The management and control of hospital acquired infection in acute NHS trusts in England : forty-second report, together with the proceedings of the Committee relating to the report, the minutes of evidence and appendices / Committee of Public Accounts.

HOUSE OF COMMONS SESSION 1999–2000

COMMITTEE OF PUBLIC ACCOUNTS

Forty-second Report

THE MANAGEMENT AND CONTROL OF HOSPITAL ACQUIRED INFECTION IN ACUTE NHS TRUSTS IN ENGLAND

Together with the Proceedings of the Committee relating to the Report, the Minutes of Evidence and Appendices

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Ordered by The House of Commons *to be printed*
8 November 2000

PUBLISHED BY AUTHORITY OF THE HOUSE OF COMMONS
LONDON – THE STATIONERY OFFICE LIMITED
£8·80

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Committee of Public Accounts

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† In the footnotes to this Report, references to oral evidence are indicated by 'Q' followed by the question number; references to the written evidence are indicated by 'Evidence' followed by a page number.

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FORTY-SECOND REPORT

The Committee of Public Accounts has agreed to the following Report:—

THE MANAGEMENT AND CONTROL OF HOSPITAL ACQUIRED INFECTION IN ACUTE NHS TRUSTS IN ENGLAND

INTRODUCTION AND SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

1. Hospital acquired infections are those that are neither present nor incubating when a patient enters hospital. Their effects vary from discomfort for the patient, to prolonged or permanent disability and even death.[1] This is a very serious subject in terms of the impact on patients and costs to the National Health Service. The best estimates we have suggest that each year there are at least 100,000 cases of hospital acquired infection in England causing around 5,000 deaths, and the cost to the NHS may be as much as £1 billion a year.

2. Not all hospital acquired infection is preventable, since the very old, the very young, those undergoing invasive procedures and those with suppressed immune systems are particularly susceptible.[2] In his report the Comptroller and Auditor General estimated, from information provided by infection control teams in hospitals, that across all NHS Trusts infection rates could be reduced by 15 per cent by better application of existing knowledge and realistic infection control practices. Attributing costs to hospital acquired infection is complex and uncertain but the potentially avoidable cost is around £150 million a year.[3] On the basis of his report we took evidence from the NHS Executive and the Chief Medical Officer on what was known about the extent, cost and effects of hospital acquired infection and how infection control could be improved.

3. Two overall points emerge from our investigation:

- The NHS do not have a grip on the extent of hospital acquired infection and the costs involved and are unlikely to have the information they need for a further 3 to 4 years. Without robust, up to date, data it is difficult to see how the Department of Health, the NHS Executive, health authorities and NHS Trusts can target activity and resources to best effect. This lack of data mirrors our concerns about significant weaknesses in NHS information and systems that have arisen in our recent hearings on medical equipment; inpatient admissions, bed management and patient discharge; and hip replacements. Effective information is essential for good management and effective health care, and central to NHS modernisation.

- A root and branch shift towards prevention will be needed at all levels of the NHS if hospital acquired infection is to be kept under control. That will require commitment from everyone involved, and a philosophy that prevention is everybody's business, not just the specialists. Leadership and accountability, through the new controls assurance process, is crucial, as is education and training, and monitoring of performance and progress. New investment is also needed. The NHS Executive have launched an array of initiatives to help make this happen, but the results have yet to work through, and we are not convinced that the Executive have given these initiatives sufficient priority when allocating resources.

4. Our more detailed conclusions and recommendations are as follows

On improving understanding of the extent, cost and effects of hospital acquired infection

(i) Research indicates that between 50 per cent and 70 per cent of surgical wound infections occur post-discharge, but these infections are not monitored. The NHS

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[1] C&AG's Report (HC 230, session 1999–00) para 1
[2] ibid, para 2
[3] ibid, paras 15–16

Executive are undertaking research into post-discharge infection, and we look forward to seeing the outcome later this year. We recommend that post-discharge infections are monitored in future through the national surveillance scheme (paragraph 16).

(ii) The NHS Executive have now taken action to improve surveillance, including researching the links between antimicrobial resistance and prescribing, measuring infections that occur after patients have been discharged from hospital, and doubling their investment in the Nosocomial Infection National Surveillance Scheme. But by December 1999, only 139 self-selecting Acute NHS Trusts in England were participating in the surveillance scheme. We recognise that the Executive are expanding the Scheme, but we believe that they should go further and make it mandatory (paragraph 17).

On improving infection control

(iii) The NHS Executive acknowledge that it should be possible to reduce the incidence of hospital acquired infection by 15 per or more, avoiding costs of some £150 million and saving lives. Since 1996, and particularly since 1998, the NHS Executive have taken a series of actions and initiatives to address this issue, but do not expect to see tangible, measurable progress until 2003. Such progress will be essential for the NHS to meet their duty and commitment to patients (paragraph 45).

(iv) Key to achieving progress will be the effective implementation of the new Controls Assurance System, which builds on the statutory duty of chief executives for quality of care. This will raise the profile of hospital acquired infection, especially in the 20 per cent of Acute NHS Trusts that do not have a strategy for dealing with it. Every Trust has to have a plan in place by July 2000 setting out priorities for action and produce an annual report on progress. We look to the NHS Executive to let us have an initial summary report of progress, priorities and key issues by the end of April 2003 (paragraph 46).

(v) Complacency, poor prescribing practice and misuse of antibiotics has led to the emergence of drug resistant infections. As the Chief Medical Officer told us, there are no simple solutions any more. The NHS Executive have now launched initiatives to look at the more prudent use of antibiotics, and to monitor and control prescribing including the new Government strategy to tackle antibiotic resistant infections announced in June 2000. We expect this work to lead to evidence-based guidance on effective prescribing strategies (paragraph 47).

(vi) Hospital hygiene is crucial in preventing hospital acquired infection, including basic practice such as handwashing. We find it inexcusable that compliance with guidance on handwashing is so poor. We note the steps the Executive have now taken to improve awareness and education, but look to them to audit progress and report back to us by the end of 2001 (paragraph 48).

(vii) The increased priority and attention that is rightly now being given to hospital acquired infection has not been matched by resources. Some new money, £5 million over two years, has been allocated, some extra infection control nurses have been appointed, and the Executive accept the case for investment in smaller wards and isolation facilities. The scale of hospital acquired infection calls for sufficient funding to ensure that hospitals can tackle the problem effectively, and so reduce the impact on patients and NHS costs (paragraph 49).

(viii) The NHS Executive recognise that more effective bed management can help reduce hospital acquired infection. Greater use of smaller rooms and single bed rooms is now part of health service planning, and the Executive accept that increased investment in isolation facilities is a priority. But high throughput of patients is also a factor. As we noted in our report on *Inpatient Admissions, bed management and patient discharge,* some hospitals are operating at very high levels of bed occupancy. Wider application of best practice will help Acute Trusts manage beds better. Trusts also need to ensure

that infection control is an integral part of their bed management policies (paragraph 50).

(ix) The Chief Medical Officer accepts that in staffing infection control teams, a ratio of one nurse to 250 beds is a good benchmark for NHS Trusts. But many Trusts have much larger numbers of beds per nurse. While local variations in circumstances and practice may account for some of these variations, we expect the NHS Executive to carry out further research, in conjunction with the Infection Control Nurses Association, with the aim of developing staffing guidelines for Trusts (paragraph 51).

IMPROVING UNDERSTANDING OF THE EXTENT, COST AND EFFECTS OF HOSPITAL ACQUIRED INFECTION

5. There is no requirement for NHS Trusts to publish data on rates of hospital acquired infection and such data that have been published are limited and not comparable. While most Trusts undertake some surveillance there are wide variations in the criteria used for defining infections, types of infection monitored, methods used, and ways infection rates are measured.[4]

6. Various estimates of the size, cost and impact of the problem were presented to the Committee. Figure 1 summarises the key figures, their bases and their reliability. [5] Though not necessarily consistent with each other,[6] they suggested that:

- At any one time around 9 per cent of patients had a hospital acquired infection;
- There are at least 100,000 hospital acquired infections in England and Wales each year, and possibly many more;[7]
- Around 5,000 patients die each year in the United Kingdom as a direct result of acquiring an infection;[8]
- These infections may be costing the NHS around £1 billion a year;[9]
- While few Trusts monitor infections that develop after a patient leaves hospital, several studies have indicated that between 50 and 70 per cent of surgical wound infections occur post-discharge.[10]

7. The NHS Executive acknowledged that hospital acquired infection was a very serious issue but that the information available was limited. The estimate that there were at least 100,000 cases of hospital acquired infection a year made a number of assumptions, excluded key areas such as teaching hospitals and intensive care units, and did not include infections that present post discharge. These could be significant and the 100,000 is likely to be an underestimate.[11] Research was continuing into post-discharge infection, and the Executive hoped to have the results in the summer, and promised to share it with us.[12]

8. The Executive did not have data on the incidence of hospital acquired infection by NHS region or Trust, nor comparative data between England, Northern Ireland, Scotland and Wales. In particular, they could not identify the worst performing hospitals.[13] They noted that hospital acquired infection was a world wide problem, but here too the information was sketchy. Any

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[4] C&AG's Report (HC 230, session 1999–00) para 1.3
[5] Evidence, Qs 190, 210
[6] Evidence, Appendix 2, p25
[7] C&AG's Report (HC 230, session 1999–00) para 1.5
[8] ibid, para 1.7
[9] ibid, para 1.13
[10] ibid, para 1.6
[11] Evidence, Qs 1–2, 10–17 and Evidence, Appendix 1, pp 22–25
[12] Evidence, Qs 12, 20, 24–25, 162–163
[13] Evidence, Qs 21–22 and Evidence, Appendix 1, pp 22–25, and C&AG's Report (HC 230, session 1999–00) paras 3.21–3.22, Figures 19 and 20

international information that was available was really just a composite of country-wide studies and it was very difficult to make judgements about international comparisons. But in the Executive's view, England was doing better generally than most Scandinavian countries, did roughly as well as the USA in relation to MRSA (methicillin resistant *Staphylococcus aureus*), but did not do as well as some other European countries such as France and the Netherlands. Overall, they saw England as in the middle of the league rather than at the top.[14]

9. The estimate of £1 billion for the cost of treating hospital acquired infection was based on a study that was thought to be one of the most comprehensive undertaken in the developed world. However, it was still shaky in some respects, being based on one hospital, and then extrapolated across the NHS. There were many variables, for example in terms of the pattern of disease and in understanding the relationship between hospital acquired infection and length of stay. Moreover, there was no consistent basis for costing the work that went on in hospitals in relation to the control of infection, and the NHS Executive did not know in total how much the NHS spent on this issue.[15]

10. As regards the estimate of 5000 for the number of deaths directly resulting from hospital acquired, the Executive accepted that this could be on the low side, but the reality was that they did not know. Getting accurate figures was difficult, because in complex cases the causes of death were multiple. For example, someone undergoing cancer treatment with their immune system suppressed might be susceptible to secondary infection.[16]

11. We asked about the costs arising from clinical negligence claims from hospital acquired infection. The Department again told us that they did not know. Historically, information on clinical negligence costs had not been collected consistently, and although improvements had been made there was no centrally held data on how many compensation claims the NHS has had where hospital acquired infection was cited as a main or contributory cause. It was unlikely that robust information could be obtained even from a separate survey of NHS Trusts. Hospital acquired infection was often a contributory, but not necessarily the primary, cause of mortality and morbidity, so it was not uncommon for claims to cite infection as only one of a number of factors that contributed to the harm caused. That said, the NHS Litigation Authority was aware that a small but growing number of clinical negligence claims cited hospital acquired infection as a component of the circumstances resulting in a claim being made. In the Executive's view, this appeared to reflect the growing incidence of hospital acquired infection in clinical settings generally.[17]

12. Overall, the NHS Executive shared our frustration about the lack of authoritative information. The Chief Medical Officer added that there had been a tendency in the Health Service over the years not to invest as much money in information and to regard money not directly spent on patient care as money wasted. It was now obvious that the service had to spend money on information if it was going to improve the quality of service.[18]

13. Since 1996, the Department and Public Health Laboratory Service have been working together to develop a national surveillance scheme, the Nosocomial (meaning hospital acquired) Infection National Surveillance Scheme. The aim of the scheme is to improve patient care by providing information to assist NHS Trusts to reduce rates and risk of hospital acquired infection and to provide national statistics on specific types of infection for comparison with local results. Surveillance is an essential component of the prevention and control of infection in hospitals. The main objectives are the prevention and early detection of outbreaks and the assessment of infection levels over time in order to determine the need for, and measure the effect of, preventative or control measures.[19]

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[14]Evidence, Qs 1, 21, 50–51, 95–96
[15]C&AG's Report (HC 230, session 1999–00) paras 1.10–1.13 and Evidence, Qs 2, 33, 95–103, 179, 190
[16]Evidence, Q5
[17]Evidence, Q209 and Evidence, Appendix 1, pp 22–25
[18]Evidence, Qs 116–117, 190
[19]C&AG's Report (HC 230, session 1999–00) paras 17–18, 1.3, 3.6–3.14

14. The Comptroller and Auditor General reported that there were some limitations in the way the scheme was operated, including the fact that it comprised only self-selecting hospitals. And while most infection control teams in hospitals carried out some form of surveillance to detect infections, there were wide variations in the methods used, types of infection monitored, ways infection rates were measured and criteria used for evaluation. Nevertheless, he concluded that the scheme's first year results showed considerable scope for NHS Trusts to reduce rates through better practice.[20]

15. The Department told us that they were doubling their investment in surveillance to £1 million a year. They were extending coverage to obtain data for more clinical areas such as intensive care settings and on links between antimicrobial resistance and prescribing. This work was being developed in a systematic way with the commitment of everyone in the health service and the Public Health Laboratory Service. The new system should throw up data more systematically and in three to four years they should have very good data. And as a result of this work, the Executive's aim was to develop measures, targets and benchmarks that will allow people to know whether their practice was getting better.[21]

Conclusions

16. Research indicates that between 50 per cent and 70 per cent of surgical wound infections occur post-discharge, but these infections are not monitored. The NHS Executive are undertaking research into post-discharge infection, and we look forward to seeing the outcome later this year. We recommend that post-discharge infections are monitored in future through the national surveillance scheme.

17. The NHS Executive have now taken action to improve surveillance, including researching the links between antimicrobial resistance and prescribing, measuring infections that occur after patients have been discharged from hospital, and doubling their investment in the Nosocomial Infection National Surveillance Scheme. But by December 1999, only 139 self-selecting Acute NHS Trusts in England were participating in the surveillance scheme. We recognise that the Executive are expanding the Scheme, but we believe that they should go further and make it mandatory.

[20] C&AG's Report (HC 230, session 1999–00) paras19 and 3.15–3. 22
[21] Evidence, Qs 2–3; 51–53; 103–104, 107, 153–156

Figure 1: Summary of data presented to the Committee as the most comprehensive data available on extent, cost and impact of hospital acquired infection

Figure given to Committee	How comprehensive is the figure—what is included and what is excluded	What else is known about the figure
At least **100,000** cases of hospital acquired infection each year in England and Wales[i]	Figure taken from a study of the control of hospital acquired infection (Glynn et al., 1997)[i] which looked at patients who acquired pneumonia, bloodstream or urinary tract infections within four main specialties in 19 hospitals. Data were then extrapolated to allow for the fact that surgical wound and skin infections were excluded, resulting in the 100,000 estimate. Figure excludes infections presenting post discharge and infections in all other specialties.	The authors of the Socio-economic burden study estimate,[ii] based on extrapolating the results from one hospital, that **320,994** adult non-day case patients admitted to eight specialties in 1994/95 acquired one or more hospital acquired infections as in-patients. This figure is still likely to be an underestimate as the study only covered 70% of adult non-day cases and excluded day cases, children, neonates and infections that presented post-discharge.
Between **50 and 70 per cent** of surgical wound infections occur post-discharge.[iii]	Figure is derived from a review of international literature by Holtz et al., 1992.[iii]	The Department commissioned PHLS to evaluate post-discharge surveillance methods for surgical wound infections. Phase 1was completed in 1997, Phase 2 ran from September 1998 to December 1999. The study's preliminary findings appear to support the 70 per cent figure (Report expected July 2000).
Around **5,000** UK deaths might be primarily attributable to hospital acquired infection. In a further **15,000** deaths, hospital acquired infection might be a substantial contributor.[iv]	The SENIC study (Haley et al.,1985)[iv] estimated that in the early 1980s hospital acquired infection was amongst the top ten cases of deaths in America. There are no equivalent data available in the UK. The 5,000 and 15,000 figures were included in the Department's 1995 guidance with the caveat that "equivalent data are not available in the UK, and whilst accepting the difficulties of extrapolating from one system of health care to another, a crude indication suggests...."	The Department acknowledged that the figures are likely to be underestimates but that they simply do not have any alternative estimates[v] (Q5–6). The Socio-economic burden study (Plowman et al., 2000)[vi] estimated that, in the study hospital, patients with a hospital acquired infection were **7.1 times** more likely to die in hospital than uninfected patients (after controlling for characteristics such as age, sex, diagnosis, admission specialty and types of pre-existing illness).
Hospital acquired infection in England may be costing the NHS as much as **£1,000 million** per year.[vi]	Figure is derived from the Socio-economic burden study (Plowman et al., 2000)[v] Study patients were recruited from one hospital and covered adult, non-day patients admitted to eight specialties. The results were extrapolated to calculate a national estimate of costs. The estimate does not take into account the costs due to infections that might have occurred in a further 30 percent of all adult non-day cases, nor does it include day cases, children or neonates.	The figure is accepted as the most comprehensive estimate of costs currently available, while acknowledging the problems of deriving an exact estimate on the basis of findings in one hospital. However, the figure is likely to be an underestimate as it is based on only 70 percent of the hospital's adult non-day case patients.

Source: National Audit Office

(i) Glynn et al (1997). Hospital acquired infection surveillance policies and practice – study of the control of hospital acquired infection in 19 hospitals in England and Wales. London: Public Health Laboratory Service
(ii) Letter to Committee
(iii) Holtz TH, Wenzel RP (1992). Post-discharge surveillance for nosocomial wound infections; A brief commentary. American Journal of Infection Control 20(40) 206 –213.
(iv) Haley et al (1985). The efficacy of infection surveillance and central programs in preventing nosocomial infections in US Hospitals (SENIC) American Journal of Epidemiology 121: 182–205
(v) Qs 5–6
(vi) Plowman et al (2000) The socio-economic burden of hospital acquired infection. London: PHLS.

IMPROVING INFECTION CONTROL

18. In 1995 the Executive issued guidance on hospital acquired infection and stated that "it is possible that currently about 30 per cent of hospital acquired infection could be prevented by better application of existing knowledge and implementation of realistic infection control policies". In response to a National Audit Office census, infection control teams in hospitals estimated that on average, infections could be reduced by 15 per cent. Even on that basis, potential avoidable costs are around £150 million a year and many lives could be saved.[22] We therefore looked at:

- The extent to which hospital acquired infection can be reduced;
- Initiatives taken and planned by the NHS Executive;
- Tackling the increase in drug-resistant organisms;
- Ways of improving hospital hygiene;
- The adequacy of resources.

(a) The extent to which hospital acquired infection can be reduced

19. We asked the NHS Executive for their view on the extent to which hospital acquired infection could be reduced. They accepted that it was possible to reduce hospital infection by 15 per cent, and maybe more, and that this could save £150 million. However, they felt it was unlikely that this would translate directly into fewer deaths because of the complex causes of death in many cases. They pointed out, however, that not all hospital acquired infection was preventable and that there was a substantial and irreducible level that the NHS would have to live with.[23]

(b) Initiatives taken and planned by the NHS Executive

20. Between 1996 and 2000, and particularly since November 1999 the NHS Executive had taken a wide range of actions and initiatives to address hospital acquired infection. In addition to the new surveillance system launched in March 1996 (paragraphs 12–14 above), these included:

- setting clear standards on infection control through the Controls Assurance System;
- backing this up with very detailed guidance, some based on their own experience, some based on the work of the National Audit Office Report and some based on the parallel work that the regional epidemiologists undertook alongside the National Audit Office;
- embedding, not just on this issue but throughout the health services, better quality assurance systems and more audit; and
- accepting that this is an area that needs more resources, more staff, more facilities, isolation facilities for example and better training.[24]

21. We noted that some earlier initiatives had been in place for some time, without noticeable effect, and asked the NHS Executive what confidence there was that these new initiatives were going to make a significant difference in the future, and when improvements would be coming through.

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[22]C&AG's Report (HC 230, session 1999–00) paras 15–16
[23]Evidence, Qs 5–6, 30, 92–94
[24]C&AG's Report (HC 230, session 1999–00) Figure 6 and Evidence, Q7

22. They told us that the new initiatives were of a different order. Key to progress was that chief executives now had a duty of quality of care, under legislation. In the past many chief executives had not been engaged in tackling hospital acquired infection. As a result, the issue had a low profile. For example one fifth of NHS Trusts did not even have a strategy for dealing with hospital acquired infection.[25] Infection control was now a core management responsibility. Every trust had to live by standards set by the controls assurance procedure, to report on a regular basis and to be managed and inspected against targets. Chief Executives were now accountable for dealing with these issues.[26] Every trust had to have a plan by July 2000, setting out priorities for action, and they would have to produce an annual report of progress, systematically year by year.[27]

23. Education and training were also a powerful means of reducing infection rates, but the Comptroller and Auditor General found important gaps in provision.[28] The Executive could not tell us how much was spent on education, but confirmed that it was an integral part of the responsibilities of infection control teams. They assured us that compliance with training requirements would be monitored as part of the new controls assurance standards. In addition, the Department were looking at developing an Infection Control manual, building on one already issued in Scotland, to bring guidance together in one place to avoid Trusts re-inventing the wheel.[29]

24. Overall, the Executive admitted that they had not done as well in tackling hospital acquired infection as they should have, and had not lived up to their commitments to patients. But they assured us that they had been active in this area over the last few years at a national level, shifting the emphasis to prevention, and pointed to many examples of NHS Trusts and health authorities taking action based on local results. They now had the problem firmly in focus. The Comptroller and Auditor General's critical report had given added impetus to the way the Executive were managing hospital acquired infection.[30]

25. The Executive expected improvements would show up gradually over time. They had set some clear timetables, and hoped to see action plans by 2001, measurable progress through the period, and tangible measurable progress in 2003 and 2005.[31]

26. Subsequent to our hearing, at a conference organised by the National Audit Office on hospital acquired infection in June, the Minister of State for Health announced the publication of the Government's strategy for dealing with antibiotic resistant organisms (paragraph 30 below) and further measures to tackle hospital acquired infection. These included strengthening the support to NHS Trusts in implementing the controls assurance arrangements; publication of new guidelines on the most effective ways of tackling hospital acquired infection; and better monitoring and surveillance.

(c) Tackling the increase in drug-resistant organisms

27. The Comptroller and Auditor General noted that hospital acquired infection was becoming harder to treat, because of the emergence of drug resistant organisms. The NHS Executive acknowledged that there was a world wide problem of anti-microbial resistance. There was evidence that over-prescribing and the misuse of antibiotics in agriculture and other areas had led to the emergence of drug resistant organisms. The Government was setting up a scientific advisory group to look at the more prudent use of antibiotics. The NHS had a good record on prescribing compared to other countries, but could do a lot better. They had a comprehensive system of monitoring and control. Eighty per cent of prescribing was in the community, and there were advisers in every health authority who talked to general practitioners on their prescribing practice. The Executive agreed that reducing hospital acquired infection would help

[25] C&AG's Report (HC 230, session 1999–00) Figure 7 and Evidence Qs 30, 76–86, 195
[26] Qs 30–31, 115, 126–129
[27] Evidence, Qs 28, 86, 206–207
[28] C&AG's Report (HC 230, session 1999–00) para 4.4
[29] Evidence, Qs 73, 208
[30] Evidence, Qs 114, 118–121
[31] Evidence, Qs 8, 107

to reduce the development of antibiotic resistant strains.[32]

28. The Chief Medical Officer added that over the past 50 years, since the start of the NHS, infection control and infectious diseases were unfashionable areas. During the 1980s, when there was a good range of antibiotics available, infections could be treated readily. In addition, isolation facilities were standing empty, so hospital management closed them. The generally held view was that infections were a thing of the past and research programmes on antibiotic resistance were wound down. However, as more and more organisms became resistant to antibiotics, problems had emerged. With the growing awareness of this problem had come recognition of the need to switch to prevention rather than treatment.[33]

29. In June, the Secretary of State announced publication of the Government's strategy and action plan to deal with antibiotic resistant organisms. This sets out eight areas of action to fight back against infections that resist treatment with antibiotic drugs, including:

- the establishment and maintenance of surveillance systems to improve data and information on resistant organisms and the illnesses they cause;
- encouraging the prudent use of antibiotics and similar drugs and to develop an information campaign to educate the public as to why antibiotics need to be used more carefully;
- to strengthen infection control practices and processes in hospital and community health care and promote collaboration between European Union member states and the World Health Organisation; and
- to promote a coordinated programme of research and encourage the development of new techniques to detect, prevent and treat infection and overcome resistant organisms.[34]

(d) Ways of improving hospital hygiene

30. In his report, the Comptroller and Auditor General emphasised the importance of good hygiene in hospital, in particular that "hand hygiene is possibly the most important factor in preventing hospital acquired infection but that compliance is poor". He also noted that most infection control teams had run handwashing campaigns but that while there was usually an immediate improvement, the impact reduced within a short time.[35]

31. The NHS Executive accepted that failure to wash hands was inexcusable. But they pointed to a series of factors which could cause non-compliance, for example people being busy, moving from patient to patient without thinking properly, and perhaps not having access to the right facilities at the right time. There were a series of practical problems that needed to be addressed, as well as education and awareness problems. Their approach was to be constructive with staff to induce positive behaviour.[36]

32. In his report, the Comptroller and Auditor General concluded that while the provision of effective education and training was a key measure in the prevention of hospital acquired infection, the provision fell below the basic requirement, and less that half of NHS Trusts had audited the effectiveness of their training.[37]

33. The NHS Executive assured us that the whole area of infection was taught during the training of doctors and nurses. But they admitted that the discipline of handwashing was not as embedded as it should be and getting to the root of this behaviour was difficult. They noted that

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[32]Evidence, Qs 2, 5, 37, 122–124
[33]Evidence, Qs 36–37, 191–194
[34]Department of Health: UK Antimicrobial Resistance Strategy and Action Plan (June 2000)
[35]C&AG's Report (HC 230, session 1999–00) paras 4.16–4.17
[36]Evidence, Qs 74–76
[37]C&AG's Report (HC 230, session 1999–00) paras 4.4–4.7

some NHS Trusts, such as the Leeds Teaching Hospital, had tackled this in an effective way. And the plans being drawn up by all NHS Trusts by July 2000 on hospital acquired infection would include hand washing. More widely, the Executive was building handwashing into post basic training, and were working with the Royal College of Nursing and others to produce new training material for use with post graduates. They were also actively involved with the Handwashing Liaison Group, which aimed to modify the behaviour of health care workers to produce sustained improvement in compliance with agreed handwashing standards and so improve the quality of patient care.[38]

34. The Comptroller and Auditor General was concerned that a quarter of infection control teams were not consulted in letting cleaning, catering or laundering contracts.[39] We asked why this was, and whether there should be a targeted attempt at improving cleanliness more generally. The Executive assured us that there were clear standards for cleanliness, and that the requirement to involve infection control teams and monitor hospital hygiene was the heart of the new standards set in the controls assurance arrangements.[40]

35. The Comptroller and Auditor General reported that attempts to prevent infections could be adversely affected by other NHS Trust policies especially on bed management. Some Trusts believed that the drive to achieve higher bed occupancy had not always been consistent with good isolation, hygiene and cleaning practices. Other developments such as placing beds closer together, patients moving around the hospital more frequently and staff shortages with increasing reliance on agency nurses could also increase the risk of infection.[41] And while isolation of patients was an effective form of infection control, isolation facilities in some Trusts had been significantly reduced over the last 5–6 years and 40 per cent of infection control teams believed that the isolation facilities in their Trusts were unsatisfactory.[42]

36. The Executive did not know what impact these issues had had on infection rates, but accepted that greater throughput of patients, and staff shortages, could increase them. They acknowledged that where there was greater opportunity to isolate people in smaller rooms or single rooms, hospitals could avoid the spread of infection by getting the physical layout of the room right. And they told us that all current planning of health services was in the direction of smaller patient rooms with en-suite facilities.[43] They pointed out that there had already been an investment and an improvement in isolation facilities in specialist children's hospitals, but they accepted that if there was to be more investment in infection control, part should be in isolation facilities.[44]

e) The adequacy of resources

37. In his report, the Comptroller and Auditor General concluded that there might be a growing mismatch between what was expected of infection control teams and the staffing and other resources allocated to them. The Department's 1995 guidance on infection control noted advantages for the planning and implementation of effective infection control programmes if teams had separate budgets for routine infection control. Yet the only 40 per cent of NHS Trusts had separate budgets. The National Audit Office found wide variations between NHS Trusts in the amounts spent. Most infection control teams believed that there had been little real change in the amount of money available for infection control. Yet expectations in the last three years, particularly in relation to a number of resource intensive activities such as surveillance, had increased.[45]

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[38]C&AG's Report (HC 230, session 1999–00) paras 4.17–18, and Case Study 10; Evidence, Qs 45–46, 54, 77, 87 and Evidence, Appendix 1, pp 22–25
[39]ibid, para 4.29
[40]Evidence, Qs 28, 112
[41]C&AG's Report (HC 230, session 1999–00) paras 3.34–3.36
[42]ibid, paras 4.38–4.40
[43]Evidence, Qs 42–43, 168–171
[44]Evidence, Qs 20, 27–28, 201, and Evidence, Appendix 1, pp 22–25
[45]C&AG's Report (HC 230, session 1999–00) paras 4, 6, 2.20–2.25

38. The NHS Executive told us that they did not have good enough data to show the correlation between rates of hospital acquired infection and resources put into infection control. And variations in the amounts spent by Trusts were distorted by differences in costing methods. However, they did have subjective data with examples of good interventions where there has been more investment, which has resulted in improved practice.[46]

39. The Chief Medical Officer added that money alone would not ensure improvements. It was clear from the Comptroller and Auditor General's report and from the Department of Health and NHS Executive's own experience that there was also a need for commitment from everyone and a philosophy that it is everybody's business, not just the specialists'. This required education and training, the induction of new staff, monitoring and data to show people how they were doing. Money put into infection control needed to be spent on the right things.[47]

40. The Executive had not laid down any guidelines on resources; rather they had guidelines on outcomes and on the sorts of improvements they expected. Ministers had, however, agreed there was a need for investment, which was set to increase in stages, with an extra £2 million in 2000–01 and £3 million in 2001–02. In addition, they were discussing the need for extra resources with the Treasury as part of the comprehensive spending review.[48]

41. The Comptroller and Auditor General also found wide variations between NHS Trusts in the staff resources they dedicated to infection control and in the ratio of infection control nurses to beds. One American study, in the early 1970's, indicated that there should be one infection control nurse to every 250 beds and this was used as a benchmark in American hospitals. Yet only 24 out of 218 NHS Trusts met this level, and 11 had over 1,000 beds per nurse.[49]

42. The Executive told us that staffing was a Trust issue. It was not their policy to set benchmarks or explicit guidelines and there were no central guidelines on staffing levels. The Chief Medical Officer took the view that the ratio used in America was based on a sound piece of medical research and was a reasonable basis for NHS Trusts to measure themselves against. However, he believed it would be better to look at local circumstances and solving local problems, using the 1:250 ratio as a guide rather than applying it as an across the board norm. The Executive added that there were rational answers to some of the variations, linked to types of activity. For example, infection control teams in very highly specialised children's hospitals were extremely well staffed whereas those at the other end of the spectrum might be NHS Trusts with little acute service activity. There were also variations in practice. For example some Trusts relied heavily on ward-based nurses with specific responsibilities for infection control, rather than on dedicated teams, which would show a different ratio but would be just as effective in control of infection.[50]

43. The Department gave us a list of the 20 Trusts with the highest number of beds per infection control nurse. But they warned that the details should be treated with caution because of variations in practice. They also pointed out that since the National Audit Office study, there had been a number of additional appointments of infection control nurses and that regional Directors of Public Health were continuing to work with Trusts to ensure that, where necessary, improvements were made.[51]

44. The Comptroller and Auditor General highlighted one example where a Trust had made a business case for additional infection control nurses, on the basis that employing 2 extra people at a cost of £90,000 would save £1 million a year. He also noted that over 60 Trusts had put forward similar business cases but with varying results in terms of getting extra staff.[52] The Executive told us that they had not yet got the evidence to demonstrate that extra infection control nurses would provide a big pay off, and in the specific case noted by the Comptroller and

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[46]Evidence, Q34
[47]Evidence, Q34
[48]Evidence, Q35
[49]C&AG's Report (HC 230, session 1999–00) paras 2.31–2.34, Figures 12–13, and Evidence, Q26
[50]Evidence, Qs 26, 140–152
[51]Evidence, Q26 and Evidence, Appendix 1, pp 22–25
[52]Evidence, Qs 184–188

Auditor General they had not yet seen the results in terms of patient care and financial savings. That said, they were looking at the issues that would encourage Trusts to experiment in this area in the hope of achieving some of the savings, and they believed that investment in information, surveillance, top management time, additional clinical staff and better isolation facilities would achieve a return. They also pointed out that although spending to save was attractive, short term affordability could be a barrier.[53]

Conclusions

45. The NHS Executive acknowledge that it should be possible to reduce the incidence of hospital acquired infection by 15 per or more, avoiding costs of some £150 million and saving lives. Since 1996, and particularly since 1998 the NHS Executive have taken a series of actions and initiatives to address this issue, but do not expect to see tangible, measurable progress until 2003. Such progress will be essential for the NHS to meet their duty and commitment to patients.

46. Key to achieving progress will be the effective implementation of the new Controls Assurance System, which builds on the statutory duty of chief executives for quality of care. This will raise the profile of hospital acquired infection, especially in the 20 per cent of Acute NHS Trusts that do not have a strategy for dealing with it. Every Trust has to have a plan in place by July 2000 setting out priorities for action and produce an annual report on progress. We look to the NHS Executive to let us have an initial summary report of progress, priorities and key issues by the end of April 2003.

47. Complacency, poor prescribing practice and misuse of antibiotics has led to the emergence of drug resistant infections. As the Chief Medical Officer told us, there are no simple solutions any more. The NHS Executive have now launched initiatives to look at the more prudent use of antibiotics, and to monitor and control prescribing including the new Government strategy to tackle antibiotic resistant infections announced in June 2000. We expect this work to lead to evidence-based guidance on effective prescribing strategies.

48. Hospital hygiene is crucial in preventing hospital acquired infection, including basic practice such as handwashing. We find it inexcusable that compliance with guidance on handwashing is so poor. We note the steps the Executive have now taken to improve awareness and education, but look to them to audit progress and report back to us by the end of 2001.

49. The increased priority and attention that is rightly now being given to hospital acquired infection has not been matched by resources. Some new money, £5 million over two years, has been allocated, some extra infection control nurses have been appointed, and the Executive accept the case for investment in smaller wards and isolation facilities. The scale of hospital acquired infection calls for sufficient funding to ensure that hospitals can tackle the problem effectively and so reduce the impact on patients and NHS costs.

50. The NHS Executive recognise that more effective bed management can help reduce hospital acquired infection. Greater use of smaller rooms and single bed rooms is now part of health service planning, and the Executive accept that increased investment in isolation facilities is a priority. But high throughput of patients is also a factor. Some hospitals are operating at very high levels of bed occupancy. Wider application of best practice will help acute trusts manage beds better. Trusts also need to ensure that infection control is an integral part of their bed management policies.

51. The Chief Medical Officer accepts that in staffing infection control teams, a ratio of one nurse to 250 beds is a good benchmark for NHS Trusts. But many Trusts have much larger numbers of beds per nurse. While local variations in circumstances and practice may account for some of these variations, we expect the NHS Executive to carry out further research, in conjunction with the Infection Control Nurses Association, with the aim of developing staffing guidelines for Trusts.

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[53] Evidence, Qs 187–189

PROCEEDINGS OF THE COMMITTEE RELATING TO THE REPORT

SESSION 1999–2000

MONDAY 6 MARCH 2000

Members present:

Mr David Davis in the Chair

Mr Alan Campbell
Mr Geraint Davies
Mr Barry Gardiner
Mr Nigel Griffiths
Mr Andrew Love
Mr Jim Murphy
Mr David Rendel
Mr Gerry Steinberg
Mr Alan Williams

Sir John Bourn, KCB, Comptroller and Auditor General, was further examined.

The Committee deliberated.

Mr Jamie Mortimer, Treasury Officer of Accounts, was further examined.

The Comptroller and Auditor General's report on The Management and Control of Hospital Acquired Infection in Acute NHS Trust in England (HC 230) was considered.

Sir Alan Langlands, Chief Executive, and Professor Liam Donaldson, Chief Medical Officer, the National Health Service Executive, were examined (HC 306-i).

Mrs Karen Taylor, Audit Manager, the National Audit Office, was examined (HC 306-i).

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[Adjourned until Wednesday 8 March at half past Four o'clock.

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WEDNESDAY 8 NOVEMBER 2000

Members present:

Mr David Davis in the Chair

Mr Alan Campbell
Mr Ian Davidson
Mr Barry Gardiner
Mr David Rendel
Mr Alan Williams

Mr Tim Burr, Deputy Comptroller and Auditor General, was further examined.

The Committee deliberated.

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Draft Report (The Management and Control of Hospital Acquired Infection in Acute NHS Trusts 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 3 read and agreed to.

Paragraph 4 postponed

Paragraphs 5 to 51 read and agreed to.

Postponed paragraph 4 read and agreed to.

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

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

Ordered, That the provisions of Standing Order No. 134 (Select Committees (Reports) be applied to the Report.

A paper (PAC/233) was ordered to be appended to the Minutes of Evidence.

Ordered, That the Appendix to the Minutes of Evidence taken before the Committee be reported to the House.—(*The Chairman*).

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[Adjourned until Monday 13 November at half past Four o'clock.

MINUTES OF EVIDENCE

TAKEN BEFORE THE COMMITTEE OF PUBLIC ACCOUNTS

MONDAY 6 MARCH 2000

Members present:

Mr David Davis, in the Chair

Mr Alan Campbell
Mr Geraint Davies
Mr Barry Gardiner
Mr Nigel Griffiths
Mr Andrew Love
Mr Jim Murphy
Mr David Rendel
Mr Gerry Steinberg
Mr Alan Williams

SIR JOHN BOURN, KCB, Comptroller and Auditor General, MS KAREN TAYLOR, Audit Manager, National Audit Office, further examined.

MR JAMIE MORTIMER, Treasury Officer of Accounts, HM Treasury, further examined.

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL: DEPARTMENT OF HEALTH: THE MANAGEMENT AND CONTROL OF HOSPITAL ACQUIRED INFECTION IN ACUTE NHS TRUSTS IN ENGLAND (HC 230)

Examination of Witnesses

SIR ALAN LANGLANDS, Chief Executive, NHS Executive, PROFESSOR LIAM DONALDSON, Chief Medical Officer, Department of Health, examined.

Chairman

1. Today we are looking at the Comptroller and Auditor General's Report on The Management and Control of Hospital Acquired Infection in Acute National Health Service Trusts in England. It is a very serious subject in terms of the impact on patients and costs to the National Health Service. Welcome once again to Sir Alan, Chief Executive of the National Health Service Executive. Can I also welcome Professor Liam Donaldson, Chief Medical Officer to what I think is his first Committee of Public Accounts. Sir Alan, you are familiar with the approach. The best estimates we have suggest that there are at least 100,000 cases of hospital acquired infections each year, around 5,000 deaths, possibly more, and at a cost to the National Health Service of around £1 billion. Is the problem under control or getting worse, and how do we compare with other countries?

(*Sir Alan Langlands*) Thank you, Chairman. I think to the extent that we are dealing with the issues raised in the NAO Report the problem is under control, but not without difficulty and by that I mean that the prevalence of hospital acquired infection does not seem to be going up, although we do not know enough in my view about prevalence in the community post-discharge. This is undoubtedly a serious issue for us and a very serious issue to tackle for a number of reasons, not least because people are now being treated in hospital who are often so ill that they might not have been treated in the past and very often their immune systems are compromised either because of their underlying condition or because of treatment, so they are difficult to treat, and also because we have, as the Report says, a growing worldwide problem of anti-microbial resistance and that creates complications. So against that background I think we are doing okay. We are certainly not complacent and I hope we will have an opportunity to discuss the action we are taking in light of this Report today. As far as the international comparison is concerned, I am afraid the information here is pretty sketchy. Any international information that is available is really just a composite of country-wide studies and so it is very difficult to make judgments about the international information, but on the whole we do not do too badly in the international league. For example, we are doing better on hospital acquired infection generally than Scandinavian countries. We do roughly the same as the States in relation to MRSA, which is one of the problems, but we do not do as well as some other European companies. France, for example, seem to do slightly better and on MRSA the Netherlands do extremely well. So I would put us in the middle of the league rather than at the top of the league.

2. Thank you, that is helpful. Figure 3 and paragraphs 1.12 to 1.13 explain the basis of the estimated cost of £1 billion and paragraphs 1.3 to 1.7 set out what is known about the extent and impact of hospital acquired infection. Why do you not have more reliable information on the extent, cost and impact of hospital acquired infection on patients?

(*Sir Alan Langlands*) I think this is a very difficult issue to get at. I agree that the information is limited. The single study cited here is said not just in this country but internationally to be one of the most comprehensive bits of work that has been done, but that proves difficult and even that has some important caveats attached. For example, people have not been able to trace in the example given exactly the relationship between hospital infection and length of stay. I think this is an area where there are so many variables both in terms of the pattern of disease and also in terms of the intricacies of hospital costing systems that it is very difficult to get at it. I agree with you that that is probably not good enough for the long term. I hope that our new surveillance system will begin to throw up information more systematically, but for now we have to work with what we have got.

[**Chairman** *Cont*]

3. When do you think this surveillance system will bite? Can you tell us some more accurate facts?

(*Sir Alan Langlands*) Over the last two or three years we have been investing £½ a million a year. We are about to up that for the next two years to nearly £1 million. We are rolling it out and taking it into very important areas. For example, the next area that we are looking at on the surveillance system is intensive therapy services and there we are trying to get right at the heart of one of the problems that we have discussed already today, which is the linkage between prescribing patterns and anti-microbial resistance. So we are trying to make these linkages and we are trying to localise them in a way that makes sense to practitioners. It is not an easy thing to do and something, to be honest, that health systems around the world are struggling with.

4. Thank you. I am sure others will press you on that. Can you tell the Committee, even roughly, to what extent hospital acquired infection results from bad clinical practice or over-reliance on antibiotics in the past?

(*Sir Alan Langlands*) What I cannot do is split the incidence. The Report says the incidence is about nine per cent overall; I cannot split that four and five against the two headings you discuss. These two factors clearly contribute a great deal, although there are other underlying factors which will affect this issue. There are some things that we do know, however. For example, we know that when you give good feedback to clinicians about their practice and rates of infection they do adjust their practice and we can measure that on a very local basis. We know that when people make more prudent use of antibiotics that helps for the long term and we are trying to support that both in public and professional campaigns through our education programmes, but I cannot give you a split, I think it is just too difficult. The Chief Medical Officer is running a strategic review of all our work on communicable diseases at the moment and this is the sort of issue that he might look at. The Government, more widely, is setting up a scientific advisory group to look at the more prudent use of antibiotics and again that may cast light on this issue, but really it is very very difficult to get to the evidence here and that is not for want of trying, it is just a technically very complex problem.

5. After the Report came out I looked hard at the basis of the figures and the 5,000 deaths directly resulting from this did not appear to be, frankly, an over-estimate. If anything, it seemed the opposite was true. Of course, there is another 15,000 not directly related deaths to these infections. How has management at all levels in the NHS allowed a situation like this to occur because the thrust of the Report is many of those deaths are avoidable?

(*Sir Alan Langlands*) Undoubtedly some of them are avoidable and I think that is accepted and the figures that came out of the survey suggest that perhaps 15 per cent of the money spent is avoidable expenditure. I am not sure that you can translate that easily into deaths, but it is extremely difficult because hospital acquired infection contributes to death but often in very complex cases where the causes of death are multiple. So someone undergoing cancer treatment with their immune system essentially suppressed or may be susceptible to secondary infection, do you count that as a failure of the infection control system or is that just an inevitable consequence of someone's very serious illness? I think it is these sort of judgments that have to be made almost case by case. I do not disagree with your notion that these figures may be on the low side. The reality is that we just do not know and the causes of death in these cases are often very complex indeed.

6. We should not confuse the two. The sort of circumstances you were describing as the multiple cause is more like 15,000 than 5,000 from the estimate in the Report and, indeed, I did follow this up with the Public Health Laboratory who indicated that, if anything, the mortality levels could be higher than this, but that is because of the balance of infection and I am glad you recognise that.

(*Sir Alan Langlands*) I think that may be true, Chairman. I think the point I am making is that these situations arise for complex reasons. They certainly do not arise through complacency, although the Report has highlighted that we take a lot of action in this area. Whether that action will convert into lives being saved is impossible to say from where we stand now.

7. The Department in 1995 talked about 30 per cent possible reductions. The 15 per cent in this Report is the weighted average of what the Trusts themselves thought they could achieve. I do not believe that it is likely to be an over-estimate; it may well be the opposite, it may be an under-estimate. What steps are being taken to achieve this 15 per cent or, one would hope, better reduction in costs and infections?

(*Sir Alan Langlands*) I think the action that has been taken is as follows. Firstly, we have set some very clear standards on infection control through our Controls Assurance System which we talked about last time. That is backed up by very detailed guidance, some of it based on our own experience, some of it based on the work of the NAO Report and, indeed, the parallel work that our own regional people took alongside the NAO. So that is the first thing, standards and guidance. Secondly, we are embedding not just on this issue but right through the health system better quality assurance systems than we have had before, more audit. We have talked about the need for more sophisticated surveillance systems and we are investing in that, but ultimately—and the point is made in the Report as to whether this is a net gain or not or just a transfer, it almost does not matter—we believe that this is an area that requires more resources, more staff, more facilities, isolation facilities, for example, and better training. The Report has a number of examples of good practice which shows that some people have been able to do that within the existing budget and we certainly do not rule that possibility out, but I think this is an area where in preparing the Spending Review bid with Ministers we feel there is a need for more investment than we are currently making.

8. Thank you. Figure 6 on pages 25 and 26 summarises the large number of initiatives you have already taken. They have not visibly had much of an impact at Trust level. Can you give me some sort of estimate of when you would expect your current initiatives to show improvement in your numbers?

[**Chairman** *Cont*]

(*Sir Alan Langlands*) I think they will show up gradually over time. We have set some very clear timetables. For example, every Trust is currently going through a self-assessment process against the criteria set out in the controls assurance document and they are required to convert that into an action plan by July of this year. The regional directors of public health and the regional epidemiologists who worked in parallel with the NAO have used the data from the survey to pin down on Trust-based problems and are looking, working with Trust managers, to tackle specific issues. The monitoring is being stepped up not just internally. We are training up our own internal audit to deal with this controls assurance process, but externally from the new Commission for Health Improvement and the Audit Commission. So the system is one of standards, local discipline, external review. The hope is that we will see clear action plans by 2001 and measurable progress through the period, but tangible measurable progress at 2003 and 2005 so that this is a long gain. There is no quick fix here, although there may in some places be improvements that can be made quickly, it is sustained effort and a much higher profile given to this issue than perhaps was the case a few years ago.

Chairman: Thank you, Sir Alan. Let us widen it out. Mr Alan Williams?

Mr Williams

9. Sir Alan, I see that on the 11th February a Health Service circular was issued based on a census of acute NHS trusts in England, just three weeks before this hearing. It shows a bit of panic, does it not?

(*Sir Alan Langlands*) The system did not panic. The system was operating and, as I think is clear in the Report, the regional epidemiologists, who are the people who monitor these issues for us, did work alongside the NAO, they shared the data and the action plan that comes out of the 11th February guidance, which is really about higher standards for control of infection, improved surveillance, better prescribing, is not just based on the NAO Report, it is based on some very good work from a House of Lords' Select Committee and it is based on the efforts and the insights of our own experts.

10. We know the 100,000 hospital acquired infections a year is on a rather strange statistical basis, but does that include staff as well as patients?

(*Sir Alan Langlands*) I think these numbers are patient based.

11. So there could be other figures relating to the same illnesses acquired, for example, from sharp instruments by the staff as well?

(*Sir Alan Langlands*) There could be, although some staff will convert to patients sometimes.

12. No, they converted to patients when they got it so they have not acquired it. I am afraid they appear under a different statistical heading, but good try! What about haemophiliacs who can end up with HIV and various blood related illnesses, are they included in this 100,000?

(*Sir Alan Langlands*) As I understand it they are, but I will defer to the Chief Medical Officer.

(*Professor Donaldson*) That is largely an historical problem. It depends on—

13. All I am asking is are they included or not?

(*Professor Donaldson*) It depends what period was covered, but it seems likely that infections like that would be covered, yes.

14. Does NAO agree with that interpretation?

(*Ms Taylor*) The 100,000 is based on a clinical audit of 19 hospitals. My understanding is that it was possible that that category was not included.

15. Perhaps we can have a note on that[1]. That is another group that could be added. Then there is post-hospital cases which are not included in this 100,000, I assume, are they?

(*Professor Donaldson*) No.

16. We are told that in the case of surgical patients who end up suffering from one of these infections, 50 to 70 per cent of them develop the symptoms after they have left hospital, so they are outside. What proportion of this 100,000 would be surgery-related?

(*Professor Donaldson*) I would have thought about 70 per cent[2]. I do not have exact figures.

17. And between half and seventy per cent of cases are outside, so that means that this 100,000 figure is nearer 200,000 when you take the post-hospital figure.

(*Professor Donaldson*) We do not have any data on cases occurring in the community.

18. That is staggering. If it could be 200,000, as is implicit if you take the statistics, it follows logically, then that suggests that the £1 billion cost could become a £2 billion cost, does it not?

(*Professor Donaldson*) I do not think there is any way of putting a figure on the number of cases in the community.

19. If 70 per cent of those are surgery related and we know that half to seventy per cent that are surgery related occur outside there is another 100,000 and that is without counting all the others we have indicated are not included in the total figures. Can we jump on from there because I am very limited on time. Sir Alan, I know we have had our contretemps but I always regard you as an extremely good witness and I think the university is very lucky to get you.

(*Sir Alan Langlands*) You know I am not going to concede the 200,000!

20. That is the end of our pleasantries! You are now leaving the NHS. Would you say that this is in any way related to the number of cutbacks in staff? We know there have been cutbacks in the number of isolation units which is disturbing. We see the staff running around in circles nowadays. It must have an impact, must it not?

(*Sir Alan Langlands*) It may have an impact. I do not know if it is because of cuts because, as you know, there has been a year by year real terms increase in health care service spending. The sort of things that are different are the case loads, the speed with which people go through hospitals, the

[1] *Note:* See Evidence, Appendix 1, page 22 (PAC 1999-2000/145).

[2] *Note by Witness:* The exact figure was ten per cent, not 70 per cent.

[**Mr Williams** *Cont*]
throughput, which may lead you into the discussions you were having about post-discharge infection. We are researching at the moment and we will have firmer data in July and there is no doubt that in some places there have been shortages of nurses and that would reflect on the shortage of infection control nurses and may have led to some sort of break down in some of the disciplines that would help deal with these issues effectively.

21. Do we have any meaningful statistics on the incidence Trust by Trust? Is it possible to pinpoint those Trusts which have the highest incidence of this type of infection?

(*Sir Alan Langlands*) The information we have is restricted to the surveillance information coming out of this study and the information that has come out of the surveillance study in the three of four areas in which it has been operating in a great many Trusts. So it is precisely that culmination of information that the regional epidemiologists are looking at and going back and discussing in detail with the Trusts.

22. Can we have the statistics, if there are any? Is it possible to identify the worst performing hospitals or hospital Trusts? If it is, will you let us have a note?

(*Sir Alan Langlands*) I do not think it would be possible to do that, but we will give you what we have.

23. I know you will do it if you can.

(*Sir Alan Langlands*) Yes[3].

24. Coming now then to the cases outside hospital, and either of you can answer this since it now looks as if there are many incidents outside hospital and inside hospital, but you do not really know and you are not really intent on finding out because really, from your point of view, you do not want to know, do you, because otherwise they become possible litigants?

(*Sir Alan Langlands*) No, we are intent on finding out. We have research under way at the moment and we will see the first report from that in July and if the Committee wants to keep up to date with that, I am happy to provide them with the outcome of that research.

25. That would be helpful.

(*Sir Alan Langlands*) With the increase in day care and the speed with which people are discharged from hospital nowadays, we think that is very important information to have and indeed when we invest, we will not just invest in hospital-based services, but invest in community-based services. It is just as important for us to influence practice amongst GPs and community nurses as it is in hospitals.

26. I am sorry to do this to you, but I have a couple of other questions I want to ask and, as Sir Alan knows, we only have 15 minutes. What is amazing is that despite the circulars from the Department, up to a quarter of the Trusts seems to have made virtually no response whatsoever in relation to special units and so on. I was looking at figure 13 which shows the ratio of whole-time equivalent infection control nurses in relation to the number of beds and it is an astonishing graph when you look at it. We are told on the page before, paragraph 2.31 that in the early 1970s, American studies indicated that there should be one infection control nurse to every 250 beds. It also goes on to say that in effect that is still accepted as a reasonable benchmark figure, but when we look at figure 12, there are about 218 NHS Trusts in that graph, but do you know that only 24 of them, of the 218—and I got my magnifying glass out and counted them, the little hair lines—that only 24 of them meet the 250 average requirement and that means that 194 do not, but eleven have over 1,000 beds per nurse, four times that which was recognised over a quarter of a century ago as the appropriate number, and one has 1,900 beds per nurse? How on earth can that happen, and can we have the names of the three worst offenders? If we take the worst 20, perhaps you will let us have a note telling us who they are and who the appropriate chief executives are because I am sure the public will want to know[4]?

(*Sir Alan Langlands*) Well, I do know who they are because I have asked myself, and although I am very happy to give you a note, the NAO did make it clear in sending out the questionnaires that the information they received would be confidential. I would just like to make two points because I think there are rational and less rational answers to your question. The rational answer is that those which are extremely well staffed in this graph tend to be the very highly specialised children's hospitals that are dotted around the country, and all of them would appear in the top ten, for example, whereas those at the lower end of the spectrum might be NHS Trusts that have a little bit of acute service activity, but a lot of other activity, community-based activities and everything else, so we are not comparing like with like in this graph. However, it is true that there are variations and some of that, and this is where I think it is less easy to defend, but some of it is to do with variations in practice. For example, there is mention in the Report of the fact that some Trusts rely heavily on what they call link nurses, ward-based nurses who have specific responsibilities rather than giving that responsibility to dedicated teams, so wrapped up in here are some very different Trusts and some very different practices. Now, I think it is fair to say that—

27. I will jump in at that point because there are very different practices and it is astonishing in the context of the rates of evolution of this problem that it seems to be an accelerated problem in hospitals, and we are told that isolation facilities have been greatly reduced over the past five years. That seems to be contrary to what is needed, does it not? It defies all logic, and there must somewhere be, but I do not suppose it is available, a possible correlation that could be drawn up between the availability of these facilities and the incidence of these illnesses.

(*Sir Alan Langlands*) Certainly in the specific cases I have looked at it tells quite a decent story. For example, the very hospitals I have mentioned, the specialist children's hospitals, are places where, because of the nature of childhood disease and how it is now being treated in a very extreme form, there is a lot of investment in isolation facilities, so that as we see some of these conditions being treated in more specialist centres, we see a concentration of these

[3] *Note:* See Evidence, Appendix 1, page 22 (PAC 1999–2000/145).

[4] *Note:* See (PAC 1999–2000/145), not printed.

[Mr Williams *Cont*]
facilities, so there is one explanation. Having said that, I do accept and I do believe that if there is more investment in this area, part of the capital investment will be in isolation facilities and in nurse staffing levels to improve the level of barrier nursing.

28. But what would be useful again in written evidence would be if you could let us have some idea of what the costs are that are associated with the establishing of such a unit, if you do not mind[5]. In paragraph 28 it makes the point that infection control teams said that a quarter of them were never consulted over the letting of cleaning, catering or laundering contracts. Now, these are all areas of possible random infection and yet they are not even consulted. What on earth is wrong with the chief executives in that when they have the teams, they do not consult them at all or talk to them?

(*Sir Alan Langlands*) Well, I agree with that. The requirement to involve the infection control teams in these very issues and indeed in monitoring hygiene is right at the centre of the new standards we have set in the controls assurance method. Every chief executive has been asked to sign up to that. Where they have been found wanting, not just as a result of this Report, but our own regional work, they have to have in place by July clear proposals for making good that deficit. That is the way we have taken the Report on.

Mr Williams: Well, I must finish on that note, but may I again say that I genuinely wish you well and although it has not always been obvious, I actually think you are one of the very good witnesses we have and I think the University are very lucky to get you.

Chairman: Mr Gerry Steinberg?

Mr Steinberg

29. Professor Donaldson, I am delighted to see you again. I thought you had actually disappeared because for three years I tried to contact you in your office and your secretary kept saying, "He's not in", "He's not in". Eventually I said to her, "Does he actually exist anymore or has he done a runner?" because I could never get you, so I am delighted to see you this afternoon and to see that you are still looking as well as you always did.

(*Professor Donaldson*) Thank you.

30. It is quite a damning Report this, is it not? It is probably one of the worst reports we have had in front of us for a long time actually and it is particularly damning of management, is it not, at all levels? If you consider the costs to the taxpayer, something like £1 billion a year, and let's not forget the suffering of the patients as well because that is really important, I think, I would have thought that hospital-acquired infection would have been a priority and yet if we look at paragraph 2.11, it seems to indicate that the chief executives of the Trusts do not even really bother to get involved, that they seem to leave it to somebody else and not really care about what is going on. In fact in 2.11, it says that "in a number of NHS Trusts, chief executives may have a low level of awareness of infection control issues and that they may be unaware of the extent and cost of hospital acquired infection and how it is being addressed in their NHS Trust". I find that quite incredible that when £1 billion on the Health Service is being used, it is obviously an appalling sort of situation happening in hospitals and yet the chief executives do not seem interested. Why is that?

(*Sir Alan Langlands*) Well, first of all, on the £1 billion, it is clear in the Report that the avoidable level of expenditure is very much less than that and I say that for the record because I think it is easy to latch on to the £1 billion and ignore the small-print which says that it really means £150 million or maybe more than that—I accept it might be more than that—which is still a substantial sum. I think the figure 7 does set out very clearly that there is a lack of engaging these people and it is that very issue, not just as a result of this Report, but as a result of our own work, that we are trying to get at. Now, several things have happened in the last couple of years: the Government has made chief executives of Trusts not just statutorily accountable for money, but also the quality of care and I think that is an important step forward; and, secondly, in the so-called "control assurance method" that we are implementing right across the Service, we are making the chief executives personally accountable for dealing with these issues. Now, that is not to say they need to do everything themselves. I think this Report sometimes misses out the notion of delegation, but it means they have got to know what is going on, that they have got to assess properly the problems in their Trust and they have got to have a plan and resources and people in place to address them systematically.

31. So you are actually saying that the Department is now actually insisting that the chief executives get personally involved in this, whereas in the past it does not seem as though they have? Am I right in saying that?

(*Sir Alan Langlands*) That is exactly right.

32. Moving on slightly, but on the same subject basically, the impression that it is not really held in great priority, in 2.22, for example, it says that one Trust spent only £500 whereas another Trust had spent £1 million on the issue, so that clearly shows to me again that there are some Trusts which just do not seem to take this seriously or take it very lightly and other Trusts seem to take it as a very serious problem. What are you doing about it to make sure that all Trusts take it very seriously as a serious problem?

(*Sir Alan Langlands*) Well, there are two points there. We are doing what I said, which is holding people to account for clear national standards. I think the £500 figure is misleading because what we see here is that—

33. You say it is misleading, but this is in the Report and you have obviously agreed the Report.

(*Sir Alan Langlands*) I have agreed the Report and I am just going to tell you what I have agreed to which is that I have agreed with the notion that there is no consistent basis for costing the work that goes on in these places in relation to control of infection, but it is not to say that people who contribute to the control-of-infection process in the Trust that has a budget of £500 are not counted under some other budget heading so that the microbiologist might be

[5] *Note:* See Evidence, Appendix 1, page 22 (PAC 1999–2000/145).

[**Mr Steinberg** *Cont*]
counted in the laboratory budget and the nurses might be counted in the nursing or the operating theatre department budget or something like that, so there is an issue of costing as well as an issue of commitment that needs to be considered.

34. You said to Mr Williams that there is a sort of league table which you were not keen to give us on good hospitals and bad hospitals. Is there any correlation between those hospitals that actually do put resources in to cases and those which in fact do not put resources in? Has there been any sort of correlation work done on that?

(*Sir Alan Langlands*) I do not think we have got good enough data to prove that point. What we do have is subjective data and examples of very good interventions where there has been more investment, where they seem to have an improvement in their practice. Some of them are in the Report and we have many more, so my guess would be that undoubtedly there will be a link between how well this is done and how well it is resourced and the results that are achieved, but again we always have to be careful about comparing apples with pears in these things because some Trusts have very complex case mixes, very difficult cases that they are dealing with and others deal with the straightforward, and actually finding some way of adjusting for all of that in looking at these correlations is genuinely a very difficult thing to do. It is not prevarication or fudging on my part, but it is just technically a very difficult thing to do.

(*Professor Donaldson*) But could I just add that money alone would not be enough. It is obvious from the Report and from our experience as well that you need commitment and basically you need the philosophy in any hospital that infection control is everybody's business, not just the specialists', and that means education and training, it means induction of new staff coming in, it means monitoring and it means providing data to show people how they are doing, so if the money is put in, it has got to be spent on the right things and it is those sort of activities which would be effective.

35. I had not actually come to that, which I do want to come on to, but I just wanted to press you slightly on this topic about resources basically. Do you lay down any sort of guidelines of what the resources should be that are put into this and, if you do lay them down, I think you do think that, I think you mentioned that there are not enough resources being put in, so who should be responsible for putting these resources in and where should these resources come from?

(*Sir Alan Langlands*) We have not laid down any guidelines as to what the resources should be. We have just laid down guidelines for the sort of outcomes that we are looking for, if you like, or the improvements that we are looking for. Now, the assumption there is that much of the resource will have to be internally generated, although, as I said earlier, this is an area where Ministers feel that there is a need for investment and investment is increasing by a bit in the next two years, an extra £2 million in the year we are just in and an extra £3 million for the next year, but I think beyond that we have prepared, drawing on all of this and our own feelings about it, a bid for the Spending Review, so we are in the business of negotiating resources with the Treasury at the moment.

36. Professor Donaldson, what do you actually attribute to the rise in infections in hospital? Could you give us some examples of why you think it is happening?

(*Professor Donaldson*) Yes, I think generally, looking back over the period when the NHS has been in existence, infection control and infectious diseases have been an unfashionable area. They have been something that people thought was, until relatively recently, on the decrease and that was because particularly up until the 1980s antibiotics usually solved the problem, so people did not need to worry about it, and in the 1980s when there was a good range of antibiotics available, isolation facilities were standing empty, so people did not see the need to keep them empty any more, research programmes were wound down on antibiotic resistance and a general feeling emerged that infection was a thing of the past, so—

37. Could I ask you to answer quickly because we do not have much time.

(*Professor Donaldson*) The main reasons for it are that organisms have become more resistant to the common antibiotics, more and more organisms have become resistant, and that is as a result of over-prescribing in medicine and the use of antibiotics—

Chairman: We do not need a history. Time is tight so can you make the answers brief please.

Mr Steinberg

38. So what you are saying is that organisms are becoming more and more drug-resistant, but there is also another real reason, is there not? I will turn to Sir Alan now because I think you said to the Chairman that there had been year-by-year increases in resources in hospital funding.

(*Sir Alan Langlands*) Yes.

39. That is not how I remember it. I can remember for years and years going to the local health authority, the North Durham Health Authority, and being told year after year about the cost efficiency gains. Is that right? This is from memory. Were they called cost efficiency gains?

(*Sir Alan Langlands*) Cost improvements.

40. That is right, cost improvements. I always remember the Chief Executive at the time telling me that they were cuts. When have the increases come in, by the way, as a matter of interest? You did say year on year increases.

(*Sir Alan Langlands*) It is a matter of historical record that there has been a real terms increase in growth in the NHS for the last 30 years. I am only saying this in a neutral way.

41. I am sure you are.

(*Sir Alan Langlands*) In addition to that, the NHS, like every other part of government, has had to make efficiency gains along the way.

42. Efficiency gains in my area meant not so much cutting the number of beds as the number of staff. The number of beds in any local authority now compared to, say, 15 to 20 years ago is considerably

[**Mr Steinberg** *Cont*]
less. We were always told by management that these things were quite acceptable because you were in and out of hospital much quicker and therefore you did not need as many beds. You went into hospital, had the operation, and were out very quickly. Because you have got fewer beds you have got nurses running around from wards all over the place; you have got patients in wards with different illnesses; you have got cross infections taking place in hospitals. How much have the cuts accounted for the increase in hospital acquired infection?

(*Sir Alan Langlands*) We do not know the answer to that question. I am not arguing with your contention—I have said this already today—that if you put people through hospital more quickly and if hospitals are stretched for resources, it is likely that infection rates could or can increase. I am accepting that. That has been—

43. Do you accept that the cuts that we have had in the last 20 odd years have increased the risk of hospital acquired infection?

(*Sir Alan Langlands*) My personal view is that the answer to that question is yes, but there are very many other factors that have increased the problem and I think the Chief Medical Officer has focused on the main one which is the whole question of antibiotic resistance.

44. I had a lot more questions to ask on this particular issue of efficiency gains but I will move on because I have only got a few minutes left. Because this is Professor Donaldson's first meeting here he did not realise he had to answer quickly!

(*Professor Donaldson*) I was trying to give very thorough answers and I was cut off.

45. I was speaking to someone who said, "Mr Steinberg, do you know that one of the big problems in hospitals today is the fact that the changes mean that the hospitals are not cleaned properly now." I said, "What do you mean by that?" He said, "When I was a male nurse I did the cleaning and I had to ensure that every bed was swept underneath, I had to ensure the wards were kept clean. There is not the supervision and there is not the effort put in that there was when I was a nurse 20 years ago." I make that point because what did appal me and stagger me was the part of the Report that talked about the washing of hand in hospitals. I was a teacher for 20 odd years and the main thing we taught, particularly to the little children in nursery and reception, was that the most important thing is that you must wash your hands. Apparently doctors and nurses do not even do it. That is appalling and I think I read the statistic that 50 per cent of cases were because of that. Was that right?

(*Sir Alan Langlands*) I do not remember reading that, no.

46. It is in the Report, page 81. It says: "Yet many observational studies, mainly conducted in intensive care units, show low rates of hand washing especially among doctors." I did read somewhere else in the quote the number. I may be wrong. Once I am finished I will have a look. You tell nursery and reception kids that they have got to wash their hands and yet doctors and nurses are not doing it, so no wonder there is infection. Goodness gracious me, if you cannot educate doctors and nurses and if they are not educated by now when are they going to be educated?

(*Sir Alan Langlands*) Clearly the whole area of infection is taught during the training of doctors and nurses. This is not saying they never wash their hands. This is saying that the discipline is not as well embedded as it should be. I do not think it is a simple case of telling people they must do it. I think getting to the root of some of these behaviourial things is quite difficult. If you turn to the page you are on there is a very neat case study of how this issue was tackled in Leeds, which is the largest trust in the country, and it does seem to me that giving this issue proper priority, having spot checks carried out by the infection control team, doing all the things that are set out here is the right way to tackle that sort of issue. We are building it into training and we are trying to build it into post basic training, working with the Royal College of Nursing and others and indeed the BBC at the moment to produce some new training material which we will use for post graduates, so it is constantly being topped up and people are constantly being reminded of the importance of this discipline.

Mr Steinberg: I would love to go on but I am out of time.

Chairman: You have had three minutes' injury time. Can we keep the answers brief. Mr Jim Murphy?

Mr Murphy: I do not mind who answers the questions as long as you are brief. Mr Steinberg in his three minutes of injury time stole most of my questions—

Chairman: Next question!

Mr Murphy

47. There are three areas I want to ask about. Firstly very briefly, you happily identified the United States of America and Holland as international case studies. Can I get an assurance from yourself that devolution to the nations of the United Kingdom is in no way hindering exchange of information and best practice in the Health Service to England and from England into Scotland or Wales.

(*Sir Alan Langlands*) No, it is not.

48. So it is creating no barriers whatsoever?

(*Sir Alan Langlands*) There are no barriers whatsoever and I think the infection control manual that has been produced in Scotland is very good indeed and may be something we can learn from here. We have certainly been looking at it with that in mind.

49. That is reassuring. There has been considerable comment in the Scottish press, as I am sure you are aware, about this issue.

(*Sir Alan Langlands*) Can I just reassure you that I meet regularly with my opposite numbers in Scotland, Wales and Northern Ireland as does the Chief Medical Officer and the Chief Nursing Officer. I have been involved in the last few weeks in bilateral meetings with Ministers from the devolved Assembly in Wales and the Scottish Parliament on these very

[**Mr Murphy** *Cont*]
issues of co-operation and I hope that we can actually learn from the little bits of diversity that emerge in the different systems.

50. Is there a problem that it is statistically better in England than it is in the other nations of the United Kingdom?
(*Sir Alan Langlands*) I think the honest answer is we do not know.

51. Why?
(*Sir Alan Langlands*) Because we do not have enough data to make these comparisons.

52. When will your successor be able to make those comparisons?
(*Sir Alan Langlands*) If the investment in the so-called NINSS system here continues, I would think three or four years from now we should have very good data.

53. And be able to answer that question?
(*Sir Alan Langlands*) Yes.

54. The second area Mr Steinberg referred to, and I do not want to put an exact figure on it, but certainly on page 81 the direct quote from the Report say " ... is possibly the most important factor in the cause of these infections" is not due to any great medical advance or use of new technology, but is soap and water. I share Mr Steinberg's sense of utter astonishment that that is the case. I would never have been aware of that. I read the case study there about the Hand Washing Liaison Group. Sir Alan, you accept that it is possibly the most important factor?
(*Sir Alan Langlands*) You must remember the key word—it says "possibly". That is very important. But undoubtedly it is a key factor.

55. In the absence of any qualitative research being done, it is possibly the most important factor?
(*Sir Alan Langlands*) Yes.

56. We have already heard that based on international experience we may have up to 5,000 direct deaths, possibly 15,000 indirect deaths, and possibly the most important factor in all of this is people washing their hands in hospitals. How many people do you estimate contract these infections simply because the people who are treating them do not wash their hands properly?
(*Sir Alan Langlands*) I do not think we can estimate or guess at that number.

57. Is it significant? Is there a significant number of patients infected whilst in hospitals because those who care for them do not wash their hands properly?
(*Sir Alan Langlands*) I do not even know that it is significant. What I do know is that when that discipline improves, as in the case of Leeds, the incidence of some infections might also improve. We have got to be very careful with our language, that we do not home in on this issue and say it is the only thing that needs to be done because I do not believe that to be true.

58. Sir Alan, no-one has done that today and I do not expect that anyone will do. I accept your point about concentrating on the language. The language that you have signed up to in the report is that it is possibly the most important factor in the contracting of these infections which lead directly or indirectly to the deaths of 20,000 people whilst in hospital. It is "possibly the most important factor".
(*Sir Alan Langlands*) It says "...possibly the most important factor in preventing hospital acquired infection", it does not say that it is possibly the most important factor in it happening.

59. Let us not play with words.
(*Sir Alan Langlands*) It is very important.

60. Let me just make one point and you can answer it. It is possibly the most important factor in preventing—
(*Sir Alan Langlands*) Yes.

61. The failure to do it properly is possibly the most important factor in contracting?
(*Sir Alan Langlands*) It may be.

62. You accept that point?
(*Sir Alan Langlands*) It may be.

63. Thank you. So it may be the most important factor in 20,000 people who die in this country through contracting these infections, possibly because people do not wash their hands properly?
(*Sir Alan Langlands*) No, I am not accepting that.

64. What do you accept?
(*Sir Alan Langlands*) The words are very important. I am accepting that published articles suggest that effective hand hygiene is possibly the most important factor in preventing hospital acquired infection but the compliance is poor. That is what I accept. I accept the words in this report. I think it is pushing too far—

65. You have changed your point of view in less than a minute.
(*Sir Alan Langlands*) No, I have not changed my point of view. The words are clearly set out as in the first sentence on paragraph 4.16.

66. I put to it you that the people who care for patients, their failure to wash their hands is possibly the most important factor in patients contracting these infections which lead to 20,000 deaths and you said "it may be".
(*Sir Alan Langlands*) No, I said—

67. You did.
(*Sir Alan Langlands*) Okay. I am reminding you of the words.

68. Are you changing your answer? You have already reminded me.
(*Sir Alan Langlands*) I am standing by the words in the report. I do not wish to go further than that because I do not think there is scientific evidence to back that point of view.

69. You may stand by the words in the report after being reminded from behind what those words were. Only less than a minute and a half ago you accepted my point that it may be the most important factor in preventing patients contracting these deadly diseases, the fact that hands are not washed properly.
(*Sir Alan Langlands*) I retract that and stand by the words in the report.

70. Okay.
(*Sir Alan Langlands*) Because I do not think there is science to support what you have just said.

[**Mr Murphy** *Cont*]

71. I was taught at school, like Mr Steinberg, not through science but just through common sense, and from my earliest days before I went to school, wash your hands before you eat your food or anything else.

(*Sir Alan Langlands*) I am not suggesting washing your hands is not a good thing.

72. On the basis that you accept hand washing in hospitals before surgery is not a bad thing, and this is not meant to be flippant—

(*Professor Donaldson*) I would not have thought there was any occasion when there was no hand washing before surgery. People have to scrub up with antiseptics in the operating theatre. These would be situations where people were examining patients or changing dressings on the ward and that sort of thing.

73. Thank you. There is a great case study there about Leeds but how much is spent in the National Health Service in England in this education campaign to encourage people to act properly in possibly the most important factor?

(*Sir Alan Langlands*) I cannot say how much is spent on education in every trust in the country, it is an integral part of the control of infection team responsibility to educate. In order to answer your question I would need to know what proportion of their time was spent on education, what proportion on surveillance. The video I mentioned, for example, we have contributed with others, but the Department of Health have contributed £10,000 on the programme, the marketing programme I mentioned earlier to the Chairman about antimicrobial resistance. We have spent £1.3 million on a public and professional campaign.

74. In the report, mitigating circumstances for doctors and nurses not washing their hands properly are lack of hand basins and soap and other things. Is it the case that a wash hand basin or soap can be so far away from a staff member that they should not wash their hands before they perform either a major or a minor service on a patient? Is that ever excusable?

(*Sir Alan Langlands*) I do not think it is excusable in the sense that everyone knows it is good practice and it is the right thing to do. There is such a thing as human failure.

75. What will happen, in your view, or what has happened, partly as this process of education to those people who systematically fail to protect the patients by failing in the most basic ideal of washing their hands?

(*Sir Alan Langlands*) Where these people are being supervised that is sometimes something that their supervisor would pick up. Where that behaviour failure, if you like, is spotted as a contributory factor it may be there are certain cases that are picked up through some sort of audit process, that would be discussed with the individual concerned and hopefully put right.

76. Is it a disciplinary matter if someone fails to wash their hands?

(*Sir Alan Langlands*) I am making a distinction here between honest failure, human failure, and persistent malicious failure, if you like. Where someone persistently fails to do something out of spite that is clearly a disciplinary matter. What we are really talking about here is a failure that is to do with being busy, by moving from one patient to another without thinking properly, by perhaps not having access to the right facilities at the right time. There is a series of practical problems there that need to be sorted, a series of education problems, a series of awareness problems. The approach to tackling this is to try to be constructive with staff in order to induce positive behaviour.

77. I look forward to receiving further information on the effectiveness of this hand washing liaison group and its ability to deal with what is possibly the most important factor in relation to these infections[6].

(*Sir Alan Langlands*) In preventing these infections.

78. Preventing people from not contracting them, okay.

(*Sir Alan Langlands*) That is not what it says.

79. Can I come to a different type of washing of hands and that is in relation to senior management. The American example, although statistically there may not be a perfect cross over, identifies these infections are amongst the top ten killers in any one nation and yet only 79 per cent of trusts seem to have a coherent strategy. Why is there such limited involvement of chief executives of trusts in ensuring that more than 79 per cent have a strategy for dealing with this problem?

(*Sir Alan Langlands*) I think it has only been since last year that there has been an absolute requirement for chief executives to be involved in this area. They are involved in two ways.

80. In 1995 there were NHS guidelines though, were there not?

(*Sir Alan Langlands*) That is true.

81. So they have had five years, not just one year.

(*Sir Alan Langlands*) They were guidelines, there was not a statutory requirement. That means, bluntly, that they could delegate that responsibility to someone else. Often if you look at the specific cases of "failure" in this report, the answer is not that in the hospital concerned there was no senior management involvement in tackling these issues, the answer is that the chief executive has asked specifically the medical director or the director of nursing to take responsibility for that area of work and, therefore, has not lied in responding to this questionnaire.

82. I have only got two minutes left so I will be brief in my questions and I will remind you to be brief in your answers. One in five of the trusts in the Report are identified as being reactive when it comes to infections which are among the top ten killers in the United Kingdom. Would you say that they are not just reactive but are negligent?

(*Sir Alan Langlands*) I would not say they are negligent. I would say what it says in the Report, that they are reactive. I think that has been an historical position. The requirement now is for them to be proactive and to meet certain clearly defined standards.

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[6] *Note:* See Evidence, Appendix 1, page 23 (PAC 1999–2000/145).

[**Mr Murphy** *Cont*]

83. I find it incredible and I find it remarkable that they have had five years of guidelines and yet one in five NHS trusts do not have a proper coherent strategy for dealing with one of the top ten killers in the country. I do find that negligent. I do not find it overwork, I do not find it anything else other than negligent.

(*Sir Alan Langlands*) I agree with your point but I do not agree that it is negligent. I do accept and indeed take responsibility for doing something about it.

84. That means that one in five people in the country are served by trusts that do not have a strategy for dealing with this. Is there any evidence yet or when will there be evidence to measure whether those one in five are at the top of the league in terms of the consideration of disease and the death of patients? Is there a correlation between those who do not have a strategy and those who have high rates of mortality?

(*Sir Alan Langlands*) I have said earlier that there is no correlation but there is subjective evidence that suggests there is a link, which is why our approach is to level up and invest to level up and to set responses to level up rather than level down.

85. Finally, Sir Alan, when will every trust in the country have a strategy for dealing with these infections that kill so many people?

(*Sir Alan Langlands*) Every trust in the country will have a plan—

86. Or when will they implement that plan? When will it go from a piece of paper to being active on the ground?

(*Sir Alan Langlands*) Every trust in the country will have a plan in July this year that will be focused and that will set priorities for action in the areas that need to be addressed first in their trust and systematically year by year after that they will have to produce an annual report of progress systematically year by year forever where they will be seeking to improve against the standards that will be set.

87. Will that plan amongst all NHS trusts include washing of hands?

(*Sir Alan Langlands*) It will include washing of hands which is a clear part of the guidance that has been set out.

Chairman

88. I have one point, Sir Alan, arising out of Mr Murphy's question. Can you explain to the Committee how a reactive strategy for a disease like MRSA, which is bordering on the untreatable with antibiotics, in NHS patients can be anything other than negligent?

(*Sir Alan Langlands*) I am sorry, Chairman?

89. Can you explain to the Committee how a reactive strategy for diseases like MRSA which is difficult if not impossible to treat via conventional antibiotics for vulnerable patients can be anything but negligent?

(*Sir Alan Langlands*) We were talking in that discussion about the involvement of the chief executive. It is quite possible that a chief executive in all honesty has responded to the NAO question along the lines that he has not been personally involved in that issue. It is equally possible that in that same trust although he retains and takes overall responsibility for that, there are very competent control of infection nurses and microbiologists addressing the MRSA issue systematically and sensibly and in line with their peer professional group without anything having to be written down on a bit of paper. That is the point. I am not willing to sit here and say that the people working in these trusts were negligent because I do not think they were.

Chairman: A strategy that is described as "reactive" does not sound like what you have just said, but never mind. Geraint Davies?

Mr Davies

90. Sir Alan, it is good to see you again, welcome. The NHS spends something like £55 billion a year, or this year it will be five per cent up to £55 billion. In that context £1 billion is something like 2 per cent of the total expenditure. That is an enormous amount of money. Do you not think it is surprising that not every trust takes this as a serious opportunity to generate more funds at the margin with only a minority of trusts having effective, well-funded anti-infection strategies?

(*Sir Alan Langlands*) Again, let us be clear about the £1 billion. The trusts themselves, and indeed the evidence suggests, that the preventable activity might be 15 per cent, not necessarily translating to preventable cost—

91. Can I have clarity on that?

(*Sir Alan Langlands*) Even if it does—and it is a substantial sum of money—there is an irreducible—

92. So that we are clear about the 15 per cent, I had assumed that the 15 per cent was an achievable target in the foreseeable future in the next couple of years not a permanent ceiling which they think they can only get down by £150 million.

(*Sir Alan Langlands*) It may be an achievable target and I hope it is and the desire will be there to achieve that target. What I am clear about is that not all hospital acquired infection is preventable. There is a substantial and irreducible minimum figure that ultimately we will have to live with.

93. I am not a clinician obviously but can you give me an example of a non-avoidable infection. Somebody whose immune system has gone down due to cancer treatment is susceptible to infection, we know the probability is up, but are you saying it is inevitable that that person is going to get an infection in hospital then?

(*Sir Alan Langlands*) As things stand at the moment there are some cases of MRSA which are unavoidable because they cannot be treated by the available antibiotics. That is not to say at some stage in the future someone may invent a new antibiotic that may deal with it.

94. If somebody gets an infection that is not treatable by antibiotics because of the resistance of bacteria to antibiotics that is one thing but they have got to get the infection in the first place. In theory could one have completely isolated situations where there was no intervention from a bacteria to trigger an infection?

[Mr Davies *Cont]*

(*Professor Donaldson*) 30 per cent of staphylococcus aureus are present in people's own bodies and when they become immune suppressed the organism turns from the commensal into attacking them.

95. That is what I was trying to establish. That is very helpful indeed. I will tell you what worries me about this whole Report, to be quite honest about it, is we have got this possible £1 billion, which Mr Williams is suggesting could be nearer £2 billion, it is a considerable amount of money within the context of £55 billion. What I am surprised about in this Report it is not clear to me where the distribution of cost and incidence is across different regions and different sorts of hospitals. I assume the 20/80 rule applies and 80 per cent of the cost of those infections are probably in 20 per cent of the trusts. Is that true?

(*Sir Alan Langlands*) We do not know that.

96. You do not know where it is?

(*Sir Alan Langlands*) No, we do not know where it is and I do not think that is a good position to be in. Clearly we are trying to do something about it, but it is a very difficult thing to get at the £1 billion—remembering that only 15 per cent may be preventable—which according to this Report is based on a study at one trust and aggregated up. That is what that figure is based on.

97. That is very understandable, yes.

(*Sir Alan Langlands*) It is clear in the Report. I do not therefore feel confident that we can extrapolate and I am certainly not going to sit here and have £1 billion converted into £2 billion with no science whatsoever. So the position is that the estimate based on a study at one trust, which is thought around the developed world to be one of the most comprehensive studies in this area, is still pretty shaky in some respects in my view and has then been extrapolated to the trusts in the NAO Report. That is not strong ground on which to be arguing about the cost of hospital acquired infection.

98. It could go either way. £1 billion is extrapolated from one trust, as you say, but it was mentioned is in Report that there is a high probability of infection when people leave hospital. That was bolted on and extrapolated up but in fact that could go either way. That trust may be atypical either because it is better or worse than the average.

(*Sir Alan Langlands*) It could be.

99. We are talking about a cost of billions rather than hundreds of millions or would you not accept that either?

(*Sir Alan Langlands*) No, I am not accepting that. What I am accepting is based on the detailed study of one hospital we have a figure of £1 billion.

100. You accept it might be, obviously?

(*Sir Alan Langlands*) No, I am not accepting—

101. You must accept it might be one billion or two billion.

(*Sir Alan Langlands*) There is a wonderful advert on television for Ronseal and the message in the advert is "it does what it says in the tin". What it says in the tin—

102. On the tin.

(*Sir Alan Langlands*) On the tin. What it does here on the tin of the NAO Report, based on a study of one hospital, if extrapolated comes up with a figure of one billion, which I accept. It says 15 per cent may be preventible, which gives us a figure of 150 million. I am not willing to speculate about figures beyond that. What we have done on the very important point about post-discharge infection, which has been raised a couple of times tonight, is undertaken and commissioned a proper piece of research to look at that. We want to try to get to these issues in detail.

103. What I am frustrated about here is you say it might or might not be, but we are talking about figures of one billion, Alan Williams has suggested it might be two billion, it might be less. Within the context of this spend of 55 billion we are talking about big bucks but we have not got the data, we have not done the studies. We have got information from one trust, we have done the extrapolations, we do not know the regional variations and obviously there is a list of the different sorts of infections people can get, blood, urine, chest, whatever, we do not know the distribution of those. We have got some sort of idea of how many surgical and non-surgical. This as an overall budget within a budget is enormous. It seems to me we need this data very quickly so we can take targeted activity in an independent way rather than the broad brush stuff that is being done at the moment. When will we have the information to have a proper strategy that is targeted on a needs basis by trusts to get maximum savings?

(*Sir Alan Langlands*) What we are doing to tackle precisely the problem, the complex problem, that you have outlined is that we are developing what we hope will be a nationwide surveillance system. We have been investing for the last few years a half a million a year and we are going to double that in the next two years to accelerate the development. We are doing that with the commitment of everyone in the health service, with the Public Health Laboratory Service. We are doing it in a systematic way that has been complimented by the NAO and by the House of Lords Select Committee as being a sensible way forward. That is what we are doing. I said earlier in answer to a question that probably three years from now when we get good data coming out—

104. Three years?

(*Sir Alan Langlands*) Yes.

105. If I was running a trust listening to this thinking "good grief, I want to make some savings in technology", whatever I wanted to do, could I not just get on with it?

(*Sir Alan Langlands*) Yes.

106. Could you give me an action pack for doing an evaluation or do I have to wait for three years for the comprehensive—

(*Sir Alan Langlands*) If you are in a trust you have got the action pack and you can get on with it. That is what many of the people enunciated in the case studies here are doing. That is what people are encouraged to be doing. To answer your questions at a high level will take time. That makes us no different from any other developed country in the world. We are putting these surveillance systems in place and getting to these very important issues and this very

[**Mr Davies** *Cont*]
important expenditure that you have set out is a difficult thing to do. That is the reality of the situation.

107. With all these figures bandied around in this report that say a quarter of all trusts have no infection control services, 40 per cent have some sort of budget, 21 per cent no infection control programmes, are you going to insist, as opposed to suggest, that trusts do put in place budget systems, teams, that take this much more seriously in light of the fact that this may be the tip of the iceberg or it might not be, but if it is it clearly is a significant cost opportunity, or not?

(*Sir Alan Langlands*) We are insisting on two things basically. One, that every trust in the country meets 15 standards which we have set out in detail, most of them the points that you have mentioned, that they take the good practice from the NAO Report and other sources and get on and implement it. That is what trusts are being asked to do. We will ensure that they do that. In addition to that, we will take national action, for example, in formulating guidance, trying to avoid a situation where people have to keep reinventing the same wheel, maybe in terms of investment with additional staff and isolation facilities and everything else, but critically we will take national action to develop a surveillance system that will get closer to the root of these problems.

108. You may not know the answer to this but recently we had this flu problem and the situation of bed blocking. I think I am right in saying—correct me if I am wrong—something like 70 per cent of beds are occupied by people over 65. Was the situation when we had all of these people running with the flu that there was an enormous increase in infection rates and deaths in the NHS?

(*Sir Alan Langlands*) The last part of that question the Chief Medical Officer can answer. You are nearly there with 70 per cent. It is about 63 per cent of the bed bays in our acute hospitals are taken up by people over 65.

109. I was thinking of the Croydon figure.

(*Professor Donaldson*) There was a higher rate of mortality from flu this winter, yes.

110. In so far as the flu epidemic reduced the amount of elective surgery because they did not have the beds, I am sure that was a good thing because these people would not have got their heart bypass but they might have died as a result because there were all these infections with people around. That is true, is it not?

(*Professor Donaldson*) I do not think we have got any data on the impact of the flu epidemic on hospital acquired infection for planned operations.

111. Is there any particular strategy when we can look forward, if I can use that expression, to a flu epidemic, or whatever you want to call it, to try to contain the amount of infection in other parts of the hospital where there are serious operations going on and the risk factor is up? Are there strategies or do we just muddle forward?

(*Sir Alan Langlands*) We are certainly not going to muddle forward. The strategy is about the segregation of patients. The strategy for ensuring that on the one hand you can deal with an epidemic as you have described it, of flu during the winter, whilst maintaining your surgical workload is not one of planning, I think that charge failed, it is not one of disagreement or concern between managers and doctors, it is a question of resources. That has been shown plainly this winter, that there is a requirement for further investment in the health service to meet these parallel objectives and to do it in a way that is safe and effective for patients.

112. Obviously, as is clear in the health service as in other things, one could do more with more resources. One of the issues that has been pulled out is how much can be done with more cleanliness. I have heard cases of certain hospitals—North Wales was reported back to me—whereby because of cost efficiencies they have reduced the amount of money spent on disinfectants to clean floors, they just use water, and I have heard instances of wards that are dirty with urine, blood and whatever, vomit and the like. You have talked about resources, and I understand that, but I wonder to what extent there should be a targeted attempt at cleanliness generally. Perhaps you could also comment on the fact that nurses are obviously doing much more medically orientated things than traditional things and they certainly are not running around cleaning and you have private contractors coming in. Is there a problem with the amount of cleaning in wards now?

(*Sir Alan Langlands*) There are clear standards for cleanliness. We have established tonight that we ensure that infection control teams have a view on standards and, indeed, monitoring hospital hygiene. I think it is wrong to generalise from your examples. If you would like to send me chapter and verse of your examples we will look into them because what I cannot support as Accounting Officer is a false economy. There is no point in cutting back on expenditure if that creates a bigger and more difficult problem for the medium and long-term. I am very happy to look into any detailed examples you want to give me.

113. In terms of inspection, presumably there will be inspections and, secondly, an encouragement of a culture of, if you like, consumer whistle blowing, for want of a better expression, so people do report somehow or another if they have witnessed dirty floors, lack of cleanliness and conditions which generate infection? Is that being encouraged or would you not encourage it?

(*Sir Alan Langlands*) People do that now. Certainly there are some good examples where patients and the public contribute to control of infection initiatives. The inspections you refer to are routine and localised in terms of things like hygiene involving domestic managers and the control of infection teams. Nationally they are from the Audit Commission and the Commission for Health Improvement to check progress against these standards. So you have got to operate at a variety of different levels to get these disciplines properly embedded.

Chairman: Mr Love?

Mr Love

114. Good afternoon, Sir Alan. I am not a very good member of this Committee because, like you, I look on this Report in terms of the impact that it has on patients rather than the financial aspects. I wonder, reading through it, do you think the Health Service has lived up to its commitments to patients in the way it has dealt with hospital acquired infection?

(*Sir Alan Langlands*) I do not think we have done as well as we should have done in this area and to that extent we have not lived up to our commitments. I think there are many reasons for that, some that we can address and will address in a practical and systematic, some that might not need additional funds, some that might need additional resources, and some might be factors that we cannot control, particularly the whole question of antibiotic resistance, but where we in this country are working with every other country in the world to try to come up with solutions.

115. Can I just press you a little on this. Figure 6 on page 25 shows 12 separate initiatives that have been taken, I think 11 of which came before the publication of this Report. What confidence should we have after this damning Report and 11 separate initiatives in relation to this, that one or two others or three others are going to make a significant difference in future?

(*Sir Alan Langlands*) I think the initiatives that are being taken now are of a different order to the initiatives here for two or three reasons. One may just seem a bit of symbolism but it is very important. There is now established in legislation a duty of quality that chief executives must live by. There is a commitment from the government in addition to that to instal systems of discipline of audit, of review, of inspection that have not previously existed so there is a much more aggressive, some would say, top-down approach to ensure compliance given the sort of failures that the NAO Report can link to some of these prior initiatives so that the dependency now, for example, on these standards for hospital acquired infection is not hospitals or trusts having to live by standards that are set by their local health authority. The requirement is for every trust to live by standards set by the control assurance procedure to report on a regular basis and to be managed and inspected against these targets. That is, in my view, a different order of initiative from those listed here.

116. I am sure we will be able to look at that. Let me press you on another area, perhaps Professor Donaldson is the one to answer. The response you have given to quite number of questions this afternoon is, "We do not know what happens because we do not have any research results in this." Why is it that from 1996 onwards there has been little research? You tell us research will be produced in July of this year but there has been little done since the first of these initiatives in 1996. Professor Donaldson mentioned it was in the 1980s when these resistant strains began to appear. Should not alarm bells have been ringing then about the complacent attitude that has happened since the 1990s? Have hospitals failed to catch up with what is happening?

(*Professor Donaldson*) They are catching up now with the initiatives.

117. Is that not a bit late?

(*Professor Donaldson*) There has been a tendency in the Health Service over the years not to invest as much money in information and to regard money not spent directly on patient care as money wasted. It is now obvious that you do have to spend money on information if you are going to improve the quality of service. This comprehensive surveillance system was introduced four years ago. It is going to be built on this year. On the initiatives you mentioned in figure 6, 11 of them have come in the last three years. We have put a real major impetus on drives to attack hospital acquired infection. There has not been enough action in the past but in the last three years there has been a major range of action.

118. Can I press you on another issue which is that Figure 3 on Page 19 tells us—this is a small piece of research that was carried out—that where patients had acquired infections in hospitals that the cost was 2.8 greater than uninfected patients and they ended up staying two and a half times longer, that is 11 days extra in hospital. I am not so much worried about the financial implications of that but there must be some horrible medical consequences to that. What were hospitals doing when they should have been living up to their commitment to patients affected in this way? Why have they been so complacent?

(*Professor Donaldson*) The emphasis was more on treatment than on prevention and that is why. There has been insufficient emphasis on prevention. We have now got this problem firmly in focus and all the action that has been described this evening is directed towards prevention.

119. Because we recognise that this problem of acquired infection is widespread—and every single hospital must have examples of where a patient has come in with probably a relatively minor problem and may well have ended up with a more serious one—one would have thought, even accepting the financial constraints under which undoubtedly the Health Service operates, that that would have raised some alarm bells. Clearly this is a sensitive issue publicly but within the Health Service, within the hospitals, within the health authorities and indeed within your own Department of Health that should have raised some concerns, that should have been reflected before. We had to wait for the NAO Report.

(*Sir Alan Langlands*) We have not waited. We have been active in this area consistently over the last few years because the alarm bells were ringing. This whole Report is peppered with examples of trusts and health authorities taking action based on local results. We have been taking action at a national level. Where I think we have failed, coming back to your very first question, is that the compliance with the guidelines and the rules and all the rest of it has not been as good as it should have been. We are now trying a new tack to ensure that we do better. Whilst acknowledging the problems, it is wrong to argue that we have been sitting on our hands. We have been active in this field and others have too. My point about post discharge studies is that that bit of research is a very narrow Health Service point but the Medical Research Council and the drugs industry, for whom there is a huge incentive to tackle this question of antibiotic resistance, have been working on these issues, so it is quite wrong to suggest that we

[**Mr Love** *Cont*]
need an NAO Report to be active in these areas. What is right is that this has given added impetus into the way we are managing it from the Department of Health.

120. Most Members would echo the point made by Mr Williams earlier on about the coincidence of further information. Indeed, the last circular relating to the paragraph, it is not in figure 6 but is in the Report somewhere, about 11 February 2000 HSC 2002 arriving just prior to this Committee meeting. We would be just a little cynical about the input that report may have had on focusing attention within the Department.

(*Sir Alan Langlands*) There was lots of action before that. Very detailed action last year following a very important and extensive study by the House of Lords Select Committee on this issue that reinforced a lot of the points made here tonight, including the point about hand washing.

121. Almost all of that happened prior to this Report of the NAO and I think you have accepted that this is a critical Report and therefore one would assume that all those initiatives you are talking about, all listed clearly in Figure 6, still left you in a position where you could be criticised severely in this Report.

(*Sir Alan Langlands*) I am accepting this is a critical report. I am accepting that it has given us new impetus to tackle these issues, but I am not accepting that we had not been doing anything before this study. Indeed, our own people worked on this study and contributed their knowledge to it. We have embraced this in a constructive way and we are tackling the recommendations in a systematic way. What I am not accepting is complacency.

122. Let me just ask you about complacency. In figure three it says "A further 19.1 per cent of patients reported symptoms after leaving hospital", yet you told Mr Williams earlier on that research on this issue will not be coming out until July. For years that must have been apparent in hospitals up and down the country. Why no research to find out the level? Why no research in terms of you cannot tell me how many of those patients ended up being readmitted to hospital because of the infections that they caught in hospital? Do you not have a responsibility in these issues?

(*Sir Alan Langlands*) Of course we have a responsibility but we have a responsibility to find out if indeed the infection was acquired in hospital. That point has not been proven. I have said earlier in the evidence that the work that we have to do in this area with general practitioners and district based nurses is just as important as the hospital based work. I am not denying that there are difficulties here but we have seen this huge upsurge in day care and day surgery in the health service, we have seen this new problem of antibiotic resistance. We are reacting to these circumstances as they arise and getting into very, very difficult territory. There is no other country in the world that I can take you to and show you a study post-discharge of patients and make some linkage between their hospital stay, their infections or, indeed, the prescribing habits of their local GP. No-one in the world has been able to do that. We are trying to do it and if we can help by this report we will keep at it, that is all I am saying.

123. I want to pick up on the responses you gave in your answers. Figure two, emergent resistant strains: it does seem to me, again recognising the sensitivity of this as a public issue, surely this must have raised a considerable concern in medical circles, that hospitals in some cases do act as incubators for the development of these resistant strains and, therefore, ensuring that we maximise the reduction of acquired infection is going to be very important in ensuring that this does not develop. Should that not have had you working on this at a much earlier stage, Professor Donaldson?

(*Professor Donaldson*) I have only been in post for just over a year but in my old post we were working on this. There has been a lot of attention given to it in medical research over the last ten years or so as people have been tracking the emergence of these infections. The National Health Service has a very good record on antibiotic prescribing compared to some other countries, but we can do a lot better. We have a comprehensive system of monitoring and control, we have advisers in every health authority who talk to GPs who are outliers on their prescribing practice. Last year we looked at the need to have a cross-governmental policy covering agriculture and other fields where antibiotics are misused. All of these things are important. It would be possible to reverse this situation, I think, if we could rein back further on antibiotic prescribing.

124. I accept the point you are making about prescribing and perhaps the over-prescribing in the past and I have no doubt we are taking steps to deal with that issue. The point I am trying to get across is I assume there is a direct correlation between acquired infection in hospitals and the development of these new strains. Recognising that is the case, is not part of this strategy to respond to the new strains, to take further action to reduce the amount of acquired infection in hospitals?

(*Professor Donaldson*) That would help. It would help but the other factors I mentioned are very, very important. Eighty per cent of the prescribing is in the community, not in hospitals.

125. I have just been told that my time is up, just as I was enjoying myself. Very good luck for the future, Sir Alan.

(*Sir Alan Langlands*) Thank you very much.

Mr Gardiner

126. Sir Alan, in December 1998 the Government reaffirmed that infection control and hygiene should be a core management responsibility, is that correct?

(*Sir Alan Langlands*) Yes.

127. When did it affirm it?

(*Sir Alan Langlands*) I think the reference to December 1998 is a reference to the National Priorities Guidance which the Government produces every year. I think in the previous year there would have been mention of that issue. I do not have the words in front of me but if you look at the last three sets of National Priorities Guidance you will find that

[**Mr Gardiner** *Cont*]
the wording on that issue has hardened up every time to the point where in this year's edition it is referred to as a "must do". It has been raising its profile over that three year period.

128. You go back to the Cooke Report in March 1995 as part of that process of gradually affirming up towards 1998?
(*Sir Alan Langlands*) Yes. The Cooke Report was the basis of guidance in 1995 and began to map out what a proper infection control for a hospital setting should look like.

129. And from there presumably back to September 1988 when there was the first mention of this as far as the report?
(*Sir Alan Langlands*) Yes, and so on.

130. And so on.
(*Sir Alan Langlands*) You can take this back to 1867 when Lister described sepsis in surgery.

131. It is not just that these were issues, it is that infection control should be a core management responsibility.
(*Sir Alan Langlands*) What is different—

132. Could you just answer that. When was that affirmed? It was reaffirmed, we are told in the report, in 1998.
(*Sir Alan Langlands*) Yes.

133. You said that before that back to 1995 it was affirmed and I asked you whether you could date it back from 1988.
(*Sir Alan Langlands*) I cannot even confirm it for 1995 because the words you have used are "core management responsibility" and I think—

134. Not my words, the words that you have agreed to and signed off in the report.
(*Sir Alan Langlands*) I am accepting that but what I am saying is the introduction of the word "management", I think was a word—

135. "Core management responsibility".
(*Sir Alan Langlands*) "Core management responsibility" and subsequent iterations of that are words that have been used essentially since 1997.

136. Okay.
(*Sir Alan Langlands*) When the new Government first influenced the Priorities Guidance. That is a critical point that I made earlier this evening, that was the point at which the thinking, the legislation followed later,—

137. Please, Sir Alan, you have answered the question and you know I have only got 15 minutes.
(*Sir Alan Langlands*) Managers should have responsibility for clinical quality. Before that, the 1995 Guidance and before that, it was always a clinical responsibility to—

138. But the words I am interested in, as I have already clarified to you, are "core management responsibility". You have dated it at 1997, and I am grateful to you, but I want to ask if it has been a core management responsibility since 1997 why is it that a fifth of all the trusts have no such programme and that 92 per cent of the trusts either have no such programme or they have a programme that has not actually been approved by the chief executive and, therefore, 92 per cent of the trusts do not consider it a core management responsibility?
(*Sir Alan Langlands*) If I can try to help with the timetable on that. I will write to you about this properly because the times are very important[7]. From memory, the Government was elected in May 1997 and the first generation of the National Priorities Guidance which contained these words was probably produced in about November 1997. That which was produced in November 1997 applied to the financial year 1998-99 onwards. So from April 1998 the core management responsibility kicked into play. This study was carried out in July 1998 and I think what we have here is a point of timing. If the NAO were to repeat this study now and to ask chief executives if they thought this was core and if they knew about the standards and if they were involved in their control of infection teams and committees, you would get very different answers to the questionnaire than you did at that time.

139. So what you are telling me, Sir Alan, is because it only became a core management responsibility in April it did not actually need to be effected or one can excuse the fact that it was not effected when this study took place two months later?
(*Sir Alan Langlands*) I am not seeking to excuse it. I am seeking to clarify the position because you have been very precise about this core management responsibility. The point I would make is that up until then good, enlightened managers and clinicians would all have been handling these issues in a perfectly reasonable way.

140. Let's move on from that, Sir Alan. I would refer paragraph 2.31 to you and that, I think, is where it says there should be an infection control nurse for every 250 beds. That is the Haley Report. Is that right?
(*Sir Alan Langlands*) Yes.

141. But paragraph 2.26 says that there are no explicit departmental guidelines for the number of infection control nurses. So on the one hand the Haley Report tells us that it should be one to 250 but, equally, there are no departmental guidelines as to what it should be.
(*Sir Alan Langlands*) That is correct.

142. Perhaps Professor Donaldson I could ask you, do you consider the Haley Report to be a sound piece of medical research?
(*Professor Donaldson*) I think it is a reasonably sound piece of work, yes.

143. You do? Does that mean that you would support the conclusion that it reaches when it says here: "The comprehensive SENIC study strongly supported the 250 bed recommendation."
(*Professor Donaldson*) I think it is very difficult. I have never been a particular enthusiast of normative planning because I have found it is not a particularly good way of improving quality. You have to look at local circumstances and it is much better if the

[7] *Note:* See Evidence, Appendix 1, page 24 (PAC 1999–2000/145).

[Mr Gardiner *Cont*]
management concentrates on the size of the problem it has got and puts the resources in necessary to solve it rather than applying an across-the-board norm.

144. So you think the Haley Report is a poor piece of research?
(*Professor Donaldson*) I did not say that. I said it was a good piece of work and it is a reasonable basis for trusts to measure themselves against.

145. With respect, you have told me you thought it is a good piece of research or work but then gone on to profoundly disagree with its conclusions.
(*Professor Donaldson*) No, I have not. I was making a general point about application of research of that sort. I do not think it should be applied in a crude across the board way.

146. "The comprehensive SENIC study strongly supported the 250 bed recommendation". You have told me that because you do not favour a normative approach to these things that you do not think that the 250 bed recommendation should apply in British hospitals but in fact that each trust should look at it on a case-by-case basis and find out what its failings or needs are and act appropriately.
(*Professor Donaldson*) I think it is a good basis for trusts to look at their own local position and plan what they need to do.

147. Thank you. Does that mean that you would support it as a benchmark, only as a benchmark, not something that is normative but as a standard against which trusts should be looking to measure their performance?
(*Professor Donaldson*) My use of a benchmark in quality terms is a gold standard and I do not think a norm of this sort can be regarded as a gold standard because there is no evidence to support the fact that if you applied it across the board you would reduce hospital acquired infection to an irreducible minimum. I think the approach should be to take account of this ratio which was produced for trusts to guide their own planning from this.

148. Professor Donaldson, when my colleague Mr Murphy was asking questions of Sir Alan, Sir Alan responded to him that he believed that, I think his words were, it was only "subjective" evidence that was available on this. You are aware that the Haley Report showed reductions of infection rates in the hospitals that had programmes that complied with the one in 250 as well as the other parts of that programme of infection rates by 32 per cent.
(*Professor Donaldson*) At that time, yes, but we do not know what level of the programme was the bit that made the difference.

149. When Sir Alan was responding, I think it was to Mr Steinberg, he said he hoped the 15 per cent was achievable but nobody has yet proved that. I think I quote you exactly.
(*Sir Alan Langlands*) Broadly, yes.

150. So it is achievable but nobody has proved that yet so what you are saying is that the results of the Haley Report would not, for you, constitute reliable evidence, they would not constitute evidence that you would take on board as proof that achievements of even 15 per cent are achievable?
(*Sir Alan Langlands*) It is a pretty old Report and many other factors have changed in the meantime. The key point that is drawn out of the Report, paragraph 2.31, is about control of infection and nurses to bed ratios, which is not what I was discussing with Mr Steinberg.

151. No, it was much more general.
(*Sir Alan Langlands*) And on that specific topic I agreed with Professor Donaldson that that is a guide and something that can be used locally to inform practice, but I also earlier this evening (and I think in the Report) gave some very good examples of link nurse systems which would show a different ratio but would be just as effective in control of infection.

152. You said it was a guide but section 2.26 of the Report says there are no explicit departmental guidelines.
(*Sir Alan Langlands*) I accept that.

153. When are there going to be?
(*Sir Alan Langlands*) I have been explaining this for whole of the night. We do not frame our guidance in terms of inputs. We frame our guidance increasingly in terms of standards and outputs and ultimately, hopefully improved clinical outcomes. That is what is happening not only in this country but in countries all around the world.

154. So what are your benchmarks of outcomes you expect to be reported against in three or four years' time?
(*Sir Alan Langlands*) These will be in relation to hospital acquired bacteraemia, surgical site infection, urinary tract infection and infection complications in intensive care units.

155. What are the benchmarks?
(*Sir Alan Langlands*) These are the areas that are being studied as part of the surveillance system we are setting up. Within these our aim will be to develop measures and targets that will allow people to know whether their practice is getting better and that is a better way forward than counting staff numbers.

156. So what you are saying to me is that as of yet no targets within those areas have been set?
(*Sir Alan Langlands*) Individual trusts using this system have been setting targets and have been quite successful and indeed some of the case studies in the report—

157. But there are no departmental benchmarks?
(*Sir Alan Langlands*) There are no departmental benchmarks as yet because we do not have a national system.

158. Can I move on because I am running rapidly out of time. When you were speaking to Mr Murphy you and he had a dispute about the interpretation of paragraph 4.16 which states: "Published articles suggest that effective hand hygiene is possibly the most important factor in preventing hospital acquired infection ..." And Mr Murphy sought to get you, on the basis of that, to sign up to the fact that poor hand hygiene was possibly the most important factor in the 5,000 deaths inside and 15,000 other potential deaths. You refused to sign up to that. What I do not understand is quite why because I know you are going to Dundee and you know that in St Andrews they had a very good of Department of

[**Mr Gardiner** *Cont*]
Logic and Metaphysics and one of the first things all first year students had to get to know was *modus tolendo tolens*. It seems to me that *modus tolendo tolens* would apply here. Why do you not agree?

(*Sir Alan Langlands*) Whereas at St Andrew's people deal in these rather esoteric things, in Dundee they deal in science and what I could not find was a scientific connection between what it says in the first sentence of paragraph 4.16 and what Mr Murphy was trying to get me to say. What I say, as my final word on this issue, is that I absolutely stand by the first sentence of paragraph 4.16. I will not go beyond what it says there.

159. I am not asking you to go beyond it, Sir Alan, what I am asking you to do is to agree that if effective hand hygiene is possibly the most important factor in preventing hospital acquired infection then the flip side of that is that ineffective hand hygiene is possibly the most important factor in hospital acquired infection happening.

(*Sir Alan Langlands*) That is not what the sentence says. I stand by what the sentence says. I stand by what it says in the report, it is as simple as that.

160. If you stand by what it says in the report then surely you have to also agree that the flip side of it is just what I have said?

(*Sir Alan Langlands*) No, I do not have to agree that. We can sit here all night—

Chairman

161. Order!

(*Sir Alan Langlands*) All of tomorrow and I am not—

Chairman: Order! We are not making any progress. We will draw our conclusions in the report. Mr David Rendel.

Mr Rendel

162. Thank you, Chairman. Can I say first of all that I have a personal interest in this matter because my wife is a GP and the fewer patients you send her, the less stressed she gets and the happier my life is. I hope we can work together on the issue. Can I turn first to the post-discharge infections. You say you are doing some work to try to find out how many post-discharge infections there are and what you can do about them. What do you call a post-discharge infection? It appears from paragraph 3.33 that you are only really talking about those infections which appear after discharge but were the result of an infection that took place in hospital. Is that correct?

(*Sir Alan Langlands*) That is correct and I think that is very difficult to establish.

163. It is difficult to establish where the infection occurred?

(*Sir Alan Langlands*) Indeed, yes.

164. Are you saying though that because you are really only dealing with ones where the infection took place before the patient left hospital that the others are in some way somebody else's responsibility?

(*Sir Alan Langlands*) No, I think that is not the case. I said earlier that we have to be as active in dealing with these issues of infection control, in dealing with GPs and community based nurses. The point is this report is about hospital acquired infection, so we are having a rather narrow slice at it this evening.

165. The work you are doing would also cover the other sort, would it, those who are infected afterwards as a result of a wound which they got in hospital even if they did not get the infection in hospital?

(*Sir Alan Langlands*) It has to because we are trying to delineate the two causes or the two sources.

166. So you are doing some work to find out how many of each sort there are?

(*Sir Alan Langlands*) Yes.

167. The second question is about the ward system. You have talked a lot about the need perhaps to try to get more isolation, is there also a problem in terms of those perhaps rather older hospitals that tend to have a lot of beds lined up alongside one another in one great big room as compared to those where perhaps the wards are split off into smaller rooms with a fairly small number of beds in each room?

(*Sir Alan Langlands*) The question is are there problems in the incidence of infection?

168. Are you more likely to get an incidence of infection where you have large wards with a whole series of beds, perhaps 15 or 18 beds?

(*Sir Alan Langlands*) I do not think so, but if I can do what I have been trying to get others not to do all night, which is to turn that on its head, where there is more opportunity to isolate people, perhaps four with the similar problem or a single person in an isolated room, you can avoid the spread of infection by getting the physical layout of the ward right.

169. So it could be that by putting more money into changing the wards and making them into smaller units we could actually avoid some of this problem?

(*Sir Alan Langlands*) It could be.

170. You have not done any work as to how likely that is or how cost-effective that would be yet, is that what you are saying?

(*Sir Alan Langlands*) I think that is what we are saying.

171. Do you plan to do any such work to see whether it would be cost-effective?

(*Sir Alan Langlands*) We are having to do that sort of work for other reasons. The Government at the moment is very keen to avoid the notion of mixed sex wards, so all the current planning of health services or hospital facilities is in the direction of smaller patient rooms with en-suite facilities. We are sort of moving in that direction.

172. But you will be taking into account the potential cost effectiveness?

(*Sir Alan Langlands*) Yes, but I think that is more likely to arise from grouping specific categories of patient.

173. I understand. Can we go on perhaps to the question of where the patients are treated. Is there a problem at all in that a patient may go into perhaps a small community cottage hospital for some treatment and may there acquire some infection and then have to be treated in a different hospital because

[Mr Rendel *Cont*]
the small cottage hospital may not be suitable for treating the infection they have acquired? I can see this would throw costs between different hospitals, maybe between different trusts. Does that reduce the responsibility that the smaller hospitals feel for this problem?

(*Sir Alan Langlands*) I do not honestly think so but it raises the very important question of standards in these facilities. That does not just apply to smaller cottage hospitals, which traditionally the health service would run and pay for and often they would be linked to one of the bigger hospitals, but it applies critically to the nursing home sector and the whole question of who pays for nursing care. The nursing home sector is a critical issue of debate currently in the follow-through of the Royal Commission.

174. So is there any evidence that in places such as nursing homes or small cottage hospitals where they may not have to bear the costs of looking after patients who acquire infections that there are more infections acquired there?

(*Sir Alan Langlands*) Not that there are more infections acquired there necessarily but that people who suffer infections in these institutions or units are often transferred to a bigger hospital for their care.

175. I understand that is what happens but I am asking is that a problem? Does it in effect mean that people are less careful, if you like, in the nursing homes and the smaller hospitals because they do not have to worry about the costs of treating those patients if they do acquire an infection?

(*Sir Alan Langlands*) I do not think we can prove it is a problem but there is some—

176. Have you worked on that to see whether there is any evidence of that at all?

(*Sir Alan Langlands*) We have not worked on that specific issue.

177. Do you plan to?

(*Sir Alan Langlands*) As far as I know we have not worked on that issue nationally but there has been quite a lot of important work, particularly in relation to older people, where local trusts in conjunction with the satellite hospitals and nursing homes have worked on these specific issues to the point at which they share written guidance and protocols and, indeed, where the microbiologists and the team from the main hospital support the clinical staff in the nursing home sector.

178. That is good to hear but I come back to the question, do you plan to do any work to see whether there is a problem that people feel that little bit less responsible because they do not have to bear the cost?

(*Sir Alan Langlands*) As far as I know there is no plan to do that at the moment.

179. Can I ask now how much the NHS spends in total on the problem of hospital acquired infection, looking after it, trying to control it, not the result of it?

(*Sir Alan Langlands*) We do not know.

180. Do you know how much is spent on cleaning and disinfection in the NHS as a whole?

(*Sir Alan Langlands*) I could find out. I collect only the information that you see displayed here once a year in the annual accounts. These are often matters that are dealt with at a trust level.

181. Do you have any plans to find out how much is spent on the control of hospital acquired infection overall?

(*Sir Alan Langlands*) I think the process of improving in this area, for example, increasing staffing levels, isolation facilities and all the rest of it, will inevitably mean that we have to look at this in more detail than we have done in the past.

182. Do you have any idea how much extra spending will be cost- effective?

(*Sir Alan Langlands*) No.

183. How much extra can you spend on infection control?

(*Sir Alan Langlands*) We do not have any idea about that. What I think we could do is break that question down and, whilst avoiding normative approaches to planning, we could make some fairly crude calculations and estimates of the sort of investment that might help us reduce this burden and, indeed, we have been doing just that ahead of the spending review discussions with the Treasury.

184. There is an interesting case study number 4 on page 47 of the Report which indicates that one particular trust, the Guy's and St Thomas NHS Trust, thought that they could save about £1 million per annum and they produced a business plan as a result of which they agreed to fund two extra infection control nurses. How much would two extra infection control nurses cost?

(*Sir Alan Langlands*) With on costs £90,000, slightly less.

185. £90,000 including all on costs for a saving of £1 million. That sounds a pretty good bet in terms of cost effectiveness.

(*Sir Alan Langlands*) It sounds a good bet—if it works.

186. I understand that a large number of the business plans put forward were turned down. It says about a quarter of plans were turned down, I cannot see it now but it says that somewhere in here. If you are getting that sort of cost effectiveness I am surprised that the NHS is not putting quite a lot of money into this rather quickly. You have got a big pay-off.

(*Sir Alan Langlands*) First of all, we have not proved there is a big pay-off. Even in this example that was a case that was made, what we have not seen yet is results both in terms of patient care and in terms of finance. It is certainly the case that we believe that investment in information, the surveillance system, the investment in top management time and additional clinical staff and better isolation facilities will achieve a return. Whether it means we will save the £150 million estimated in the Report time will tell. The trouble is that all sorts of other variables will change in the equation as we go along but undoubtedly at a very micro level people have shown that some interventions are cost-effective, others are unproven, for example the work on screening which is raised as

[Mr Rendel *Cont*]
a possibility here we are looking at not just from the point of view of clinical effectiveness but cost effectiveness.

187. Paragraph 2.33 indicates that of the 60 control teams who prepared a business case for extra infection control nurses 16 were unsuccessful and indeed a decision is still pending in the case of a further 20 cases, so 16 out of 40 were unsuccessful. Do you know why the control teams in those cases would not able to indicate there would be cost effectiveness in these cases?

(*Sir Alan Langlands*) I think they possibly did prove it and whilst the notion of spending to save is very attractive—

188. Indeed.

(*Sir Alan Langlands*)—It is not one that people always latch on to immediately in a system where short-term affordability is often a barrier. It is certainly the case in looking at this Report and looking at these issues that we will encourage people to experiment in this area in the hope of achieving some of the savings.

189. So you are saying that you believe that 16 out of 40 were turned down mainly because although probably they were cost effective there was not a short term case to make that saving?

(*Sir Alan Langlands*) I think that could well be true in some cases and that is the trouble with running a system based on annuality.

Mr Rendel: Thank you, Chairman.

Chairman: Mr Alan Campbell?

Mr Campbell

190. Can I congratulate you on two things, one, your new job and also having seen off two-thirds of this Committee this evening; there are not many of us left! Can I admit to a sense of frustration, first of all, at reading the Report but also to some extent at the evidence session this afternoon because the issue that we are looking at has really great concern for the public, some of whom are going into hospital, some of whom have relatives who are hopefully coming out of hospital but sometimes having acquired infection. An extreme view amongst staff—and may I say not in my local trust—is that hospitals are the last places you want to be ill in. I am frustrated because the figures we have bandied about this afternoon "nearly" 100,000 cases, "about" £1 billion, "possibly" 20,000 cases where this has been a contributory factor, "about" 5,000, 15 per cent reductions and on none of these is the usual sense of accuracy that this Committee has come to rely on.

(*Sir Alan Langlands*) I agree with that and I share your frustration. I can assure you that for the NAO and/or ourselves had there been more precise data available we would have put it on display at the Committee tonight but that is where we are on this issue in terms of trying to aggregate things at a national level. I could certainly find you hospital trusts in the country where many of these questions could be answered in some detail. What I cannot do is provide national data with that sort of accuracy. What I think we may be able to do once we get a decent information and surveillance system working is if we think it is necessary to do that in order to make progress to provide that information, but I cannot do it tonight.

191. We are talking as if this is a new problem in some ways. We are talking about hospital acquired infection as if it is a new problem. Correct me if I am wrong, that means that if people go into hospital sometimes for fairly routine operations they catch an infection while they are in hospital which makes them ill and in some cases kills them. When Robert Liston was chopping off legs at the end of last century there had been improvements in anaesthetics that made surgery more dangerous because they were taking longer to carry out an operation and the longer you took to carry out an operation in those days the more chance you had of catching an infection. We are not talking about a new problem. You are not reinventing the wheel.

(*Professor Donaldson*) But the belief across the world in health care systems in the 1980s was that if somebody acquired an infection in hospital it could be treated with an antibiotic so it was not a major problem. Of course people wanted to reduce it but they had a solution. It is only since the emergence of these resistant strains that people have recognised they have not got a simple solution any more and some of the profligacies of prescribing in the past have come home to roost. Some of these programmes set in hand in 1990 are a response to this problem. It is a worldwide problem. The US health care system is a better funded service, but as we can gather, has a comparable level of hospital acquired infection to ourselves.

192. But a student revising for their history course and looking at the history of medicine will tell you that the course of medical development has seen a number, and of course ultimately extremely positive, of developments and changes but one inevitably leads to another. There is always an unexpected result of that. Why did we take our eye off the ball? Why did we suddenly not have infection in hospital as a major priority? I forget the phrase Mr Gardener used.

(*Professor Donaldson*) Because we had many, many other priorities to deal with all of them pressing down on the Health Service at the same time so the ones that are not jumping up and kicking you in the face are ones that tend to have a lower order priority. They are now jumping up and kicking us in the face.

193. The signs are that it is actually getting worse. Is that what you are telling me, so we are now paying it attention?

(*Professor Donaldson*) It is certainly not getting worse than the times of Lister and Semmelweiss who first discovered the links.

194. In the last 20 years, for example, there are signs that things are getting worse.

(*Professor Donaldson*) There are signs that we are having trouble dealing with the problem; we have no simple solutions any more.

195. Let us put the layman's history to one side and concentrate on the management issues, if I may move on, Sir Alan. The figure suggested is 20 per cent of trusts had no control programme to combat this. Only one in ten had programmes which were

[**Mr Campbell** *Cont*]
approved by the chief executive. That suggests to me that there was a lack of grip in a number of trusts throughout the last 20 years and I am putting it to you that one of the reasons for that lack of grip was the difficulty of the Department of Health in knowing what was going on in trusts and to give it that central direction and to make this a priority.

(*Sir Alan Langlands*) Firstly, I do not accept that the chief executive knowing or not knowing something necessarily means a lack of grip. It is possible to delegate that responsibility but I accept, as I said earlier this afternoon, what there was a lack of was the sense that this was a core management responsibility. There are many chief executives over that period of 20 years who would describe and regard this as a clinical issue, something that doctors and nurses had to get on with and deal with. There is now no doubt that the chief executive and the board or the trust has that responsibility of dealing with this issue fairly and squarely placed at their door. That is the change that has taken place.

196. But the ability of the Department of Health, if it regards an issue such as this as a priority, has more difficulty in adapting quickly if you have a free-for-all in the health system where the trusts are left to do as they wish.

(*Sir Alan Langlands*) I do not think in a nationally accountable, publicly accountable system I would concede that there has ever in the last 52 years been a free-for-all, but there have been differences in the extent to which there has been an attempt made to achieve central control of the health service and the extent to which responsibilities have been devolved. If you look at the history of the last 50-odd years of the health service that has waxed and waned over time.

197. It has waxed—if that is the right phrase—in the last 20 years. Let me move you on about determining priorities. Mr Williams asked you about efficiency gains. The National Bed Review, as I understand it, highlighted some 4,000 beds that were needed in the National Health Service and my temptation is to use the word staff rather than beds because there are often many beds but the staff are not there.

(*Sir Alan Langlands*) Yes.

198. A shortage of staff, with staff having to deal with more patients, is actually quite bad in a ward situation where there is the possibility of infection, is it not?

(*Sir Alan Langlands*) A shortage of staff is not good, that is for sure.

199. And could contribute to the problem?

(*Sir Alan Langlands*) Certainly where there is a higher throughput, where people are busier, and I think someone used the phrase "run off their feet" earlier this evening, that could certainly contribute to hospital acquired infection.

200. So not being able to wash your hands once you have dealt with Mr Jones because Mr Smith is demanding your attention. Let me move on to another one because we are short of time. The shortage of isolation facilities: you said earlier you think smaller wards probably have less risk of infection.

(*Sir Alan Langlands*) I did not quite say that. Mr Rendel was discussing that issue with me.

201. Can you clear that up for me?

(*Sir Alan Langlands*) I think I have said three things this evening. First of all, I believe there has been an investment and an improvement in isolation facilities in hospitals that carry out very specialised work. I think, as the report suggests, in general there may have been some reduction in isolation facilities, that is what the control of infection teams are reporting and if that is the case we need to consider how best to put that right. The third thing I said in response to Mr Rendel's point, not because of control of infection but possibly a help to that, the tendency in building facilities in hospitals is to have smaller apartments, four bedded bays, en-suite bathrooms and sometimes very often single rooms with en-suite bathrooms, and that could help enormously in terms of the treatment of difficult cases. It also raises other problems, like everything else that is done in the health service there is a trade-off, in the sense that it is much more difficult to staff that sort of facility than it is the traditional so-called Nightingale ward, so that observation becomes more difficult and the staff requirement is higher than it might have been in the "old-fashioned" health service.

202. You have been very careful to choose the words that you have used from the report and I will throw back at you the phrase where you said there may have been a reduction in the number of isolation beds. If what you say about their contribution to preventing the spread of infection— I am not asking you to do this but if I can link the two together then the trend in the health service over the last number of decades has been in the wrong direction, has it not, moving to larger wards, getting rid of isolation hospitals, getting rid of isolation wards, that has been the wrong direction?

(*Sir Alan Langlands*) I do not think that has been the direction to be perfectly honest.

203. I imagine there are plenty of MPs who could quote you examples of where in their constituencies and in their hospitals, and in some cases whole hospitals, there is not the emphasis on isolation facilities that there was 20 years ago.

(*Professor Donaldson*) We are not talking about the free standing isolation units that we used to treat tuberculosis, they are no longer necessary. I think in this context we are talking about whether there are any single rooms within the normal ward environment into which a patient with a serious hospital acquired infection can be put and nursed in a special way. There is no doubt that those sorts of facilities have gone down.

204. Nevertheless, we note what you have already said and what I am saying is that there is evidence, even in the report there is evidence, that there has been some movement away from that. I want to move on.

(*Sir Alan Langlands*) I do not think that is true but okay, for the purposes of moving on. I do not think that is what it says.

[**Mr Campbell** *Cont*]

205. You said earlier that this issue, in your view, should be made a priority for future spending. We need to address it. There is a resource issue here. We have been turning arguments on their heads all afternoon. If you turn it on its head, does that mean that it has not been given a sufficient priority in the past?

(*Sir Alan Langlands*) Well, yes, because I think to make progress in this area, as we have seen this evening, you can generate resources internally but I think there is clearly a need in this area to invest more in staff and facilities and, indeed, in information systems. That is certainly the way that ministers and I and others will be pushing in the spending review. We have a very clear view about the sort of investment we think could make a difference.

206. I want to move on very quickly. I complained earlier about the lack of accurate figures and I am not going to go back to that. We have talked about the lack of data and what you are doing to try to put that right. When you have that data, will that data be used to hold trusts to account for what is happening in their hospitals? Will you be publishing the data in future?

(*Professor Donaldson*) Yes, it will be used to hold them to account. As Sir Alan said, they have now a duty of quality placed on them which they never had in the past, so the chief executive is personally accountable for the quality of standards of care in his or her hospital. One of the key strands in this will be hospital acquired infection, it is one of our major problems at the moment.

207. Will that information be publicly available?

(*Sir Alan Langlands*) It will be published in their annual reports.

208. You said, Sir Alan, and I am quoting you liberally here, that Scotland had an Infection Control Manual which you described as "very good indeed". Why do we not have one in England?

(*Sir Alan Langlands*) We may have one in England. That is one of the recommendations of the report that we are looking at that we did not pre-empt. The content of controls assurance work and the guidance that was referred to earlier this evening of 11 February pretty well covers the territory set out in the Scottish manual. I think what the Scottish manual does is it brings it all together in one place. I really struggle to find an argument why we should not do that here and, therefore, leave 218 trusts trying to reinvent the same wheel. We will be looking at it very carefully with that in mind.

209. One final question which is in two parts, and you may write to me if you have the information. How many claims has the National Health Service had in cases of hospital acquired infection for compensation by families or by individual patients? What estimate have you made of the amount which is at risk from compensation claims?

(*Sir Alan Langlands*) I can answer the second part of the question globally but not in relation to infection. I think the best thing to do is, as you suggest, write to you on both of these points[8].

Mr Campbell: Thank you.

Chairman

210. Thank you very much. Before we publish our report I am going to ask the National Audit Office to try to make an assessment of the numbers that Alan Williams was trying to get to earlier, including the post release infection figures. Without taking too long over it, I wonder whether we can do a little to tighten up the numbers we already have within the report. I have a copy of a note which you will have received, or your Department will have received, which talks about the basis for estimate, from the London School of Hygiene Laboratory I think it is. One part of it says: "The estimates presented in the Socio-economic Burden of HAI report are limited to adult, non-day case patients, admitted to selected specialties. These patients accounted for approximately 70% of all adult, non-day case admissions in 1994/95. The estimates do not therefore cover the cost of HAIs occurring in the remaining 30% of adult non-day case patients, or HAIs occurring in day case patients, children or neonates. HAIs occurring in some of the excluded categories may be particularly resource intensive. Given the above estimates presented in the report are likely to be an underestimate." Can we see if we can tighten up on that? It may not be possible but as much as one can, can we make an estimate of those missed categories and the likely impact on cost?

(*Sir Alan Langlands*) We are very happy to try and co-operate with the NAO on this. It is not an exact science, but we will do our very best.

211. I do not pretend it is. We have dealt with these numbers in round estimates anyway, 5,000 and 15,000, and to get an handle on where the real number may be helpful.

(*Sir Alan Langlands*) Okay, we are very happy to do that.

212. Beyond that it remains for me to both thank you, Sir Alan, for giving evidence on a very, very important issue and to wish you the very best in your future in Dundee; we will miss you.

(*Sir Alan Langlands*) I fear you might see me again but I would be very happy to cut that deal!

213. We are very happy to have you.

(*Sir Alan Langlands*) I may be back!

[8] *Note:* See Evidence, Appendix 1, page 24 (PAC 1999–2000/145).

APPENDIX 1

SUPPLEMENTARY MEMORANDUM SUBMITTED BY NHS EXECUTIVE (PAC 1999–2000/145)

Question 12: Does the figure of 100,000 hospital acquired infections include staff, haemophiliacs and post discharge patients?

The study looked at patients who acquired pneumonia, bloodstream infections or urinary tract infections within the four major specialties (general surgery, general medicine, gynaecology and orthopaedics) over a period of one year at participating hospitals.

It is possible that some of the patients studied may have included NHS employees admitted routinely for treatment within one of the four specialties covered by the study, or possibly as a result of an infection acquired through their employment but that information is not available from the data collected by the researchers. The data does however record that there were 51 haemophiliacs among the 72,000 patients included in the study, none of whom contracted a hospital acquired infection.

The study was not designed to detect patients with hospital acquired infection presenting after discharge. A relevant factor here was the absence of an agreed methodology for measurement of such cases. That is why the Department commissioned and funded the research referred to in evidence at paragraph 24, the results of which will be made available to the Committee when the report is received during the Summer.

The study did not include surgical wound infections but the estimate of 100,000 did take account of them. To quote from the report (paragraph 12.1) "By extrapolation from the audit figures, there would have been approximately 60,000 such infections during the year in England and Wales. This takes no account of cases of hospital acquired infection (HAI) occurring in specialties not studied. In particular, it does not include surgical wound and skin infections which, in the latest prevalence study, together accounted for 20 per cent of all HAI. Nor do the figures include those for teaching hospitals (except one), or for ICUs, both of which have higher rates of infection than district general hospitals. The results suggest that there may be at least 100,000 HAIs per year".

Question 22: Can you identify the worst performing hospitals from the surveillance information in the report?

As the Accounting Officer indicated at the hearing, it is not possible to identify the worst performing hospitals from the surveillance information in the NAO report. The available data from the Nosocomial National Surveillance Scheme (NINNS) is limited (as the report acknowledges) in that it does not relate to all hospital Trusts, only to those self selected hospitals.

Question 28: Could you please indicate the costs associated in establishing an isolation unit?

Capital costs

Typical capital costs for provision of standard isolation facilities in new build and existing accommodation:

Accommodation	*New Build*	*Existing* Room Conversion*
Adult Acute Ward	*£/Bed*	*£/Bed*
Single bed accommodation with en-suite facilities	£35k–£40k	—
Single bed accommodation with en-suite facilities plus negative air pressure with non-automatic controls	£50k–£55k	£15k–£20k
Single bed accommodation with en-suite facilities plus negative air pressure with automatic controls	£55k–£60k	£20k–£25k

* assumes existing en-suite facilities.

Revenue costs

We know of no evidence based research to confirm that more nurses are needed to care for patients in isolation. However, anecdotal evidence is strong in respect of patients with poor hygiene, who may contaminate the environment and who cannot be expected to assist in maintaining infection control procedures (eg children and patients with altered mental status) in terms of extra time needed:

— to wash hands and don protective clothing (where necessary);

— for observation of patients, including informal and formal observation;

— for psychological care of patients in source isolation, who are unable to leave their rooms and who may also suffer feelings of imprisonment, stigmatisation and low self-esteem.

Patients in isolation may also require more time from therapy staff when they are unable to leave the ward to visit physiotherapy/OT. This increase will be variable and dependent on the particular condition.

For obvious reasons no meaningful figures can be put on these additional costs.

It is estimated that approximately £400–500 per bed per annum might be required to maintain ventilation systems to provide negative air pressure systems. Extra cleaning costs are estimated at around £500 per bed per annum, although this is also likely to be particularly variable.

Question 77: Can you provide further information on the effectiveness of the handwashing group and its ability to deal with what is possibly the most important factor in relation to these infections?

The Handwashing Liaison Group was formed in 1997 and consists of representatives from the Association of Medical Microbiologists, the Department of Health, the Hospital Infection Society, the Infection Control Nurses Association, the Public Health Laboratory Service and the Public Health Medicine Environmental Health Group.

The mission statement of the group is to modify the behaviour of health care workers to produce sustained improvement in compliance with agreed handwashing standards and so improve the quality of patient care.

Initiatives to date include:

(i) Production of guidance entitled "Handwashing for Chief Executives, Why you need to be interested" which the Department sent to Chief Executives with HSC 1999/049.

(ii) An editorial on Handwashing entitled *"Hand Washing A modest measure—with big effect"* published in the British Medical Journal. This was complementary to the Chief Executive document and aimed to raise the profile of the subject with managers and clinicians and provide the basis for a clinical audit session.

(iii) Papers on handwashing published or accepted for publication in the Journal of the Clinical Negligence Scheme for Trusts and the Annals of the Royal College of Surgeons.

(iv) Work on the use and promotion of alcoholic hand rub.

(v) Supporting an Infection Control Nurses Association initiative planned for October which aims to educate mothers, children and young people about the importance of hand hygiene.

The Handwashing Liaison Group will be reviewing their terms of reference in June and plan to become an autonomous group.

With regard to handwashing, we would like to clear up any confusion which may have arisen in the course of Sir Alan Langlands' evidence in response to Mr Murphy and Mr Gardiner about paragraph 4.16 of the NAO report.

Sir Alan said that he was in full agreement with the first sentence of that paragraph, which says "Published articles suggest that effective hand hygiene is possibly the most important factor in preventing hospital acquired infection but that compliance is poor". He was then invited to agree to the proposition that ineffective hand hygiene is therefore possibly the most important factor in hospital acquired infection happening, and consequently in the deaths associated with it. The following explains why he did not accept that it is possible to argue directly from the former to the latter.

The NAO's survey asked infection control teams to estimate the level of infection which, in their view, was preventable in their Trust. The bed-weighted average of replies received across all Trusts was 15 per cent. Only 4 per cent of Trusts are reported as estimating a figure greater than 35 per cent (Figure 14). These findings suggest a strong consensus that around 15 per cent of HAI is preventable. In other words, if all of the avoidable HAI could be prevented by effective hand hygiene (and published articles do not go so far as to suggest that), then perhaps as much as 85 per cent would still occur anyway, and arguably as many as 85 per cent of associated deaths.

Similarly, if ineffective hand hygiene were responsible for all preventable HAI/deaths (and we can assume the true figure is less than that) that would mean that around 85 per cent of all infections/deaths were due to other causes. Obvious examples include commensal and environmentally-present bacteria.

PAC members may wish to know that a systematic review of the scientific evidence worldwide, relating to the effectiveness of handwashing in preventing HAI, has recently been undertaken as part of the DH-funded project to develop evidence-based guidelines for the prevention and control of HAI. No scientifically robust studies were found to support the premise that good hand hygiene reduces the rate of HAI. But research has shown that good hand hygiene practice reduces the number of organisms on hands, and it is therefore assumed that this affects the rate of HAI.

Question 138: Can you provide the details and timings of references to infection control hygiene in the National Priorities Guidance?

In its response (December 1998) to the House of Lords Select Committee on Science and Technology Report: Resistance to Antibiotics and Other Antimicrobial Agents, the Government said "The NHS Executive agree that hospital infection control and hygiene are core management responsibilities . . . "

The Cooke Report (Hospital Infection Control—Guidance on the control of infection in hospitals), issued by the Department and the PHLS in March 1995, had previously outlined the importance of strong and effective management arrangements for hospital infection control. This message has been repeatedly underscored in National Priorities Guidance since.

In June 1996 the Priorities and Planning Guidance for the NHS: 1997–98 identified a number of baseline requirements for the NHS including the need for Health Authorities to:

> "satisfy themselves that their providers have appropriate arrangements for communicable disease and infection control, and the management of other untoward incidents, based on expert advice."

In the following year, the Priorities and Planning Guidance for the NHS 1998–99, issued at the beginning of September 1997, reminded the NHS that:

> "the obligations which Health Authorities have in relation to the protection of public health, for communicable disease control and radiological and chemical incident protection, must be fulfilled."

The National Priorities Guidance 1999–2000 to 2001–02, issued at the end of September 1998, in setting out the modernisation programme and identifying the national priorities for action over the following years, said:

> "Of particular importance is the need for the NHS to meet its obligations to: ensure the continuing and effective protection of the public's health with particular regard to the prevention and control of communicable disease, including controlling antibiotic resistance, the control of hospital infection . . . "

The most recent National Priorities Guidance 2001–01 to 2002–03, issued in December 1999, and referring to the Government's 13 priority areas, said:

> "Delivering improvements in these priority areas has to be under-pinned by achieving the following must-dos:
>
> strengthening services to prevent and control communicable diseases, especially hospital acquired infection, taking action to reduce anti-microbial resistance and meet immunisation targets, including for meningitis."

Question 209: (i) How many claims has the NHS had in cases of hospital acquired infection for compensation by families or by individuals? (ii) *What estimate have you made of the amount which is at risk from compensation claims?*

There is no centrally-held information which would make it possible to answer these questions as asked. It is unlikely that robust information could be obtained even from a separate survey of individual NHS Trusts.

Historically, information on clinical negligence costs has not been collected consistently. Only since 1997–98 have Health Authority accounts separated clinical negligence settlements from other payments under legal obligation and those for personal injury. Similarly, the Department of Health did not historically collect statistics on the number or types of clinical negligence claims brought against the NHS, largely in order to minimise the administrative burden.

Since the establishment of the NHS Litigation Authority (NHSLA) in 1995 better central data has been developed, and the Authority keeps information on all the cases which might qualify for reimbursement under the schemes it operates. This is not comprehensive, however, since Trusts are responsible locally for settlement of claims below the individual "excess" level negotiated by the NHSLA with each Trust. These latter claims are only reportable to the NHSLA when they have been settled, and it is not therefore possible to know centrally at any given time the aggregate amount potentially at risk from this comparatively large number of smaller claims. It is also the case that many claims, big and small, are withdrawn in advance of going to, or not substantiated in, court.

But even if individual Trusts were asked to provide local information for a one-off purpose, there are factors which would make it difficult to obtain a unique focus on Hospital Acquired Infection. Compensation is payable where it can be shown that there has been negligence (by act of omission or commission); and that there has been harm; and the harm was caused by the negligence. But given the nature of HAI as often a contributory, but not necessarily primary, cause of morbidity or mortality (as reported by the NAO) it is not uncommon for claims to cite eg MRSA as only one among a number of factors which contributed to the harm caused.

We understand from the NHSLA that they are aware that a growing number of clinical negligence claims cite HAI as a component of the circumstances resulting in a claim being made. This would appear to reflect the growing incidence of HAI in clinical settings generally. However they believe these to remain as yet a very small element within the overall actual or potential cost of settling claims.

NHS Executive

6 March 2000

APPENDIX 2

Copy of a letter to the Chairman of the Committee from the London School of Hygiene & Tropical Medicine (PAC/99–2000/233)

We would like to draw your attention to a misunderstanding about the number and cost of hospital acquired infections (HAIs) occuring in patients admitted to NHS hospitals in England. We are the authors of the recently published report *The Socio-economic Burden of Hospital Acquired Infection*, that was quoted in the National Audit Office (NAO) report *The Management and Control of Hospital Acquired Infection in Acute NHS Hospitals in England,* published earlier this year. The NAO report, which was discussed at length at the Public Accounts Committee meeting on 6 March 2000, states that there are ". . . at least 100,000 infections a year" and that "hospital acquired infection may be costing the NHS as much as £1 billion a year". These two estimates are incompatible. By accepting both the estimate of 100,000 infections per year derived by Glynn *et al* (1997), and our estimate that HAIs cost the health service almost £1 billion per year, the reader may conclude that the average cost per case is £10,000. This is a gross overestimate of the average cost of an infection, and a gross underestimate of the number of infections occurring annually. Our report, which is perhaps the most comprehensive attempt to date to derive estimates of the cost of HAIs, estimated that patients with one or more HAIs, on average, incurred costs that were almost three times greater than uninfected patients equivalent to £2,917 per case.

We estimated 320,994 (95 per cent CI: 288,071, 353,916) adult, non-day case patients admitted to the eight specialties covered in our study in 1994–95, acquired one or more HAIs which presented during the in-patient phase. This estimate was based on an incidence rate of 7.8 per cent (95 per cent CI: 7.0, 8.6), the incidence rate observed in our study. This estimate is considerably higher than that presented in the NAO report, yet is likely to be an underestimate of the number of patients who acquired one or more HAIs. The estimate does not take into account infections occurring in adult, non-day case patients admitted to specialties not covered in our study, who collectively accounted for approximately 30 per cent of all adult, non-day case admissions to NHS hospitals in England in 1994–95. Nor does it take into account infections occurring in day cases, children and neonates or infections which present post-discharge. In our study 19 per cent (95 per cent CI: 16.5, 21.9) of patients who did not present with an infection during their hospital stay, presented with symptoms suggestive of an infection following discharge from hospital.

With regard to the cost estimates presented in the NAO report we would like to stress that our study took a rigorous approach to deriving national estimates of the burden imposed. National estimates were derived from data on the observed incidence of hospital-acquired infections; the estimated ratio of the costs incurred by infected compared to uninfected patients obtained from the linear modelling analysis; the mean costs incurred by uninfected patients; and the data on the number of adult non-day case admissions to similar specialties at NHS provider units in 1994–95. The results of this analysis indicated that HAIs cost the hospital sector an estimated £930.62 million per annum as a result of additional in-patient care, and cost general practitioners an estimated £8.4 million, the hospital out-patient service £26.83 million and district nursing services £20.51 million. Whilst these results clearly demonstrate the substantial burden imposed by HAIs, they are likely to be underestimates of the overall burden imposed. The estimates derived relate to the economic burden associated with HAIs occurring in just 70 per cent of all adult, non-day case patients admitted to NHS hospitals in England in 1994–95. The burden associated with infections occurring in the remaining 30 per cent of adult non-day case admissions, and in day cases, children and neonates has not been taken into account.

Whilst we are aware of the problem of being accurate when extrapolating the results from one hospital to the national level, it should be noted that the hospital involved was broadly similar to other hospitals; we were extremely careful only to apply the incidence and cost data to similar patients admitted elsewhere; and the methods employed allowed for some variability in the incidence rate and the ratios of the increase in costs incurred by infected patients compared to uninfected patients derived in our study. The Department of Health was unable to fund a study that would have involved a representative sample of all English hospitals, and given the complexity and cost of conducting this study, it is unlikely that this detailed study will be replicated in the near future. As such, the national estimates presented in our report, derived using carefully considered methods, probably represent the best estimates that are likely to be available for some time.

We are concerned lest the conflation of data from two incompatible estimates should cause confusion and it is for this reason that we have taken the unusual step of contacting you directly about this issue. We hope the information presented in this letter clarifies the situation with regard to the number of patients affected, and the economic burden these infections place on the health care sector, and look forward to reading the report of the Public Accounts Committee following the hearing on 6 March 2000.

Rosalind Plowman and *Jenny Roberts*
on behalf of the authors of the report (Barry Cookson, Lynda Taylor, Tony Swan, Nicholas Graves and Mark Griffin)

19 June 2000

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Printed in the United Kingdom by The Stationery Office Limited
11/2000 522234 19585

ISBN 0-10-269500-8

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