, and has several specialist sections, such as the National Hospital for Neurology and Neurosurgery. UCLH is spread over dozens of sites. General acute hospitals like The Hillingdon Hospital provide all round health care (at two sites) and often refer patients on to specialist or single specialty hospitals as appropriate.

3.9 London has a very high number of hospitals, which are world leaders. As the above table also shows, London has a higher proportion of both specialist and specialty Trusts, such as UCLH and the Royal Marsden than the rest of the country. This means London has a higher number of hospitals that are likely to receive patients referred from other hospitals.

3.10 **The single clearest indicator of whether a hospital Trust will have a high or a low MRSA rate is the type of Trust it is** (see table at Annex C for classification of Trusts)[24]. If the median MRSA rates for all London hospitals in a particular group are worked out, a clear pattern emerges. Single specialty Trusts have the lowest median, with specialist Trusts having the highest.

MEDIAN MRSA RATE BY TRUST TYPE	Apr01-Mar02	Apr02-Mar03	Apr03-Mar04	Apr04-Mar05
GENERAL ACUTE	0.19	0.23	0.21	0.20
SINGLE SPECIALTY	0.07	0.10	0.04	0.06
SPECIALIST	0.32	0.34	0.32	0.21

3.11 Due both to the higher number of patients seen, and the number of specialisms, specialist Trusts generally have higher rates of MRSA than both general acute and single specialty hospitals. Single specialty hospitals tend to have the lowest rates. Also, because of the high proportion of specialist and single specialty Trusts, the proportion of hospital episodes involving invasive procedures (with both the inherent risks of errors and the fact it is bypassing the skin-blood barrier) will be higher. In other words, a patient in London is more likely to be receiving treatment that, by its very nature (see three conditions outlined in section 'What does MRSA do?'), puts them at a greater risk of MRSA.

3.12 It is interesting to note that the rate for specialist Trusts is improving such that they now have a median close to that of general acute Trusts in 2004-05. This is due in large part to the success in reducing MRSA rates by hospitals such as UCLH which had high rates in the past.

3.13 **Putting two factors together – the higher number of specialist Trusts in London than elsewhere, and the generally higher rates of MRSA at specialist Trusts is one clear reason why London may have a worse**

[24] The Health Protection Agency's reports on MRSA surveillance in the Communicable Disease Report Weekly comment on type of trust and MRSA rates (see www.hpa.org.uk).

record on MRSA than elsewhere in England. This means that there is all the more reason why NHS hospital Trusts in London should address reduction of MRSA as a high priority.

4 Hospital cleanliness

4.1 The seeming paradox around MRSA is that while it is very difficult to treat once it has entered the bloodstream, it is not too difficult to kill during cleaning. Assuming the cleaning is thorough, the problem lies largely in stopping re-colonisation from other places or people.

4.2 In this section, we will first examine what the known links are between MRSA and the overall cleanliness of hospitals as rated officially, before moving on to broader issues of cleaning.

Patient Environment Action Team scores

4.3 An annual assessment of hospital environments is made through the PEAT scores[25]. This stands for the Patient Environment Action Team and is the vehicle through which the NHS Estates (a Department of Health body, now no longer in existence) assessed the quality of the patient's environment. Hospitals are judged to be in one of five categories – Excellent; Good; Acceptable; Poor; Unacceptable.

4.4 There is an immediate problem when trying to see if assessments of the scores for the quality of patients' environment match up with MRSA rates. MRSA numbers and rates are given for entire Trusts, whereas PEAT scores are given for individual hospital sites. For example, The Royal Marsden has two sites, one in Sutton, the other in Chelsea. The individual sites were given a separate rating for the patient environment, rather than an overall one for the Trust, in this case. Other Trusts, such as University College Hospital London have even more hospital sites.

4.5 Also, the PEAT scores are calculated for each hospital site on a single day in the year , and until recently, MRSA rates were given over a year for April to March. Therefore, in simple terms, no clear relationship between PEAT scores and MRSA rates can be seen. Guy's and St. Thomas' has the highest rate, and gets two 'acceptables', one for each hospital, which is mid-point on the five-point scale. However, Barts and the London gets three 'acceptables' for its three component parts and has the lowest MRSA rate of any specialist hospital in London. In fact, despite the high rates and number in London, no hospitals for which MRSA rates are available scored less than acceptable, and only two trusts had any component part that rated excellent. In other words, most received good or acceptable yet the MRSA statistics show a wide variation of MRSA across London's hospitals.

4.6 Despite the inadequacy of the way in which information is collected, which makes it extremely difficult to assess accurately any correlations between cleanliness and MRSA rates in London, there does appear to be a widespread

[25] patientexperience.nhsestates.gov.uk/clean_hospitals/ch_content/home/home.asp

international consensus that there is a link more generally between hospital cleanliness and hospital-acquired infections[26].

Who does the cleaning?

4.7 Much of the discussion about cleaning and MRSA surrounds who does the cleaning. We were unable to find a connection between MRSA and whether the cleaning was contracted out or undertaken in house. Twenty-one out of the 32 Trusts use external cleaners[27] (for a variety of reasons). The rest use either in-house cleaners or both on different sites. Out of the hospitals with the top 5 highest rates of MRSA, three use external cleaners, one uses in-house cleaners (the one with the highest rate) and one uses a combination.

4.8 Responses varied from the Trusts as to whether they considered external contractors preferable to in-house ones. Some report long-term satisfaction with their external contractors, some are planning to change contractors, and one explained they were going to bring the cleaning in house. Of those that expressed a preference, the majority seemed to think there was no difference, contracting staff were regarded as 'regular' NHS staff, and standards were monitored whoever did the cleaning. In the words of Barking, Havering and Redbridge Hospitals Trust, 'We do not perceive a difference in the standards of cleaning … We believe this is because we provide infection control support and training to the contractors as we do to in-house teams and encourage all wards and matrons to include cleaners in the team management.'[28]

Who monitors cleaning?

4.9 Monitoring is key to ensuring that the highest standards are reached, but the levels of monitoring and sanctions against poor performers vary considerably at the local level. Management has the power to penalise cleaning contractors, by withholding payment, as a sanction against poor performance[29]. However, no central records of the use of this power are kept, so no judgement can be made about its use[30]. Records are kept for how many Trusts terminate cleaning contracts due to poor performance, and from the available figures, a total of 9 were cancelled in England between 2000 and 2002[31]. This is across all Trusts, not just Hospitals, and represents a small fraction of NHS Trusts in England.

4.10 Recently, the Government announced a Health Improvement and Protection Bill. It plans to introduce a statutory hygiene code for both NHS and private bodies, and to empower the Healthcare Commission to issue improvement notices backed up by sanctions. Opinion varies over whether this will be

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[26] Murphy, J, 2002, 'Literature review on relationship between cleaning and hospital acquired infections.' Available at: http://www.cupe.ca/updir/cleaning_and_infection_control.pdf

[27] Parliamentary written answer, Hansard 15th October 2004, PQ 07334 2003/04.

[28] Evidence submitted to scrutiny by Barking, Havering and Redbridge Hospitals Trust by letter 23rd March 2005.

[29] Health Service Circular HSC 2001/010.

[30] Parliamentary written answer, Hansard 22nd January 2003, PQ 91130 2002/03.

[31] Parliamentary written answer, Hansard 7th January 2003, PQ 88764 2002/03.

effective at raising standards, or lead to a greater regulatory burden on hospitals. The Department of Health is, at the time of writing, consulting on its proposals for dealing with healthcare associated infections.[32]

Cleaning tools and techniques

4.11 Even with readily available alcohol gels, hand basins, and the right equipment for cleaning there are practical problems to being able to maintain best practice. A modern hospital bed is very intricate and we were told it requires about 75 minutes to clean it to the required standard before the next patient comes in, but that often only 15 minutes is allowed[33]. It is because of factors such as the length of time taken to clean a bed and circulation of MRSA whilst in the air, that bed occupancy is a contributory factor to high MRSA. **High bed occupancy helps recolonisation even after thorough cleaning.**

4.12 The environment around the bed is also of paramount importance. In research carried out by UCLH (University College of London Hospital), 13 out of 14 people contracted MRSA from the air or from hands, rather than coming into contact with the surfaces around the bed. To get rid of MRSA effectively an area needs to be flat and accessible to cleaning. To pick one example, rounding the corners between floors and walls makes both easier to clean; similarly, dealing with chips in paintwork helps keeps surfaces cleanable. All this plays a part in the fight to contain MRSA.

The role of health professionals in keeping a clean environment

4.13 The patient environment incorporates a range of different items, from pens to phones to computers. MRSA can be present on any and all of these and research has shown this can be substantial[34]. There are 1,000,000 MRSA on a skin cell, and as well as naturally falling off the skin, they get easily transferred from fingers to whatever surfaces are touched. To use the example of computers; when using a keyboard, a doctor colonised with MRSA may have no physical contact with a patient, but using a keyboard without cleaning their hands could be leaving MRSA for a nurse who uses the keyboard before going to treat a patient. Representatives of the Royal Marsden told us that they use washable covers for keyboards and UCLH are liaising with different organisations such as the National Programme for IT, looking at ways of producing a more cleanable keyboard.

4.14 This is why it is not just important to clean hands before touching a patient, but also before touching anything that might be touched by someone who may then touch a patient. Increasingly, hospitals are placing boxes of disposable gloves of assorted sizes all over the wards so that it is a simple matter for a healthcare worker to put a pair on.

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[32] www.dh.gov.uk/Consultations/LiveConsultations/LiveConsultationsArticle/fs/en?CONTENT_ID=4115302&chk=XT%2Bu82

[33] Information given verbally by Dr Peter Wilson, UCLH, 25th May 2005.

[34] Dr Peter Wilson, UCLH, quoted in Evening Standard article, 13th September 2005.

4.15 On the broader issue of uniforms, there is a debate currently under way as to whether nurses and doctors should use scrubs, or uniforms. The Royal College of Nursing has recently launched a campaign to get one uniform for each shift worked by staff, with adequate arrangements for changing and cleaning. If staff have to wash uniforms at home, they can kill MRSA in a regular 60^0 wash, but the clothes can be re-colonised if they are brought into contact with the rubber rim of the washing machine when the clothes are withdrawn.

4.16 An increasing number of hospitals uniforms are either worn to the hospital or staff change in toilets and other unsuitable places. Opinion is divided on whether healthcare staff wearing uniforms to and from work is or is not a major problem[35]. UCLH told us that MRSA tends to 'fall off' clothes and skin once someone has left hospital, only to be re-colonised upon re-entering the hospital. On the other hand, the Royal Marsden has a very strict policy of not allowing staff to wear their uniforms off the premises, and has on site laundry and changing facilities. Many hospitals do not have a policy on this, despite the guidance that NHS Estates issued in 2000. It seems to us only a matter of common sense that carrying soiled clothes home or changing one's uniform in a toilet is unlikely to be helpful in controlling the spread of bacteria and infection.

Recommendation 3:

Given the importance of the appropriate hospital environment for controlling MRSA, we ask the Department of Health to ensure that all hospitals provide changing facilities for staff and cleaning facilities for staff uniforms and that the design of new hospital buildings incorporate these facilities.

4.17 Changing individual behaviour so that infection control is at the forefront of peoples' minds is perhaps where the biggest culture change will have to come in the NHS. The Royal College of Nursing stated that the higher dependency in London on agency and temporary staff compared to the rest of the UK might contribute to problems in promoting a culture change in London NHS Trusts[36]. There are many reasons for this, the most important being that for good practice to become standard in a hospital it has to become part of universal routine with new staff seeing established staff act in a certain way and following suit.

4.18 The Government has hinted that patients could be doing more to combat MRSA themselves. The former Secretary of State for Health, Dr John Reid, said, 'In hospital I want NHS patients to demand the highest standards of hygiene and – since human contact is a major way infection spreads in hospital – to feel happy to ask staff if they've washed hands.'[37] However, it is hard enough for nurses to feel able to remind doctors to wash their hands, but for a

[35] The Department of Health has established a working group 'to consider the need for a national policy statement on the wearing of uniforms' in respect of: professional appearance and patient confidence, healthcare associated infection and the need to review existing guidance on laundry and linens.
[36] Jane Tierney, Royal College of Nursing, evidentiary meeting, 18th May 2005.
[37] Department of Health press release, 12th July 2004, reference number 2004/0259.

patient, who is often at their most vulnerable, it is very difficult indeed. In any case, the onus should not be on the patient.

4.19 UCLH told us that they were using alcohol gel sprays for years before they were recommended by the Department of Health, but it took a long time for the practice to become accepted and with an appreciable level of compliance. While not quantifiable, evidence received suggests that healthcare staff have grown accustomed to viewing themselves as sterile rather than potential transmitters of infection.

4.20 It is also important to recognise that certain medical and care procedures are more likely to create infection than others – eg when putting in a drip. Whilst these should rightly be emphasized in training, this should not negate that there are two ways in which MRSA needs to be controlled – reducing colonisation, which requires action on a wide range of behaviour, and reducing infections which requires attention to those people or procedures with higher risks.

Recommendation 4:

We recommend that the training colleges and university responsible for training healthcare staff, including the Royal Colleges, develop integrated multi-disciplinary training programmes on hygiene and infection control so as to develop a common culture across the healthcare professions. We would expect this training to have particular emphasis on areas seen to have a higher risk for passing infection.

The effect of hospital visitors

4.21 We know from patients and their representatives that they themselves and their relatives are anxious to do all they can to assist in reducing the spread of MRSA, for example by cleaning their hands on entering wards where this is provided for. Representatives of the Royal College of Nursing told us that a cluster of relatives around a patient's bed for long periods can make it very difficult for the nurses and domestic staff to clean. While they do not wish to stop people visiting their ill relatives in hospital, they would like to see specified visiting times and restrictions on large numbers of people visiting a patient at the same time.

Recommendation 5:

We recommend that the Healthcare Commission and Patient Safety Agency work with Hospital Trusts to review existing practice and develop guidelines on managing times and numbers of visitors visiting an individual patient at any one time to ensure that cleanliness and patient safety is maintained.

5 Assessing performance and improvement

5.1 The Healthcare Commission's performance ratings take into account many different aspects of a hospital's performance from financial management to hospital food.[38] These were formerly know as 'star ratings', with Healthcare Trusts awarded anything from 0 to 3 stars for their performance. The ratings cover the same time period as the MRSA surveillance results.

5.2 There is a strong emphasis on financial management and governance as opposed to patient health care. For this reason, there is no obvious link between star ratings and MRSA. This is despite the star ratings being meant to facilitate patient choice. For 2003/04, both the hospital with the highest and lowest MRSA rates in London had a rating of three stars, and the two hospital trusts that received no stars for that year had the 9th and 31st highest MRSA rates in London.

5.3 2004/05 is the last year that star ratings will be used; the Healthcare Commission is moving over to a different system. It remains to be seen if, in practice, the new system will give more of a place for hospital acquired infections.

Recommendation 6:

We recommend that the Department of Health, the Healthcare Commission and Strategic Health Authorities work together in aligning the basis on which PEAT scores are assessed with the basis on which MRSA rates are collected, enabling correlations between cleanliness and MRSA to be properly assessed.

Recommendation 7:

We recommend that the Healthcare Commission set national standards for the reduction of hospital-acquired infection against which Trusts' performance can be measured (see next recommendation).

Recommendation 8:

We recommend that the Healthcare Commission, in reviewing the NHS performance assessment framework, give greater priority to reduction of hospital acquired infection rates including MRSA and make clear to the public how assessment of Trusts takes account of hospital acquired infection including MRSA.

[38] ratings2004.healthcarecommission.org.uk/home.asp

6 Case Studies[39]

Case Study 1: University College of London Hospital

Key statistics

UCLH	2001/02	2002/03	2003/04	2004/05
MRSA Rate	0.33	0.33	0.32	0.15
No. Cases	94	84	85	45
Bed occupancy	85%	86%	86.20%	Data not confirmed

6.1 Despite, or perhaps because of, UCLH having had one of the highest numbers and rate of MRSA bacteraemia in London, it has often been at the forefront of pioneering techniques to deal with MRSA and in undertaking research on this topic.

6.2 As you can see from the table above, UCLH has already reached the government target of a 50% reduction in the number of MRSA bacteraemia compared to the 2003 level. As mentioned in Section 2, the small number of MRSA cases means that tracking genuine change is difficult, if the MRSA surveillance results are the only data relied on. UCLH monitors and records all cases of *Staphylococcus aureus* not just those that are methillicin resistant. As MSSA (methillicin sensitive *Staphylococcus aureus*) is transmitted in the same way as MRSA and a change in one equals a change in the other[40], using these figures gives a bigger sample to track changes. This makes UCLH confident in declaring it has reached the target.

6.3 A number of measures have been implemented by UCLH in order to achieve this.

1. UCLH used alcohol hand gel early on, in 1996, with ready availability on all wards by 2002. Personal bottles were also introduced prior to the Department of Health's recommendation last year. The use of hand gel was restricted early on as people got used to new ways of doing things, but finally reached the tipping point and its usage is near universal.
2. Wound surveillance is carried out to a level unknown in most other places. The wound surveillance team follow the progress of a patient's treatment from the moment they enter hospital, and do as many checks post-discharge as possible. About 85-90% of patients are covered and a database of about 15,000 patients has been built up. These results are fed back to surgeons in a league table format to help them target their efforts. The very fact of reporting the findings has produced a decrease in the amount of infection. If rates remain high, the clinical director is informed. The wound surveillance scheme costs UCLH £120,000 per

[39] Both case studies have been checked by medical staff at the respective hospital.
[40] Dr Peter Wilson, *Reduction of MRSA at UCLH,* University of College London Hospitals' briefing note.

annum, but saves about £365,000, a portion of which comes from reduced payments into the medical negligence payment scheme.

3. UCLH has broken its training on infection control down into simple didactic procedures backed up by pictorial guidance. This is known as Anti-septic No Touch Technique (ANTT) and was introduced throughout the Trust by Stephen Rowley, senior nurse in haematology. Wards are ANTT accredited and compliance is monitored.
4. Screening of patients coming in for elective procedures is increasing. Treatments can then be given to reduce MRSA colonisation before surgery to reduce post-operative procedure. Accurate screening takes three days so is not appropriate for emergency surgery. New methods of rapid testing are becoming available. Also, the use of topical treatment has to be restricted. It only reduces, rather than eradicates, MRSA and it risks MRSA becoming resistant to the treatment.

6.4 The Infection Control Nurse team has been built up to 10 members (five hospital based nurses, five community based) that cover the acute hospitals in the Trust as well as Camden and Islington PCTs and Mental Health Trust, which ensures a seamless service.

6.5 The new hospital is being built with input from microbiologists. Unfortunately, the original plans were made in 1998/9 (when the terms of the PFI specified a certain number of beds per building) when infection control was not as high on the agenda, but within the constraints of space, new techniques are being taken into account. Infection control was high on their agenda from the start, but certain areas like bed numbers within the building size were beyond their control - the trust helped as much as possible to get infection control design in place. It is also getting involved in looking at how the design of beds and bedside equipment can be changed to help infection control.

6.6 The challenge at the time of the visit was dealing with the logistics of moving equipment and patients to the new site from the 300-year-old Middlesex Hospital in such a way that MRSA would not be transported in the move. The clean start should give UCLH a chance to prove what it has learnt about the optimum patient environment.

Case Study 2: Royal Marsden hospital

Key statistics:

Royal Marsden	2001/02	2002/03	2003/04	2004/05
MRSA Rate	0.08	0.10	0.06	0.01
No. Cases	6	7	4	1
Bed occupancy	81.8%	82.9%	84.1%	Data not confirmed

6.7 As a single specialty hospital with 330 beds over two sites in Chelsea and Sutton with no accident and emergency department, the Royal Marsden is a

very different hospital from UCLH. The Chelsea site is an old building with an impressive modern interior.

6.8 As a world-leading centre for cancer care, treatment and research, it deals with patients at very high risk of MRSA, yet has very low rates of MRSA. It is also in the fortunate position of having always managed to stay on top of MRSA, and so its efforts are devoted more to preventing MRSA than coping with it.

6.9 Some of the ways in which it has done this are as follows.

1. Risk assessment carried out on patients transferred in from another healthcare setting, and isolated if deemed necessary.
2. Routine screening of all patients and staff. Appropriate treatment given where needed.
3. Generic care plan for all wards to help consistency and staff familiarisation. Copies found in all patient folders, with details of the different treatments for different health care acquired infections listed.
4. Strict ban on wearing uniforms outside the site. One uniform is provided per working day and there is a changing room and laundry on site.
5. Integrated electronic patient information and tracking system for recording infection details. Sophisticated flagging aspect.
6. High profile given to infection control by management. Quarterly infection control reports feed into an annual infection control report. There are also monthly reports back to the management board, and a specific infection control committee.

6.10 As mentioned above, the Royal Marsden is a special case in lots of ways. It is smaller and has less emergency pressures than many hospitals. Being a Foundation Trust, it also has more control over its own affairs (and the related risks), which many other hospitals do not.

6.11 Overall, it would be fair to say that the Royal Marsden represents best practice for hospitals once MRSA has been brought under control. It has a good IT system, well-trained staff, and a good number of isolation rooms, factors that again may not be present everywhere.

6.12 The feeling that one gets from the staff at the Royal Marsden is that MRSA and other healthcare acquired infections are problems that can be dealt with if all staff recognise they have a responsibility for the problem and if the correct procedures are in place. At the very least, places like the Royal Marsden are a sign of hope for the rest of the health service.

Recommendation 9:

The Department of Health should do more to enable best practices from London hospitals, such as UCLH's wound surveillance programme, and the Royal Marsden's admission screening and risk assessment, to be implemented in other hospitals.

Annex A - Recommendations

Recommendation 1:
We recommend that the Patient Safety Agency and the Strategic Health Authorities require MRSA surveillance data to include wider information about MRSA infections that are not blood borne. Trusts should collect and publish MRSA records broken down by the presence of MRSA on admission, at a later date, by department and by hospital site.

Recommendation 2:
We recommend that London Strategic Health Authorities set ceiling targets for London NHS Trusts of bed occupancy rates at 82% or below and should performance manage these targets. London Primary Care Trusts should take bed occupancy rates into account in their commissioning strategies.

Recommendation 3:
Given the importance of the appropriate hospital environment for controlling MRSA, we ask the Department of Health to ensure that all hospitals provide changing facilities for staff and cleaning facilities for staff uniforms and that the design of new hospital buildings incorporate these facilities.

Recommendation 4:
We recommend that the training colleges and university responsible for training healthcare staff, including the Royal Colleges, develop integrated multi-disciplinary training programmes on hygiene and infection control so as to develop a common culture across the healthcare professions. We would expect this training to have particular emphasis on areas seen to have a higher risk for passing infection.

Recommendation 5:
We recommend that the Healthcare Commission and Patient Safety Agency work with Hospital Trusts to review existing practice and develop guidelines on managing times and numbers of visitors visiting an individual patient at any one time to ensure that cleanliness and patient safety is maintained.

Recommendation 6:
We recommend that the Department of Health, the Healthcare Commission and Strategic Health Authorities work together in aligning the basis on which PEAT scores are assessed with the basis on which MRSA rates are collected, enabling correlations between cleanliness and MRSA to be properly assessed.

Recommendation 7:
We recommend that the Healthcare Commission set national standards for the reduction of hospital-acquired infection against which Trusts' performance can be measured (see next recommendation).

Recommendation 8:
We recommend that the Healthcare Commission, in reviewing the NHS performance assessment framework, give greater priority to reduction of hospital acquired infection rates including MRSA and make clear to the public how assessment of Trusts takes account of hospital acquired infection including MRSA.

Recommendation 9:
The Department of Health should do more to enable best practices from London hospitals, such as UCLH's wound surveillance programme, and the Royal Marsden's admission screening and risk assessment, to be implemented in other hospitals.

Annex B – Evidence received

Visits
University College London Hospital Trust
The Royal Marsden Hospital Trust

Informal meetings
MRSA Support Group
The Royal College of Nurses

Written Evidence

Bexley Care Trust
Bromley Hospitals NHS Trust
Ealing Hospital NHS Trust
Enfield Primary Care Trust
Health Protection Agency
Homerton University Hospital, NHS Foundation Trust
Kensington and Chelsea PCT
Kings College Hospital NHS Trust
Lewisham PCT
Mayday Healthcare NHS Trust
London Ambulance Service
Newham PCT
North Central London SHA
Queen Elizabeth Hospital NHS Trust
Queen Mary's Hospital
Royal Brompton and Harefield NHS Trust
South London and Maudsley NHS Trust
St Georges Healthcare NHS Trust
St Mary's NHS Trust
The Hammersmith Hospital
West London Mental Health NHS Trust
Hillingdon Hospital
Barnet and Chase Farm Hospitals
Barking and Dagenham PCT
Harold Wood Hospital
Harrow PCT
Great Ormond Street Hospital
Camden Primary Care Trust
Kingston PCT
Southwark Primary Care Trust
PPI Forum Mayday NHS Trust
PPI Forum Hillingdon Hospital
PPI BHR Hospitals NHS Trust (Barking, Havering & Redbridge)
PPI Forum Primary Care in Hammersmith and Fulham & PPI Forum Hammersmith Hospitals

Annex C– Detailed MRSA surveillance data 2001 – 2005

	Apr 01 - Mar 02			Apr 02 - Mar 03			Apr 03 - Mar 04			Apr 04 - Mar 05*		
Section 1 - General Acute Trusts	number of MRSA bacteraemia	MRSA rate per 1000 bed days	England Ranking (1st = worst)	number of MRSA bacteraemia	MRSA rate per 1000 bed days	England Ranking (1st = worst)	number of MRSA bacteraemia	MRSA rate per 1000 bed days	England Ranking (1st = worst)	number of MRSA bacteraemia	MRSA rate per 1000 bed days	England Ranking (1st = worst)
Barking, Havering & Redbridge Hospitals NHS Trust	92	0.19	57th	77	0.16	85th	116	0.24	32nd	98	0.2	41st
Barnet & Chase Farm Hospitals NHS Trust	62	0.18	63rd	94	0.27	21st	94	0.28	17th	102	0.3	5th
Bromley Hospitals NHS Trust	37	0.19	58th	32	0.17	77th	18	0.1	138th	16	0.09	144th
Ealing Hospital NHS Trust	40	0.3	11th	38	0.28	16th	36	0.25	24th	26	0.18	56th
Epsom & St. Helier NHS Trust	84	0.28	15th	72	0.26	23rd	88	0.33	9th	58	0.22	29th
Hillingdon Hospital NHS Trust	33	0.15	81st	36	0.17	79th	24	0.14	108th	30	0.17	75th
Homerton University Hospital NHS Foundation Trust	14	0.09	135th	19	0.13	113th	14	0.09	146th	4	0.03	166th
Kingston Hospital NHS Trust	23	0.13	92nd	42	0.23	33rd	26	0.14	106th	50	0.27	17th

Lewisham Hospital NHS Trust	54	0.28	16th	45	0.24	26th	49	0.26	22nd	60	0.32	4th
Mayday Healthcare NHS Trust	39	0.16	73rd	48	0.2	54th	56	0.24	31st	40	0.17	66th
Newham Healthcare NHS Trust	25	0.18	65th	33	0.23	32nd	24	0.18	65th	17	0.13	107th
North Middlesex Hospital NHS Trust	45	0.28	17th	48	0.3	13th	53	0.33	8th	29	0.18	55th
Queen Elizabeth Hospital NHS Trust	18	0.11	115th	35	0.23	34th	29	0.19	56th	42	0.27	15th
Queen Mary's Sidcup NHS Trust	30	0.23	32nd	32	0.24	27th	28	0.2	45th	41	0.3	6th
St. George's Healthcare NHS Trust	115	0.37	3rd	75	0.25	24th	93	0.29	14th	63	0.2	40th
West Middlesex University NHS Trust	32	0.21	52nd	41	0.3	14th	34	0.26	20th	30	0.23	26th
Whipps Cross University Hospital NHS Trust	45	0.17	71st	43	0.18	70th	37	0.15	95th	48	0.2	45th
Whittington Hospital NHS Trust	27	0.19	62nd	30	0.2	53rd	29	0.2	49th	24	0.16	83rd

	Apr 01 - Mar 02			Apr 02 - Mar 03			Apr 03 - Mar 04			Apr 04 - Mar 05 (provisional)		
Section 2 - Specialist Trust Name	number of MRSA bacteraemia	MRSA rate per 1000 bed days	England Ranking (1st = worst)	number of MRSA bacteraemia	MRSA rate per 1000 bed days	England Ranking (1st = worst)	number of MRSA bacteraemia	MRSA rate per 1000 bed days	England Ranking (1st = worst)	number of MRSA bacteraemia	MRSA rate per 1000 bed days	England Ranking (1st = worst)
Barts & the London NHS Trust	62	0.17	67th	74	0.21	48th	62	0.17	77th	64	0.18	59th
Chelsea & Westminster Healthcare NHS Trust	36	0.25	24th	32	0.19	56th	38	0.23	35th	47	0.28	13th
Guy's and St. Thomas's NHS Foundation Trust	114	0.32	5th	154	0.42	3rd	166	0.46	1st	104	0.29	8th
Hammersmith Hospitals NHS Trust	89	0.27	21st	115	0.34	9th	125	0.36	3rd	81	0.24	22nd
King's College Hospital NHS Trust	92	0.31	6th	108	0.35	6th	107	0.33	7th	64	0.2	39th
North West London Hospitals NHS Trust	59	0.21	50th	44	0.16	84th	55	0.19	59th	54	0.19	51st
Royal Free Hampstead NHS Trust	122	0.48	2nd	101	0.35	5th	98	0.34	5th	69	0.24	23rd
St. Mary's NHS Trust	64	0.31	9th	72	0.33	10th	59	0.27	18th	48	0.22	30th
University College London NHS Foundation Trust	94	0.36	4th	84	0.32	11th	85	0.29	11th	45	0.15	91st

	Apr 01 - Mar 02			Apr 02 - Mar 03			Apr 03 - Mar 04			Apr 04 - Mar 05 (provisional)		
Section 3 - Single Specialty Trusts	number of MRSA bacteraemia	MRSA rate per 1000 bed days	England Ranking (1st = worst)	number of MRSA bacteraemia	MRSA rate per 1000 bed days	England Ranking (1st = worst)	number of MRSA bacteraemia	MRSA rate per 1000 bed days	England Ranking (1st = worst)	number of MRSA bacteraemia	MRSA rate per 1000 bed days	England Ranking (1st = worst)
Great Ormond Street Hospital for Children NHS Trust	7	0.09	134th	13	0.17	82nd	4	0.05	163rd	7	0.09	146th
Moorfields Eye Hospital NHS Foundation Trust	0	-	172nd	0	-	173rd	0	-	173rd	0	-	173rd
Royal Brompton & Harefield NHS Trust	9	0.07	150th	9	0.07	155th	5	0.04	169th	7	0.06	162nd
The Royal Marsden NHS Foundation Trust	6	0.08	145th	7	0.1	139th	4	0.06	159th	1	0.01	169th
Royal National Orthopaedic Hospital NHS Trust	2	0.05	159th	6	0.13	116th	1	0.02	171st	5	0.1	141st

Annex D – Orders and translations

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Ta ba ri enikeni ti o ba ni ife lati ni eda ewe nla ti igbimo awon asoju tabi papa julo ni ede ti abinibi won, ki o kansiwa lori ero ibanisoro. Nomba wa ni 020 7983 4100 tabi ki e kan si wa lori ero assembly.translations@london.gov.uk. Ako ni gbowo lowo yin fun eto yi.

Haddii adiga, ama qof aad taqaanid, uu doonaayo inuu ku helo koobi ah warbixinta oo kooban iyo talooyinka far waaweyn ama farta qofka indhaha la' loogu talagalay, ama luuqadooda, oo bilaash u ah, fadlan nagala soo xiriir telefoonkan 020 7983 4100 ama email-ka cinwaanku yahay assembly.translations@london.gov.uk

Annex E – Principles of Scrutiny

The powers of the London Assembly include power to investigate and report on decisions and actions of the Mayor, or on matters relating to the principal purposes of the Greater London Authority, and on any other matters which the Assembly considers to be of importance to Londoners. In the conduct of scrutiny and investigation the Assembly abides by a number of principles.

Scrutinies:

- aim to recommend action to achieve improvements;
- are conducted with objectivity and independence;
- examine all aspects of the Mayor's strategies;
- consult widely, having regard to issues of timeliness and cost;
- are conducted in a constructive and positive manner; and
- are conducted with an awareness of the need to spend taxpayers money wisely and well.

More information about scrutiny work of the London Assembly, including published reports, details of committee meetings and contact information, can be found on the London Assembly web page at www.london.gov.uk/assembly.