



House of Commons  
Public Accounts Committee

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# Reducing Healthcare Associated Infection in Hospitals in England

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**Fifty-second Report of Session  
2008–09**

*Report, together with formal minutes, oral and  
written evidence*

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## The Public Accounts Committee

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## Summary

Every year over 300,000 patients in England acquire a healthcare associated infection whilst in hospital. These infections cost the NHS more than £1 billion a year. They are caused by a variety of organisms and lead to a range of symptoms from minor discomfort to serious disability. For some they can be fatal, and in 2007, there were 9,000 deaths recorded with Meticillin resistant *Staphylococcus aureus* (MRSA) or *Clostridium difficile* infections as the underlying cause of a contributory factor.

This is our third report on this key indicator of quality and safety of NHS care. In 2000, our predecessor Committee concluded that the NHS did not have a grip on the extent and costs of hospital acquired infection and that without robust data it was difficult to see how they could target activity and resources to best effect.<sup>1</sup> In 2005, this Committee found that the progress in improving infection prevention and control had been patchy and there was a distinct lack of urgency on key issues such as ward cleanliness and compliance with good hand hygiene.<sup>2</sup>

The Department's hands on approach to what seemed, in 2004, to be an intractable problem, has been successful in reducing Meticillin resistant *Staphylococcus aureus* (MRSA) bloodstream and *C. difficile* infections. Hospitals cleanliness has improved and the priority given to reducing these two targeted infections has started to have an impact on hospital trusts overall infection prevention and control. This progress has not, however, been matched on other healthcare associated infections. The best available evidence from voluntary reporting of other healthcare associated bloodstream infections, however, suggests that these infections may be increasing. Indeed, as a result of the Department's decision to disregard a key recommendation from previous Committee of Public Account reports—to introduce mandatory surveillance of all hospital acquired infections—there is still no robust comparable data on the extent and risks of at least 80% healthcare associated infections.

There has also been limited progress in improving information on, and understanding of, hospital antibiotic prescribing and the evidence that is available on other bloodstream infections, which can be just as serious as MRSA, suggests the problem may be growing and that antibiotic resistant organisms are increasing.

On the basis of a report by the Comptroller and Auditor General,<sup>3</sup> we took evidence from the Department and NHS on progress in reducing healthcare associated infections in hospitals.

1 Committee of Public Accounts, Forty-second Report of Session 1999–2000, *The management and control of hospital acquired infection in Acute NHS Trusts in England*, HC 230

2 Committee of Public Accounts, Twenty-fourth Report of Session 2004–05, *Improving patient care by reducing the risks of hospital acquired infection: A progress report*, HC 876

3 C&AG's Report, *Department of Health: Reducing healthcare associated infections in hospitals in England*, HC (2008–09) 560, 12 June 2009

## Conclusions and recommendations

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- 1. The Department has delivered significant reductions in MRSA bloodstream and *Clostridium difficile* infections, the two healthcare associated infections that have had national reduction targets, and it has also helped improve cleanliness of hospitals.** The Department has achieved this using a combination of mandatory surveillance, national targets, legislation, inspection and close performance management and support of hospital trusts. It has also provided additional resources and direct support and guidance to hospitals to help them achieve these reductions.
- 2. The Department has not achieved measurable reductions in other, avoidable, healthcare associated bloodstream infections.** The Department and Health Protection Agency should adopt the approach to mandatory surveillance of MRSA bloodstream infections for other healthcare associated bloodstream infections. Primary care trusts should benchmark the performance of their hospitals trusts and agree local reduction targets for these infections. The Department should report back to the Committee on what they have done to extend surveillance.
- 3. The Department's approach to mandatory national surveillance means there is still no grip on hospital acquired surgical site infections, pneumonias, skin and urinary tract infections.** This lack of robust comparable data on around 80% of healthcare associated infections is limiting the NHS's ability to reduce the risks to patients acquiring a healthcare associated infection whilst in hospital. The Department should work with the Health Protection Agency to develop a risk-based approach to national and local surveillance that enables all patients to understand their infection risks, and provides staff with a consistent and co-ordinated evidence base to help them eliminate all avoidable healthcare associated infections.
- 4. One of the greatest threats to infection control is the increase in antibiotic resistance but generally hospitals do not yet have robust electronic prescribing systems that enable them to monitor whether antibiotics are being used effectively.** All hospital trusts should provide their boards with assurance that there is effective surveillance and control over antibiotic prescribing, underpinned by evidence from regular clinical audits of compliance with antibiotic protocols. The Department should expedite immediately our previous recommendation on developing the National Programme for IT to include the hardware and software needed to support the collection of national surveillance data, including effective links between microbiology, pathology, prescribing and patient administration. It should also report back to us on this issue by the end of 2009.
- 5. Better understanding of the impact of patient movement within and between hospitals and the community, underpinned by a health economy wide approach to infection prevention and control, is needed to sustain and deliver further improvements.** All health and social care commissioners and providers need to be aware of the risks to patients, particularly those who are elderly, of acquiring a healthcare associated infection as a result of a hospital admission, and should work together to identify ways of avoiding admission and unnecessary movement between wards. Hospital trusts and primary care trusts should provide advice, guidance and

support to residential and nursing homes on preventing and controlling healthcare associated infections.

6. **The Department's efforts to improve recording on deaths certificates where MRSA or *Clostridium difficile* infection was a contributory factor or underlying cause has led to better data on these deaths, but the NHS still does not have any idea how many patients are dying from other healthcare associated infections.** We reiterate our recommendation that the Department should work together with the Health Protection Agency and Office of National Statistics to identify all deaths linked to healthcare associated infections, and take action to reduce such deaths.
7. **Trusts continue to believe that wider factors, such as high bed occupancy and the four hour A&E target, are barriers to further improvement and compromise good infection prevention and control.** There is limited research on the impact of bed occupancy on infection rates. There is a need for trusts to understand the impact of their bed occupancy levels on infection risks and to adopt more effective bed management practices which avoid patients moving too frequently. The Department should commission research to determine whether there is a link between bed occupancy and other healthcare associated bloodstream infections and *C. difficile*.
8. **The Department's decision to implement MRSA screening has not been fully evaluated and there is confusion about implementation and cost effectiveness.** There is wide variation in implementation of this initiative and a lack of clear communication to staff and patients on how to respond to a positive result. The Department should commission a robust review of both the cost-effectiveness and impact on patients of the first year of operation of the screening, and publish the results to provide trusts' with a better understanding on cost-effectiveness and how best to implement the policy.

# 1 The extent of the problem of healthcare associated infections in hospitals

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1. Healthcare associated infections are infections acquired as a consequence of a person's treatment by a healthcare provider, or by a healthcare worker in the course of their duties. They are often identified in a hospital setting, but can also be associated with medical care delivered in the community. These infections arise from micro-organisms that people carry safely on their skin or in their body, and only become a problem when the organisms have an opportunity to breach the body's natural defences as a result, for example, an open wound, catheterisation or intravenous devices. Such infections lead to increased length of stay and hospital costs.<sup>4</sup> There are various types of healthcare associated infection and a variety of causative organisms, leading to range of symptoms from minor discomfort to serious disability, and in some cases death (**Figure 1**).<sup>5</sup>

2. Our predecessor Committee first raised concerns about the prevention, management and control of hospital acquired infections in 2000.<sup>6</sup> It concluded that the Department and local hospital trusts had not given sufficient attention to the issue, and only had limited data and understanding on the extent and cost of the problem. It recommended that there should be a shift towards prevention at all levels, underpinned by a commitment and philosophy that prevention is everyone's business. A 2005 follow up report by this Committee found that progress had been 'patchy'. It concluded that there had been a distinct lack of urgency on several key issues including ward cleanliness and hand hygiene, limited progress in improving isolation facilities or reducing bed occupancy rates, and that the NHS still did not have a grip on the extent or cost of the problem.<sup>7</sup>

3. In 2001, the Department introduced mandatory surveillance of MRSA bloodstream infections and in 2004 extended mandatory surveillance to *Clostridium difficile* infections and orthopaedic surgical site infections.<sup>8</sup> In response to our 2005 report, the following year the Department commissioned a prevalence survey, which found that 8% of patients in the NHS in England had a healthcare associated infection that was not present or incubating at the time of their admission. The survey was also conducted in Wales, Northern Ireland and the Republic of Ireland, with a separate survey undertaken in Scotland. It provides the most up to date comparative assessment of the prevalence of healthcare associated infection in hospitals (**Figure 1**).<sup>9</sup>

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4 C&AG's Report, paras 1.1–1.2

5 C&AG's Report, para 1.6, Figures 1 and 4

6 Committee of Public Accounts, Forty-second Report of Session 1999–2000, *The management and control of hospital acquired infection in acute NHS hospitals in England*, HC 230

7 Committee of Public Accounts, Twenty-fourth Report of Session 2004–05, *Improving patient care by reducing the risk of hospital acquired infection: A progress report*, HC 876

8 Qq 63–64, 108; C&AG's Report, paras 2.11, 2.20, 2.30

9 Q 10; C&AGs Report, para 2.9–2.10, Figure 6

Figure 1: Background information on healthcare associated infections

<b>Main causes of healthcare associated infection</b>							
	Urinary tract infections	Lower respiratory tract infections	Gastro-intestinal infections	Surgical site infections	Bloodstream infections	Skin and soft tissue infections	Other
Percentage of all healthcare associated infections	20%	20%	22%	14%	7%	10%	7%

#### Some facts about healthcare associated infections

- The best estimate suggests that there are over 300,000 healthcare associated infections in hospitals each year and these cost the NHS at least £1 billion.
- In 2006, the prevalence rate of healthcare associated infections in hospitals in England was 8.2; 9.5 in Scotland; 6.4 in Wales; 5.4 in Northern Ireland; and 4.9 in the Republic of Ireland.
- Urinary tract infections are usually mild and treatable, but sometimes give rise to bloodstream infections if not treated appropriately. Healthcare associated urinary tract infections are commonly associated with urine catheters.
- Mechanical ventilation is the main risk factor for pneumonia and has a case fatality of 40%.
- Risk factors for surgical site infections include duration of surgery, surgical technique, length of stay and antibiotic prophylaxis.
- The most serious infections tend to be bloodstream infections with most common risk factors being insertion and management of intravenous access devices (peripheral and central lines).
- 70% of gastro-intestinal infections are caused by *C. difficile* and 4% of bloodstream infections are caused by MRSA. *C. difficile* is largely a disease affecting the elderly (82% of reports are for people aged 65 and over with risk increasing with age).
- MRSA bloodstream and *C. difficile* account for about 15% of healthcare associated infections.
- In 2007, there were 9,000 deaths where MRSA or *C. difficile* was identified as the cause or contributory factor.
- People at most risk of acquiring a healthcare associated infection are the very old and the very young, and patients that have a weakened immune system.
- Whilst some experts believe that not all hospital acquired infections are preventable, some trusts have zero tolerance to avoidable infections; particularly zero tolerance of bloodstream infections caused by the insertion of lines into a vein or artery.

Source: C&AG's Report; Four Country Healthcare Associated Infection Prevalence survey 2006: *Journal of Hospital Infection* (2008) 1–19 and Results from Scottish National HAI Prevalence Survey—*Journal of Hospital Infection* (2008) 69, 62–68

4. The Department changed the terminology in 2003 from hospital acquired to healthcare associated to reflect the fact that these infections can arise in any care settings, such as care homes and community hospitals. The Department's focus to date, however, has primarily been on healthcare associated infections acquired in acute and foundation hospital trusts (hospital trusts), as this is where most serious healthcare associated infections are identified and treated. The Department does, however, acknowledge the role the 'health economy' plays in the prevention, management and control of healthcare associated infection.<sup>10</sup>

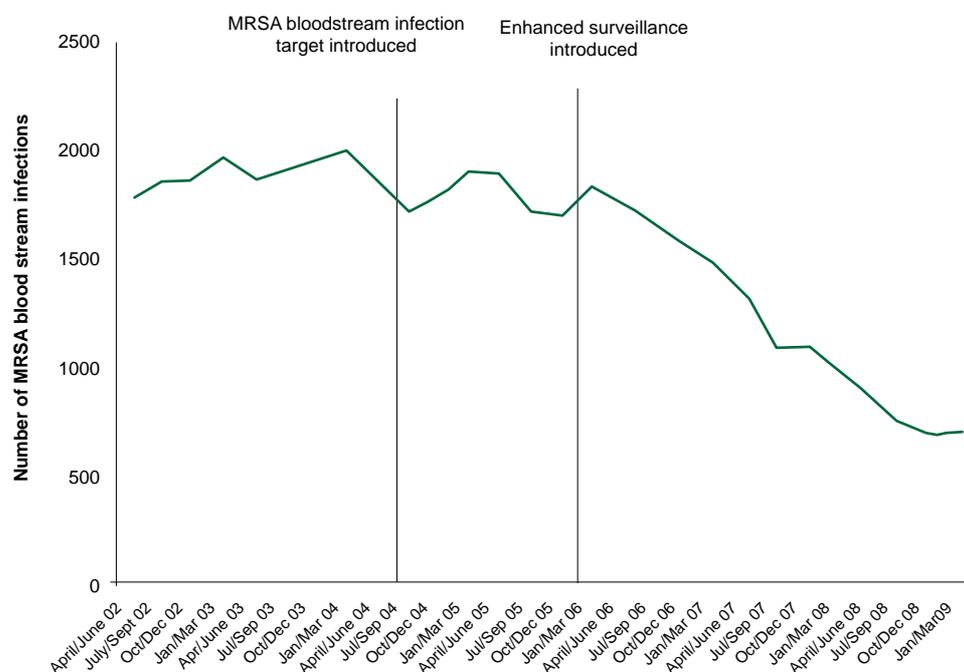
5. Following the introduction of mandatory reporting of MRSA bloodstream infections in 2001, the numbers reported increased year on year and in 2003–04 there were 7,700 MRSA bloodstream infections. The proportion of *Staphylococcus aureus* infections that were MRSA, were amongst the worst in Europe.<sup>11</sup> In 2004, the Department set a target for

10 Q 44

11 Committee of Public Accounts Twenty-fourth Report of Session 2004–05, *Improving patient care by reducing the risk of hospital acquired infection: a progress report*, HC 876

reducing MRSA bloodstream infections by 50% by the end of March 2008 against the 2003–04 baseline (Figure 2).

**Figure 2: The number of MRSA bloodstream infections per quarter reported to the mandatory surveillance system**



Source: C&AG's Report, Figure 8 and Health Protection Agency's MRSA surveillance data

6. The Department was successful in achieving its target, with a 57% reduction in MRSA bloodstream infections, from an average of 642 per month to 279 per month.<sup>12</sup> Although 12% of trusts saw an increase in bloodstream infections over this period, 24% achieved reductions over 80% (with 9% of the overall reduction down to decreases in three trusts).<sup>13</sup>

7. The Health Protection Agency has subsequently published data for the final quarter of 2008–09. This showed a rise in MRSA bloodstream infections, from 678 reports in the previous quarter to 692 (a 2% rise). Overall, however MRSA bloodstream infections were down 62% in 2008–09 compared with 2003–04 (7,700 in 2003–04 to 2932 in 2008–09).<sup>14</sup>

8. The Department told us that in terms of the home nations (Scotland, Wales and Northern Ireland), its record is very good comparatively, especially over the last two years. Wales has had a smaller reduction in MRSA over the period and Scotland has only had a 23% reduction in MRSA. It believes that it has learned lessons from around the world, put them in place, and benefited from them.<sup>15</sup>

12 C&AG's Report, para 2.14

13 C&AG's Report, para 2.16

14 Health Protection Agency, June 2009

15 Q 10

9. Voluntary reporting of *C. difficile* has shown an increasing trend since the mid-1990s, with increases of more than 20% a year between 2001 and 2003. Following the introduction of mandatory surveillance in January 2004 numbers reported rose from 44,563 in 2004 to 55,635 in 2006 (a 25% increase). Following concerns about serious outbreaks of *C. difficile* between 2003 and 2007, the Healthcare Commission carried out investigations at Stoke Mandeville, Leicester and Maidstone and Tunbridge Wells. The blame for the outbreaks fell largely on the management teams of the trusts involved and the trusts were seen to be very poor performers. However, in terms of rates of infection they were not significant outliers.<sup>16</sup>

10. In 2007, the Department set a target to reduce *C. difficile* by 30% by the end of March 2011 from a 2007–08 baseline. **Figure 3** shows that following the introduction of the target infections started to fall from the 2006 peak, and in the year to December 2008 fell to 32,628 (a 41% reduction compared to the baseline). Subsequently, the Health Protection Agency has published data for the final quarter of 2008–09. This showed an 8% rise in the number of cases of *C. difficile* in patients aged 65 years and over, compared to the previous quarter (6,259 to 6,776).<sup>17</sup>

11. The improvement in *C. difficile* is not universal, with one in five hospital trusts showing an increase in *C. difficile* cases. The Department explained that in terms of number of cases this was actually only about 250 cases nationally as the trusts concerned, individually, had relatively smaller numbers to start with. Whilst every hospital has not made the progress that they need to, a half of those hospitals that were identified by the National Audit Office as having experienced an increase have now improved their position.<sup>18</sup>

12. The Department considers that overall the NHS has made significant achievements in securing the reductions in *C. difficile*, and in delivering its three-year target in the first year. It believes that this is because it focussed very strongly on improving and enhancing the surveillance and that it has a better record than the other home countries in terms of *C. difficile*. It is now looking at how it is going to take this forward in terms of a national approach.<sup>19</sup>

13. Mandatory surveillance of the four main types of orthopaedic surgical site infection have shown a decline since April 2004, although some of this decline may be explained by shorter lengths of stay and a lack of post-discharge surveillance. Since 2004–05, the cumulative incidence rate for these procedures has fallen from 1.44% to 0.6%. To properly measure surgical site infection, however, post discharge surveillance is required, especially given falling average lengths of stay. This was recommended by the Committee in 2000 and 2005, but only 14% of trusts have an effective local system in place.<sup>20</sup>

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16 Q 73; C&AG's Report, para 2.20, Appendix 5

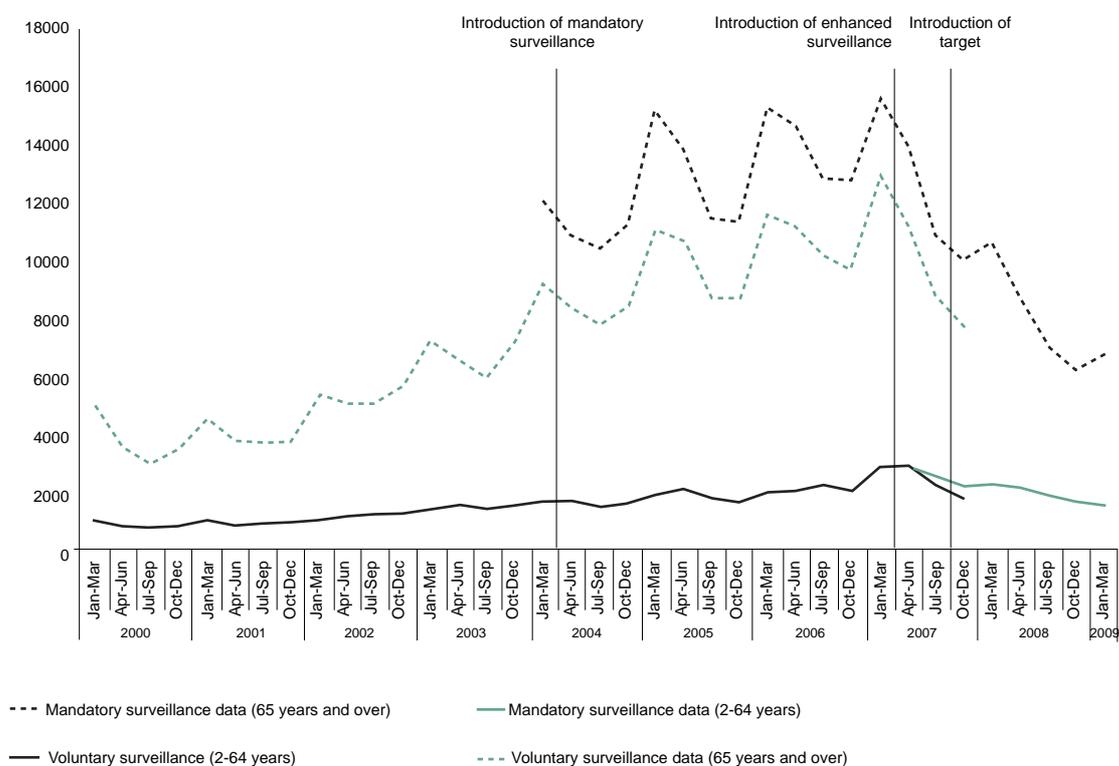
17 Health Protection Agency, June 2009

18 Qq 39

19 Qq 1, 9–10, 12

20 C&AG's Report, para 2.30

**Figure 3: Trends in number of reports of *C. difficile* toxin specimens reported to the Health Protection Agency**



Source: C&AG's Report and Health Protection Agency's healthcare associated infections surveillance system

14. The Department agreed that many trusts have historically had problems setting up post-discharge surveillance for surgical site infections and that it is not something that it has mandated centrally because of the difficulty in defining who makes the diagnosis, (another healthcare professional, a nurse, or a doctor) or what infections should qualify—for example, whether it should only apply to the more serious ones that end up with a readmission. On the basis that readmissions should be more straightforward the Department has introduced this requirement nationally, from July 2008, for orthopaedic surgical site infections.<sup>21</sup>

15. In 2005, whilst acknowledging the introduction of mandatory MRSA bloodstream infection surveillance in 2001, our Committee recommended that the Department expand the mandatory surveillance to other healthcare associated infections. This recommendation has not been implemented and there is still no complete picture on around 80% of healthcare associated infections. Without surveillance information the Department has no idea of the true scale of all healthcare associated infections and the risk they pose to patients.<sup>22</sup>

16. The Department could not explain why 20% of trusts had carried out no additional surveillance other than MRSA and *C. difficile* and agreed that they should be encouraged to

21 Q 105

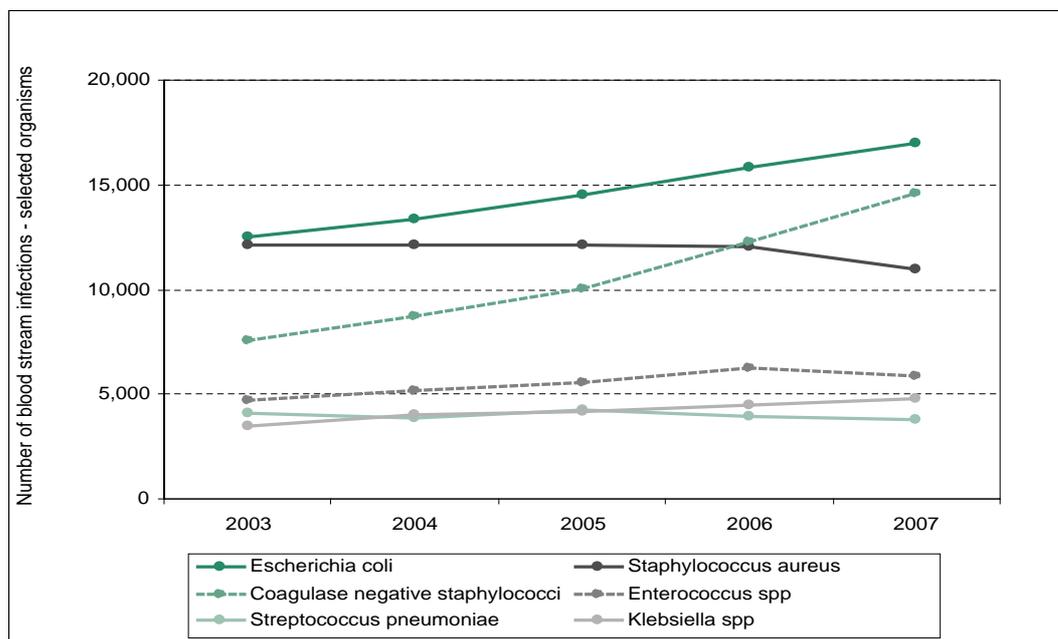
22 Qq 11, 63, 108; C&AG's Report, Figure 3

do so.<sup>23</sup> The Department has, however, asked its Advisory Committee on surveillance to look again at the benefits of extending national surveillance, and expects to have completed this by the end of this year.<sup>24</sup>

17. Since 1996 the Health Protection Agency has continued to collect data on other healthcare associated bloodstream infections as part of its voluntary laboratory reporting scheme. These data show that other bloodstream infections have increased year on year from 80,000 in 2003 to 105,000 in 2007. Whilst some of this increase will be due to increasing ascertainment, data from a subset representing 70% of laboratories, showed a 27% increase in reported bloodstream infections (66,000 to 84,000) between 2003 and 2007. Not all of these will be healthcare associated and some will be linked to healthcare provided in community settings (around 60% likely to be healthcare associated).<sup>25</sup>

18. **Figure 4**, shows that the bacterium *Escherichia coli* (*E. coli*) is the most common cause of bloodstream infection (accounting for 20% of all reported infections) and has risen by 33% between 2003 and 2007. Reports of *Klebsiella spp* and coagulase negative *Staphylococcal* (CNS) have increased by 34% and 17% respectively over the same period. Despite the decline in the rate of MRSA bloodstream infections, the numbers of reports of the meticillin sensitive *Staphylococcus aureus* (MSSA) have increased by 9%. All of the above bloodstream infections can be equally as fatal as MRSA.<sup>26</sup>

**Figure 4: Pathogens causing bloodstream infection reported to the voluntary laboratory surveillance system (based on a subset of laboratories consistently reporting over the period)**



Source: Health Protection Agency LabBase data

23 Qq 68–69

24 Qq 64

25 Qq 2, 61, 68, 108

26 C&AG's Report, paras 2.18 and 2.27

19. Resistance in antimicrobial resistance to other types of pathogens is increasing. Analysis of surveillance data show dramatic increases in resistance of *E. coli* and *Klebsiella spp* to a number of key antibiotics. Indeed, antibiotic resistance is a problem with a variety of bacteria which the Department acknowledged it needed to monitor to try to keep it under control by good infection control measures. But as they are constantly evolving, there will always be other problem organisms emerging.<sup>27</sup>

20. Following the Committee's recommendation in 2004, there have been improvements in the recording of healthcare associated infections on death certificates, but this information has been limited to *Staphylococcus aureus* and *C. difficile*. The Health Protection Agency and the Office for National Statistics carried out an audit to identify deaths that might be related to MRSA bloodstream infections. Their report published in November 2007, found inaccurate reporting of MRSA on death certificates. The Chief Medical Officer raised the need to improve reporting on death certificates in 2005 and 2007.<sup>28</sup> In 2007, some 9,472 death certificates recorded *C. difficile* or MRSA as either the underlying cause of their death or a contributory factor (1,517 MRSA and 7,916 from *C. difficile*).<sup>29</sup>

21. There is no data on the number of people who die from other healthcare associated infections.<sup>30</sup> Whilst the cause of death is recorded on the death certificate, there is no code for many other healthcare associated infections and therefore it is not collated and recorded as a cause of death. The Department believes there are about six categories of other healthcare associated infection deaths that could be recorded such as ventilator associated pneumonias.<sup>31</sup> There is, however, a complication of definitions and the ability to pull out those data, even though they can be precise.<sup>32</sup> The Department said that it is the responsibility of the Office for National Statistics (ONS) to carry out the analysis on these other healthcare associated infection deaths, but that it has not asked the ONS to carry out this analysis.<sup>33</sup>

22. Information on the cost of healthcare associated infection both at a national and at a local level remains limited. Although more hospital trusts are attempting to calculate the cost of healthcare associated infections the best available data remains the London School of Hygiene and Tropical Medicine study, published in 1999.<sup>34</sup> Based on this report, the best available estimate for the total cost of healthcare associated infections is over £1 billion, which is acknowledged to be an underestimate. The Department uses a cost of £4,300 per infection in its productivity calculator. The Department believe that these costs remain relevant, but is undertaking new work to strengthen the method of estimation.<sup>35</sup>

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27 Q 77; C&AG's Report, 2.28–2.29

28 Qq 19–20

29 Qq 17–18

30 Q 20

31 Qq 21–27

32 Q 33

33 Qq 27–32

34 C&AG's Report, 2.37–2.40

35 Q 13

## 2 Achieving reductions in MRSA bloodstream and *C. difficile* infection

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23. In 2004, the Department acknowledged that progress in implementing many of the Committee's recommendations from 2000 within NHS trusts had been 'patchy'. They told the Committee that they intended to drive through improvements using the same approach to achieving targets for waiting times: a combination of financial incentives, performance management, and support.<sup>36</sup>

24. Since 2004, the Department has implemented a combination of mandatory surveillance, targets, legislation, inspection and support underpinned by performance management to help achieve reductions in MRSA bloodstream infections and subsequently *C. difficile* infection.<sup>37</sup> Strategic health authorities have monitored weekly performance towards achievement of these targets at hospital trust level reporting results to the Department. The Department have operated national Improvement Teams offering support and guidance to hospital trusts. 87% of trusts which had been visited by these teams rated them as effective.<sup>38</sup>

25. The Department has also launched a number of national initiatives aimed at reducing levels of healthcare associated infection. These include the deep clean, expansion of the modern matron initiative, the 'cleanyourhands' campaign and a Technology Programme which includes the Rapid Review Panel. These are estimated to have cost around £120 million since 2004. Due to the fact that there was a lack of baseline information on what was happening before these initiatives were implemented, and many of them were launched concurrently, it is difficult to judge the impact of individual initiatives on reducing infections.<sup>39</sup> The Deep Clean, however, has been successful in improving the confidence of staff and patients in hospitals.<sup>40</sup>

26. The National Patient Safety Agency's cleanyourhands campaign has delivered cost effective improvements in hand hygiene. Independent evaluation of the campaign found that alcohol hand rub was strongly associated with reductions in MRSA bloodstream infections, and that combined use of alcohol hand rub and soap procurement had risen within hospital trusts.<sup>41</sup> This followed a recommendation by the Committee in 2004 that the Department needed to develop a better understanding of the reasons why compliance with hand hygiene has not been sustained. However, initially the cleanyourhands campaign was not effective in reducing *C. difficile* as alcohol rub is not successful in cleaning *C. difficile* spores from hands, and new guidance on using soap and water needed to be issued in 2008.<sup>42</sup>

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36 C&AG's Report, para 3.1, Figure 3

37 Q 9

38 C&AG's Report, para 3.5

39 Qq 36–37; C&AG's Report, para 3.8, Figure 15

40 Qq 58–59

41 Q 15; *The National Observational Study to Evaluate the Cleanyourhands Campaign* (2009)

42 Qq 5–8

27. Screening of patients for MRSA colonisation is being introduced in a staged process, with all elective patients to be screened from April 2009 and all elective and emergency by 2010–11. The Department estimates that the annual cost from 2010–11 will be £130 million per annum. The Department has estimated that there will be savings made from reducing MRSA infections when you take into account reduced cost of treatment and the wider economic benefits to society. The Department's calculations are based on reducing MRSA bloodstream infections from a baseline of 7,000. However, when this screening programme was implemented in 2009, the number of MRSA blood stream infections was already less than 3,000. The Department's assumptions are also based on reducing MRSA wound infections from a baseline of 30,000, but there is no robust data on these infections.<sup>43</sup>

28. The Rapid Review Panel involves a methodology for assessing the effectiveness of innovations. The Department was not able to demonstrate the cost effectiveness of this programme.<sup>44</sup>

29. A final, national initiative, which has had an impact, has been the introduction of modern matrons. The work of these modern matrons is seen as contributing to improved cleanliness and infection control practice. Modern matrons usually work over two or three wards and are focused on quality of patient care. Modern matrons are supported by ward sisters or charge nurses who are responsible for the cleanliness of a ward.<sup>45</sup>

30. There has been a cultural shift in the way hospital trusts are tackling healthcare associated infection and the priority that trust boards give the issues, although this is almost exclusively focused on MRSA bloodstream and *C. difficile* infections.<sup>46</sup> Leadership from senior management and systems of performance management have been key, and have led to improvements in infection prevention and control across hospital trusts.<sup>47</sup> However, the fact that most hospital trusts do not report data on other healthcare associated infections to the board means that the full picture is unclear.<sup>48</sup>

31. The Department considered that what happened at Maidstone and Tunbridge Wells and Stoke Mandeville exemplified the critical importance of leadership. Whilst systems and processes may have been in operation, without patient safety being seen as a number one priority by leaders, required change is unlikely to take place. The Department has made it clear that accountability for improving patient safety and tackling healthcare associated infections lies with the chief executive and trust board.<sup>49</sup>

32. Another initiative that has impacted at trust level is the need for compliance with an improved regulatory framework. From April 2009, the Care Quality Commission continues the Healthcare Commission's work on healthcare associated infections, but with

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43 Q 38; Department of Health's *Regulatory Impact assessment of screening elective patients for MRSA*

44 Qq 34–37; C&AG's Report, Figure 15

45 Qq 56–57, 69

46 Q 43

47 Qq 14, 43

48 Q 68; C&AG's Report, para 15

49 Qq 14; C&AG's Report, Appendix 5

tougher powers to inspect, investigate and intervene on cleanliness and infections. The Department considers that this is one way that trusts will sustain their focus on this high priority issue.<sup>50</sup>

33. Trusts have increased the amount they spend on tackling healthcare associated infection and the staff resources devoted to it. In 2007–08, hospital trusts spent approximately £150 million on expenditure related to infection control. Total expenditure on cleaning in hospital trusts increased from £355 million in 2003–04 to £522 million.<sup>51</sup> In addition to the £63 million the Department allocated for the one-off deep clean in 2007–08.<sup>52</sup> The Committee recommended in 2004 that the implementation of cleaning initiatives should be evaluated by an annual cleaning survey. Patient Environment Action Team inspections are now carried out in every hospital and have shown improvements in standards.

34. The Department's estimate of the cost of treating avoidable MRSA bloodstream infections is around £4,300. This estimate is, however, based on a methodology and figures from the 1990s.<sup>53</sup> Nevertheless, using this estimate we estimate that the cost of treating patients with MRSA bloodstream and *C. difficile* infection in 2007–08 was around £150 million, but that this is £95 million less than it would have cost if the NHS had not achieved its reductions in MRSA and *C. difficile*. Indeed, since the implementation of the MRSA target in 2004, there have been savings in treating MRSA bloodstream infections against the baseline of around £45 million, and savings as a result of the reduction in *C. difficile* since 2007 of around £96 million. This illustrates the cost benefits of prevention and, if similar success could be achieved in reducing the other 80% of healthcare associated infections, there should be scope for further significant savings to be made.

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50 Q 14; C&AG's Report, para 3.22

51 Department of Health's *Estates Return Information Collection* (2009)

52 Qq 58–59

53 Q 13

## 3 Going further to reduce avoidable healthcare associated infections

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35. Bed occupancy levels continue to be cited by hospital trusts as a problem for providing best practice infection prevention and control.<sup>54</sup> This was raised as an issue in the Committee's previous hearings on the subject, and in 2000 the Department informed the Committee that they hoped to reduce bed occupancy rates to 82% by 2003–04. Bed occupancy levels for 2007–08 were 85.3%, and in over a quarter of trusts were over 90%.<sup>55</sup> However, some trusts have been able to make improvements in their infection control, as measured by MRSA bloodstream and *C. difficile* infections, despite having high levels of bed occupancy.<sup>56</sup>

36. One of the greatest threats to infection control is the increase in antibiotic resistance because as resistance increases it becomes more difficult to treat patients and prevent outbreaks. High antibiotic prescribing raises the risk of pathogens developing resistance and, therefore, it is important to reduce inappropriate prescribing. Hospitals have received guidance on appropriate antibiotic prescribing but compliance by doctors on prescribing against the guidance is not effectively tracked.<sup>57</sup>

37. In 2004, the Committee recommended that the Department implement IT systems to support the collection of national surveillance data, including effective links between pathology, microbiology, prescribing and patient administration.<sup>58</sup> In particular, that the Department's National Programme for IT needed to include the hardware and software to support the collection of national surveillance data and allow effective monitoring of overall antibiotic usage and tracking of antimicrobial resistance. Despite dramatic increases in resistance in certain pathogens, including *E. coli* and *Klebsiella spp*, no national system has been put in place and in most hospital trusts there is no link between infection recoding systems and antibiotic prescribing.<sup>59</sup>

38. The Department explained that at the moment most NHS IT systems are not able to make a clear linkage between those infection recording systems and the antibiotic prescribing, which is still in many cases based upon an accounting system for the pharmacies to show their throughput of antibiotics, rather than a prescribing system which would link the prescribing of individual antibiotics to a patient's infection. Despite the huge investment in the NHS programme there is still not the IT capability to do this. The Department is, however, working to improve this situation with various agencies.<sup>60</sup>

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54 Qq 52 and 67

55 The NHS Information Centre (2008)

56 Q 52

57 Q 84

58 Q 107

59 Qq 105 and 107; C&AG's Report, Figure 3

60 Q 107

39. The roles and responsibilities of the national agencies which support trusts in improving infection prevention and control is not clear.<sup>61</sup> The confusion about responsibilities that was one of the contributory factors in the case of the major healthcare associated infection outbreaks and deaths at Maidstone and Tunbridge Wells.<sup>62</sup> The Health Protection Agency and National Patient Safety Agency all co-ordinate activities when things go wrong, but it is the organisation itself which is responsible and accountable for the action. In the case of Maidstone and Tunbridge Wells, however, the trust thought somebody else was accountable.<sup>63</sup> The Department agreed that, although around two-thirds of trusts are generally clear about the respective roles of these organisations, they would work with the Health Protection Agency and the National Patient Safety Agency to do more to explain their respective roles.<sup>64</sup>

40. Going forward, the general consensus is that a health economy-wide approach is needed to deliver further improvements, including a joined-up approach from the acute trust, primary care trust and the regional health protection units. Many infections arise in other healthcare settings and only manifest themselves within hospitals. Patients can be infected and colonised within hospitals, but symptoms may not become apparent until after discharge, with infections arising outside of hospital.<sup>65</sup> However, 37% of hospital trusts are unclear about the role of primary care trusts in tackling healthcare associated infection, and 49% felt they were ineffective in this regard. Similarly, 39% of hospital trusts were unclear about the role of health protection units, and 48% felt they were ineffective.<sup>66</sup>

41. Finally, zero infections maybe unachievable, but zero tolerance of avoidable infection is the right ambition. Whilst every person carries millions of bacteria on their skin, hospitals should not be tolerant of any infections that could be avoided by poor practice, poor clinical care or poor antibiotic prescribing. There will always be some cases of infection, especially associated with patients who are severely ill with other problems, which make them far more vulnerable, so the risk of infections is very high. The Department and NHS believe that their responsibility in the future is to decrease the number of cases to an irreducible minimum.<sup>67</sup>

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61 Q 95

62 Q 98

63 Q 101

64 Qq 34 and 98

65 Qq 44 and 62

66 Q 95; C&AG's Report, paras 3.14 and 4.39

67 Qq 41 and 72

# Formal Minutes

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**Wednesday 15 July 2009**

Members present:

Mr Edward Leigh, in the Chair

Keith Hill

Mr Don Touhig

Mr Austin Mitchell

Draft Report (*Reducing Healthcare Associated Infections in Hospitals in England*), proposed by the Chairman, brought up and read.

*Ordered*, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 41 read and agreed to.

Conclusions and recommendations read and agreed to.

Summary read and agreed to.

*Resolved*, That the Report be the Fifty-second Report of the Committee to the House.

*Ordered*, That the Chairman make the Report to the House.

*Ordered*, That embargoed copies of the Report be made available, in accordance with the provisions of Standing Order No. 134.

[Adjourned till Wednesday 14 October at 3.30 pm

## Witnesses

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**Wednesday 24 June 2009**

*Page*

**Mr David Nicholson CBE**, Chief Executive of the NHS, **Dame Christine Beasley DBE**, Chief Nursing Officer, **Professor Brian Duerden CBE**, Inspector of Microbiology and Infection Control, Department of Health and **Professor Hilary Scholefield RN**, Chief Nurse, Sheffield Teaching Hospitals NHS Foundation Trust

Ev 1

## List of written evidence

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Thirty-second Report	Financial Management in the European Union	HC 698
Thirty-third Report	Planning for Homes: Speeding up planning applications for major housing developments in England	HC 236
Thirty-fourth Report	DEFRA: Natural England's Role in Improving Sites of Special Scientific Interest	HC 244
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Thirty-seventh Report	Building the Capacity of the Third Sector	HC 436
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Thirty-ninth Report	The Warm Front Scheme	HC 350
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Forty-first Report	Service Families Accommodation	HC 531
Forty-second Report	Supporting Carers to Care	HC 549
Forty-third Report	Learning and Innovation in Government	HC 562
Forty-fourth Report	The Maritime and Coastguard Agency's response to growth the UK merchant fleet	HC 586
Forty-fifth Report	Assessment of the Capability Review programme	HC 618
Forty-sixth Report	Financial management in the Home Office	HC 640

Forty-seventh Report	Reducing Alcohol Harm: health services in England for alcohol misuse	HC 925
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Fifty-first Report	Maintenance of the Prison Estate	HC 722
Fifty-second Report	Reducing Healthcare Associated Infection in Hospitals in England	HC 812
Fifty-fourth Report	Ministry of Defence: Support for High Intensity Operations	HC 895

# Oral evidence

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## Taken before the Committee of Public Accounts on Wednesday 24 June 2009

Members present:

Mr Edward Leigh

Mr Richard Bacon  
Mr Douglas Carswell  
Mr Keith Hill

Mr Austin Mitchell  
Mr Alan Williams

**Mr Amyas Morse**, Comptroller and Auditor General, **Mr Michael Whitehouse**, Assistant Auditor General and **Ms Karen Taylor**, Director, National Audit Office, gave evidence.

**Ms Paula Diggle**, Treasury Officer of Accounts, HM Treasury, was in attendance.

### REPORT BY THE COMPTROLLER AND AUDITOR GENERAL Reducing Healthcare Associated Infections in Hospitals in England (HC 812-i)

*Witnesses:* **Mr David Nicholson CBE**, Chief Executive of the NHS, **Dame Christine Beasley DBE**, Chief Nursing Officer, **Professor Brian Duerden CBE**, Inspector of Microbiology and Infection Control, Department of Health and **Professor Hilary Scholefield RN**, Chief Nurse, Sheffield Teaching Hospitals NHS Foundation Trust, gave evidence.

**Q1 Chairman:** Good afternoon and welcome to the Committee of Public Accounts where today we are considering the Comptroller and Auditor General's Report on the issue of healthcare associated infections in hospital, which obviously is a matter of great public interest. This is the third time that the subject has been before the Committee, the second time during my period as Chairman, and we really have tried to drive this process forward. I am very much looking forward to what you have to tell us, Mr Nicholson, about how you have driven forward your promises contained in the Treasury minute last time, and I would like to start by congratulating you on the progress that you have made on MRSA and *C.difficile* infections. This is a notable achievement, but it will ultimately be a pity if it is overshadowed by an upsurge in other infections, as appears to be happening at the moment. How do you plan to extend the improvements to other infections apart from MRSA and *C.difficile*?

**Mr Nicholson:** First of all, it is just worth putting on the record that there have been significant improvements in our ability to tackle MRSA and *C.difficile* over the last few years. It is significant. We chose MRSA and *C.difficile* because of the scale of the injury and damage they do to our patients but, also, because many of the things you would put into place to tackle MRSA and *C.difficile* are equally useful for other infections. The National Audit Office Report states that six out of the eight major interventions that we put into place have in fact had an effect across other infections as well as those two in particular. We believe that many of the things that we have put in place—the Code of Practice, the modern matrons, deep cleaning—will all have an effect on other infections than just MRSA and *C.difficile*. There is an issue about counting here, and I just want Brian Duerden to say something about that before I go on to say something else.

**Q2 Chairman:** I am glad you are going to bring Professor Duerden in. I should have said at the beginning that he is the Inspector of Microbiology and Infection Control. I would also like you to tell us what advice you have given to the Department about the increase or the upsurge in the number of infections.

**Professor Duerden:** We looked at the figures that were presented as evidence that other infections had raised, and those were increases in the number of reported bacteraemias, blood cultures positive for bacteria, with other organisms. That was over a four to five year period. At that time there had been a very significant increase in the electronic reporting from several parts of the country, so reports generally to the Health Protection Agency had gone up. Also, those blood culture results related to all bacteraemias: not just healthcare associated ones but ones that relate to primary disease, disease acquired in the community, and so on. Also, some of the infections that have risen, the ones that had gone up the most, that we have always known as the coagulase-negative staphylococci from the skin, did not used to be reported very much at all and therefore we have become more aware that they might have some significance. There are a variety of reasons for those figures to go up, rather than just an excess of healthcare associated infections, so it was a more complex issue than that and probably did not reflect a huge increase. As we could see from the measures we had put in place, the advice was that the cleanliness, the hygiene, the aseptic practice in clinical procedures were all geared to prevent infections generally and not just MRSA and *Clostridium difficile*.

**Q3 Chairman:** We are also joined by Dame Christine Beasley, who is the Chief Nursing Officer. What are your nurses telling you about these other infections?

**Dame Christine Beasley:** Very similar issues, I think, to Brian. The measures we have put in place, particularly some of the very, very core areas of hand washing, looking after lines and those areas, really are making a big difference. I was visiting a trust only last week where they are doing a lot of work on making sure that other infections are just as important in what they are doing—so not only all the general things, but what are the different things you should do when you see other infections and what are they, and putting a lot of training programmes in around that—and I am fairly confident that organisations are really tackling these other infections where there need to be specific things that are different.

**Q4 Chairman:** We see with our own eyes and it is evident to members of the public that there is much more emphasis on hygiene in hospitals.

**Dame Christine Beasley:** Yes

**Q5 Chairman:** For a time we have had this alcohol gel. That apparently works on MRSA, does it not?

**Dame Christine Beasley:** Yes.

**Q6 Chairman:** But *C.difficile* grows on alcohol.

**Dame Christine Beasley:** No it does not. However, *C. difficile* spores are not killed by alcohol.

**Q7 Chairman:** So it is only old-fashioned soap and water that works.

**Dame Christine Beasley:** Indeed.

**Q8 Chairman:** If shortcuts like alcohol gels and things do not work, what are your nurses doing about getting back to the old culture of everybody washing their hands with soap and water all the time?

**Dame Christine Beasley:** First of all, hand gel is not a shortcut, it is a particular way of making sure your hands are clean and it has a place. But we have also worked very hard to make sure that there are frequent hand-washing facilities, really good hand-washing facilities with soap and water. Nurses are clear when they need to wash their hands with soap and water and when hand gel is very useful. That is all part of the training package. We have also spent quite a lot of money improving the fabric of buildings so that people do not have to walk from one end to the other to get to a wash basin. People can use those facilities—nurses in particular—and make sure that they use the right sort of hand hygiene for the right sort of infections.

**Q9 Chairman:** Good. Thank you. Mr Nicholson, we are very proud of what we have done to encourage the Government in this process, started by my predecessor, and our three reports. Undoubtedly, until 2004 not enough progress had been made with MRSA. Since then you have made good progress, but you have done this with a centralised focused campaign. How are you going to sustain these improvements?

**Mr Nicholson:** There is no doubt that a central campaign and a national target certainly gave us the focus and impetus to take it forward, but it has not just been that. There has been a whole range of things, from a new regulatory system right the way through to a training package and support teams, all of these things brought together make it a reality, and there is good evidence to show that the progress that was made on MRSA is sustainable. The last four quarters have shown that across the system. I am sure you all visit hospitals and you can see now with your own eyes the emphasis that people are putting on it. How we sustain it is by keeping the pressure on it. We make the rates that individual organisations have of the various healthcare associated infections public knowledge, so that people can see how their hospital compares with others, so they can put pressure on it. We have made it an individual responsibility of the chief executive and of the board to make sure that these improvements do continue to be delivered. Every board has to look quarterly, in detail, at its record of healthcare associated infection and what they are doing about it. I think all of these things together show that we can and will sustain it. In terms of where we go next with MRSA, we have through the National Quality Board just set out a consultation document to set out what the alternatives are, because what is very important to us is that we do not just want the best performing hospitals to do really well, we want every single hospital to do really well—so how can we get it into those organisations that have struggled to deliver the improvements in the past? With *C.difficile*, of course, we have delivered our three-year target in the first year, so we now need to look at how we are going to take that forward in terms of a national approach. We are confident in those circumstances with the training and the package in place that we have a sustainable position.

**Q10 Chairman:** What could we learn from other countries in the United Kingdom which have a better record than us? Northern Ireland and Wales apparently do not rely so much on targets? Targets are not enough on their own, are they?

**Mr Nicholson:** No, they are absolutely not on their own. We have learned quite a lot from around the country. One of the things I would say about Chris and Brian is that they have brought learning internationally, from places like the Netherlands through Seek and Destroy. The testing we are doing shows that and there is training in all of that. In terms of the home nations, Scotland, Wales and Northern Ireland, our record is very good comparatively, over the last two years in particular. We have had a 35% reduction in *C.difficile* and MRSA over the last year. Wales have had a smaller reduction in MRSA over approximately the same period and Scotland have only had a 23% reduction in MRSA. We have had a better record than all of the countries in terms of *C.difficile*. We have learned lessons from around the world, we have put them into place, and we have the benefits of them.

**Q11 Chairman:** Would you like to look, Mr Nicholson, at page 12. This is the traffic lights: the progress against recommendations made by our Committee and you will see too that we have made a recommendation about the importance of monitoring and measuring these other infections. There is a recommendation which you did not accept, and this may explain why we have not made enough progress. This is perhaps a mistake, not accepting our 2004 recommendations. You will see there is a red traffic light there.

**Mr Nicholson:** Yes, I see that. We did of course introduce surveillance for *C.difficile* after this, and we have kept this under review.

**Q12 Chairman:** I am referring to the other infections, not *C.difficile*.

**Mr Nicholson:** Yes, I will come on to that. We have kept the others under review and we have said in the Code of Practice that we expect organisations locally to look at their rates of other healthcare associated infections and do a risk-based assessment about what you should look at and what you should not. I think there is good evidence around that they have done it but there is an issue I think that we need to keep under review. I am sure Brian will want to say something about this, but we have a committee that provides advice on surveillance and we have asked them by the end of this year to give us more advice about surveillance and whether we should extend it at this period, given the progress we have already made on MRSA and *C.difficile*.

**Professor Duerden:** We did focus very strongly on improving and enhancing the surveillance of MRSA and *Clostridium difficile* over this period and that takes effort and time amongst people. We have to be proportionate about this. We cannot draw people from doing the frontline clinical work to do the counting and the surveillance. There has to be a balance between these. We have been looking and encouraging trusts around the country to look at their own particular areas of concern and most of them have been doing this, and doing local surveillance, supported by the Health Protection Agency in many instances, but not on a national mandated system.

**Q13 Chairman:** We are a value for money Committee and when we were last talking about this in 2004, the best possible estimate that we found out, based on research from the late 1990s, was that this might be costing us £1 billion a year. I was being briefed by the NAO this afternoon and I am astonished that apparently you are still relying on research from the late 1990s. That is extraordinary.

**Mr Nicholson:** We have updated some of that research. When the National Patient Safety Agency (NPSA) did its review of all of this, it did look at the figures again. It tested them—against, admittedly, a relatively small sample—about costing at the moment, and came to the conclusion that they were still relevant. We have commissioned the officials in the Department, again by the end of this year, to come up with a scoping exercise to see whether it is worth doing a more extensive piece of work on this.

**Q14 Chairman:** Also since our last hearing, we have had the appalling situation of large numbers of people dying from *C.difficile* at Stoke Mandeville, Maidstone and Tunbridge Wells. How did this happen under your watch?

**Mr Nicholson:** These were absolute tragedies. They were extensively written about at the time and I have set out what I think the issues were around it. It seems to me that what came out really clearly about both those examples is the importance of leadership in all of this. You can have lots of very interesting systems and processes that underpin things but unless the leadership of the organisation is absolutely focused on this, unless the leadership of organisations see patient safety as being a number one priority, you simply do not get the change that you need. In both of those examples there were catastrophic failures of leadership. That is one of the reasons we were very clear, in the aftermath of both of those—I personally made it very clear to every chief executive and every board—about their accountability for improving patient safety and tackling healthcare associated infections. I think you have seen the benefit of that real clarity about accountability as we have gone forward. We have also improved the regulatory framework. As you know, in April we saw for the first time the registration of NHS organisations. Healthcare Associated Infections were identified as a specific criterion for registration by the Care Quality Commission (CQC)—I am sure we will come on to that—and we have set out the Code of Practice. It continues to be the number of one priority as far as the NHS is concerned.

**Q15 Mr Bacon:** When our son was born in April 2007 at the Chelsea and Westminster Hospital, there were, I kid you not, clowns on stilts walking around in the foyer handing out leaflets on “Hand hygiene awareness week”. It was not possible to get from the entrance to the hospital to the lifts without going past them. It was a big campaign. But in the labour ward where my wife was giving birth, there were two alcohol dispensers, neither of which had any alcohol rub in them and appeared not to have done for quite a long time. I do not think anyone would expect you as the Chief Executive of the NHS to go around making sure that every alcohol dispenser is filled up regularly. In an individual hospital whose responsibility is it to make sure that happens?

**Mr Nicholson:** I will ask Hilary to talk about that as Chief Nurse of the Sheffield Hospital. It is the responsibility of both me and the chief executives of individual organisations to make sure there are systems and processes to make sure that happens.

**Q16 Mr Bacon:** They obviously had their leaflet printing going well, and they had their clown hiring going well, but not the important thing.

**Mr Nicholson:** I think Chelsea and Westminster also have a very good record in terms of healthcare associated infections.

**Professor Scholefield:** My answer to your question would be that it is everyone’s responsibility. That is the way we make it work across our organisation

which comprises some 2,000 beds. It is the responsibility of the Chief Executive, it is the responsibility of me as the Chief Nurse. I am the lead executive for infection prevention and control but I also expect the domestic staff on the ward, the registered nurses on the ward, the medial staff, to feel that it is their responsibility as well. For example, if an alcohol dispenser is empty, I would expect, first, someone to pick it up, but if it was not picked up quickly, I would expect them to report it and get it dealt with very promptly.

**Q17 Mr Bacon:** How many people in 2009 are dying from hospital acquired infection?

**Professor Duerden:** Deaths from all causes, including healthcare associated infection, are recorded by the Office of National Statistics from death certificates. The last set of figures that were published last year in August only relate to 2007. We do not have any more up-to date figures because of the system not producing them as yet. At that point, the number of death certificates with *Clostridium Difficile* on them was 8,324, of which in about half it was regarded as the primary cause and in the other half it was a possible contributory reason. They also published figures on MRSA.

**Q18 Mr Bacon:** How many deaths were there from MRSA?

**Professor Duerden:** I will have to check the exact figure. It was 1,593, of which around a third were where MRSA was identified as the underlying cause of death.

**Q19 Mr Bacon:** Roughly 9,000 altogether from *C.difficile* and MRSA combined. I have two questions. First, in 2004—and I was on the Committee when we looked at it previously—the widely touted figures were that the cost was £1 billion and that 5,000 people a year were dying. It now appears to be 9,000. Are we now saying that those numbers earlier were simply wrong?

**Professor Duerden:** I believe there were significant underestimates, certainly from the figures on death certificates in those earlier years. Particularly with *Clostridium Difficile*, during the mid part of this decade as the awareness grew, as we impressed upon doctors the need to record this on death certificates, that there would be more training—and there were two letters from the Chief Medical Officer to all doctors to emphasise this—we saw an increase in the recording and we even saw an increase in the recorded number of deaths when the actual number of cases were starting to fall. It is better recording.

**Q20 Mr Bacon:** Paragraph 2.33 talks about death certificates and mentions the letter from the Chief Medical Officer “reinforcing the importance of including healthcare associated infection on death certificates, mentioning specifically MRSA and *C.difficile*.” This does not mention any others, does it? How many people died from other healthcare acquired infections apart from *C.difficile* and MRSA?

**Professor Duerden:** They are not being recorded in the same way in the Office of National Statistics searches on *C.difficile* and MRSA. Other healthcare associated infections will be recorded where they have been significant, but they are not as obvious to pull out because the organisms—

**Q21 Mr Bacon:** Do you have an estimate?

**Professor Duerden:** I do not have an estimate.

**Q22 Mr Bacon:** How many hospital acquired infections are there from which people can die other than these two?

**Professor Duerden:** A broad number, from ventilator associated pneumonias in intensive care units to other causes of septicemia in very ill patients.

**Q23 Mr Bacon:** In just a rough number, how many are there?

**Professor Duerden:** I cannot give you a number for that.

**Q24 Mr Bacon:** It is quite a large number. Roughly, is it two dozen, is it 230, is it 190? How many roughly?

**Professor Duerden:** I cannot give you precise figures.

**Q25 Mr Bacon:** I did not ask you for precise figures. In fact, I precisely asked you for rough figures.

**Professor Duerden:** I can give an idea that it will be in the hundreds to a thousand people who have a serious healthcare associated infection which is not MRSA and not *C.difficile*.

**Q26 Mr Bacon:** I am sorry, I was asking how many different types of infection are there, roughly.

**Professor Duerden:** Half a dozen serious types of infection that can cause death.

**Q27 Mr Bacon:** In that case, why are they not all recorded on death certificates? Why is there not training for all of them? If somebody has died, usually the clinician knows why they have died.

**Professor Duerden:** It will be recorded on the death certificate but they are not analysed in national statistics in a way that pulls them together.

**Q28 Mr Bacon:** If you are already doing that for MRSA and *C.difficile*, how much more difficult is it to do it for the other five or six?

**Professor Duerden:** One would have to ask the Office of National Statistics for that. It is not something we have.

**Q29 Mr Bacon:** Mr Nicholson, why do you not do it for all of them?

**Mr Nicholson:** If a member of the medical staff attributed a death to a healthcare associated infection other than *C.difficile* and MRSA, we would expect them to put it on the death certificate. The issue is that the collection of those numbers are only done for *C.difficile* and MRSA nationally. The others are simply not collected nationally, though they should be on the death certificate.

**Q30 Mr Bacon:** My question is why do you not do the same for the others as you do for MRSA and *C.difficile*? If it is the case—and it seems to be from what Professor Duerden was saying earlier—that the 2004 number of 5,000 deaths a year was significantly understated, then it is entirely possible that even the present numbers of 8,000 *C.difficile* and 1,000 MRSA, therefore 9,000 in total hospital acquired infection deaths, are also significantly understated in the total number of deaths.

**Mr Nicholson:** Yes.

**Q31 Mr Bacon:** Why do you not just do it for all of them? If there are only half a dozen apart from MRSA and *C.difficile*, why do you not do the same statistical procedure for all of them?

**Mr Nicholson:** It is the Office of National Statistics—

**Q32 Mr Bacon:** Yes, but have you asked the Office of National Statistics to do this?

**Mr Nicholson:** No, we have not.

**Q33 Mr Bacon:** Why not?

**Professor Duerden:** There is a complication of definitions and the ability to pull out those data, precise as they are. Although I said there were half a dozen causes, it would not be recorded uniformly as septicaemia or particular types of pneumonia caused by different types of organisms. The problem is getting sufficiently precise definitions to pull out from the national figures.

**Q34 Mr Bacon:** Let us move on. Figure 15 on page 33 talks about: “The Rapid Review Panel has put in place a methodology for assessing the effectiveness of innovations” and it goes on to say, “The dissemination of these throughout the NHS has not yet occurred.” It talks about seven products which have received a “recommendation one” (which means that the efficacy has been proved both scientifically and in use) but it goes on to say, “The Department was not able to demonstrate sales of product recommended by the panel and has not carried out an assessment of its performance.” Are you planning to carry out an assessment of its performance?

**Mr Nicholson:** The Rapid Review Panel do just as you describe. They do not do an analysis of the cost-effectiveness.

**Q35 Mr Bacon:** Indeed, it says so in the third paragraph down: “Cost effectiveness of this programme has yet to be tested.”

**Mr Nicholson:** Yes.

**Q36 Mr Bacon:** If you are spending tens of millions of pounds on it—I think it is £60 million, is it not?

**Mr Nicholson:** Yes.

**Q37 Mr Bacon:** Why do you not assess the cost effectiveness?

**Mr Nicholson:** There are now eight showcase hospitals across the country where these products are being used at the moment in proper clinical arrangements, being used by doctors and nurses to

show that they work or do not work in practical circumstances. We expect those showcase hospitals to be part of a programme then to extend their utilisation across the whole of the NHS. We thought that was a better way of doing it in these circumstances.

**Q38 Mr Bacon:** The bottom half of figure 15 talks about MRSA screening. It is not fully implemented yet but it says that the impact is not yet known, but, also, the cost effectiveness, once again, has not yet been tested. What benefits do you expect to get from MRSA screening?

**Mr Nicholson:** I will ask Hilary to talk about this. Sheffield are more advanced in this regard than many other places, I guess. The economic impact that we have done on MRSA screening shows that there is a significant impact, both in terms of costs in the NHS and also the economic consequences for a country as a whole. Hilary will talk about that.

**Professor Scholefield:** Thank you, David. We started screening elective patients earlier than most other organisations, so we started quite a long time ago, and we have already started screening all our emergency patients as well. If you look at the total number of patients we are screening and then look at the percentage of positive patients that we are picking up, it seems like a small amount when you look at the percentage, but in terms of numbers it is thousands. We are picking up patients who are colonised with MRSA. We are able then to decolonise them, which clearly is a huge step forward in reducing the risk of them getting a bloodstream infection. For us, we have started early and we have had some very good results. If you talk to patients about what is important to them, this is one of the things that they like to see when they come into hospital.

**Q39 Mr Bacon:** The figure in your report is that one in five hospital trusts has shown an increase in *C.difficile* cases. Why is that? That is a lot. It is 20%.

**Mr Nicholson:** For the period the NAO cover in their Report, the actual percentage was 19%. In terms of actual number of cases the increase in *C. difficile* in these Trusts accounted for 250 cases I am not underestimating the importance of the 250 patients, but it is 250 nationally. In the case of those Trusts who have seen an increase in MRSA cases, it is a small number, with 36 cases nationally. As I said before, not every hospital has made all the progress that they need to, but one of the issues we are particularly dealing with is those that have relatively small numbers. Those who have relatively small numbers—sometimes literally two or three cases a year—can put them into the increased numbers rather than the lower numbers. A good half of those hospitals that were identified by the NAO, since the NAO Report have now improved their position.

**Q40 Mr Bacon:** Could I ask Dame Christine Beasley about the “Matching Michigan” initiative. I think that is something you are copying. Can you explain how it fits into your programme?

**Dame Christine Beasley:** Yes. Clearly we have been working internationally with a whole range of colleagues to see how can we learn from the best and how can we work with the best. Through our patient safety initiative, which is across the piece—and infection is clearly one aspect—looking at the work that is done in Michigan, Matching Michigan is really a bundle of actions that you take that can help you reduce infections. We are working with them to see if that can add to all the other things that we are doing.

**Q41 Mr Bacon:** Why has the NHS not adopted a zero tolerance approach?

**Mr Nicholson:** I think it has done—or is doing at the moment. When we launched the document on the next stage review, as far as healthcare associated infections are concerned, we set out very clearly in that document that our approach needs to be zero tolerance. Our mindset and the way we approach it needs to be zero tolerance. Just saying that is the right thing to do to get us in the right place, but you have to give organisations, some of whom were a long way back in terms of being able to deliver these things, some opportunity to hit their objectives, otherwise you simply turn people off. It is worth saying that most commentators in the NHS and outside, when we launched the original targets, said it could not be done. Some of the big commentators you used to hear on the *Today* programme, coming on regularly from the various scientific organisations, were saying that it could not be done. I think we have showed that it could and now we can have the ambition to go to zero tolerance.

**Q42 Mr Bacon:** It is interesting you should say that but I remember when I first saw the figures a few years ago, when we last looked at this, what struck me more than anything else was how extraordinarily lower the figures were in the Netherlands than they were here.

**Mr Nicholson:** That is true.

**Q43 Mr Bacon:** Which immediately made me think it must be capable of being done. Far from it being not possible to do it, quite the contrary. It has been shown to be capable of doing that.

**Mr Nicholson:** I ran a hospital in the mid 1990s when a lot of these infections started to develop, and genuinely in the NHS at that time it was not regarded as a particular priority. What happened in the Netherlands is that they dealt with it early, as soon as it became an issue, whereas I think we left it for about ten years before we really got on top of it. Because of that, we have started from such a long way back.

**Mr Mitchell:** I have been treated at the Chelsea and Westminster twice—not for pregnancy!—and I have always found the alcohol washes full and much used, and no clowns.

**Mr Bacon:** And in the absence of gin, you found it very tasty!

**Q44 Mr Mitchell:** Let me ask you a question which is frequently put. Hospitals say that most of these infections come from outside, so people take them in with them. Is that correct and what can be done about that?

**Mr Nicholson:** We had to start somewhere and so we started with the hospitals. That was the place where we thought we could get most benefit most quickly. As we have gone through that process and understood how it all works, the issue about communities has been considered. I will ask Hilary to say something about this, because they are on to it in Sheffield at the moment. Going forward, in the future, we will have a community element to whatever we do, because tackling it in the community is just as important as tackling it in hospital.

**Professor Scholefield:** I absolutely agree with David, the hospitals were the right place to start. In Sheffield we have an absolute shared vision across the city, with our commissioners in primary care and our providers in primary care and with the acute hospitals. We have a shared vision of where we would like to get to and that is zero tolerance, but we have a joint strategy. We have a joint education programme, we work across the city on good prescribing of antibiotic therapies.

**Q45 Mr Mitchell:** That is through the Health Service, not through schools.

**Professor Scholefield:** Not with schools, no, it is all through the Health Service. If we are identifying a cluster of cases which might be in a nursing home or in a particular area, we work with our local health protection unit to identify those cases and address them, so there is a tremendous amount of good working across the city. When I said earlier about decolonising patients who present with an MRSA colonisation, we are doing that on behalf of our primary care trust so that we can, in the first instance, centralise that work on decolonisation. The next step, of course, is to move that closer to the patients' homes. We are currently looking at four different locations across the city. It is very, very important to work together on these problems so that you are addressing the whole thing.

**Q46 Mr Mitchell:** Is it something that people in bad housing are more prone to, and therefore you are much more scrupulous and clean them up before they come in?

**Professor Duerden:** These healthcare associated infections are not specifically associated with socioeconomic status and poor housing.

**Q47 Mr Mitchell:** Not class. We do not have a clean working class and a dirty working class.

**Professor Duerden:** All of us carry billions of bacteria around with us.

**Q48 Mr Mitchell:** Some of us bath or shower more than others.

**Professor Duerden:** That can even encourage some of the organisms. However you do it, we are all carrying  $10^{13}$  (one hundred million million) bacteria

with us. Some of them can cause these infections and we have to be able to pick up the potentially dangerous ones. But it is not an issue of where you come from and your particular home circumstances, it is the individuals. They live on and in our bodies.

**Mr Mitchell:** Perhaps that explains why I have such a weary tread these days: I am carrying a lot of bacteria around.

**Mr Bacon:** I will move your seat a little bit further away!

**Q49 Mr Mitchell:** Primary care trusts have to be made responsible for cleaning up the communities.

**Mr Nicholson:** Yes, primary care trusts.

**Q50 Mr Mitchell:** Bed occupancy has been put to me. I see in the material that we have about our local hospitals that it is strongly emphasised by Grimsby. It follows, does it not, that if we are kind of “hot bedding” and overusing the beds we are going to have more lingering infections, and yet bed occupancy still remains very high and much higher than overseas. In some respects it has increased. I see it is much higher for elderly patients than for the average run of patients. Why is that? Why are we overusing the beds?

**Mr Nicholson:** I would not say we are overusing the beds. I would say that we are using them effectively.

**Q51 Mr Mitchell:** We use them more than other countries. We must be overusing them.

**Mr Nicholson:** We certainly have higher hospital utilisation rates in this country than some other hospitals. That is absolutely true.

**Q52 Mr Mitchell:** And higher bed occupancy rates.

**Mr Nicholson:** But higher bed occupancy does not mean you have lots more patients going through them. High bed occupancy can be literally one person in their bed for a long time. It does not mean there is a rapid turnover. It is occupancy. We have looked very closely at the link between bed occupancy and healthcare associated infection rates. Anecdotally people say that those places with high bed occupancy might have the highest rate, but that is not the case at all. In fact, some of the places with the highest bed occupancy have some of the lowest rates. Sheffield is an example of that, where they use their beds a lot but they have low rates of infection. It is much more to do with the way you manage your beds, the way you bring your patients in, the time between taking one patient out of a bed and putting another one in, the way you wash things out. All of those things are much more relevant to infection than the base occupancy.

**Q53 Mr Mitchell:** That is true, but the more you are using the beds, the higher the occupancy, the greater the turnover.

**Mr Nicholson:** Yes, the turnover is greater.

**Q54 Mr Mitchell:** The greater the risk of spreading infection. When we were in Opposition we used to bang on about so many beds closed in the Health Service this week. Since then we have remained

somewhat silent on the issue. Surely it is policy to close down beds, to use fewer beds. Is it not a national policy?

**Mr Nicholson:** No, there is no national policy about closing beds.

**Q55 Mr Mitchell:** For economic reasons you want them to be used—

**Mr Nicholson:** No, not for economic reasons. Only 15 years ago 25% of all patients came in and were operated on a day case basis. In some parts of the country now over 90% of our patients are dealt with on a one day or 24-hour basis. There has been a massive revolution in the way healthcare is delivered. The consequence for beds is that we have far more day case beds but far fewer inpatient beds, and that is a good thing. It is a good thing for patients.

**Q56 Mr Mitchell:** Dame Christine Beasley, we are always talking about matron, are we not? I remember Peter Lilley saying at the Tory Party Conference, “We’re bringing back matron” and then we came in and said, “We’re bringing back matron.” The question is: is matron back? And what is her or his responsibility in dealing with this issue?

**Dame Christine Beasley:** Yes, we have brought back matron in many guises over the years. We have done two things which I think really are important. The matrons that have been appointed which are usually associated with bringing back the matrons are the matrons that are really working usually over two or three wards/clinical areas, really focused on patient quality and that includes cleanliness and infections. We have increased that number to over 5,000—and that number has been maintained, it was not just a one-off. That has made a big difference in both supporting ward sisters and charge nurses and really getting focus for patients.

**Q57 Mr Mitchell:** You do not have a matron ward by ward who is responsible for the cleanliness and hygiene of that ward.

**Dame Christine Beasley:** We have a ward sister or charge nurse who is absolutely responsible for the cleanliness and hygiene of that ward, but we have matrons who help and support them with that. The old-fashioned matrons would have been more Hilary’s role, as the director of the hospital—and some people, indeed, are still called ‘Matron’ in that type of role.

**Q58 Mr Mitchell:** Let me ask you about deep cleaning. It seemed to me a gimmick at the time—perhaps a useful one for focusing attention but still a gimmick. That is what several people in hospitals have told me since. If it was that good, why has there been no impact assessment?

**Mr Nicholson:** The idea of a deep clean did not spring out of the head of some clever person in Whitehall or wherever. It came out of the experience of some hospitals doing it and how effective it was: the Royal Free in London being the most obvious example of that, the idea of going through the whole hospital and absolutely bottoming the clean. In

terms of getting the attention of organisations and boards and people who worked within them, but also to touch those places that we had not reached before, we felt that we would say that everyone should do a deep clean, and we gave people financial incentives to help them to do that. The National Audit Office itself says it was successful.

**Q59 Mr Mitchell:** You are satisfied that at a cost of £62.6 million it was a success. It was justified.

**Mr Nicholson:** Absolutely. One of the things about all of this is that it is not just one thing on its own; it is the combination of things together that has made the difference. For the deep clean we went, for example, from 3,000 matrons to 5,000 matrons; we introduced the deep clean; we introduced the code of practice. We introduced a whole series of things together, so it is very difficult then to unravel each individual thing; but when you bring all those things together, I think they have made a massive difference.

**Q60 Mr Mitchell:** I see that bloodstream infections were up by 31% from 2003-2007. Are methods of treatment of other infections the same? Why is one lot up and the other one down?

**Professor Duerden:** That figure for the increased number of bloodstream infections covers a whole range of different types of infection, not just healthcare associated infections.

**Q61 Mr Mitchell:** Are they less fatal?

**Professor Duerden:** No, some of them can be equally fatal, but they are not just the healthcare associated infections. You get bloodstream infections associated with community pneumonias, meningitis, a range of infections. They are all included together. Also at that time there was an increased ability of trusts to report the numbers. We had better reporting, because of increased electronic reporting from many laboratories during that period. There is a whole range of reasons why those figures went up. Some of them do need further investigation.

**Q62 Mr Mitchell:** Why have you not used targets on other bloodstream infections in the same way as on these two?

**Mr Nicholson:** For a whole series of reasons. First of all, they were seen by the community and by this Committee and by people in the NHS as being particularly significant and virulent at that time. They were having a significant impact on patients and we knew how to tackle them, and we were coming from a very long way back in terms of performance, comparative performance. For all of those reasons, targets are very useful when you are in that particular position. If you have 100 targets, then you do not really have 100 targets, it is much better to focus on those two.

**Q63 Mr Mitchell:** We did recommend mandatory surveillance of these other infections in our last report.

**Mr Nicholson:** You did.

**Q64 Mr Mitchell:** Why has that not been implemented?

**Mr Nicholson:** We said that organisations could locally do risk-based assessment on what they counted. That is essentially what we have done. We have left it to local circumstances. After the Committee we obviously implemented the arrangement for *C.difficile*. We are now looking again at the cost benefits, but also the overall benefits to patients for increasing that surveillance, and we will do that by the end of this year in the committee in which Brian is involved.

**Q65 Mr Mitchell:** Why is it that deaths due to *C.difficile* have still been increasing and have gone up by a few hundred per cent since 2003?

**Professor Duerden:** There was very significant increase in the recording of the number of deaths from *Clostridium difficile* during that period.

**Q66 Mr Mitchell:** It is diagnosis.

**Professor Duerden:** Not just diagnosis but recording on the death certificates. There was a great emphasis on getting the records much better. I am more confident that we have a better balance and more accurate measure now, because it fits with the expected mortality of the disease.

**Mr Mitchell:** It is not increasing, but now you have a more accurate system of recording it.

**Q67 Chairman:** Following on Mr Mitchell's question, if you re-read paragraph 4.32 on page 43 we see: "In our trust census 72% of the Directors of Infection Prevention and Control believed that bed occupancy was a barrier to improvement; of these, 61% said it was a significant or very significant problem in respect of reducing infection rates." What do you say to that?

**Mr Nicholson:** I say the analysis the Department did and published in 2007 and the work we have done subsequently—the results of where infections have gone down—all show that the connection you have just described is not the right connection. It may very well be that different ways of managing beds affect that, but it is certainly not the occupancy in itself.

**Q68 Chairman:** On a slightly different issue, again following on Mr Bacon and Mr Mitchell's questions, your census found that 20% of trusts are not doing any other surveillance on other bloodstream infections. Is that not a worry? "We also found that the increase in other bloodstream infections is a serious concern. Around 60% are likely to be healthcare associated, although not necessarily hospital acquired."

**Professor Duerden:** That last statement shows the whole variety of types of bloodstream infections that are included in those overall figures.

**Q69 Chairman:** The NAO has said that it is has found that 20% of trusts are not doing any surveillance on other blood stream infections.

**Professor Duerden:** That means that 80% are and the great majority of trusts do report to the HPA voluntary system of recording all bacteraemias. If there are 20% that are not through that system, clearly it needs to be encouraged that they should. The bloodstream infections are part of the things that the Advisory Committee is looking at to say which are the most appropriate areas to focus on further surveillance for national purposes.

**Chairman:** Again following Mr Mitchell's questions, Dame Christine, about matrons, I think what the public wants is—

**Mr Mitchell:** They want a mother figure!

**Q70 Chairman:** They want somebody who is old and fierce, in a uniform, who slaps nurses' wrists.

**Dame Christine Beasley:** Yes. It is a myth, let me tell you. People want people to care for them and they want them to be compassionate, and they want them to make sure that when they are in hospital they are safe and they are cared for. That requires people to be very competent and very skilled, whatever age they are. There is me and there is Hilary, and there is quite a big difference between the two of us, and it is the skills and competencies that really matter. On a serious level, they really want people they know they can go to when there is a problem and that something will happen. That is what I want and that is what they want.

**Q71 Mr Carswell:** I have a couple of quite specific questions for Mr Nicholson about Colchester Hospital. I am looking at a graph here showing the number of *C.difficile* cases in patients aged over 65 at Colchester Hospital. I notice that in the first quarter of 2007 there are 120 cases of infection and in the first quarter of 2009 that was down from 120 to 20. That is a good improvement and a significant reduction, but the graph goes down and then for the past four quarters has stubbornly stuck at 20 a quarter. Is zero obtainable? Is there more that can be done to bring it down even further?

**Mr Nicholson:** I will ask Brian to talk about the irreducible minimum, which is what you are describing there. Colchester was one of the top ten performing organisations in the country in terms of tackling healthcare associated infections. They have a really good record of doing it. If anyone can get it down a bit lower, it will be Colchester that will be able to do it. But this irreducible minimum, Brian—

**Q72 Mr Carswell:** Is there a point after it will not go.

**Mr Nicholson:** Yes, that is the point.

**Professor Duerden:** Zero infections as against zero tolerance is unachievable. We have to live in this world with the billions of bacteria and some will infect us, some will infect our patients. We have to make sure that we are not tolerant of any that could be avoided by poor practice or poor clinical care or poor antibiotic prescribing. That is where the zero tolerance approach comes in, so the best possible care. There will always be some cases of infection and especially associated with patients who are

particularly ill with other problems. It makes them far more vulnerable, so some will get infections. Our job is to make that as small a number as possible.

**Q73 Mr Carswell:** I am sure you did not record the data, but if this graph hypothetically went back, say, 30 years—and I do not mean the pre Pasteur and Fleming period, but 30 years—would you have seen a constant at about 20, or would it have been higher or lower?

**Professor Duerden:** The graphs for *Clostridium difficile* started to go up in the early 1990s. It was first discovered as the cause of antibiotic associated diarrhoea and colitis in 1979, I think it was, so we have had just under 30 years of that. The numbers really started to increase during the 1990s, so there would have been far fewer cases in the 1980s, and then it moves to the figures that we saw in the early 2000s and that are on those graphs.

**Q74 Mr Carswell:** The MRSA graph shown over a similar quarter spikes a lot more and it goes up and down. Is that because there are fewer cases overall? Is it statistics?

**Professor Duerden:** Yes, it is a much smaller number overall, so just a few cases clustered together shows there as a big spike in the graph.

**Q75 Mr Carswell:** How does Colchester, a big local hospital, compare with other hospitals in the country today in terms of MRSA?

**Mr Nicholson:** I think it is in our top ten performers.

**Q76 Mr Carswell:** Is that in terms of improvement?

**Mr Nicholson:** Yes.

**Dame Christine Beasley:** Yes.

**Q77 Mr Carswell:** I am talking about decades rather than years, but are we likely to see microbes evolving so that we see more problems? Just as in the 1990s MRSA and *C.difficile* became a problem, are we going to find new microbes that develop into being new problems over the decades?

**Professor Duerden:** The answer has to be yes, that there will be bacteria to challenge this. Antibiotic resistance is a problem in a variety of bacteria. We have to monitor that, we have to try to keep it under control by good infection control measures. But they are constantly evolving and there will be other problem organisms as we go along.

**Q78 Mr Carswell:** At the last election some politicians on all sides used slogans about cleaner hospitals. I was always slightly sceptical and I have always been slightly sceptical about the ability of a central fiat alone to bring back long-lost changes. You can decree things from the centre and in the short term maybe it will have an effect, but in the long term central fiat does not always have the desired effect. Do you think perhaps there are other things we could do to pass ownership and responsibility outwards, so that instead of trying to solve the problem by directive, instead of you trying to ensure there are strategies which deal with it, longer term we can somehow create a mechanism so

that it is not really either necessary or desirable for central fiat to solve the problem but ownership is with the locality?

**Mr Nicholson:** Hilary works in a foundation trust and may want to say something about this, but there is no doubt that the message I would give to people in the NHS is that they need to look out to their communities and their patients rather than look to Whitehall. It seems to me that is where we are going to get the real change. When organisations feel accountable to their local communities and you have a transparent way of measuring them so that communities can compare the performance of their organisations to others nationally, that is where you will get the real sustainable change. That is why we have gone through the process of setting up foundation trusts. That is why we have memberships. That is why we are trying to create that local accountability within a national system. That is absolutely where we will get the sustainability and the buy-in from both patients and staff.

**Q79 Mr Williams:** At the first two hearings we held on MRSA, we received very persuasive assurances from a professor that it would not be possible to record MRSA on death certificates. How has it now become possible?

**Mr Nicholson:** Brian, was it you that did the last hearing?

**Professor Duerden:** It probably was me.

**Mr Nicholson:** He was there.

**Q80 Mr Williams:** Were you at Cardiff then? Were you down in South Wales at that stage? It was a professor from South Wales.

**Professor Duerden:** Yes, Cardiff.

**Q81 Mr Williams:** All I can say is that you have aged better than I have.

**Professor Duerden:** The purpose here is that MRSA generally is not a disease; it is an organism which causes a variety of diseases, wound infections, abscesses and pneumonia. The ones that we have been measuring and which have been recorded on the death certificates particularly have been the bloodstream infections. You can focus very clearly on ones that invade the bloodstream and are diagnosed in that way. Our difficulty was about saying it was all MRSA infections because you have a clinical entity and it is about what sort of infection it is causing, and then the organism, whereas with the bacteraemias that we have been talking about so much in the last few years and today, it has been very much focused on the one group where it is in the bloodstream and it is caused by MRSA. That is why we are able to record that with much greater certainty.

**Q82 Mr Williams:** Is any effort being made to improve identification of these other infections in ways that can be recorded?

**Professor Duerden:** It is done clinically and it is recorded in many cases where it occurs and it is on death certificates. It is the difficulty of analysing those and pulling the data together to actually show that sort of figure. Many of them will be there.

**Q83 Mr Williams:** That is an almost identical argument that we were told about MRSA.

**Professor Duerden:** It is MRSA and other organisms but it is the mixture of the organism that causes it and the type of disease.

**Q84 Mr Williams:** One of the other constant complaints that has arisen over the years when we have had these discussions has been the overuse of antibiotics, particularly in hospitals, and also by GPs. Is there any national data available on this? Is there any national guidance on it? What are you doing to try to address that problem?

**Mr Nicholson:** There is a huge amount of data and guidance around all of this at the moment which has been set out over the last two, three or four years in particular and has had a particular effect in relation to *C.difficile*.

**Professor Duerden:** We have had guidance out in the NHS. The initial one was from a decade ago but in the last few years there has been guidance from our Advisory Committee on prescribing, guidance in the Saving Lives package from the Department as part of our healthcare associated infection improvement programme. It is also part of the Code of Practice for healthcare associated infections that all trusts have to have in place prescribing policies. They have to have them implemented and they have to have an audit trail to show that they are being implemented and they have to have training of those who are doing the prescribing, so there are measures in place to improve and have more prudent prescribing of antibiotics for those very reasons you said.

**Q85 Mr Williams:** We are told that in 2007-08 13,000 infection-related patient safety incidents were reported to the National Patient Safety Agency but that no work has been done on this data. Why not?

**Professor Duerden:** The National Patient Safety Agency ones?

**Q86 Mr Williams:** Yes.

**Professor Duerden:** Sorry, I cannot answer for the National Patient Safety Agency.

**Q87 Mr Williams:** Does anyone know what it is?

**Mr Nicholson:** Yes.

**Q88 Mr Williams:** Does it belong to anyone?

**Mr Nicholson:** It all belongs to me in the end. What the National Patient Safety Agency collects together is information from individual organisations about untoward incidents and unexplained deaths and all that sort of thing. They analyse it and they feed it back to organisations so they will have fed that information back to their organisations.

**Q89 Mr Williams:** That is not what the NAO has told us in their supplementary briefing. They say "... yet no work has been done on this data". That is data that is two years old. NAO, is that something you stand by?

**Ms Taylor:** That is what they told us, yes.

**Q90 Mr Williams:** The Agency itself told you that?

**Ms Taylor:** Yes.

**Q91 Mr Williams:** And you are responsible for the Agency but they have not told you about it?

**Mr Nicholson:** I do not know what they have told the NAO. They will certainly tell me later on this afternoon! They have not told me so far. Normally they give that information back to organisations and then they help people and support them and provide them with training and advice and all the rest of it. I do not know whether on this particular occasion they have just given the information back and not provided the support and help. We can let you know.

**Ms Taylor:** Should I just explain?

**Q92 Mr Williams:** Please do.

**Ms Taylor:** They told us they have not done anything with this data because they do not take the lead on infection control and that the data is only a very small subset of the number of infections that are voluntarily reported so it is not one of their big issues.

**Q93 Mr Williams:** It is not their job to do it; it is someone else's. That must be within your bailiwick.

**Mr Nicholson:** Hilary, is going say something about this anyway. The base way in which we collect information about infections is through the surveillance arrangements and through the HPA. That is the way in which the information goes through the system and that is how we analyse it. That is why we work on it. The NPSA gets information around untoward incidents or unexplained deaths and it is voluntary. My guess is that most organisations get their information from the HPA and do not need the extra information from the NPSA. Hilary might know.

**Professor Scholfield:** I would like to assure you that we get the information back from the NPSA and of course we do look at it. It is very helpful because it allows you to benchmark where you are against other organisations. What is incredibly helpful is that the NPSA have recognised and clarified their role and have said this is not where we lead and they have given that lead to other organisations. As a foundation trust that is very helpful for us. You do not have to answer to lots of different organisations on the same thing, so we do look at the data and we do use it.

**Ms Taylor:** I need to make a correction because they have done some work on ingestion of alcohol hand gel.

**Q94 Mr Williams:** Ingestion?

**Ms Taylor:** Yes, people have been drinking it.

**Chairman:** That is what Mr Bacon was suggesting.

**Mr Williams:** That is a novel suggestion. I have finished my questions. Thank you very much.

**Q95 Chairman:** Following on Mr Williams' questions we read in paragraph 3.10 on page 34: "Our trust census identified concerns about the clarity of the roles and responsibilities of some external agencies. 23% of trusts were unclear about the role of the Health Protection Agency; and 39% were unclear about the role of the Health Protection Units in relation to healthcare associated infection." I think you need to do some more work on this.

**Mr Nicholson:** I think we and the Health Protection Agency and the NPSA need to do more work to explain what this looks like. All I would say is that two-thirds of trusts said they did know. Certainly in my experience going round hospitals the people who need to know do know. Clearly from the hospital point of view they are very distinct roles that these organisations play. It is very important that people understand it so we need to take that forward.

**Q96 Mr Williams:** Back on the alcohol gel, my mind boggles. People drink it?

**Dame Christine Beasley:** Some people do, yes.

**Q97 Mr Williams:** Do you need a licence to store it? When you say some people do you mean patients or medical staff?

**Dame Christine Beasley:** Patients, yes. In reality it is a very small number. Sometimes it is people who are confused. Occasionally it is people who are seeking alcohol but the number is small. That is why we are very careful with alcohol gels for example in children's units because they might do it just because they do not understand, so we are very careful around it but it is a relatively small problem.

**Chairman:** Mr Bacon has a supplementary and it is not about drinking.

**Q98 Mr Bacon:** It is not about Mr Mitchell's drinking habits. Actually it is related to what was just being said about the Health Protection Agency. The Chairman mentioned page 34 and the paragraph that talked about the confusion of roles and responsibilities of external organisations, particularly as to who was responsible for intervening in the case of an outbreak, also refers to the Health Protection Agency. This is at paragraph 3.13. It looks like it was the confusion about responsibilities that was one of the contributory factors in the case of Maidstone and Tunbridge Wells. Is that fair?

**Mr Nicholson:** Yes, there was confusion.

**Q99 Mr Bacon:** How much clearer do you think things are now?

**Mr Nicholson:** The most important bit of clarity is the people who are responsible for all of this are the people who run the hospital.

**Q100 Mr Bacon:** Right at the beginning I asked who is responsible when I was talking about Chelsea and Westminster and Professor Scholfield's answer was "we are all responsible". I appreciate if any domestic

or chief executive or finance director sees that there is an empty alcohol gel dispenser they do something about it, but the trouble with everyone being responsible is that you end up with no-one being responsible.

**Mr Nicholson:** The accountability is very clear; it is the board of the organisation.

**Q101 Mr Bacon:** But that is 12 or 14 people.

**Mr Nicholson:** Yes. The HPA and National Patient Safety Agency all help and co-ordinate when things go wrong, but it is the organisation itself, the board of directors of the organisation, who is responsible and accountable for the action, and that was the confusion at Maidstone and Tunbridge Wells; they thought somebody else was accountable.

**Q102 Mr Bacon:** Can I ask you to turn the page to figure 16 which talks about expenditure on healthcare associated infection by the Department and its arm's length bodies between 2004 and 2008. You see a growth in the expenditure pattern there. In 2008-09 your Department spent £16 million. What is that figure projected to go to in the current year and in the next two years after that?

**Mr Nicholson:** This will be funding the national work that we do, the national team and all the rest of it. There is no growth in the team this year. We expect the numbers to be the same for 2009-10. We have not yet set the central budgets for 2010-11 because we have got a bigger discussion about resources to have.

**Q103 Mr Bacon:** Would that be the same answer in relation to the Health Protection Agency, the Healthcare Commission, the National Patient Safety Agency and the NHS Institute?

**Mr Nicholson:** Yes, we would not expect growth in national investment in this area. This is for local organisation.

**Q104 Mr Bacon:** The total for the financial year that has recently finished 2008-09 is £24.5 million. Are you saying that in the current year, 2009-10, it will also be £24.5 million?

**Mr Nicholson:** I would expect it to be that, yes, unless somebody is telling me different.

**Q105 Mr Mitchell:** I see from paragraph 2.29 that studies post operation have shown dramatic increases in resistance to various bacteria and infections which I cannot pronounce (and probably do not have because of the high intake of alcohol which Mr Bacon has shamefully drawn attention to). I hope there is nobody from the *Daily Telegraph* present and taking notes! The recommendation which we made in previous Reports that there should be a national post-discharge surveillance system has only been implemented in 14% of trusts. Why is that? Not why is there an increase but why do we not know what is going on in other trusts?

**Professor Duerden:** Doing post-discharge surveillance for surgical site infections has been a great problem to set up in many trusts. It is not something that has been mandated centrally. The

difficulty is that you have to define who makes the diagnosis, is the patient seen by another healthcare professional, a nurse, or a doctor in order to make that diagnosis. Do you just want to do the more serious ones that end up with somebody coming back into hospitals, the readmissions? That is relatively straightforward. We have introduced that nationally for the orthopaedic surgical site infections. That is now part of the system. If you go beyond that into the less severe, the minor ones, where do you draw the line as to what you want to collect and who does the collecting and how do you get consistency?

**Q106 Mr Mitchell:** 14% is a very low proportion to be implementing this surveillance, is it not?

**Professor Duerden:** At the moment the Health Protection Agency is running a trial scheme for some of this work on post-discharge surveillance to see what best methods we can put in place to get reliable data that does not have huge fluctuations because of differences in methodology.

**Q107 Chairman:** I just have one very last question. I want to go back to a previous recommendation from the Committee of Public Accounts which has not been accepted. This is figure 3. Again we read there, Professor Duerden, that there is still no link between pathology, microbiology, prescribing and patient administration systems. Why not?

**Professor Duerden:** We have had much improved laboratory systems over the last few years and reporting of infections from those. It is true that in most NHS IT systems at the moment there is not the ability to do a clear linkage between those infection recording systems and the antibiotic prescribing, which is still in many cases based upon an accounting system for the pharmacies to show their throughput of antibiotics rather than a prescribing system which would link the prescribing of individual antibiotics to a patient's infection. The IT capability has not allowed us to do this. We are pushing ahead as best we can with that with various agencies.

**Q108 Chairman:** Mr Nicholson, that concludes our hearing. We are very grateful to you. Clearly you have met your targets on MRSA and *C.difficile* and for that we congratulate you, but I am afraid that there have been just as deadly other bloodstream infections on the rise and your Department is still disregarding a key recommendation from previous Reports of the NAO and Committee of Public Account on this subject in both 2000 and 2004. We urged the introduction of a mandatory surveillance scheme covering all healthcare associated bloodstream infections and there is still no such scheme. I am sure, Mr Nicholson, that we will return to this in our Report. May I say on a lighter note to Mr Mitchell that it does actually work raising what happens in a particular hospital. I once put to your predecessor, Sir Nigel Crisp, that the toilets in the

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24 June 2009 Department of Health and Sheffield Teaching Hospitals NHS Foundation Trust

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Chelsea and Westminster Hospital were in a lamentable state. I go there quite often and ever since then they have been so clean that the Queen could sit on these toilets. Indeed, the problem with the toilets

at Chelsea and Westminster now is that they are being cleaned so often it is hard to get into them any more!

*Mr Nicholson:* I will see what I can do.

*Chairman:* Thank you.

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### Submission from Bard Limited

BARD SUBMISSION TO THE HOUSE OF COMMONS PUBLIC ACCOUNTS COMMITTEE CONCERNING THE NATIONAL AUDIT OFFICE'S (NAO) REPORT ON REDUCING HEALTHCARE ASSOCIATED INFECTIONS (HAI) IN HOSPITALS IN ENGLAND

Bard Limited is a major supplier of medical devices to the NHS. Several of these have a positive impact in reducing healthcare associated infection, including Bardex IC, a silver alloy hydrogel coated catheter, which was the first product to receive a Recommendation 1 from the Rapid Review Panel (RRP) in December 2004.

Bard welcomes the NAO's latest report on reducing HAIs in hospitals and the progress which has been made over five years since the last report. It is, however, worrying that while rates of MRSA and C Difficile infections have been falling, overall numbers of bloodstream infections may have been rising.

Bard therefore supports the NAO's call for surveillance to be broadened with a greater emphasis on infection risks, such as device related infections. More specifically in relation to the Rapid Review Panel, the company would make the following points for the Committee's consideration:

1. NICE is proposing to exclude RRP products from its remit in the current consultation on its appraisals process. Given the priority attached to HAI, this makes it doubly important that the RRP has a direct bearing on uptake;
2. The fact that only seven products have obtained a recommendation 1 out of over 200 submitted in over four years suggests that a reasonable amount of rigour attaches to the process;
3. NICE communicates actively with the NHS about its appraisals, providing implementation tools and monitoring adoption. The RRP should do something similar, at least for recommendation 1 products;
4. NHS commissioners and providers should also be advised that they will be expected to evaluate and, depending on their findings, adopt RRP technologies. Such reviews could reasonably be expected within, say, six or twelve months of a recommendation 1 being issued;
5. The focus of communication is currently on provider trusts. If World Class Commissioning is to take practical effect, commissioners should take an equal or greater interest, be informed accordingly and take a lead role in monitoring providers' responses. This communication should probably include procurement hubs as well;
6. In line with the Darzi report, tariffs should be reviewed to reflect best practice rather than average cost, providing trusts with an incentive to keep up with technological developments. For example, in relation to urinary tract infections, 80 per cent of which are catheter related, the associated tariff could be reduced or payable only on a proportion of patients;
7. The experience of early adopters of RRP technologies could also be disseminated more effectively to the wider NHS as an addition to limited placements in showcase hospitals.

16 June 2009

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