



National Audit Office

Reducing Healthcare Associated Infections in Hospitals in England

LONDON: The Stationery Office
£14.35

Ordered by the
House of Commons
to be printed on 11 June 2009



1 Healthcare associated infections in hospitals are caused by a wide variety of organisms (**Figure 1**) and cause a range of symptoms from minor discomfort to serious disability and in some cases death. In 2007, around 9,000 people were recorded as having died with meticillin resistant *Staphylococcus aureus* (MRSA) bloodstream infections or *Clostridium difficile* (*C. difficile*) infections as the underlying cause or a contributory factor.¹ Risk factors include the extent of the patient's underlying illness, or treatment, which can make patients more vulnerable. There is no national aggregate data on the total number of healthcare associated infections in England. In 2004, the Department of Health (Department) confirmed that 300,000 was the best estimate of the number of healthcare associated infections per year.² The estimated cost to NHS hospitals of caring for people that acquire a healthcare associated infection is over £1 billion a year.³

2 The National Audit Office highlighted concerns about the management and control of healthcare associated infections in hospitals in 2000⁴ and 2004.⁵ Both of these reports were followed by a hearing and critical reports by the Committee of Public Accounts. The Committee's second report,⁶ published in 2005, concluded that progress in reducing healthcare associated infection had been patchy, and that there was a distinct lack of urgency on issues such as cleanliness and compliance with good hand hygiene; limited progress in improving isolation facilities or reducing bed occupancy rates; and progress continued to be constrained by a lack of robust data other than on MRSA bloodstream infections, for which mandatory surveillance was introduced in 2001, and a lack of evidence of the impact of different intervention strategies.

3 In 2004, in response to our report, the Department committed to make the control and prevention of healthcare associated infections a top priority. It introduced a target to reduce one specific infection, MRSA bloodstream infection, across all NHS acute hospital and acute foundation trusts by 50 per cent by 2008. The Department told the Committee of Public Accounts that it intended to reduce MRSA bloodstream infection rates by employing the same approach it had used in achieving targets for waiting times; where the Department had secured improvements using a combination of financial incentives, close performance management, and support to trusts.

4 In July 2004 the Department published 'Towards cleaner hospitals and lower rates of infection' and established a Programme Board to provide leadership and direction to its commitment to reduce infection rates. Over the next two years the Department published guidance and enacted new legislation, the Health Act 2006, supported by a Code of Practice for the Prevention and Control of Healthcare Associated Infections (Code of Practice) and brought in new inspection powers for the Healthcare Commission. In 2004, the Department introduced mandatory surveillance arrangements for *C. difficile* for patients aged 65 and over, which was extended to patients aged two and over from April 2007. In October 2007, a target was set for a 30 per cent reduction in the number of cases of *C. difficile* reported in 2010-11 against a 2007-08 baseline. In January 2008, primary care trusts were told to agree local reduction rates with hospitals as part of local contracts.

1 Office for National Statistics, 2008: Health Statistics Quarterly 39.

2 House of Commons Committee of Public Accounts – Twenty-fourth Report 2004-05: Improving patient care by reducing the risks of hospital acquired infection: A progress report.

3 Plowman *et al* (1999): The Socio-economic Burden of Hospital Acquired Infection – Public Health Laboratory Service London.

4 National Audit Office, 2000: The Management and Control of Hospital Acquired Infection in Acute Trusts in England (HC 230 Session 1999-00).

5 National Audit Office, 2004: Improving patient care by reducing the risks of hospital acquired infection: A progress report (HC 876 Session 2003-04).

6 House of Commons Committee of Public Accounts – 24th Report 2004-05: Improving patient care by reducing the risks of hospital acquired infection: A progress report.

5 Now that the end of the March 2008 target date for reducing MRSA bloodstream infections has passed, we have undertaken a further examination of the progress made on preventing and controlling healthcare associated infections in NHS acute hospital and acute foundation trusts (hospital trusts) in England. We focused on hospital trusts as the risk of acquiring an infection is highest in the hospital setting, and the Department's resources and effort have so far been concentrated there. The prevention and control principles that apply to hospitals do however apply equally to other healthcare settings.

6 This report evaluates the changes since 2003-04 in the extent and impact of healthcare infections; the effectiveness, sustainability and cost of the Department's approach; and the effectiveness of action within hospitals to improve the prevention and control of infections. Our methodology is set out at Appendix 1 and **Figure 3 on pages 12 to 14** summarises the progress in implementing the Committee of Public Account's recommendations.

Key Findings

Progress in reducing the extent and cost of healthcare associated infections

7 **By the end of March 2008 the NHS had achieved a 57 per cent reduction in MRSA bloodstream infections against the 50 per cent national target.** To achieve this national target by the end of March 2008 (which the Department measured by comparing the first quarter of 2008-09 with the quarterly average for 2003-04), the Department asked all trusts with more than 12 MRSA bloodstream infections to submit trajectories for reducing their infections by 60 per cent by March 2008. While a quarter of trusts have achieved improvements greater than 80 per cent, in 12 per cent of trusts there has been an increase in MRSA bloodstream infections. There are also marked regional variations ranging from a 42 per cent reduction to a 72 per cent reduction.

8 **Reports of *C. difficile* in the over 65s peaked in 2006, but since then there has been a 41 per cent reduction. There has also been a reduction in surgical site infections.** In 2004 there were 44,563 reports of *C. difficile* in patients over 65 years of age, which by 2006 had risen to 55,635 (a 25 per cent increase). Since the Department's announcement in October 2007 to introduce a national target to reduce incidence of *C. difficile* across all age groups by 30 per cent by 2010-11, the numbers reported in patients aged 65 and over have reduced from the peak of 55,635 in 2006 to 32,628 in 2008 (a 41 per cent reduction). Since 2004, the overall orthopaedic surgical site infection rate has also fallen from 1.44 per cent in 2004 to 0.6 per cent in 2008.

9 **There are no national surveillance systems on some of the most common healthcare associated infections, for example: urinary tract infections, pneumonia and skin infections, but the Health Protection Agency receives data and reports back annually to trusts on all bloodstream infections under its voluntary surveillance scheme.**

The best available data from the voluntary scheme, indicate that the number of reports of bloodstream infections have increased from 80,000 in 2003 to 105,000 in 2007. The reasons for this increase are not clear, but are likely to be due to a mix of improved ascertainment and more efficient IT-based reporting systems as well as evidence of real increases in infections. Not all of these infections will be healthcare associated, but the five most common pathogens which account for 65 per cent of these reports, are usually associated with healthcare infections. Some of these are linked to healthcare provided in community settings. As bloodstream infections have a high mortality and morbidity, there is a need for further work to understand the origin, cause and type of these infections.

10 **The Department has provided additional resources since 2004 aimed at tackling healthcare associated infections, and in financial terms the benefits achieved are likely to be commensurate with the costs incurred in reducing the targeted infections and improving hospital cleanliness.** We estimate that since April 2004, the Department and its arm's length bodies spent £120 million, comprising of £57 million on national initiatives to tackle healthcare associated infections and a one off allocation of £63 million for the deep clean in 2007-08. Between 2003-04 and 2008-09 we estimate that the NHS has saved between £45 and £59 million in treatment costs by reducing the rates of MRSA bloodstream infections and between £97 and £204 million from 2006 to end of 2008 by reducing the rate of *C. difficile* infections (Appendix 1). There will, too, have been unquantifiable administrative costs and local expenditure on the drive to reduce infections but also potential benefits in terms of better ward management of staff and harm avoided to patients.

The effectiveness and cost of the Department's response since 2004

11 **The Government has made the reduction of healthcare associated infections, as measured by MRSA bloodstream and *C. difficile* infections, a top priority for the NHS.** The Health Act 2006 introduced new legislation on prevention and control of healthcare associated infections. Until March 2009 compliance was regulated through a statutory inspection regime operated by the Healthcare Commission. From April 2009, this responsibility passed to the new Care Quality Commission (see paragraph 13). The Department also included

targets to reduce both of these infections in its 2007 PSA Agreement. The Department has introduced a number of initiatives to help trusts to achieve their reduction targets and has made healthcare associated infections a 'must-do' within successive NHS Operating Frameworks. **Figure 2 overleaf** summarises our evaluation of the effectiveness of the Department's main national healthcare associated infection reduction initiatives. The Department's approach to governance is strong compared to many other countries.⁷

12 Despite having a national surveillance system for *C. difficile* infections, there were incidents where trusts did not act in a timely manner on the information generated.

Since 2006 the Health Protection Agency has operated a real time reporting and feedback system with the prime responsibility for analysing and reporting surveillance data. Healthcare Commission reports on its investigations, in particular two special investigations in 2006 and 2007 which investigated high levels of deaths due to *C. difficile* (Appendix 5) identified that despite the availability of national surveillance data, the trust failed to recognise its significance and act on it in a timely manner. There was also confusion about the roles and responsibilities of external organisations, such as the Health Protection Agency, strategic health authority and the local primary care trust, particularly as to who was responsible for intervening in the event of an outbreak.

13 The Healthcare Commission helped trusts to increase the priority given to tackling healthcare associated infections, but in the past did not always pick up on serious problems in specific trusts.

From 2004, the Healthcare Commission assessed trusts on their policies and procedures for preventing and controlling healthcare associated infections as part of its annual health check. From 2007, it also implemented an annual programme of inspections of all hospital trusts against the Code of Practice. The Healthcare Commission concluded that over the four years, hospital trusts' performance against these two measures was improving. Around 87 per cent of trusts considered that the Healthcare Commission helped trusts tackle healthcare associated infections. In the past, however, this approach did not always pick up trusts with high levels of infections or serious outbreaks.

14 In April 2009, 11 hospital trusts failed to meet all the new regulations for healthcare associated infection which are a condition of registration, and the Care Quality Commission has required them to make the necessary improvements promptly.

The Care Quality Commission replaced the Healthcare Commission from 1 April 2009 and, whilst it continues the programme of annual inspections of all hospital trusts, the Health and Social Care Act 2008 confers stronger powers to inspect, investigate and intervene on cleanliness and infections. From April 2009, the Care Quality Commission was also given new responsibility for registering all health and social care providers. All NHS trusts had to be registered from April 2009 and independent and social care providers from April 2010. The Care Quality Commission plan to make responding swiftly to events which compromise patient safety an underlying principle to its approach to regulation.

The extent of improvements within hospitals

15 Reducing MRSA bloodstream and *C. difficile* infections has been a top priority for most trust boards, but other infection risks have not been given the same attention.

In most hospital trusts, the introduction of targets and direct reporting of MRSA and *C. difficile* data by the Director of Infection Prevention and Control to trust boards has increased the importance given to controlling these two infections. Although 58 per cent of hospital trusts believe that mandatory surveillance of MRSA and *C. difficile* has helped improve surveillance of other healthcare associated infections, they were not able to make meaningful regular comparisons. In addition, 20 per cent of trusts do not carry out surveillance on any other healthcare associated infection. Most trusts do not report data on healthcare associated infections, other than MRSA bloodstream and *C. difficile*, to their board. The 2008 Code of Practice expects NHS trusts to undertake local surveillance on other healthcare associated infections and to have measures to control and prevent them.

16 There has been a cultural change in the way that organisations tackle infection prevention and control and the priority that it is afforded.

Many staff and infection control teams identified that the development of a culture of senior management leadership and engagement was the most important action their trust had taken in improving infection prevention and control. Trusts which have seen the greatest reductions in MRSA bloodstream infections and *C. difficile* demonstrate strong board leadership and ward management underpinned by robust performance management.

7 J A Roberts and BD Cookson (January 2009): The management prevention and control of healthcare associated infections: An International Comparison and Review.

2 National Audit Office's assessment of new national initiatives on healthcare associated infection since 2004

Description	Expected Benefits	Cost	Impact
Modern Matrons Increased numbers and enhanced role (2004)	Improve clinical care standards, ensure best practice in infection control and provide a clean environment for care.	At least £56 million per annum – Infection control is 30 per cent of their workload	Modern matrons have contributed to improvements in cleanliness and infection control compliance. ●
Cleanyourhands campaign (2004)	Improved availability of alcohol hand rub at the point of patient care and increased compliance with hand hygiene and its auditing.	£2.5 million	The campaign has delivered cost effective improvements to hand hygiene practice. Independent research shows that compliance is associated with reductions in rates of MRSA. ●
Saving Lives (2006)	Provides the tools and resources for hospital trusts to embed robust infection prevention and control across their organisation.	Not possible to separately identify	Every hospital trust has signed up to Saving Lives. Producing a national set of guidance and tools was more cost-effective than the situation in 2000 and 2004 whereby each trust was re-inventing wheels. Our trust census shows it has been useful as a source of guidance and in delivery of audit tools for staff. ●
The Code of Practice (part of the Health Act 2006)	Sets out statutory criteria by which managers of NHS organisations are to ensure that patients are cared for in a clean environment, where the risk of healthcare associated infection is kept as low as possible. Inspection of compliance was carried out by the Healthcare Commission until end of March 2009. The Care Quality Commission will be continuing these activities from April 2009.	Not possible to separately identify	The Code of Practice has been effective in clarifying what is expected from trusts and ensuring engagement from chief executives and boards. ●
The Improvement Teams (2006)	Provide support to trusts in achieving reductions in MRSA bloodstream infections. Support ranges from a three day visit to advice down the telephone.	£3 million per annum	The Improvement Teams have worked with 154 hospital trusts. Our census showed that trusts felt that the support they had received was effective. ●
The Deep Clean (2008)	Improvements in cleanliness, patient confidence. Deep cleaning was one element of a wider range of measures introduced to tackle healthcare associated infections and ensure patient safety.	£62.6 million	The deep clean has contributed to on-going improvements in cleanliness and helped improve patient and staff confidence. In terms of reducing infection rates the impact is difficult to measure. ●
Technology Programme (2008) including the Rapid Review Panel (2004)	Speed up the assessment and adoption of technologies to further help combat infections.	£25,000 for the panel and £10 million per annum from 2008-09 onwards for the wider programme	The Rapid Review Panel has undertaken systematic assessment of technologies submitted to them but there is limited evidence that it has led to adoption within trusts. It is too early to assess the wider programme. ●
MRSA Screening (from April 2009)	Reduction of the carriage of MRSA colonisation from patients in the community into the hospital.	Approximately £130 million per annum from 2010-11	This has yet to be fully implemented. Costs are higher than other initiatives and the evidence for the cost effectiveness of screening is mixed. ●

● Initiative has delivered benefits in terms of reductions in MRSA and *C. difficile*, and/or improvements in the hospital environment and in patient confidence which are likely to outweigh the cost

● Initiative has delivered some benefits which may justify the cost

● It is not possible to form a judgement on the relative cost and benefit of this initiative

Source: National Audit Office hospital trust census; visits to trusts and evaluation of existing research

17 Compliance with good infection control practice is improving, but doctors remain less likely to comply.

Overall, nurses have been quicker to improve their clinical practice in relation to healthcare associated infection than doctors, for example with higher levels of compliance with basic hand hygiene. In our surveys, doctors and in particular junior doctors were viewed by trust staff as less likely to comply with infection control policies including policies on hand hygiene. Infection control teams continue to play an important role in monitoring compliance against good practice. Inspections show that environmental cleanliness in hospitals has improved year on year.

18 An important aspect of embedding good infection control is the extent to which trusts learn from incidents and adopt good practice. Many clinical teams have benefited from using root cause analysis, but the learning is rarely shared within or between trusts.

The Department has recommended that hospital trusts should use its Root Cause Analysis tool to examine every MRSA bloodstream infection. All trusts use root cause analysis to investigate MRSA and most also use it for *C. difficile* outbreaks. When root cause analysis is carried out effectively, trusts find that it contributes to improvement of practice on infection prevention, and the use of the tool has provided important insight for local clinical teams. There is, however, variation and disparity in the extent to which learning from root cause analyses is shared within trusts and no evidence of capturing the lessons and sharing them between trusts. The Department does not expect root cause analysis to be shared between trusts seeing it as a tool for local action.

19 Progress in improving information and tracking of hospital antibiotic prescribing has been limited, largely because of delays in developing electronic prescribing.

All hospital trusts have antibiotic prescribing protocols which contribute to reducing risks from some healthcare associated infections and, in the majority, the pharmacist is actively involved in enforcing these policies. Antibiotic prescribing in hospitals can provide a marker of healthcare associated infection when linked to patient records, but as yet there is no system for doing so. One way of improving monitoring that was raised in previous National Audit Office reports was electronic prescribing, but there has been a delay in developing electronic prescribing systems in trusts.

20 The most common barriers to further improvement in reducing healthcare associated infections, as reported by trusts, were high bed occupancy and lack of isolation facilities.

When asked to identify the most significant barriers to further improvement, 44 per cent of Infection Control Teams identified bed occupancy. Whilst there is some evidence that links high bed occupancy, and its impact on patient movement around the hospital, with increased risk of MRSA and *C. difficile*, some trusts have been able to achieve reductions in these two infections despite high levels of bed occupancy. Twenty-three per cent cited a lack of isolation facilities. Overall, however, we found there had been a large improvement in the use of, and limited improvement in availability of, isolation facilities. Fifty-nine per cent of trusts highlighted concerns that the four hour admission target for accident and emergency meant that it is difficult to diagnose and isolate patients effectively.

21 Primary care trusts' role in tackling healthcare associated infections in community healthcare settings is evolving, but is not as clear as it needs to be.

Healthcare associated infections can originate in other care settings. The enhanced surveillance for MRSA bloodstream infections and *C. difficile* has provided some insights, with around a third of MRSA bloodstream infections and 45 per cent of *C. difficile* infections appearing to be acquired outside of hospital or as a result of a previous hospital stay.⁸ For all other healthcare associated infections acquired outside of hospital, information is poor. Our census and visits identified that hospital trusts remain unclear about the roles and responsibilities of the primary care trust in relation to healthcare associated infection. From 2010, the Care Quality Commission will check compliance with the Code of Practice in all care settings, including community hospitals and care homes, as part of registration.

8 Health Protection Agency 2009.

Conclusion on value for money

22 The Department, in introducing infection reduction targets, close performance monitoring, support and guidance, has been effective in helping the NHS to improve cleanliness and compliance with infection prevention practices. The Department has improved information on MRSA bloodstream and *C. difficile* infections and helped trusts to achieve aggregate reductions, in both these infections, which have exceeded the target reduction rate. By 2008, the reduction in numbers of MRSA bloodstream infections was 57 per cent and *C. difficile* infection, 41 per cent against their respective baselines. Since 2003-04, the Department have spent some £120 million (including a one-off £63 million in 2007-08 on the deep clean) on these new initiatives. The reductions in these infections, since 2003-04, has led to decreases in treatment costs of between £141 million and £263 million as well as reducing the discomfort, disability and, for some, death that might have been caused by these avoidable infections. The direct intervention by the Department on these two infections has therefore been commensurate with the benefits achieved.

23 There has been a perceptible change in leadership, performance management and clinical practice in most trusts. The impact has not, however, been the same for all trusts. A quarter of hospital trusts have reduced MRSA bloodstream infection rates by over 80 per cent, but 12 per cent had an increase in MRSA bloodstream infections. Twenty nine per cent of hospital trusts have reduced *C. difficile* infections by over 29 per cent, but 19 per cent have had an increase in *C. difficile* infection. Moreover there has not been the same impact on other avoidable infections, where there is still a lack of robust and comparable surveillance information. The information that is available suggests that other healthcare associated bloodstream infections, including ones due to other antibiotic resistant organisms, may have increased. Most staff and patients are less aware of the risks of acquiring these other infections. There is scope therefore for hospitals to improve infection prevention and control further and make savings by tackling other healthcare associated infections.

Recommendations

24 From our work on this and our previous reports on healthcare associated infections in hospitals, we have identified four systemic issues that need to be addressed by the Department, hospital trusts and others to help sustain the progress made in tackling MRSA bloodstream and *C. difficile* infections; and to extend the improvements to other infections. Some of the recommendations are reinforced by the requirements in the Code of Practice 2008.

National targets supported by mandatory surveillance, the Code of Practice and inspections have driven the reductions in MRSA bloodstream infections and *C. difficile*. There have not, however, been the same reductions in other avoidable healthcare associated infections. Progress has been made on reducing *C. difficile* and MRSA bloodstream infections but the NHS needs to strive towards continuous improvement and the goal of eliminating all avoidable healthcare associated infections.

Recommendations:

- a** **The Department** should require individual hospital trusts to develop a healthcare associated infection mandatory surveillance system for other significant bloodstream infections (using similar technology as for MRSA bloodstream surveillance); and a rolling programme of surveillance for other local infection risks such as device related infections, ventilator associated pneumonia and surgical site infections (including an agreed system of post-discharge surveillance). This surveillance should be based on a transparent assessment of local risk factors with support and guidance by local **Health Protection Units** and the results reported to the **Health Protection Agency**, analysed and fed back to trusts. **Trusts** should ensure feedback to clinical units and a record maintained of actions taken in response to surveillance reports.
- b** **Primary care trust commissioners'** contracts with healthcare providers should explicitly state expectations of quality and safety with respect to reducing the risk of all healthcare associated infections.
- c** **Hospital trusts** should extend root cause analysis to all serious infection incidents. **The Department, Health Protection Agency and National Patient Safety Agency** should implement a system for collating and sharing the key lessons from trusts' analyses in the same way as for other serious patient safety incidents.

There remains a lack of clarity on the roles and responsibilities of local and national organisations in relation to healthcare associated infections and a need for a whole system approach to achieve further reductions. A health economy wide approach is needed to deliver further improvements, particularly for infections such as *C. difficile* and other bloodstream infections. It also requires a better understanding of the movement of patients within, and between hospitals, care homes and the community.

Recommendations:

- d** **The Department** needs to clarify the roles and responsibilities of relevant local and national organisations including for example what they are required to do when information suggests patient safety may be at risk. These roles and responsibilities should be communicated clearly to the NHS. **The Care Quality Commission** should communicate clearly to NHS and social care organisations what they should expect in terms of a swift response to incidents that compromise patient safety.
- e** **Primary care trusts** should require all providers to put in place assurance systems which demonstrate how they are complying with good infection control practice, for example, clinical audit compliance and root cause analysis.

Whilst staff are more aware of good infection control practice and compliance is improving, compliance is still not universal. Given the delay between failure to comply and infection, some staff still do not see a clear link between their actions and healthcare associated infection. There is a general consensus on good practice, and in order for these improvements to be sustained, staff need to see compliance as fundamental to safe care. Compliance with good infection control practice should be integrated with hospital trusts' ongoing approach to improving quality of care and patient safety.

Recommendations:

- f** Currently healthcare associated infections are recorded as part of the Health Protection Agency's mandatory reporting scheme but, apart from orthopaedic surgical site infections, these reports are generated through laboratory reporting systems. **Hospital trusts** should require staff to report healthcare associated infections which contribute to death, significant disability or injury, for one or more patients to the trust's patient safety incident reporting system.

- g** **The Department, strategic health authorities, Health Protection Agency and the National Patient Safety Agency** should share data and intelligence, such as complaints, on healthcare associated infections to facilitate improved reporting and learning from infections and support development of preventative measures.
- h** **Hospital trusts and primary care trusts** need to agree action plans where necessary to address any shortfall in isolation facilities identified by the trusts' audits of the availability of isolation facilities.
- i** **Hospital trusts** should have processes to provide their board with assurance that infection, prevention and control is the responsibility of everyone in the trust. For example as required by the Code of Practice, all staff should have performance objectives for complying with good infection control practice.
- j** **The Royal Colleges and professional bodies** responsible for training and revalidating professional competence should include patient safety, including infection control, as a fundamental part of all healthcare professional and medical training and assess these competencies as part of the new revalidation processes.

One of the biggest threats to infection control is the increase in antibiotic resistance. Data on hospital prescribing is still not robust and the expected electronic prescribing system is still not in place. The lack of data limits hospital trusts' and others ability to monitor whether antibiotics are being used effectively.

Recommendations:

- k** **Hospital trusts** should have processes in place to assure their boards that there is effective control over the appropriateness of the antibiotics being prescribed. Hospital trusts should also develop links between their hospital prescribing, patient records and pathology and microbiology reporting systems.
- l** **Primary care trusts** should monitor hospital trusts' and other healthcare providers' antibiotic prescribing and take action to address inappropriate use.

3 Progress against recommendations made by Parliament's Committee of Public Accounts in 2004

Committee of Public Accounts recommendations¹

1 The Department hopes to reduce MRSA rates by employing the same approach used in achieving targets for waiting times where improvements were driven through using a combination of financial incentives, performance management and support. The Department will need to clarify what support will be available to trusts, and what incentives will be available to help deliver improvements.

2 The Department needs to work with the Health Protection Agency to expand national mandatory surveillance, based on a robust risk assessment with input from clinical staff. Its National Programme for IT needs to include the hardware and software needed to support the collection of national surveillance data, including effective links between pathology, microbiology, prescribing and patient administration systems.

3 The Department should repeat the 1996 prevalence study to obtain up to date information.

4 The Department needs to expedite its proposal for hospital acquired infections to be identified on death certificates, and its proposed audit of deaths attributable to all the main types of hospital acquired infection.

5 The Department needs to work with the National Patient Safety Agency to develop a better understanding of the reasons why compliance with hand hygiene guidance has not been sustained and how it might best be tackled.

Government's Treasury Minute Response (October 2005)²

The Department agreed with this recommendation. They were closely monitoring progress towards the target of halving MRSA bloodstream infections. They introduced performance reporting to strategic health authorities and committed to providing support to trusts.

The Department did not accept this recommendation. The mandatory surveillance system would continue to develop but they felt it would not be appropriate to make all new surveillance mandatory. Mandatory surveillance was extended to cover *Glycopeptide Resistant Enterococci* in October 2003, *C. difficile* in January 2004, and orthopaedic surgical site infections in April 2004.

The Department accepted this recommendation.

The Department noted the Committee's conclusion. They commissioned the Health Protection Agency and the Office for National Statistics (ONS) to undertake a confidential study of suspected deaths from healthcare associated infections.

The Department accepted this recommendation in principle. All hospital trusts had implemented the clean^yourhands campaign or their own equivalent.

NAO assessment of implementation

The Department has achieved reductions in MRSA bloodstream infections through a combination of support and performance management. Strategic health authorities monitor progress against the MRSA target and, since 2006, the reduction target on *C. difficile*. Department of Health Improvement teams have worked with 154 trusts to help them improve compliance with good infection control and achieve the reduction targets. ●

There has been no expansion of the national mandatory surveillance system since the PAC report other than some refinements to develop enhanced surveillance, for example a requirement for trusts to report all cases of *C. difficile* for patients aged two to 64 from April 2007. There are national and local systems for the collection of surveillance data but they are not linked to the National Programme for IT. There is still no link between pathology, microbiology, prescribing and patient administration systems. ●

A four countries national prevalence study was conducted in 2006 and the final report was published in 2008. ●

A study of deaths linked to MRSA was carried out by the Health Protection Agency and the ONS. Guidance was issued to reinforce the importance of including MRSA and *C. difficile* on death certificates. The ONS reports deaths attributable to MRSA, MSSA and *C. difficile* but concerns about completeness and compliance for all healthcare associated infections remain. ●

Independent evaluation of the clean^yourhands campaign concluded that it was associated with higher alcohol hand rub and soap usage, and lower rates of MRSA bloodstream infections. ●

3 Progress against recommendations made by Parliament's Committee of Public Accounts in 2004 *continued*

Committee of Public Accounts recommendations¹

6 The Department has still not implemented the National Audit Office's 2000 recommendation to publish a national infection control manual, despite four years of research and consultation. The Department should establish a repository for national evidence based guidelines and good practice examples.

7 Despite a small improvement in the ratio of infection control nurses to beds there remains a mismatch between what is expected of infection control teams and the resources available to them. The Department, working with trusts and strategic health authorities, should conduct a survey of the new Directors of Infection Prevention and Control to determine whether they have the authority and resources to fulfil their designated role.

8 NHS trusts' implementation of cleaning initiatives should be evaluated by an annual survey to see that they are actually improving cleanliness on the wards.

9 The design of hospitals can help minimise hospital acquired infection, particularly by ensuring the provision of sufficient single rooms with appropriate ventilation for use as isolation facilities. Infection control teams should be part of the planning team for refurbishments of new buildings.

Government's Treasury Minute Response (October 2005)²

The Department accepted this recommendation. In response to the recommendation in 2000 it carried out a study aimed at establishing what infection control specialists wanted from a manual. This showed a consensus that what was wanted was a reliable and high quality infection control information resource, bringing together national guidance and other source literature relevant to the prevention and control of infection, rather than an infection control manual.

The Department did not accept this recommendation on the basis that infection prevention and control should be everybody's business and cannot be achieved by setting a ratio of specialist infection control staff to beds.

The Department accepted this recommendation.

The Department agreed with the recommendation. To help local planning for isolation facilities, an isolation facilities document was published in February 2005.

NAO assessment of implementation

The National Resource for Infection Control was established online and hosts the key guidance on infection control and provides links to other quality assured relevant resources. The Department has also published various good practice guides, for example the Saving Lives initiative which provides tools for improving infection control.

Despite not accepting this recommendation our trust census showed a further improvement in the ratio of infection control nurses to beds: 83 per cent of trusts now exceed the international benchmark of 1 infection control nurse per 250 beds (average ratio has increased from 1:524 in 2000 to 1:315 in 2004 to 1:189 in 2008).

Patient Environment Action Team inspections are carried out in every healthcare facility in England at least once a year where cleanliness is assessed, alongside other aspects of the patient environment. These inspections have shown year on year improvements. Since 2007, the Healthcare Commission has inspected trusts against the Code of Practice which includes duties in relation to cleaning standards.

Infection control teams reported via our trust census that they are now involved in reviewing plans for alterations and additions to clinical buildings.

3 Progress against recommendations made by Parliament's Committee of Public Accounts in 2004 *continued*

Committee of Public Accounts recommendations¹

10 There is evidence that wider factors such as bed management policies and the need to meet waiting times targets can compromise infection prevention and control. Trusts need to reduce bed occupancy levels and to adopt more effective bed management practices which avoid patients moving too frequently.

11 Strategic health authorities should ensure that all trusts have carried out a risk assessment of their isolation facilities and work with them to determine a timetable and resourcing strategy to address identified shortfalls in requirements.

12 NHS trusts should inform their strategic health authorities when a recommendation to close a ward is refused. Strategic health authorities should ensure that these incidents are recorded and should work with trusts to identify ways of minimising their impact.

-  The Committee's recommendation has been fully implemented
-  The Committee's recommendation has been partially implemented
-  The Committee's recommendation has not been implemented

Government's Treasury Minute Response (October 2005)²

The Department accepted this recommendation in part. Guidance was produced in 2004 in Towards Cleaner Hospitals on the involvement of infection control in bed management.

The Department accepted this recommendation in principle. Winning Ways required chief executives to ensure, over time, there is appropriate provision of isolation facilities.

The Department did not agree with this recommendation. The trust chief executive is responsible for the decision to close a hospital ward.

NAO assessment of implementation

Our trust census showed that now 89 per cent of infection control teams are regularly consulted on bed management compared to 46 per cent in 2003. Thirty-five per cent of trusts however still see bed occupancy, and 59 per cent see the four hour A&E target, as potential barriers to improvement.

Our census found that 84 per cent of trusts had carried out an assessment of their isolation facilities and two thirds of these concluded they had insufficient facilities.

In our census, most trusts reported no incidents where a request to close a ward was refused, and where this did occur there were appropriate reasons. The strategic health authority however, do not have any involvement and therefore this recommendation was not implemented.

Source: National Audit Office

NOTES

- 1 Committee of Public Accounts – 24th Report 2004-05.
- 2 HM Treasury 2005.