Brunel
THE UNIVERSITY OF WEST LONDON
Health Economics Research Group

KING's FUND CENTRE

MEDICAL AUDIT
TAKING STOCK

Susan Kerrison, Tim Packwood and Martin Buxton

MEDICAL AUDIT SERIES 6

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Part I 'Medical Audit in Hospitals' was written by Tim Packwood in conjunction with Susan Kerrison and Martin Buxton. Part II 'Supporting Audit' was written by Susan Kerrison in conjunction with Tim Packwood and Martin Buxton.

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SK, TP and MB, Brunel University
January 1993

FOREWORD

The medical audit proposals in 'Working for Patients' would never have been put forward by audit experts. In particular the aim that within three years all doctors would be participating in what had been, until then, largely an esoteric activity for enthusiasts, was either visionary or hopelessly unrealistic, depending on your perspective. This aspect of the Reforms could not be imposed by vigorous management yet with the help of large amounts of money (£150m to date) and the energies of those enthusiasts, enormous progress has been made. But against what criteria should this progress be measured?

It was inevitable, given the pace of implementation, that mistakes would be made and much development work duplicated. But the basic proposition that audit should be a standard part of the professional practice of all doctors is impossible to challenge now – the debate is about 'how' not 'whether'.

The facts from these two complementary studies – an in-depth look at audit in general medicine in four hospitals, and a national survey of audit support staff – could not be more timely. The National Audit Office, Purchaser and Provider General Managers, and Clinicians with hard-pushed timetables are all starting to question the value added by audit and its future direction. A clear lead has been given by the Chief Medical Officer on the need to evolve from medical to clinical audit, but other major questions need to be addressed.

This monograph thoughtfully articulates the key issues and provides a mass of facts to inform discussion. It is extremely welcome.

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OVERVIEW

Of the many proposals for reform of the NHS put forward in 1989 in the White Paper 'Working for Patients', the requirement for all doctors to be involved on a regular basis in medical audit proved one of the least contentious. It was not contested on a party political basis, it was not challenged by the leaders of the medical profession, and it aroused little public interest. To many indeed it did, and still does, stand as a self-evidently 'good thing' that doctors should collectively review their clinical work. There was little discussion of the White Paper's broad definition of audit:

> 'the systematic, critical analysis of the quality of medical care, including the procedures used for diagnosis and treatment, the use of resources, and the resulting outcome and quality of life for the patient' (Department of Health, 1989).

Concern was expressed about the spectre of managerial involvement in medical audit implied by the White Paper, but, as the details emerged, medical audit was left firmly under the professional control of doctors as a peer-review process. What is more, funds for audit were ring-fenced thus guaranteeing from the outset the resources to begin to develop a medical audit infrastructure.

This monograph presents the results of two parallel studies undertaken by the Health Economics Research Group at Brunel University to monitor the progress with implementing the requirements for medical audit within hospitals. Both were funded by the King's Fund as one of a set of projects monitoring key aspects of the reforms. The first study used a very detailed case-study approach to observe, during 1991 and the early part of 1992, the implementation of medical audit in general medicine at four hospitals. The second, in conjunction with the King's Fund Centre's Medical Audit Information Service, was a national survey of audit support staff carried out in the autumn of 1991. The results of this survey, based on 382 responses, provide a more broadly-based picture about the characteristics, views and activities of audit support staff, a new occupational group, created as a result of the formalisation of medical audit and key to its current development. Together these studies provide a complementary evidential basis 'taking stock' of progress in the last couple of years and, perhaps more importantly, illuminate a number of issues which need to be considered if audit is to develop further and thrive as a useful element in the new NHS.

A number of general observations from these twin studies deserve highlighting:

- Together the reports clearly indicate that medical audit has now been firmly introduced in hospitals and that the initial aim of involving doctors in a regular process has broadly been met. An infrastructure of support staff now exists.

- While there are certainly still those in the medical profession who remain sceptical about the value of audit, its implementation has been led by those who support it and who have given it an initial impetus. Evidence suggests, however, that it is still a fragile plant and perhaps not yet well rooted as a standard component in clinical thinking and practice.

- Indeed, it is still a marginal activity. In each of the four case studies audit meetings took place 'out-of-hours ' or during lunch-times. Meetings were cancelled because of other pressures, and organisers struggled to add this responsibility on top of other commitments. Attendance was patchy. It has not made major demands on doctors' time except perhaps those with lead roles.

- Most of the audit being undertaken is criteria audit – assessment of current practice against an explicit set of criteria. At the four study sites 37 out of 55 audits used a criteria approach and the broader survey also suggests that criteria audit is the most common form. But too often the criteria were implicit, and, even when explicit, criteria were not always clearly research based or clearly justified.

- In most audits sample sizes were small, based on case note reviews. Little use was yet being made of information systems intended specifically for audit and many problems were experienced in getting appropriate data for medical audit from existing information systems.

- Audit meetings tended to be viewed as one-off events rather than a continuing process to achieve and monitor change. The famous 'audit-cycle loop' was often not closed.

- At present audit is limited in scope, focusing on the technical content or process characteristics of professional medical care. In the case-studies we saw few examples of the formal consideration of resource use or cost data: the survey shows that less than 3 per cent of respondents had undertaken an audit using cost data. We also saw very little formal consideration of post-discharge outcomes or patients' views, although the survey suggests that a third of support staff had used patients' views as a source of data for audit.

- Medical audit is professionally encapsulated. It tends not to involve other professional groups, unless by ad hoc invitation, and has been kept quite firmly divorced from management involvement or influence. This inevitably reduces its ability to effect wider changes within the hospital or unit. Most audit support staff seem effectively to be responsible to clinicians for the process of audit. Audit is certainly not yet integrated with other quality initiatives nor with the broader changes associated with the reforms.

Such characteristics will probably come as no surprise to those who have been involved and some, at least, are the inevitable weaknesses of a new system. But looking forward, we see a need to create a greater clarity about the purposes of audit and on that basis to make the process more appropriate.

Currently a number of tensions and dilemmas exist, as audit is seen as meeting a range of quite different purposes. For example:

- *Is it a process to monitor the provision of 'quality care' to satisfy those external to the organisation?* If so, then it needs to use externally validated criteria and provide transparent evidence of their being achieved.

- *Is it a professional educational process aimed at improving the practice of medicine by comparing individual practice with good professional standards?* If so, then the requirements to serve the needs of a transient population of junior doctors are very different from those to meet the interests of the relatively few and more experienced consultants in the organisation.

- *Is it a management process to contribute to the more effective use of resources within a hospital?* If so, then again the process has to be firmly located in an appropriate framework.

In recognising several of these purposes, medical audit may be currently meeting none adequately. It is interesting to speculate whether this may be due in part to the very process that has ensured the rapid start up of audit – namely the earmarking of funds in that, at the local level, there has been no real opportunity cost to using these funds for audit, and hard questions of purpose, value

and expectations have largely been avoided. Audit has not had to compete for resources, except in the important sense of its call on scarce medical time. If and when funds for audit cease to be ring-fenced, harder choices will have to be faced.

The future direction for medical audit depends, therefore, upon determining issues of principle in respect of the objectives that it is expected to fulfil. A debate as to the appropriate purposes might help clarify the options and their implications. The following reports which take stock of where audit currently stands provide a useful background to such a debate. Any resolution is dependent, however, upon wider events, such as the processes adopted in the internal market, the production of a more coherent system of postgraduate medical education and on the development of quality assurance initiatives.

The effects of such developments on medical audit will inevitably take time to become clear, but in the more immediate future the reports also suggest a number of ways in which medical audit might be improved in practice. They include relatively straightforward improvements and attention to programming, presentation, methodology, following up audit results and developing the skills of audit support staff, which could all add considerably to the productivity of the audit process.

PART I
MEDICAL AUDIT IN HOSPITALS

SUMMARY

Background and Methods

The aim of the study was to evaluate how hospitals went about the implementation of medical audit following the general obligation to undertake audit imposed by the NHS Review. This introductory section sets the context for the study, which was carried out in the general medicine specialty in four acute hospitals, explains the research methods that were used and suggests that audit is likely to be complicated by the existence of different conceptions of quality and by its appeal to a range of different interests.

Chapter I – Audit at the Four Sites

This chapter presents the research findings in the form of short vignettes of medical audit in the case study sites. The audit groups, the subjects audited, the methods used and the outcomes are described, as are the views of the participants and others who might be expected to make use of medical audit in their own work. An assessment has also been made of the operation of the audit process including the work of local audit committees. Although the vignettes show considerable differences in detail between the four sites, there are a number of common findings set out below.

Medical audit:

- ❑ has been rapidly implemented;
- ❑ is somewhat isolated from other management and quality assurance activities;
- ❑ is not integrated into existing patterns of work;
- ❑ provides an additional element in medical management;
- ❑ is limited in its scope, emphasising technical medical subjects;
- ❑ appears to rely upon one particular methodology, criteria audit.

Chapter II – Providing Medical Audit

This chapter draws together the experience of the four case-study sites in implementing medical audit, within a framework of inputs, process and outcomes.

Inputs

- ❑ The expectations of medical audit are that it serves three related purposes – quality of care, efficiency of resource use and medical education.
- ❑ Existence of 'ring-fenced' monies for medical audit was strongly supported.
- ❑ Time costs are generally low, although these are not distributed equally.

Process

- ❑ Depends upon committed individuals – particularly those serving as lead clinicians and audit co-ordinators.
- ❑ Authority and accountability are unclear.
- ❑ Medical audit is a medical preserve.
- ❑ The concept of 'peer review' in audit presents difficulties since specialty groups generally consist of consultants and junior medical staff.
- ❑ Participation levels are high.
- ❑ It proves difficult to determine action as a result of audits.
- ❑ IT, as yet, makes little contribution.
- ❑ Audit committees have useful roles in promoting and overseeing audit, allocating resources and pulling audit activities together.
- ❑ Audit committees experience difficulty in exerting authority over specialty groups in comprehensive planning of audit activities.
- ❑ Experience has shown that there is a need for greater structuring of audit activities.

continued on next page

Outcomes

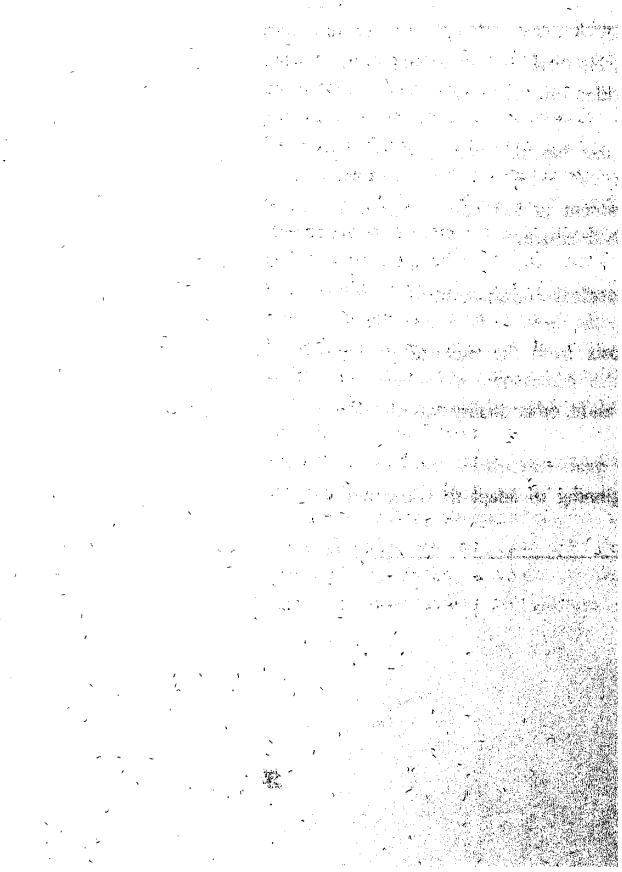
Although it is difficult to identify precisely the effects of medical audit, a small number of changes can be discerned. Medical audit does appear to:

- ❑ produce some alterations in medical practice;
- ❑ lead to the construction of local standards for treatment and care, although this takes considerable time;
- ❑ improve the management and education of junior medical staff by their consultants.
- ❑ But it makes little contribution to wider management beyond the medical profession.

Chapter III – Nature of Medical Audit

The report concludes by suggesting more general explanations for the character of medical audit revealed by the research. These relate to, first, the different purposes that could be met by medical audit and, second, to the different interests that have a potential stake in the process and its products.

- ❑ The emphasis in medical audit has been placed on technical improvements to the quality of care, but the process has been individualistic and haphazard.
- ❑ Structured assessment of efficiency of resource use has received less emphasis.
- ❑ Medical audit is potentially important as a component in medical education, but it is not integrated into the post-graduate educational structure.
- ❑ Medical audit is an important mechanism for medical socialisation.
- ❑ The process is dominated by individual enthusiasts from the medical profession.
- ❑ Medical audit hardly engages with multi-disciplinary audit, other quality control initiatives or general management.
- ❑ There is some evidence that medical audit is beginning to adapt to wider purposes and to become more open to other interests.



BACKGROUND AND METHODS

As a technique, audit has a long history. Many medical publications testified to the fact that audit skilfully executed could yield benefits both in terms of patient care as well as for clinicians in organising their work. The implementation of the reforms offered the opportunity for this worthwhile technique to be further extended until it became securely woven into the fabric of medical practice. But achieving such an objective in an organisation as large and as complex as the NHS is a difficult task. The direction and purpose of audit has to be negotiated between those who have an interest in the success of the venture and the main participants. The commitment of the latter to audit must be secured. Organisational structures which provide support and accountability need to be constructed and the ripple effect of audit on the work of others needs to be managed. This study documents how four hospital sites went about designing and developing these activities.

The research design used a case-study of the implementation of medical audit in general medicine at four hospital sites during 1991 and early 1992. Data were analysed from:

- 52 specialty audit meetings in general medicine – 45 were observed and, in a further seven, data were obtained from the records of the meeting;
- observation of 37 local audit committee meetings;
- 44 interviews with clinicians, medical audit support staff, nurses and managers;
- questionnaire surveys of junior doctors at three sites (sample size 105; response rate 55 per cent (58)).

The aim of the study was to evaluate the introduction of audit in hospitals. Classic evaluative methodologies consist of establishing the objectives of the policy then examining the extent to which those objectives are met. However, this method often proves unsuitable for policy initiatives where objectives may be fuzzy or contested, as is the case with audit. Then, as Smith and Cantley (1990) suggest, it may be necessary to design a method which examines a range of objectives for the policy which emerge from different sources and interest groups. We have adopted this approach for our study of audit.

The different interest groups on the audit stage share the view that the main purpose of audit is to improve the quality of patient care. But in practice 'quality of care' is a concept which is very difficult to work with in an evaluative framework. Although both Maxwell (1984) and Donabedian (1988) have set out definitions of quality, their work pre-dates widespread attempts to use the term as a basis for policy. Consequently, as what constitutes 'quality of care' has become more widely discussed and used as a basis for action, the meaning of the term has changed and is now contested. For example, quality may refer to an attribute of a product or it may refer to a system of management, as in Total Quality Management (Pfeffer and Coote, 1991). However within the policy literature which accompanied the introduction of medical audit, quality of care is largely treated as though its meaning was self-evident and its use unproblematic. Similarly, in our experience, clinicians undertaking audit seem to have a simple practical everyday working definition of 'quality' which interprets quality of care as 'ensuring that what we are doing is what we think we ought to be doing'; in other words, ensuring that medical work conforms

to accepted standards of professional practice. Our discussions of the audit process use this common sense view of quality. But other purposes as well as quality of care are closely associated with the profession's view of audit. Audit is also associated with the education of doctors and improving the efficiency and management of medicine. The potential of current audit to fulfil these purposes is considered in Chapter 3.

Although audit at present may be heavily shaped by the medical profession's view of its purpose, it has been introduced within a policy context where traditional professional values are being challenged, both by policy makers, who are demanding greater evidence of the effectiveness and efficiency of medicine, and patients, who, it is now said, expect a greater say in decisions about their care (Elston 1991). The implementation of audit may be seen as one of the ways in which these issues find policy expression. Indeed echoes of these challenges may be seen in the definition of audit in the White Paper:

'[audit is] the systematic, critical analysis of the quality of medical care, including the procedures used for diagnosis and treatment, the use of resources, and the resulting outcome and quality of life for the patient' (Department of Health, 1989).

Thus within the internal market, medical audit is seen as having a dual, potentially conflicting role, both of ensuring that quality of care is maintained in provider institutions – where definitions of 'quality' may emphasise excellence of care and responsiveness of the patient's view – and supplying data which will provide a basis for cost-effective purchasing decisions.

In practice, the direction audit takes and its success in fulfilling any of these objectives depends upon who the active participants in the audit process are, the values and interests they bring with them and their views of the purposes of audit. In chapter III we consider the involvement of those other than doctors who have an interest in audit: managers, patients and other health professionals and we consider their potential ability to shape the direction and purposes of audit.

CHAPTER 1
AUDIT AT THE FOUR SITES

AUDIT AT SITE A

Data Source

This account is based on information collected between January 1991 and April 1992 from the following sources:

- records of 16 audit meetings in general medicine (12 of these were observed and, in a further four, data were taken from the minutes);
- observations of seven unit audit committee meetings;
- two surveys of junior doctors undertaken in May/June '91 and December '91 (32 sent, 17 returned);
- ten interviews with clinicians, the audit co-ordinator, nurses and managers.

Organisation of Audit at Site A

Site A consists of an acute unit of approximately 600 beds split between the two hospital sites which are ten miles apart. In the specialty of general medicine there is a separate complement of junior staff at each site but the four general physicians are appointed to the unit as a whole. Because of these staffing arrangements, audit is carried out separately at each site. The unit audit committee is chaired by the lead clinician for audit in general medicine, but there is no district audit committee. The specialty audit groups report to the unit audit committee.

Both hospitals are part of the King's Fund Hospital Accreditation Scheme and, with the implementation of Resource Management, the unit is moving towards a clinical directorate structure. One audit co-ordinator and seven audit assistants, responsible for both audit and coding, have been appointed.

Views of the Purposes of Audit at Site A

The 1990/91 'Forward Plan' and the 1991/92 'Forward Strategy' indicate that the purpose of audit is to formulate protocols and guidelines and this was confirmed in interviews. This process is thought to provide an educational experience for junior doctors and the implementation of protocols and guidelines is perceived as an aid to their effective management.

Audit in General Medicine

The Audit Group

The audit group consisted of some 12-15 doctors at each site including four consultant physicians. In addition, geriatricians, pathologists, consultants from other specialties and medical students attended from time to time, but it was rare to see other professions, such as nurses or paramedics, present at the meeting. However, with the move towards a clinical directorate structure, it is anticipated that this situation will change and it is intended that both business managers and nurses will be invited to the meetings. The other groups of doctors attending swelled the average size of the audience to around 18 at each site.

The Audit Meetings

Organisation and methods: Over the 15 months of study, 16 meetings were held – eight at each hospital site. Meetings were held at lunch-time with coffee and sandwiches provided. Initially the meetings were arranged on an ad hoc basis by the lead clinician who in the main chose the topics, but the need for a more formal programme became increasingly apparent and this was instigated in January 1992. The meetings had an informal atmosphere and on a number of occasions they were used for purposes other than presentation and discussion of audit findings. For example, the meetings were often used to provide an opportunity to discuss proposed changes in organisation or procedures with junior doctors. At three meetings more than one topic was presented.

The informal nature of these meetings meant that they were difficult to classify in terms of the usual accepted audit methodologies, but 12 out of the 19 audits undertaken appeared to be loosely based on the criteria method (see Table A). Over half these criteria audits used implicit criteria and the sample size was always less than thirty (see Table B).

Scope of audit: Audit in general medicine was 'medical' as opposed to 'clinical', concentrating primarily on the technical aspects of in-patient care. No audits were undertaken which involved joint formulation of criteria and joint decision-making with other professions. No data on patients' perceptions of their care or cost data were used.

Issues arising from audit meetings:

- ❑ The need for full accurate medical records.
- ❑ The need to increase awareness in A&E of the guidelines for treatment of asthma.
- ❑ The difficulties of applying Regional guidelines for GI bleeds.
- ❑ The need to discuss admission of elderly to coronary care with geriatric consultants.
- ❑ A discussion of whether relatives should be involved in decision 'not to resuscitate'.
- ❑ The need to review procedures for informing GPs of deaths in hospital.
- ❑ The transfusion of small quantities of blood.
- ❑ Incorrect drug dosages on discharge.
- ❑ The possible effect of a 'treat and transfer' policy.
- ❑ The recording of information and PM findings after death.
- ❑ The need to write logical and legible notes in diabetic care.
- ❑ Problems with drug prescribing.
- ❑ The need for better links between pathologist and clinician.
- ❑ The need for better communication between haematologist and clinician in anti-coagulation therapy.
- ❑ Delay in completing case-note summaries for GPs.

Time costs for preparation of audit meetings: These are detailed in Table C.

Table A Audit Meetings at Site A

Number of meetings in 15 months	No. of minutes available for analysis	No. of substantive topics analysed	Types of audit	Main presenters	Data collection
16 (8 at each hospital site)	7	19	Criteria audit (12) Educational/ Org (2) Collection of baseline data (0) Examination of 'critical' incident (2) Other (3)	Lead Clinician (6) Other Consultant Physicians (3) Medical Registrar (5) Pathologist (1) Haematologist (1) Nurse (1) Unknown (1) Audit Co-ordinator (1)	Usually by presenters

Table B Criteria Audits at Site A

Total criteria audits	Criteria type		Main data source for criteria audit	Sample size
12	Explicit (6) Source: -presenter (5) -audit group (0) -literature or national guidelines (1) -already used in management of patients (0)	*Implicit (6)	Case notes	20-29 (4) 10-19 (3) < 5 (3) Unknown (2)

** Criteria were classified as implicit when no clear statement was made by the presenter about the criteria being used or their origin.*

Table C Time Costs for Preparation of Audit Meetings at Site A

Date of meeting	Main subject	Time in preparing for meeting
22/2/91	Surgical referrals for medical opinion	(see note 1)
11/3/91	Asthma	(see note 1)
22/3/91	Referrals to coronary care	(see note 1)
26/4/91	Audit of management of GI bleeds	(see note 1)
29/4/91	Deaths in hospital	(see note 1)
3/6/91	Communications with GP	(see note 1)
14/6/91	Transfusions	(see note 1)
15/7/91	Referrals to medical team	(see note 1)
19/7/91	Alcohol and smoking histories	(see note 1)
6/9/91	Deceased patients' records	(see note 1)
7/10/91	Diabetic care	(see note 1)
8/11/91	Cardiac arrests	Nurse (2 hours per month on-going project) (1 hour to prepare for meeting)
2/12/91	Quality of case note/drug prescribing	Medical Registrar (0.5 hours)
21/12/91	Post mortems	Pathologists (6-7 hours)
2/3/92	Referral for anti-coagulation therapy	Consultant Haematologist (4.66 hours)
6/4/92	Case note review	Audit co-ordinator (40 hours)

Note 1: Although we have no accurate estimate for these meetings, site personnel suggest that preparation of these audits took between one and two hours.

The Outcomes of Audit and Perceived Constraints on Audit

The main achievements were seen as the formulation and implementation of a policy on the transfusion of small quantities of blood and the development of new policies for informing GPs of death. Other issues, such as the formulation of protocols for treating asthma for use in A&E, had been pursued but as yet were unresolved.

In addition, interviewees felt that audit had increased junior doctors' awareness of the importance of the medical record. The overall view of key participants was that the successes of audit had been few in number but nevertheless significant.

However participants also felt that there were a number of constraints on the process. Obtaining consensus in a peer group could be difficult because the small number of consultants meant that notice had to be taken of minority views. Other problems were perceived to be lack of time to organise and carry out audit activities and the problem of implementing change, particularly when some junior doctors were on three month rotation.

Views of Audit in General Medicine

Junior doctors: The views of two cohorts of junior doctors were obtained by survey. Seventeen out of 32 junior doctors responded. The average number of meetings that each group had attended was three. Eight out of 17 who replied were house officers. Most (16/17) agreed that audit was held at a convenient time for their work and only four respondents did not know who organised audit meetings in General Medicine. In their views of the purposes of audit, junior doctors ranked most highly the formulation of policies and standards of care. The use of resources, demonstrating accountability to each other and increasing co-operation with other professions were ranked lowest. Less than half (7/17) of those who responded agreed that the meetings were well structured and well focused. Nine out of 17 agreed that participation was encouraged, but only a minority (6/17) agreed that they had a clear idea of what further action should be taken as a result of the meeting and who would be responsible for taking that action (5/17). In addition, seven out of 14 comments suggested that meetings would improve if they were more structured.

Typical comments were:

'To get a clear and concise conclusion to the meeting with an established policy. For junior doctors themselves to initiate topics for discussion at such meetings.'

'More structure to them. A "statement"/ "answer" needs to be provided at the end.'

'Short summary of conclusions of recommendations to be circulated to junior doctors.'

The subject that junior doctors learnt most about through audit appeared to be the consultant's views (10/16). All other subjects received very few responses. Twelve out of 16 felt that audit had changed their practice and where this had occurred respondents felt that this had been as a result of discussion with consultants. These responses suggest that junior doctors also perceive audit as an unstructured educational process where the consultant's views are made explicit.

Local perspectives from outside the audit group: Although nurses, managers and representatives from the District acknowledged the need for audit to develop in a protected space, they nevertheless noted that they received little information or requests for action as a result of the audit process. They therefore perceived audit as opaque and this gave rise to concerns about the audit's effectiveness and purpose. They would like to have seen visible signs of change resulting from audit.

Issues for Audit in General Medicine

Audit in this unit is characterised by its informal relaxed atmosphere, which encourages participation from all those who attend the meetings. It appears to be a process which is primarily directed towards the informal education of junior doctors. However the local objectives stated in the 'Forward Plans' 1990/91 and 1991/92, are for audit to produce policies and guide-lines. The audit process which has been implemented does not appear well suited to this purpose. The lack of advance planning or discussion of criteria for audit, the apparent preference for using implicit criteria and small sample sizes all suggest a process which is more geared to informal exchange of ideas rather than the development of organisational policies. In addition, the considerable energy invested in building an information technology infrastructure for audit at a unit level has yet to bear fruit in specialty audit.

To fulfil the objectives set out in the forward plans, the process would require:

- the development of an organisational planning structure for audit. Instead of seeing each audit meeting as a discrete event, audit projects need to be collectively planned and followed up as part of an on going process. This would have other advantages too. At present the process appears quite fragile as it is highly dependent on one individual – the lead clinician. The process would benefit from a greater sense of shared responsibility and collective ownership which an organised planning process would bring;
- the greater use of more structured audit methods with better guidance to presenters about what is expected.

The Supporting Organisation for Audit at Site A

Assessment of the Unit Audit Committee

The membership of the unit audit committee is shown in Table D.

In common with other local audit committees, one of the main functions of the unit audit committee has been to allocate audit monies received from the Region. These monies amounted to £65,000 in 1990/91 and £108,000 in 1991/92.

At unit level the audit committee has successfully promoted audit throughout the two hospitals and has carried out regular monitoring to ensure that audit takes place. The committee's other main area of interest has been in developing an informational infrastructure for audit. Until recently interest has concentrated on improvements to coding and medical records organisation; now the committee is becoming involved in the RM initiative. However, other areas important to the audit process appear underdeveloped. First, the need to develop skills required for audit has received little attention. Similarly, the links between audit and post-graduate education remain symbolic rather than operational. No formal educational processes were initiated as a result of audit and conversely the agenda set for post-graduate education meetings appeared to have no relationship with the audit agenda.

Table D Local Audit Committees at Site A

Membership
Consultants 3 Information/Resource Management Managers GP Director of Public Health A representative from paramedics Clinical Tutor Audit Co-ordinator

Secondly, there is a lack of clarity about reporting structures and accountability both between the specialty audit groups and the unit audit committee and with the wider hospital context. The relationship between specialty audit groups and the unit audit committee appears particularly unclear; although the audit group may receive reports from the specialty meetings, the committee appears reluctant to pursue the issues raised on its own initiative and specialty groups tend not to request this of the committee. Yet specialty groups may fail to pursue or be unable to resolve issues themselves. This means that channels of communication and mechanisms for action are not well developed and the audit process appears inward-looking at all levels.

The Role of the Audit Co-ordinator

The audit co-ordinator has responsibilities for both audit and coding and is accountable to both the chair of the unit audit committee and director of Quality Assurance. She has seven assistants who split their time between audit and coding; their audit work amounts to two full-time equivalents. The audit co-ordinator services the unit audit committee. This includes organising meetings, ensuring that they are documented, administering the audit budget and attempting to implement or follow up committee decisions. As the main areas of work for the unit committee are ensuring that audit takes place throughout the unit and developing an information infrastructure for audit, a major part of the co-ordinator's role is committed to these areas. In addition, the co-ordinator and the assistants encourage and assist clinicians undertaking audit. This includes planning audits with clinicians and liaising with other departments to ensure that the information required for audit is available, but neither the co-ordinator nor her assistants are routinely involved in data collection. When requested, the co-ordinator will attempt to implement decisions of the specialty audit groups but the co-ordinator's authority to act, and the scope for action, is narrow both among clinicians and within the wider hospital context.

AUDIT AT HOSPITAL B

Data Source

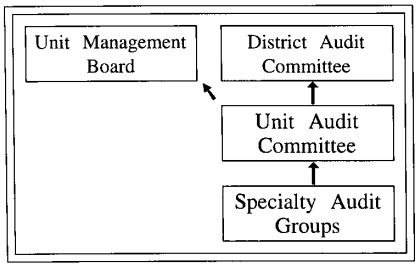
This account is based on information collected between January 1991 and February 1992 from the following sources:

- ❑ records of seven audit meetings in the sub-directorate (six were observed and data from a further meeting was taken from the minutes);
- ❑ observations of ten unit audit committee meetings and seven district audit committee meetings;
- ❑ eleven interviews with clinicians, audit co-ordinators, nurses and managers.

Organisation of Audit at Hospital B

Hospital B consists of a large hospital with some 900 beds. It is one of two hospitals which together form a trust. Each hospital has its own unit audit committee but there is also a district audit committee. The hospital has implemented Resource Management and has a Clinical Directorate structure but audit in General Medicine is carried out at the sub-directorate level. The organisation of audit is shown in figure 1 below:

Figure 1 Organisation of Medical Audit at Hospital B



The specialty audit groups report to the unit audit committee. The unit audit committee is accountable to the district audit committee but will also report issues arising from audit to the Unit Management Board. For the majority of the study period there is no

formal unit or Trust-wide Quality Assurance programme but a director of QA has now been appointed and a programme is being formulated. The unit has appointed an audit co-ordinator and she has recently recruited two assistants. The audit staff are accountable to the chair of the unit audit committee.

Views of the Purposes of Audit at Hospital B

Within the medical sub-directorate the purposes of audit are seen as being partly educational, and partly administrative or engaging in 'good housekeeping'. In the wider hospital context, audit is seen in terms of a process for developing guide-lines and monitoring standards of care.

Audit at Sub-Directorate Level in General Medicine

The Audit Group

The audit group studied consisted of two consultant physicians, about six junior doctors, the senior nurse and the medical secretary from the sub-directorate, ie the medical team. But in the majority of meetings (5/7) external experts or presenters were invited to take part in the meetings to broaden the team's view. The meetings were usually well attended by the team and the average attendance was estimated as nine.

The audit meetings' organisation and methods: In the 13 months of the study, seven audit meeting were held (see Table A). All meetings were held in the evening between 5-7pm.

As the audit group consisted of the medical team who usually worked together, audit meetings took on the character of a team meeting with all the members contributing to, and learning from, the debate. There was no formal programme but meetings were arranged on an ad hoc basis by the senior consultant who chose the topics. For the majority of audits, criteria previously formulated by this consultant were used to monitor the team's work. The data to do this were collected by the group from the case notes at the meeting (see Table B).

Scope of audit: Audit in general medicine was primarily 'medical' as opposed to 'clinical' and was confined primarily to the 'technical aspects' of in-patient care. No audits were undertaken which involved joint formulation of criteria and joint decision-making with other professions, although members of these were often involved in discussion of the findings. No data on patients' perceptions of their care were used in the criteria audit. Cost data were used on two occasions.

Issues arising from audit meetings:

- ❑ Better documentation of pathology requests required.
- ❑ Better documentation of social history, mobility and mental state of elderly required. The need for accurate concise discharge summaries.
- ❑ Autopsies should be sought more often and results recorded in the notes.
- ❑ The system for notifying GPs of deaths in hospital should be clarified.
- ❑ Deficiencies in the completion of peak flow charts and in patient education about the use of inhalers.
- ❑ Discrepancies between the number of out-of-hours haematology tests ordered and the costs.
- ❑ The use of steroids in chronic obstructive airways disease would be reviewed.

Time costs for preparation of audit meetings: These are detailed overleaf in Table C.

Table A Audit Meetings at Hospital B

Number of meetings in 13 months	No. of minutes available for analysis	Number of meetings analysed	Types of audit	Data collected by	Main presenters
7	6	7	Criteria audit (6) Educational/ Org (0) Collection of baseline data (1) Examination of 'critical' incident (0)	Lead Clinician (6) Additional data collected by Pharmacist, Haematologist, Information Officer	Consultant Physician (1) Lead Clinician (6) Geriatrician (1) Information Officer (1) Lecturer in Haematology (1)

Table B Criteria Audit at Hospital B

Total criteria audits	Criteria type		Data source for criteria audit	Sample size
6	Explicit (6) Source: -already used in management of patients (0) -previously discussed with audit group (0) -linked to literature or national guidelines (0) -presenter's explicit (6)	Implicit (0)	Case notes	11-12 (2) 5-10 (4)

Table C Time Costs for Preparation of Audit Meetings at Hospital B

Date of meeting	Main subject	Time in preparing for meeting
4/7/91	Use of respiratory drugs	Pharmacist (15 hours) Consultant (2.66 hours) Secretary (3 hours)
26/9/91	Out-of-hours haematology	Haematology (3 hours) Secretary (3 hours)
27/1/92	Management of chronic obstructive airways disease	Consultant (6 hours)

The Outcomes of Audit and Perceived Constraints on Audit

The most concrete success that had been achieved had been the uncovering of errors in the costing of out-of-hours haematology. In addition, participants felt that as a result of audit junior doctors' awareness of the importance of good record-keeping had increased. But it was also felt that audit at a sub-directorate level was constrained by:

- the small size of the group, which limited audit activities by making large scale audits involving the formulation of guidelines and criteria impracticable;
- the short three-month rotation of junior doctors which made the implementation of change particularly difficult; and,
- a lack of time to organise and carry out audit activities.

Views of Audit in General Medicine

Junior doctors: The three-month rotation of junior doctors within the team coupled with irregular and infrequent audit meetings (less than one a month) meant that it was not possible for us to conduct a meaningful survey of junior doctors' views of these meetings.

Local perspectives from outside the audit group: Although those interviewed supported the concept of audit, they felt it had been implemented with undue haste. There had been no time to build up a framework of well-tested techniques for audit. Consequently, some felt that much audit activity lacked adequate preparation and it was difficult to see any resulting change. Audit was now suffering from a crisis of confidence and identity.

Issues for Audit in General Medicine

The size of the group and the fragmentation of the audit process within the directorate tended to constrain the group's audit activities. Participants acknowledge that it would be difficult to carry out large formal audits. Limited by size, the audit meetings produced neither formal policies nor guide-lines but had the character of informal education sessions. However, although individual meetings may have been of educational value, the process was undermined as an on-going educational experience due to the infrequency of the meetings – less than one a month – coupled with a three-month rotation of junior staff. The group appeared to be in a difficult position. Its size made formal audit impracticable and somewhat inappropriate, and the rapid turnover of juniors called into question the effectiveness of the process as a educational tool.

The Supporting Organisation for Audit at Hospital B

An Assessment of the Unit Audit Committee

The unit audit committee (membership shown in Table D) has been active and successful in developing an infrastructure for audit, establishing channels of communication and monitoring the audit process. The committee has attempted to ensure that the case-mix management system was accessible to clinicians for audit purposes. It has also undertaken a number of initiatives intended to promote audit and establish channels of communication with clinicians, such as surveys, newsletters, seminars and other meetings. Links have been established with the purchasing authority through a community physician who was a committee member. In common with other local audit committees, one of the main functions of this committee has been to allocate audit monies. These monies were £46,000 for 1990/91 and £122,000 for 1991/92.

It was the original intention of the committee that clinicians should report their audit activities to them but this has been difficult to establish. However, the employment of audit co-ordinators who undertake audit work for clinicians and report back to the committee provided an informal channel through which reports of audit could be received.

Table D Local Audit Committees at Hospital B

	Unit Audit Committee	District Audit Committee
Membership	3 Consultants	6 Consultants
	Community Physician representing Purchasers	Postgraduate Dean
	Medical School Representative	Representative from Dental School
	Nurse Manager	Representative of Paramedics
	Business Manager	Community Physician representing Purchasers
	Dietician	Medical Audit Support Staff
	Medical Audit Support Staff	

However, two areas of the committee's work remain problematic. First, the implementation of 'clinical' audit has been set as an objective by the commissioning authority. The committee has, however, had difficulty in obtaining jurisdiction over both general quality issues and the 'audit' activities of other professions. There are no clear boundaries between the committee's interpretation of its remit and the other quality structures within the unit and the committee has had difficulty in clarifying its relationship to these other initiatives. Second, as a reflection of its commitment to clinical audit, the unit audit committee has been formed with a membership such that other groups outnumber doctors by two to one. This may weaken the committee's legitimacy in dealing authoritatively with issues which solely concern the medical profession.

An Assessment of the District Audit Committee

The district audit committee (membership shown in Table D) has carried out its role with considerable breadth of vision. Despite a fluctuating membership, the committee has established links with purchasers and other bodies and has successfully used them for the promotion of audit.

One of its important functions has been to provide a forum for both airing problems from the grass roots and sharing views on some of the complex unresolved issues of audit. In doing so, it provides support for the local unit audit committees. Thus the committee has considered the information which purchasers may require from audit, and has attempted to establish good relationships with GPs to the extent of recommending that they should be involved in the formulation of guide-lines. As is inevitable with the discussion of complex issues, on some occasions no conclusions or consensus are reached but sometimes such discussions have led to further action. For example, a discussion of the difficulties of measuring outcomes led to the organisation of an educational seminar on this subject.

Although the committee is committed to the development of clinical audit, it has a different approach to pursuing the issue from the unit committee. It has seen its role as working on these issues through other structures within the organisation rather than being directly responsible for these areas itself.

The Role of the Audit Co-ordinator

For the major part of the period under study the unit had only one part-time audit co-ordinator. This officer was accountable to the chair of the unit audit committee. Apart from servicing the unit audit committee and administering the audit budget, her main activities were to promote audit by organising the events mentioned above

and to attempt to make the case-mix management system more accessible to clinicians for use in audit. The appointment of another full-time co-ordinator and two assistants has enabled the audit department to provide more direct help to clinicians planning and executing large-scale audit projects and this area of work is now burgeoning.

AUDIT AT HOSPITAL C

Data Source

This account is based on information collected between October 1990 and March 1992 from the following sources:

- records of 20 audit meetings in general medicine (18 were observed and for a further two data were taken from the minutes);
- analysis of eight unit audit committee meetings and five district audit committee meetings;
- two surveys of junior doctors (24 sent, 15 returned);
- 11 interviews with clinicians, audit co-ordinators, nurses and managers.

Organisation of Audit at Hospital C

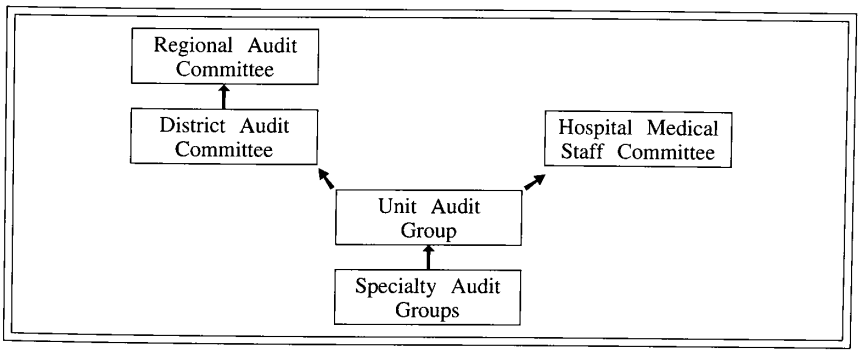
Hospital C is a small hospital with some 405 beds. The hospital has applied for trust status but during the study period was a directly-managed unit within a district which also had another acute hospital of a similar size. With the implementation of Resource Management, the hospital has recently appointed its first clinical directors. As yet there are no formal quality assurance programmes within the hospital and the information technology is relatively underdeveloped. As well as specialty audit groups, there is both a unit audit committee for the hospital as a whole and a higher level district committee which encompasses all directly managed provider units within the health authority.

The reporting structure has not been formally documented by participants but interviewees have suggested it is as follows: the specialty committees should report to the unit audit group which reports both to the hospital medical staff committee and the district audit committee. The district audit committee reports to the region audit committee.

The organisation of these groups and committees is shown diagrammatically below. However, the precise nature of the reporting relationship remains unclear.

The district audit committee has appointed an audit co-ordinator who has two subordinate audit officers, one of whom is based in Hospital C.

Figure 2 Organisation of Medical Audit at Hospital C



Views of the Purposes of Audit at Hospital C

The general view was that audit could make an important contribution to the identification of issues and problems relating to the quality of care and, secondly, that the guide-lines or protocols produced by audit would increase the cohesion of medical practice. If such guide-lines were formulated by specialists then the knowledge of all physicians would be updated and standards would be raised. In addition, by exposing junior doctors to new or different ideas, the formulation of guide-lines and protocols could provide education not only in management policies for patients but also in the best use of resources. Some interviewees felt that audit would provide an important vehicle for change but others did not share these high expectations.

Audit in General Medicine

The Audit Group

The audit group consisted of some 20 doctors including three consultant physicians and one consultant geriatrician. Apart from these doctors, meetings were often attended by consultants from other specialties, in particular pathology. Prior to January 1992, pharmacists, nurses and others attended meetings but the group has now decided to restrict regular attendance to doctors and medical audit support staff.

The Audit Meetings

Organisation and methods: 23 meetings were held during the study period of 18 months. Meetings were held fortnightly at lunch-time and the average audience size was 16. The lead clinician organised the meetings and chose the majority of the subjects, although junior doctors were on occasion encouraged to propose topics. A number of well-structured criteria audits have been undertaken (see Table A). The majority (8/13) of these have used explicit criteria and where possible these have been derived from authoritative sources (4/13) (see Table B). A wide range of people have been involved in their preparation – pathologists, nurses, pharmacists, outside consultants and junior doctors (see Table A). All presenters have been supported by the audit department, which has been instrumental in stimulating and facilitating the process and in collecting data.

Scope of audit: Audit concentrated mainly on the technical aspects of in-patient care and was primarily 'medical' as opposed to 'clinical'. No audits were undertaken which involved joint formulation of criteria and joint decision-making with other professions. No data on patients' perceptions of their care were used. Cost data were used on one occasion.

Issues arising from audit meetings:

- ❑ The need for guide-lines for requesting PM including asking relatives permission.
- ❑ The need for guide-lines in A&E for the treatment of asthma.
- ❑ Lack of information given to patients on discharge and lack of follow-up.
- ❑ The authority of pharmacy staff to change prescriptions.
- ❑ Guide-lines for the investigation of anaemia should be devised as investigation was often inadequate.
- ❑ Poor recording in some case notes.
- ❑ More oncology sessions were required.
- ❑ Local circumstances made the application of Regional Guide-lines for GI bleeds difficult.
- ❑ More clinical details were required on requests for ultra sound and CT scans.
- ❑ More exploration of causes of cardiac failure required.
- ❑ Requests for X-rays should be scrutinised by a registrar.
- ❑ The need for a new policy on the prescribing of antibiotics.
- ❑ The absence of pathology results from medical records.
- ❑ The need for joint audit with surgeons.

Time costs for preparation of audit meetings: These are detailed in Table C, distinguishing between medical and non-medical staff time costs.

Table A Audit Meetings at Hospital C

Number of meetings in 18 months	No. of minutes available for analysis	Number of meetings analysed	Types of audit	Data collection	Main presenters
23	10	20	Criteria audit (13) Educational/ Org (3) Collection of baseline data (2) Examination of 'critical' incident (0) Other (2)	Usually by Audit Co-ordinators and presenters	Consultant Physician (2) Lead Clinician (2) Radiologist (2) Surgeon/ Physician (1) Pharmacist (2) Oncologist (1) Haematologist (1) Medical Registrar (4) Pathologist/ Medical Registrar (1) Microbiologist (1) Community Physician (2) Geriatrician and Nurse (1)

Table B Criteria Audits at Hospital C

Total criteria audits	Criteria type		Main data source for criteria audit	Sample size
13	Explicit (8) Source: -already used routinely in patient management (0) -previously discussed with audit group (1) -linked to literature or national guidelines (4) -presenters explicit (3)	*Implicit (5)	Case notes	>20 (2) 10-19 (3) 5-9 (6) <5 (1) Unknown (1)

** Criteria were classified as implicit when no clear statement was made by the presenter about the criteria in use or their origin*

Table C Time Costs for Preparation of Audit Meetings at Hospital C

Date	Main subject	Medical costs	Non-medical costs
12/2/91	Referrals for oncology	Consultants (8.5 hours)	Secretary (3.5 hours) Audit Officer (1.5 hours)
22/5/91	Anaemia	Medical Registrar (6-8 hours)	Audit Officer (10 hours)
19/6/91	Asthma	Medical Registrar (6 hours)	Audit Officer (10 hours)
11/9/91	Post-mortems	SHO (6 hours), Medical Reg (6 hours)	Secretary (1.5 hours), Audit Officer (6 hours)
25/9/91	Use of Calcium Antagonists	?	Audit Officer (1 hour)
9/10/91	Readmission of elderly	Consultant (10-12 hours)	Nurse (17 hours) Audit Officer (15 hours)
23/10/91	Requests for CT scan	Consultant (4 hours)	Secretary (16 hours)
20/11/91	Chest infections	Consultant (4 hours) General Registrar (8.5 hrs)	
26/2/92	Case note review	Consultant (4 hours)	?

The Outcomes of Audit and Perceived Constraints on Audit

As well as being of interest in themselves, two of these audits have yielded results in terms of development of criteria, policies or guide-lines, one on the treatment of asthma and the other on the investigation of anaemia. In this respect, audit at Hospital C is beginning to fulfil the objectives articulated by participants. We also understand that as a result of these audits other issues are being pursued but are not yet resolved. In addition, eight out the 13 junior doctors who responded to our survey felt that audit had changed their practice. Interviewees also felt that audit had also increased the awareness of junior doctors of the importance of the medical record.

However, a number of interviewees felt that despite these successes their expectations of audit were unfulfilled. They attributed this to:

- ❑ resource and organisational constraints in implementing findings, for example, the lack of other quality assurance structures within the hospital through which quality issues relating to other professions could be raised;
- ❑ the small size of peer group which meant that obtaining consensus could be difficult as notice had to be taken of minority views;
- ❑ lack of time to work on audits and to pursue issues arising from them.

Views of Audit in General Medicine

Junior doctors: The views of two cohorts of junior doctors were obtained by survey. Fifteen out of 24 junior doctors responded. The average number of meetings each group had attended was seven. In their views of the purposes of audit, junior doctors ranked highly: education, producing policies and guide-lines, assessing the quality of care and examining practice in a structured way. The use of resources, demonstrating accountability to each other, obtaining consultants' views and increasing co-operation with others received the lowest scores. Just over half of those who responded agreed that the meetings were well structured and well focused. The majority agreed that participation was encouraged but only a few (2/14) agreed that they had a

clear idea of what further action should be taken as a result of the meeting and who would be responsible for taking that action. Their comments about what would have improved meetings reflected similar concerns.

Typical comments were:

'Better collation of what has been discussed. A summary of each meeting should be circulated.'

'Setting of aims. Methods to achieve aims – including increasing resources.'

'Clear conclusions and proposals for action.'

The subject that junior doctors learnt most about through audit appeared to be local policies. All other subjects were given very few responses.

Local perspectives from outside the audit group: Interviewees had expected that audit would work well at Hospital C because of its small size and the commitment of senior clinicians. They had therefore adopted a laissez-faire attitude to its development. However, they felt that audit was currently conservative concentrating on small mundane issues and in future it would need to change this approach to tackle more substantial problems.

Issues for Audit in General Medicine

The commitment and enthusiasm for audit at Hospital C was demonstrated by the decision to hold audit meetings fortnightly. As a result of this decision, considerable time and effort has been required to sustain the process. Although some audits of significance have been undertaken a number of problems remain unresolved.

- Although attempts were made to involve others such as junior doctors in the organisation of audit, the process remains quite fragile and is highly dependent on one individual, the lead clinician. There is no organisational planning structure for audit in general medicine. It would benefit from a greater sense of shared responsibility and collective ownership.

- Related to the above point, there is a tendency to see every audit meeting as a discrete event rather than an ongoing process to achieve a result. For example, although a number of audits have resulted in the formulation of policies, little attention has been paid by the audit group to how these might be implemented. Both the planning of audits and the pursuit of change would benefit from a longer time-scale which would involve the wider audit group in planning and reporting back on progress.

- Considerable effort and time (a total of 65 medical and 81.5 non-medical hours for nine audits on which we have data, see Table C) has been put into audit. But sometimes these efforts have been undermined by feelings that the majority of problems uncovered are insoluble, whether they are the responsibility of doctors or other departments in the organisation. The articulation of such problems is not seen as being of benefit to clinicians or the institution itself and issues tend not to be taken up in the wider environment. This issue also emerges in the responses of junior doctors to our survey. From their comments it is plain that many of them would like to see clearer outcomes to audit with a clear idea of the expectations being made of them as a result of audit meetings.

- In some audits the sample size has been very small. Perhaps this is to be expected as information technology at this site was underdeveloped. Although it is often argued that much can be learnt from an individual incidence or case, we have observed that when small samples are used there is a tendency to see all the difficulties identified as anomalies rather than generalised problems.

Table D Local Audit Committees at Hospital C

	Unit Audit Committee	District Audit Committee
Membership	5 Consultants	8 Consultants from two hospitals
	GP	1 Consultant from community unit
	Nurse Manager	1 Management Representative
	Audit Co-ordinator	Audit Co-ordinator
	Junior Doctor (unfilled post)	

The Supporting Organisation for Audit at Hospital C

An Assessment of the Unit Audit Committee

The unit audit committee (membership is shown in Table D) has been active in attempting to stimulate audit at hospital C. The committee has also attempted to build a reporting structure for audit but this seems to have been less successful. The specialties appear not to report to the committee and the committee has had difficulty in fulfilling its intended role of monitoring and acting on the outcomes of audit.

Less emphasis has been placed on the development of an informational infrastructure for audit or on developing the skills of clinicians to undertake audit. In addition, the relationship between audit and post-graduate medical education remains symbolic rather than operational. No formal educational processes were initiated as a result of audit and conversely the agenda set for post-graduate education meetings appeared to have no relationship with the audit agenda.

An Assessment of the District Audit Committee

This committee (membership is shown in Table D) has worked hard to produce both comprehensive plans for the implementation of audit and reports on its development. These conform fully to both Regional and Department of Health guide-lines. In common with other local audit committees, one of the main functions of this committee has been to allocate audit monies received from the Region. The monies amounted to £84,000 in 1990/91 and £133,500 in 1991/92.

The philosophy that has been adopted by this committee views audit as a professionally determined activity with little negotiation between clinicians and other groups of the expectations or purposes. This view of audit is re-enforced by an undemanding management and a quality assurance structure which does not interact with audit as it is currently underdeveloped. Unfortunately, one of the consequences of this philosophy is that it tends to constrain the role of the committee. As audit is non-negotiable, interaction with management, other professions, and purchasers is infrequent. Specialties appear reluctant to report through the structure devised and the committee appears not to be proactive in the development of information systems or education. Together these factors mean that the committee's remit is narrow.

The Role of the Audit Co-ordinator

The audit co-ordinator has responsibilities for the district and is accountable to the chair of the district audit committee. The co-ordinator has two assistants one of whom is permanently based at Hospital C but is responsible for both Hospital C and the mental health and community unit. Both the co-ordinator and her assistant have been active in facilitating audit by meeting clinicians, planning audits and collecting the data.

AUDIT AT HOSPITAL D

Data Source

This account is based on information collected between February 1991 and February 1992 from the following sources:

- observations of nine audit meetings in General Medicine;
- two surveys of junior doctors (26/59 returned);
- twelve interviews with clinicians, audit co-ordinators, nurses and managers.

(As a decision was made not to monitor local audit committees at this site, the paper refers only to audit within General Medicine.)

Organisation of Audit at Hospital D

Hospital D is a hospital trust with 550 beds. The trust is a Total Quality Management pilot site and, with the implementation of Resource Management, is moving towards a clinical directorate structure. The specialty audit group reports both to the Division of Medicine and to the District Audit Committee. The district budget for 1991/92 was £128,000.

Views of the Purposes of Audit at Hospital D

The purposes of audit were seen as educational, leading to the production of standards and guide-lines. Some felt that such guide-lines would enable the hospital to organise predictable clinical activity. Others felt that audit was primarily an educational activity, where the systematic examination of treatment would lead to the development of good practice in patient care.

Audit in General Medicine

The Audit Group

The designated audit group for general medicine was potentially very large (23 consultants from all medical sub-specialties and 40+ junior doctors) but meetings are not always well attended and on average only half this group were present. An open invitation was also extended to all other consultants, pharmacists and nurse managers, although the latter rarely attended.

The Audit Meetings

Organisation and methods: Audit meetings were held once a month at 8.30am. Over the study period of 13 months, ten meetings were held (see Table A). A formal programme was organised until September 1991 when responsibility for organising the meetings passed to a different clinician. Meetings were still held once a month but there was no formal programme. The topics have been chosen by these two lead clinicians. The size of the group means that the meetings were of necessity quite formal with much stimulating debate among consultants. However, the participation of junior doctors was far less. A number of well-structured audits have been undertaken using criteria from authoritative sources and appropriate sample sizes (see Table B).

Scope of audit: Audit in general medicine was primarily 'medical' as opposed to 'clinical', concentrating primarily on the technical aspects of in-patient care. No audit was undertaken which involved joint formulation of criteria or joint decision-making with other professions. No data on patients' perceptions of their care or cost data were used.

Issues arising from audit meetings:

- The need for hospital guide-lines on anti-coagulation therapy. Documentation of anti-coagulation therapy.
- Documentation of discharge of elderly and other patients.
- The difficulties of identifying GI bleeds using ICD9 codes.
- The need for more rigorous studies on shared care.
- Access by junior doctors to discharge summaries.
- Deficiencies in documentation in medical records.

Time costs for preparation of audit meetings: These are detailed in Table C.

Table A Audit Meetings at Hospital D

Number of meetings in 13 months	No. of minutes available for analysis	Number of meetings analysed	Types of audit	Data collected by	Presenters
10	3	9	Criteria audit (6) Educational/ Org (2) Collection of baseline data (0) Examination of 'critical' incidents (0) Other (1)	Presenters	Senior Registrar in Medicine (1) Lead Clinicial/ Senior Registrar (1) Senior Registrar in Haematology (1) Consultant Geriatrician (1) Consultant Physician (3) Consultant Haematologist (1) Medical Registrar (1)

Table B Criteria Audits at Hospital D

Total criteria audits	Criteria type		Main data source for criteria audit	Sample size
6	Explicit (5) Source: -already used in management of patients -linked to literature or national guide-lines (3) -presenter's explicit (1)	*Implicit (1)	Case notes (4) Other manual records (1) Prospective collection (1)	>50 (3) 20-49 (1) 10-19 (2)

** Criteria were classified as implicit when no clear statement was made by the presenter about the criteria in use or their origin.*

Table C Time Costs for Preparation of Audit Meetings at Hospital D

Date of meeting	Main subject	Time costs
27/2/91	Anti-coagulation therapy	Senior Registrar (35 hours)
9/10/91	Introduction to medical records	Senior Registrar (15.5 hours) Consultant (1 hour)
27/11/91	Case note review	Senior Registrar (10.5 hours)

The Outcomes of Audit and Perceived Constraints on Audit

Interviewees felt that the main concrete achievement for audit was the formulation of guide-lines for anti-coagulation therapy. In addition, it was felt that the increased attention focused on medical records had resulted in an improvement to documentation in general. Audit had also changed the attitudes of many consultants. It was felt that the need for guide-lines was now more widely accepted among clinicians and there was an increased realisation of the need for greater consultant support for junior doctors. But some consultants were sceptical about the benefits of audit. Because audit at this site was designed to be educative to junior doctors, the rapid rotation of this group of doctors meant that audit was felt by some to be a repetitive process.

Views of Audit in General Medicine

Junior doctors: The views of two cohorts of junior doctors were obtained by survey. Twenty-six out of 59 responded. The average number of meetings these two groups had attended was three. Six felt that audit meetings were entirely voluntary but the rest felt some compulsion to attend. The organisation of audit appeared somewhat opaque to this group of junior doctors as ten out of 24 did not know who organised audit meetings. In their views of the purposes of audit, junior doctors ranked highly examining practice in a structured way, improving the quality of care and formulating policies or guide-lines. Demonstrating accountability to each other and developing co-operation with other professions or departments received low scores. Nine out of 21 agreed that the meetings were well focused and structured, and nine agreed that they had a clear idea of what should happen as a result of the meeting but only three agreed that they had a clear idea of who was responsible for implementing changes. Many of the comments suggested that junior doctors would have liked this clarified.

Typical comments were:

'Written conclusions, afterwards distributed to all.'

'Plan of action (or agenda) to begin and end meetings.'

'A clear proposal of the way in which management should be changed with comments invited.'

'Clearer responsibility indicated for recommendations being acted on and reporting back.'

The subject that junior doctors felt that they learnt most about at audit meetings was the consultants' views (10/22). All other options received low scores. About half of the respondents felt that audit had changed their practice and where this had occurred respondents felt that it was as a result of discussion with other junior colleagues.

The Role of the Audit Co-ordinator

The audit co-ordinator is accountable to the chair of the District Medical Audit Committee. One of the main activities of the audit co-ordinator has been directed towards developing an informational infrastructure which consists of a computerised networked audit system. Although the co-ordinator has been involved in the planning of audit, the collection of data and follow-up for other audit groups, lack of time and the decision of the clinicians in general medicine to undertake these activities themselves has meant that the audit co-ordinator has not played a central role in general medicine audit, although she has attended many of the meetings.

Issues for Audit in General Medicine

Audit in general medicine is executed with skill and, at times, is carried out with a good sense of direction and purpose. Meetings can have the feel of an ongoing process directed towards achieving change. For example, the audit of case notes was discussed in advance with a group of junior doctors, executed and repeated. Similarly the audit of anti-coagulation therapy which led to the formulation of guidelines was examined and discussed over a number of meetings. However a number of problems remain unresolved:

- there are often problems in 'closing the loop' or executing the decisions taken even if agreement has been reached;
- from the comments of junior doctors (see page 25), it is clear that many of them would like to see more structure to audit with a clear idea of the expectations being made of them as a result of the meeting;
- there appears to be no organisational planning structure for audit in general medicine. The process appears quite fragile and is highly dependent on one individual, the lead clinician. It would benefit from a greater sense of shared responsibility and collective ownership.

CHAPTER II
PROVIDING MEDICAL AUDIT

The preceding chapter provided vignettes of the way in which medical audit was undertaken in general medicine in four contrasting acute hospitals. In this chapter of the report we draw upon the experience of the four sites, as well as upon our (inevitably partial) knowledge of what has been happening elsewhere, to provide a descriptive overview of the early provision of medical audit within acute hospitals. For convenience we have categorised different aspects according to whether they are concerned with inputs to the audit process, the audit process itself, or the outcomes of the process. Given our brief to study the way in which medical audit was implemented, most attention is devoted to the operation of the process.

The structure of the chapter is shown diagrammatically in Figure 1, below.

INPUTS TO THE AUDIT PROCESS

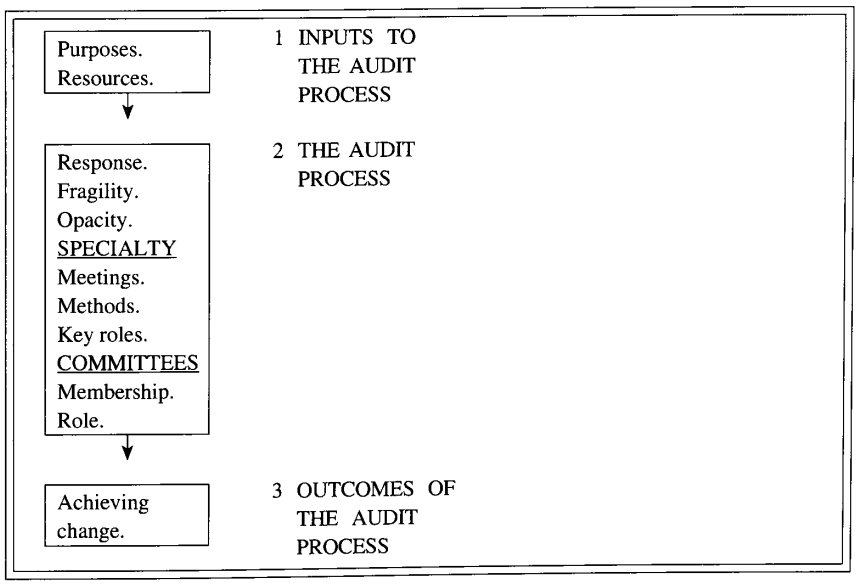
Inputs into the audit process were of two kinds, the purposes that audit was expected to meet and the resources which the process consumed. These are considered in turn below.

Purposes

First and foremost is improvement in the quality of care. Although in the introduction we argued that the meaning of this term was complex, in the official literature it is treated as though its meaning were self-evident. The official guidance from the Government creating a mandatory audit process saw:

'medical audit as central to any programme to enhance the overall quality of care given to patients in the NHS' (Department of Health, 1989).

Figure 1 The Structure of Chapter II



The promotion of quality was seen as part of good professional practice.

But quality is a relative, and, if interpreted as high standards or excellence which is one possible meaning, a potentially expensive concept. The cost-effective use of the available resources, which had formed a principal theme within the NHS Review, was also a significant feature within audit:

'An effective programme of medical audit will help to provide reassurance to doctors, patients and managers that the best quality of services is being achieved having regard to the resources available' (Department of Health, 1992).

It was stressed that medical audit was to achieve its purposes through education. According to the Health Circular, it was 'primarily an educational activity' (Department of Health, 1992).

And as an educational activity it would need to be related to, and supported by, medical education programmes.

In their definition of medical audit, the Royal College of Physicians listed the same trinity of purposes.

Medical audit is primarily a mechanism for:

- assessing and improving the quality of patient care;
- enhancing medical education by promoting discussion between colleagues about practice;
- identifying ways of improving the efficiency of clinical care' (Royal College of Physicians, 1989).

Their guidance then suggested approaching medical audit through the three categories of medical care defined by Donabedian (1966): structure, how care is organised and resourced; process, what is done to the patient; and, outcome, the result of clinical interventions.

As can be seen from reading the case-studies, the sites had a diversity of local purposes. While generally these reflected the three broad interrelated areas mentioned above, there were particular emphases, such as achieving better administrative arrangements in site B, in producing treatment protocols and guide-lines that could make medicine a more predictable activity in site A. These emphases reflect policies adopted by local audit committees or were the particular mission of individuals interested in audit.

(The third part of this chapter, on Outcomes, examines whether these various demands have been satisfied.)

Resources

Both the Working Paper and the subsequent Circular accepted that the development of medical audit represented additional demands for financial and staffing resources.

Additional finance was used, first, to pay for the introduction and/or adaptation of information systems for the purposes of audit. Computer technology is the largest item of capital expenditure. A second demand for additional finance came from staffing needs. Here it was necessary to pay for the new audit support staff who were being introduced across the service and for assistants taken on for special studies or particular pieces of audit work. In addition, money needed to be found for one or two weekly sessions for the clinicians who took the lead in co-ordinating medical audit across units or districts.

The Department of Health allocated designated monies to regions who, in turn, allocated them to local district or unit audit committees for further apportionment. In 1990/91 £24 million was allocated to regions and special health authorities, by

1991/92 the sum had increased to £38 million. Some smaller sums were also provided to the Royal Colleges in response to bids for developing specific items of audit work.

Turning to a local perspective, the sums received by the four sites studied in the research are set out in Figure 2 below.

Allocations were frequently criticised from two standpoints: their inadequacy, given the size of units and the audit work that they were doing, or wished to do; and, the way they were allocated, in tranches, requiring the submission of bids and forward programmes. But despite the criticisms, and the considerable amount of work involved for local audit committees in preparing and administering budgets, there was strong support for the idea of financing audit from 'ring-fenced' monies. Respondents expressed fears that medical audit would suffer if 'ring-fencing' ended in 1992 and the process became dependent on allocations from larger, more general budgets. Put another way, one of the incentives offered by medical audit was that there had been some, if limited, sums of money available which could be used by clinicians to develop their work.

The other major resource requirement was the time of consultants and junior doctors. The Royal College of Physicians (1989) had suggested that audit should require no more than one hour per week for the attending physicians, although those involved in presenting material would obviously have to

Figure 2 Allocations from Regions for Medical Audit

	1990/91	1991/2
Site A	65,000	108,000†
Site B	46,000	122,000††
Site C	84,000*	133,500*
Site D		128,000**

† Allocation for acute unit only
†† Allocation for the hospital trust
* Allocation for two directly managed acute hospitals and community services
** Allocation for hospital trust and community services

Figure 3 Schedule of Weekly Time to be Spent at Audit Meetings

Site A –	1 meeting of 1 hour every other month	7.5 minutes per week
Site B –	1 meeting of 1 hour and a half per month	22 minutes per week
Site C –	2 meetings of 1 hour per month	30 minutes per week
Site D –	1 meeting of 1 hour per month	15 minutes per week

Figure 4 Actual Weekly Time Spent in Attendance at Audit Meetings

Site A –	7.5 minutes
Site B –	12 minutes
Site C –	20 minutes
Site D –	10 minutes

Figure 5 Average Time Cost Presenting Audit Topics

Site A –	(5 meetings calculated)	13.5 hours
Site B –	(3 meetings calculated)	9 hours
Site C –	(8 meetings calculated)	14 hours
Site D –	(3 meetings calculated)	23.5 hours

spend more time. Figure 3 on page 29 indicates the time scheduled for audit meetings in our four sites. However, due to such things as cancellations and holidays, the actual time spent was less (see Figure 4 on page 29). Figure 5 indicates the average time cost for those presenting medical audits.

Views on the effect of time costs varied. As far as the meetings were concerned, attempts were made in all four sites to minimise their effect on the working day and to secure high attendance by holding the meetings in less committed times: early mornings, lunch hours, at the end of the working day. As far as the presentations themselves were concerned, the averages conceal an enormous range. This reflected both the topic and individual commitment. Some presenters had literally given the issue fifteen minutes thought before the start of the meeting. Others, more conscientious and/or dealing with more complicated issues, put in some twenty or more hours of work that had to be fitted around normal working duties over one or two weeks. For example, the audit of anti-coagulation therapy at Site D took 35 hours of Senior Registrar time. This may be a reasonable demand on an individual if it only falls on him or her occasionally. It was where particular individuals found themselves, because of their position in the audit process or because of their enthusiasm, having to invest such time month after month that the costs became burdensome. Burdens were not evenly spread across specialties, and the 'willing workhorses' for managing the audit process were frequently those same individuals who were taking a lead in developing other aspects of the new structure.

THE AUDIT PROCESS

In highlighting some of the major characteristics of the audit process revealed by the research, we commence by drawing attention to a number of general features that are relevant to the whole of a local audit system. We then differentiate the discussion of process between the specialty audit groups at grass roots level and the local audit committees that have a wider, unit or district, perspective.

General Characteristics

❑ *Rapid response:* One striking feature in all four hospitals studied was the speed with which the audit process was implemented. This reflected two facts. First, although the formalisation of audit was new, the activity itself was familiar. Staff had already engaged in audit, albeit on an informal and unsystematic basis. Audit had been the subject of professional comment and exhortation for some time. The consultant staff, at any rate, knew what audit was about and many claimed to be already auditing aspects of their work.

Second, in all four sites there were a number of consultant staff who were enthusiastic champions of medical audit. The majority of consultants favoured audit in principle, although they were concerned at the possible implications of yet another set of demands detracting from patient care. Enthusiasts tended to be 'given their head' and nominated on to committees or given 'lead' roles within the various specialties.

❑ *Fragility:* Because the audit process was so dependent upon particular individuals, it

tended to reflect the interests and style of working of those who were most involved at the expense, perhaps, of a larger menu of approaches. And when, as we experienced at three of our sites, these 'product champions' moved on to other interests and responsibilities, the audit process faltered and changed tack. But fragility also stemmed from an attitude, discussed further in the final section, that the audit process was an addition to medical work, rather than an inherent component. This led to it being seen by some as a rather unwelcome 'extra', that could be omitted or dealt with in other ways without any serious detriment to medical activity. Meetings were frequently cancelled or foreshortened without much apparent sense of loss.

❑ *Opacity:* It is not easy for non-clinicians, or indeed for all clinicians, to understand how the medical audit process works. This is partly because, as discussed under inputs above, it is potentially meeting a range of different demands. Additionally, if the way in which audit operates reflects the wishes and interests of a few individuals, it may well appear obscure to others less involved.

There is a further point. From the outset, authority and accountability for undertaking medical audit were never precisely defined. Responsibility for getting audit 'up and running' was seen as both hierarchical – to unit, district and regional authorities – and professional – to the peer group, to medical advisory and education committees and to the Royal Colleges. Lead clinicians who were organising audit activity were in theory both acceptable as leaders to fellow consultants and nominated/approved by the local audit committees. The medical audit structure of specialty groups, unit, district and regional committees, apparently ignored 'the iron curtain' of separate interests between purchasers and providers that was rapidly forming across the health service. However, members of district audit committees were aware of potentially being tugged in different directions.

Audit Process at the Grass Roots

❑ *Meetings:* Meetings of the specialty audit groups were the most obvious manifestation of the audit process. A full account of the nature of audit meetings can be found in Kerrison S, Packwood T, Buxton M (1993) *Audit in Practice*, Research Report No. 13, Brunel University. The audit meeting was medical audit in action. However, the way in which meetings were conducted sent back different, and sometimes conflicting, messages about the nature and importance of the activity.

First, the timing. This strongly suggested that audit was an extra, to be added on to the real work of the day. One of our sites met monthly from 8.30 to 9.30am, two others, fortnightly and monthly respectively, from 1.00 to 2.00pm and the fourth monthly from 5.30 to 7.00pm.

Second, attendance. This suggested that audit was an obligation and, further, that it was a medical obligation. Junior doctors always formed the majority of the audience. Indeed it was made clear to them that they were obliged to attend meetings, although they, themselves, were not always clear as to what the meetings were about. Lists of attenders were taken in two sites and in all sites, on occasion, non-attenders were chased up before meetings commenced. Consultant staff also generally attended, although at all sites there appeared to be one or two individuals who were rarely seen. This was explained away by other commitments, the inconvenience of the time and, sometimes, by known antipathy to audit. There were particular difficulties in sustaining a programme where, as in site A, the specialty covered two hospital sites, the consultants mostly working in both while the junior staff were employed in one or the other.

Attendance was overwhelmingly medical. Members of other disciplines would be invited if it appeared relevant for the particular subject under discussion or if they were closely involved with the work of the specialty, such as the nurse manager for the medical specialty or sisters of wards containing medical beds. The smallest of the specialty groups studied, two consultants and their junior staff, made a point of regularly including their relevant ward sister and the medical secretary but the numbers involved were small enough for the audit meeting to operate as a clinical team meeting. Unit general managers or specialty service/ business managers were not observed attending any of the specialty audit meetings at any of the four sites during the study, although staff responsible for the Resource Management Initiative and IT staff were occasionally present. Some of our respondents believed that in time audit meetings would have to become more widely open, moving from medical to clinical audit, but this was for the future. It was necessary to get the process up and running and 'right for the doctors' first.

Third, the subjects covered. These were always medical as opposed to more broadly clinical. More specifically, they dealt with medical process and medical outputs – rather more rarely with outcomes for the patient. Programmes were somewhat haphazard, subjects tending to reflect the interests of the lead clinician organising the process and of whomever he could cajole into participating. Or if, for example, a locum consultant was present, with a particular interest or expertise, this might be the focus. Subjects might be suggested by circumstances, such as an apparently increased death rate from a particular condition, or a higher than expected expenditure on drugs. If an attempt was being made to formulate a particular treatment guide-line, then this could form the subject of a meeting. Likewise, if the specialty was participating in a regional or professional study, the researchers involved could be asked for an interim report.

So subjects ranged from highly technical discussions of treatment technique to broader aspects of the management of patient care. It could be argued that such eclecticism was well suited to the nature of the audience, with very different interests and levels of professional expertise. But as more experience of the audit process was gained, so there was a growing realisation of the benefits from adopting more structured arrangements, with an agreed programme. It was also apparent as our research continued that meetings became more geared to the needs of the majority – the junior staff. This was partly instrumental. Given the importance of case notes as a source of audit, for example, it made good sense to stress their production and content. This was an audit topic which was examined in all sites and which the consultants, as permanent members, were aware would have to be revisited with each and every intake of junior staff. One of the lead clinicians (at hospital C) also adopted the practice of discussing the content of the future programme with junior staff. However, there were also criticisms that audit programmes were not sufficiently linked to educational requirements.

Fourth, the style of the meeting. There are a number of very basic prerequisites. The subject of the meeting should be clearly presented, followed, or in some cases accompanied, by a discussion of the material and its implications, and concluding with decisions as to any further action. Meetings would be held in a room, probably located in the post-graduate centre, that was appropriate for the numbers attending and equipped with presentational facilities such as an overhead projector and black/white board. Given that meetings were held at the start, middle or end of the day, the availability of some kind of refreshment

was desirable particularly if, by attending, members were sacrificing their own opportunities for refreshment.

It is difficult for individuals, working in a busy hospital environment, to meet these conditions routinely and there were the usual hiccups when rooms were double-booked or overhead projectors locked in inaccessible cupboards. There are, however, a few points that justify consideration.

Participation in meetings was encouraged and generally good. Meetings succeeded in conveying the atmosphere of being a forum for members of a shared profession, albeit occupying very different levels of experience, status and authority. Consultants did not appear unduly threatened by their juniors, and indeed generally tried to draw the latter into discussion and expand and illuminate the points they raised. For their part, juniors were willing to put forward their opinions, to seek information and were often critical of the practicalities of what was proposed. Lead clinicians, who usually chaired the meetings, felt that it was important to encourage debate while being sensitive to avoid any impression of threatening individuals. Nonetheless, respondents from all three parties mentioned an awareness that individuals did experience some sense of threat and that junior doctors, in particular, were reluctant to put themselves in a position of either being corrected or of being seen to criticise one's seniors. Indeed, staff would have to be remarkably insensitive not to feel some sense of discomfort when auditing or being audited.

Presentation at meetings was variable. Doctors are not necessarily skilled communicators or professional educators but their work does involve both communication and education. Many basic weaknesses of presentation, such as mumbled delivery, speaking facing away from the audience and reporting verbally on masses of data, could have been avoided with a little preliminary advice.

But presenters do suffer an enormous distraction in the form of unsettled meetings. Meetings are punctuated by a chorus of bleeps and members coming and going in search of a telephone. Perhaps it would be worth adopting the custom of saloon bars in Western movies with reference to firearms, and insist that members deposit their bleeps outside, deputing one of their number to remain, with bleep, near the telephone to deal with queries.

Fifth, the result of the meeting. If audit is to achieve any results some form of action has to follow. This seemed to pose difficulties at all the sites. Our surveys of junior doctors suggested that at all sites they would have liked a clearer idea of what action would be taken as a result of the meeting and whose responsibility it was for taking that action. It appeared an accepted convention that the chair of the meeting had some responsibility for drawing attention to the results of the audit, either in summary at the end or as they emerged during, or were discussed after, the presentation. This was not always easy since there were quite likely to be conflicting opinions as to just what had emerged. There was also the related issue of who was going to take any action on the results and how anyone would know whether or not any such action had been successful. In our experience, insufficient time was allocated to this aspect of audit. By the end of the meeting the audience was liable to have drifted away, leaving the chair, the presenter and the audit assistant to pick up the pieces. The problem was not so great if the required actions were restricted to medical policy within the specialty. If the consultants agreed an action during the meeting, then in theory at least, they possessed the necessary authority with their junior staff for it to be implemented. It was more difficult if it was necessary

to negotiate within the wider hospital, with other specialties, other disciplines or with general mangers.

Identification of the need for action was clarified where meetings were minuted, or where standard pro forma produced by the local audit committee were completed after each meeting. This did not ensure, however, that any follow-up actually occurred. Generally audit meetings were treated as discrete events and no time was allocated for 'matters arising'. However, the requirement to provide information to local committees for the production of an aggregate report to management did stimulate at least one specialty group we observed to review what they had done and what had been achieved over the last six months. It is also the case that staff from the audit office may see it as part of their supporting role to negotiate some of the wider implications for audit on behalf of specialty groups.

❑ *Methods:* The principal means of audit applied in all four sites, some 68 per cent of the total we observed followed the advice of the Royal College of Physicians. (1989). A particular aspect of patient care would be reviewed from a selection of case notes. The review would be undertaken in terms of criteria that were either explicit, in the form of national or local guide-lines or good practice from the literature, or implicit, in the minds of the presenter or chair of the meeting.

Sample sizes were generally small, limiting the extent to which the findings could be subjected to quantitative analysis or be generalisable or representative. Information was also generally collected manually, limiting the extent to which data could be manipulated. During the period of our study, audit committees were battling to gain access to the available IT for audit purposes and to introduce new IT systems specifically directed towards audit. Perhaps general medicine presents more difficulty for IT applications than some other specialties because there is less agreement as to procedures and processes of care. It is possible, too, that the sites concerned had other priorities because, although IT appeared to promise a great deal for audit, during our observation the promise was unfulfilled. This was surprising given that one of the initial hypotheses for the research was that the sophistication of the IT would effect the implementation of audit. However, it is one thing for a hospital to have sophisticated IT systems, quite another for these to be made available or used for audit. IT generally appears to have been driven by managerial and financial imperatives and medical audit's place within Resource Management was not seen to have been given a high priority. This said, as Resource Management systems became more generally available, so some clinicians, and some managers too, were pressing for activity data to be made available for audit purposes.

❑ *Key roles in the audit process:* First, and absolutely crucial, is the lead clinician for medical audit within the specialty. He, or she, always a doctor and, in our experience, a consultant, is expected to organise a programme of meetings: selecting topics, individuals to present them, publicising arrangements to the potential audience, ensuring that a room with the necessary equipment is available, usually chairing the meetings, summarising agreed implications from the meetings, and possibly taking up issues that arise with other individuals and bodies. The lead clinician is also expected to encourage colleagues to engage in audit, report on the group's activities to the local audit committee, and in some cases serve as a medical representative for audit matters on one or more of the local committees. Lead clinicians at the specialty level do not

receive any sessional payments to compensate for the additional work unless they also chair a local audit committee. The post appears to be filled either on the basis of interest, because of the individual's wish to promote audit, or on the basis of duty, because there are a number of leadership roles to be filled within a specialty and everyone must take a hand. As mentioned above, authority and accountability are unclear. Occupancy of the position needs to be agreed and is perhaps suggested by the local audit committee, but it must also be acceptable to the other consultants in the specialty. Unit general managers may also carry accountability for ensuring that arrange-ments for audit are satisfactory in their unit, which implies some concern with the role and work of the lead clinician. This accountability, and hence concern, may be delegated to medical or clinical directors.

A second important set of roles in the audit process is that of the Audit Co-ordinator and his or her assistants who make up the Audit Office. (A detailed account of their role and their perceptions of audit can be found in Part II – Supporting Audit, which reports the results of a national survey of audit support staff.) The Audit Co-ordinator or Facilitator who is head of the office is usually accountable to the chair of the local site audit committee, or in some cases the chair of the district committee. The Audit Office can provide considerable assistance to lead clinicians in fulfilling the tasks mentioned earlier, and in addition staff can help presenters of audit topics in collecting and analysing information and in gaining access to the relevant literature. Clearly there is a great deal of ambiguity as to whether audit support staff should be facilitating audit or carrying out delegated tasks and there is a fine line to be drawn between helping and doing. Medical audit was designed to be performed by professionals examining their own practice. However, the eighteen months of our study coincided with the introduction of audit co-ordinators and their staff in the four sites. They have obviously facilitated medical audit, assisting in formalising the process and, in particular, in maintaining the necessary documentation.

It has been possible to observe two rudimentary patterns of organisation emerging: centralised, where the audit office works principally to the priorities of the local audit committee and its chair, providing an audit resource to the unit as a whole; decentralised, where members of the office are effectively seconded to work closely with one or more of the specialty groups. The latter arrangements may well suit units with a definitive sub-unit organisational structure – audit officers forming part of the directorate's or department's business support and possibly undertaking other duties such as coding. It was stressed to us, however, that where this is the case, time for audit work must be protected to avoid it being swamped by other demands.

Audit Process by the Local Committees

❑ *Membership:* The guide-lines for organising medical audit required local committees to be structured to represent both the medical interests engaged in audit and those interests which were expected to interact closely with their audit activities (Department of Health, 1991). Thus a site committee would commonly contain consultants representing three or four specialties (including diagnostic departments), the senior tutor for post-graduate education, the quality assurance manager (if there was such a position), an information officer, a GP, the Audit Co-ordinator and his, or her, assistants. The chair would be taken by one of the consultant members.

The district committee would be made up of one or two consultant members from each site or component unit, including the chairmen of the various site and unit committees, a clinician with educational responsibilities for the district, a consultant from the district public health department (who could provide the purchasers' perspective), an information officer, possibly the officer responsible for Resource Management, possibly a quality assurance manager, a GP, possibly representatives from some of the paramedical professions and the Audit Co-ordinator or Facilitator. Again the chair would be taken by one of the consultant members.

The chair of the site committee and/or the district committee would probably receive a sessional payment in recognition of the responsibility for leading and developing audit across the site or district.

Membership requirements were not always fulfilled. For example, Site A had difficulty in securing a GP representative and Hospital C had no representative from the local unit management. Similarly, although willing in principle to serve, busy consultants encountered problems over the timing and location of meetings and over the extent of their extra curricular activities.

❑ *Role:* The role of committees in the management of the medical audit process was also spelt out in the central guidance (Department of Health, 1991). According to this circular, the responsibilities of the audit committee are to ensure that:

a) systematic audit takes place;
b) links between medical audit and post-graduate medical education are established;
c) adequate procedures for confidentiality are maintained;
d) action is initiated if the results of audit reveal serious problems;
e) managers are provided with regular reports which identify where management action could realistically be expected to improve quality of care.

Thus the role of a local audit committee might be seen as acting as a channel of communication between audit and the wider institutional context. In our study we have sought to investigate whether these channels have been established and the extent and nature of the communication. Our observations suggest that in practice there are four major components to the role.

First, there is clearly an element of *oversight* in the relationship between committees and specialty audit groups, in that committees are responsible for ensuring that audit takes place. However, their authority to direct and ensure compliance appears uncertain, and their knowledge of what was being done at grassroots level appeared patchy. This was because the formal reporting mechanism between specialty groups and committees was variable – good if members of specialties served on the committee, not so good if there was no direct link. Committees might attempt to compensate by arranging for the chair and vice chairman to meet with all the specialty groups in turn, or by holding an Audit Day when a representative from each specialty group reported on their activities and concerns. This was another area where audit co-ordinators were increasingly able to provide useful insights gained from their own work with the specialty groups. Similarly, there were sometimes difficulties in communication between district and unit committees, although problems were eased by dual membership.

There is also an element of *promotion* in the role, with committees acting to stimulate and encourage an interest in audit. The district audit committee for Hospital B, for example, arranged workshops and conferences on aspects of audit and published a regular newsletter.

A third aspect of the role, and one that is most time-consuming, is *patronage*. The committees receive funds from the region and must determine how the money allocated is best spent. This entails creating budgetary estimates and arguing their case, as well as administering the medical audit budget for the site or district. It also means arriving at judgements as to whether a limited sum of money is best spent on this activity rather than another, whether to back a request for IT equipment for an audit of heart disease or employ another audit assistant. The room available to committees to exercise significant discretion is, of course, limited. Most of the revenue monies are already committed for staffing, particularly paying for the audit support staff, while a great deal of the available capital expenditure has been invested in IT systems. Debates as to the most suitable hardware and software, its compatibilities with other systems and reasons for delay, have been consistent themes in committee meetings.

A fourth aspect of the role of committees is that of *promoting coherence*, integrating together audit initiatives and interests within different parts of sites, between sites, between different units and between different disciplines – liaising, for example, between what is being done in the hospital and community health services sector, on the one hand, and in the family health services sector, on the other. Clearly the ability to perform this role partly reflects the membership of the committee and the extent to which members are able to speak for those they represent. It also reflects the willingness and ability of the chairman to spend time in liaison between different interests.

However, according to the Government's guide-lines creating the arrangements for medical audit, liaison with general management was seen as a major concern: managers needed to receive regular reports on the audit process and to be satisfied as to its quality, and committees, for their part, had to indicate where managerial action might improve the quality of care. Committees certainly have ensured that managers received general accounts of audit activities, but these were not particularly informative as to what specialty audits revealed or what was done as a result. Beyond this limited communication there appears to be little contact. The chair agreed sometimes to approach the chief executive or general manager over a seemingly general problem affecting a number of specialties or sites, but such demands were rare. Many issues raised by audit at the specialty level were, as was said earlier, specific in nature. It was also the case that given the circumstances of the early 1990s, managers were pre-occupied with implementing other aspects of the NHS Review, while doctors were quick to preserve medical audit as a professional activity.

Certainly the role of district audit committees appeared increasingly anomalous as the purchaser-provider split hardened up, particularly so where some of the participating units had gained, or were seeking to gain, trust status. Interests inevitably became more partisan and the managerial points of reference more distinct.

The links with the education process also appeared unproductive. It was clear that audit had considerable implications for medical education and vice versa, but less certain how these implications should be dealt with and at what level.

But these two particular, and perhaps intractable, areas of difficulty aside, it was striking how successfully the committees arbitrated between different interests, and were pro-active in stimulating relationships across institutional boundaries.

OUTCOMES OF THE AUDIT PROCESS

If medical audit is successful in improving the quality of care, improved medical processes would lead to improved health care for the population. But because medical audit was just beginning and, in Donabedian's terms, concentrated on structure and processes of care delivered rather than on the outcomes for patient care, it was impossible to evaluate fully the effectiveness of the initiative in terms of objectively measured changes in quality. Our assessment of outcome is therefore more limited and reflexive, examining whether participants felt that medical audit was meeting the various purposes it was expected to satisfy (as outlined earlier in the chapter, under Purposes).

Changes Achieved

Our judgement would be that audit was perceived as producing some improvements in medical process. Certainly 68 per cent of the junior staff surveyed across the sites felt that it had led to an alteration in their own practice. There was evidence of standards being formulated, as in the production of policies for blood transfusion and for informing GPs of patients' death in Site A, of guide-lines for treating asthma and investigating anaemia at Hospital C, and for anti-coagulation therapy at Hospital D. And other guide-lines were being developed. There was evidence, too, of resource use being both better monitored, as when an audit of haematology tests investigation requested by the specialty group at Hospital B found that they had been consistently overcharged, and when a presentation on the use of 'dipsticks' at Hospital C concluded that much of the current use was unnecessary.

The consultant staff, however, were rather sceptical as to what audit achieved. Changes in practice had come about but so had they before medical audit had become formalised. Consultants had always talked to one another, kept abreast of the professional literature and participated in professional networks. Some of the benefits claimed were intangible, reflected in changed attitudes to colleagues and/or junior staff. Many of our respondents found it difficult to tell if improvements stemmed from audit, as opposed to any other source, and some were quite definitive that as yet it had 'told them nothing that they did not already know'. Managers interviewed also felt that, as yet, they had seen little product from the audit process, although their demands were not necessarily the same as those of the doctors.

It was also reported that medical education was benefitting from audit. The clearest example was in the way in which junior staff produced case notes, which was felt to have improved in all four sites as a result of consideration in audit sessions. Rather more intangibly, it was claimed that audit had made consultants more aware of their responsibilities in educating their juniors.

In conclusion, the preceding description presents medical audit as a rather confused activity. At one and the same time: a formal collective process, successful in involving all hospital doctors in regularly reviewing aspects of their work; an individual process, its content and impact dependent upon enthusiasts and personal commitment; an opaque process, not readily visible in the health service beyond its participants (and not apparently to all of those); an indeterminate process, that may or may not lead to change and where, if the latter does occur, it is likely to take a long time; an organisational process, with its own hierarchy of roles and committees, but whose authority and accountability is not particularly clear. The final section of this report looks more deeply at the properties that shape the present nature of medical audit and which are responsible for some of the confusion and uncertainties. It also indicates some of the pressures that medical audit is likely to face in the immediate future.

CHAPTER III
THE NATURE OF MEDICAL AUDIT

Previous sections of this report have, first, provided brief vignettes of the way in which audit has been implemented at our four case-study sites and second, drawn upon these studies to provide an overview of audit as a dynamic system with inputs, process and outcomes. Here we draw upon the preceding descriptive material to present broad conclusions as to the principal characteristics of medical audit as it has been implemented in the two and a half years since the NHS Review. Our conclusions follow two different paths of analysis. First, we have considered the ability of medical audit to satisfy the various purposes which it was expected to meet. In the preceding section, the general objectives were described as improved quality and efficiency of care, both of which were to be achieved through the medium of education. It was recognised, however, that local groups and individuals would also have their own specific objectives for participating in audit. Here we broadly conclude that medical audit within the hospital specialty of general medicine is contributing, somewhat incrementally, to improved quality, although its potential for improvement has by no means been realised. It has not, as yet, contributed much to improved efficiency but it is certainly contributing to the education, and even more to the management, of junior doctors. Second, we have considered the ability of medical audit to include and respond to a range of different interests all of which, to a greater or lesser extent, could be expected to have a concern with the products of the exercise, as follows:

- The medical profession, although this grouping must be further disaggregated to distinguish between the different interests of consultants and junior doctors.
- Service managers, which as a grouping include general managers at a unit and specialty level. Within this group are also clinicians who have taken up general management roles.
- Other service professions, particularly those whose members work alongside the doctors in service delivery.
- Consumers of medical care.

Here there can be no doubt that the dominant interest to date, in general the sole interest, has been that of the medical profession.

These two pathways, purposes and interests, can be brought together in a matrix, as shown in Figure 1 below, to give some indication of which purposes have been pursued by which interests.

Figure 1 Nature of Medical Audit: Framework

Purposes	Interests				
	Consultant	Junior doctors	Managers	Other service professions	Consumers
Improved quality					
Improved efficiency					
Medical education					
Medical management					

PURPOSES OF MEDICAL AUDIT

1 Improving the Quality of Care

This was given as the prime objective for medical audit in the initial guidance and was certainly seen as a major incentive for participation by our respondents, particularly for the doctors, consultants and juniors, and also for members of other clinical disciplines we interviewed. Here was the raison d'etre for undertaking audit. However, as was pointed out in the Introduction to this report, quality has a number of possible meanings. Observation and discussion of the audit process suggested that it was interpreted as achieving acceptable standards of medical practice that could be defended as the professional norm. The quest for perfection had to be tempered by the reality imposed by local circumstances and resources. And although, as mentioned in the previous section, medical respondents were clear that their practice did change over the period of our investigation in order to provide better treatment and care, they were far less sure as to how far the changes could be attributed to audit, as against other possible influences, or whether improvements actually resulted.

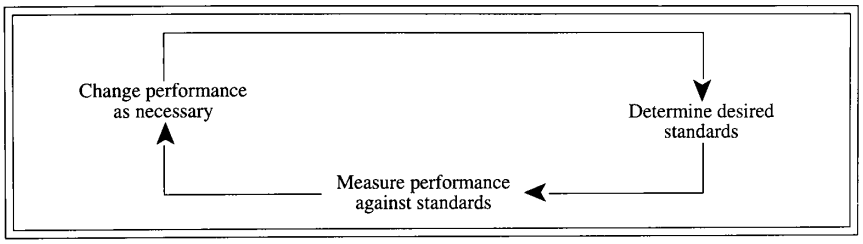
We believe that this uncertain and cautious assessment of the achievements of audit in improving quality is correct. There are a number of explanations. First, audit was individualistic, and consequently haphazard, in both its operation and effects. It relied upon the efforts and enthusiasm of individuals. The programmes therefore reflected the interests of those who were taking the lead and those whom they could cajole into participating. The impact depended very largely on what individuals took away from meetings and decided to reflect and act upon. Indeed, at our sites, the commitment of individuals proved to be a stronger explanation of the progress made by medical audit than the presence or absence of either IT or medical organisation structures. The commitment, however, appeared increasingly fragile given that the limited amounts of time that consultants could spare on top of their clinical practice was under increasing pressure from other managerial, educational and professional demands – demands that were seen as having significantly increased with the changes in the NHS.

But leaving the enthusiasts aside, medical audit appeared to make few demands on clinical time; if it did impose tasks – they were tasks at the margin. There was an attitude, evidenced by the timing of meetings in our case-study sites, that audit was an extra. It was treated as an addition to the working day rather than a part of the normal routine. (This feeling might be reduced by copying the practice of some hospital units and fixing monthly audit meetings within the normal morning or afternoon clinical sessions, programmed progressively from Monday morning to Friday afternoon across a ten month cycle. This would of course both increase the opportunity costs of audit and make them more apparent.)

As the managers of their junior staff, the opinions of individual consultants were particularly influential. But consultants' opinions were, it was suggested, more likely to have been preformed by previous experience, by professional contacts and literature, and perhaps by audit activities undertaken through the Royal Colleges or regional meetings, than moulded by corporate agreement at a hospital specialty audit meeting.

A second reason for caution in ascribing much weight to audit as a mechanism for quality improvement lay in the failure to utilise fully the Review Cycle. The Cycle, depicted in Figure 2, was recommended in the professional guidance as a means of regularising medical audit and securing continuous and predictable change. The reality appeared quite the opposite; audit was haphazard and change was discontinuous, unpredictable and rather messy.

Figure 2 The Review Cycle



Taking the various elements of the Cycle in turn, the first, determining desired standards, proves vexed. On the one hand there are strong incentives, including greater efficiency of care and improved education of junior staff, for developing a number of agreed and predictable approaches to care. This had been seen as a strong local objective in two of our sites. Further, it was an activity with the stamp of respectability from being undertaken by the Royal Colleges and by regional audit groups and it was clearly of great interest to a number of individual consultants. Junior doctors, too, welcomed the safeguards that were provided by the existence of agreed protocols. Yet although we found evidence of standards being both used and being formulated in medical audit, they were viewed with disquiet as 'cook book medicine' by many consultants; appropriate in some circumstances for use by the less experienced junior doctors but unduly restricting for the more skilled and experienced seniors. The blanket adoption of a national guide-line was not favoured; standards had to reflect local circumstances. As consultants tended to have their own interpretations of local conditions, standards were more likely to be an implicit property in the mind of the audit presenter. The need to define implicit beliefs and then persuade others of their value partly explains why the production of explicit and agreed standards was usually a lengthy process. It was also difficult to get agreement with other specialties and departments. Joint specialty audit meetings are obviously useful in this context.

The second stage in the Cycle, measurement of performance, typically addressed the structures or processes of medical care. The means of review was by the examination of the details of treatment recorded in the case notes of a small sample of patients. The concentration on process, examined on the basis of implicit criteria, tended to lock medical audit into a strait-jacket of technical medical concerns. It is difficult to apply this particular method to examine other areas potentially within the purview of audit, such as cost-effectiveness and communications between doctor and patient. The methodology also encouraged the qualitative analyses of individual cases which could not readily provide repeatable measures of performance.

The Cycle's third stage, changing performance, also presented problems, possibly requiring individual compliance by the doctors in their own practice, managerial compliance by the consultants in determining accepted practice for their own teams, corporate compliance by the consultants in the specialty as a group, and agreement by other disciplines involved in providing the necessary resources or performing their own activities in a particular way.

For the junior staff we surveyed, the most potent causes of change appeared to be from discussions of the material presented, or its implications, with other junior staff or from their own personal meditation – a verification of the importance of professional reflection in medicine. Not surprisingly, discussion of

audit topics with their consultants was also seen by junior staff as an important cause of changed practice.

But although a systematic process of audit meetings has developed, there were, as yet, few examples of topics being treated systematically, as part of a review cycle. The overall picture of audit was individualistic – a series of discrete events. If action for change was not forthcoming after a meeting, then, in all probability, the opportunity had been lost. This meant that junior doctors were most unlikely to see any formal follow-up within the audit process to the reviews in which they had participated. This may alter. Experience of the audit process had apparently convinced some of the leading participants of the necessity to move towards more structured programmes that include implementation of change and further review.

A third and final reason why medical audit has a rather indeterminate influence on the quality of care is that frequently the production of quality lay outside the competence of the participants and/or was outside the ambit of the audit process. Audit meetings concentrated on clinical processes and those involved were primarily clinicians. However, on occasion, it was apparent that if improvements were to be effected, they required attention to be given to aspects of care that lay outside clinical processes. They might also require an agreement to work in new ways by other clinical disciplines, such as nurses, or the agreement by managers to provide additional resources. It might be that representatives from the discipline concerned had been invited to attend the relevant meeting and could therefore commit themselves to new ways of working, or take up the issue in their own management structures. But this was by no means an accepted convention and, from our experience, it was most unlikely that any general managers would be present to respond to resource issues. The organisational structure for medical audit provided for issues that needed to be debated elsewhere to be referred to audit committees and/or medical advisory committees. These mechanisms could deal with general issues of concern for medical audit across a unit, they were less suited to resolve the details that concerned particular specialties. However, we found that audit co-ordinators had begun to emerge as useful emissaries on behalf of specialties in dealing with general management and other disciplines, although their scope for action was restricted by lack of status within the wider organisation.

Significantly, the relative isolation of medical audit as a change mechanism extended to other forms of audit and quality assurance initiatives. This was partly induced by structure, medical audit being treated as located on one side of the professional/managerial divide, while much of the impetus for the development of other quality assurance initiatives came from management on the other side. But it was also the case that the individualistic character of medical audit made it unsuitable as a mechanism for quality management. It was difficult enough for the clinicians by themselves systematically to review areas of concern, agree a common course of action and implement new approaches, without including other disciplines, with their own processes of working and their own interests, in the exercise. Typically, nursing and the professions allied to medicine developed their own audit and quality processes, under the aegis of a Director of Quality. The latter might well be a member of the local audit committee, just as interested clinicians might serve on clinical audit forums or quality assurance boards. Although we were told of examples where medical audit mechanisms contributed towards broader multi-disciplinary audit, in our experience the links could only be characterised as, at best, tenuous, and, more commonly, non-existent.

In the future, as quality management gains a higher profile and issues of quality become more firmly incorporated within the purchasing process, medical audit is likely to be under increasing pressure to become less isolationist in its approach.

2 Improving the Efficiency of Care

As an objective for medical audit, the promotion of efficiency was viewed with ambiguity. Reactions varied between disciplines and between individuals within disciplines. Consultants recognised that resources were scarce and that efficient use of resources enabled you to treat more patients and/or provide better treatments and thereby improve the overall quality of care. But at the same time there were perceptions that the promotion of efficiency could clash with that of quality, and that the government's motive in making medical audit compulsory in the NHS Review had been more to do with the former than the latter. There was considerable resistance to any notion of medical audit being foisted on the medical profession as a form of control.

The junior doctors surveyed certainly mentioned making better use of resources as one of the purposes of audit, but it was not one most frequently mentioned. Managers, including clinicians in general management roles, were, not surprisingly, more aware of efficiency as a goal for audit and indeed saw it as a pre-condition for achieving quality, rather than a contradiction in terms.

This ambiguity towards the legitimacy of considering costs as a subject for audit was apparent in the audit programmes undertaken by the specialty groups. As stated above, most of these were concerned with the technicalities of medical process. The efficiency aspects of working in one way rather than another emerged, if at all, as a by-product of discussion and attracted little interest.

But the underplaying of cost-effectiveness was not solely attributable to suspicion and narrow interests. The information which would have enabled meetings to understand the use of resources and their costs was not readily available; and when it was available it was open to interpretation and dispute.

Part of the problem was that managers, who would have had access to resource data, had held back from becoming involved with medical audit. This was partly self-denial, managers not wishing to stimulate the professional suspicions mentioned above, and partly a function of work-load, managers being 'up to their ears' in work concerned with implementing other aspects of the Review.

It was noticeable that the audit groups did focus their minds on efficiency where activities could be costed and coupled to their own budget. Examples have already been mentioned where specialty meetings had been given the data for their recent requests for clinical services and were seeking to find out if these were a) correct b) necessary and c) reducible.

It is likely, then, that in the future efficiency will figure larger within medical audit. The changes to the NHS have largely been implemented and have also been confirmed by the election. With some of the contentious and complex issues resolved, managers may have more time to devote to audit. At the same time the development of the Resource Management strategy can potentially provide clinicians with rapid and regular information on the cost of their activities, although we are aware that the extent to which this is regarded as a priority varied from site to site. The creation of sub-unit management structures, such as clinical directorates, may also result in clinical groups becoming more accountable for controlling and managing their resource use. Indeed, as an individual who had taken an early lead in developing medical audit at one of our case study sites suggested, medical audit can serve a valuable

purpose in helping to develop a corporate, instead of an individualistic, way of working by the consultants. This would enable better medical 'housekeeping' than in the past.

3 Medical Audit as Medical Education

The stress on medical audit as an educational process was seen by some as the softer option, reflecting the development of an accommodation between the medical profession and the government and avoiding audit being seen as a managerial accountability process, as had seemed intended in the White Paper. As a profession, medicine controlled its own education. If medical audit were educational, it would thus remain under medical control. Further, defining medical audit as an educational activity would serve to allay individual fears of being held to account and pilloried. An educational objective was compatible with the professional values of freedom and consensus. Everyone at audit meetings was there to learn and there was always something that a good professional could learn.

In practice, the educational objective proved difficult for four reasons. First, the educational needs of the doctors participating in audit were very different. The consultants required the opportunity to reflect upon their very considerable professional experience, as this could help improve the quality of their work. The junior doctors likewise required the opportunity to reflect upon, and extend, their, in some cases very limited, experience. This could both improve their current work and help them gain professional status in the future. But what was of interest to the former could well be beyond the latter. Topics relevant to the juniors would be boring to the consultants, who might well feel they were learning nothing from audit meetings, and particularly so if the topics had to be repeated every six months to cater for fresh intakes of junior staff.

A second problem was that although doctors become educators, both of their patients and junior colleagues, they are not trained for the activity. Yet education is not wholly intuitive; it can be done well or badly and it is possible to train individuals in educational techniques. The educational impact of audit meetings was certainly reduced by poor presentation.

A third problem, which has already been mentioned, was the lack of congruence between the operation of the Review Cycle, which was lengthy and halting, and that of junior staff attachments, which for the most junior were very short.

A final problem was that although medical audit undoubtedly highlighted issues which had implications for medical education, the mechanisms of translation appeared haphazard. The provision of post-graduate medical education relied, of course, on the commitment of individual consultants, who might, or might not, take seriously the responsibility of educating their own junior staff. And, like medical audit, it also relied heavily on the interest of the smaller number of individuals who were willing to take on the additional work of clinical tutor on top of their work in providing a medical service. These individuals attended audit meetings as practising consultants and might serve on audit committees as educational representatives. They were thus well placed to pick up some of the educational implications arising from audit. What was less clear was their ability then to get the educational programme to respond accordingly. Some of those in educational roles doubted the value of audit as a form of education and were correspondingly less enthusiastic in attempting to forge links.

Both the general view taken of quality as acceptable medicine and the specific topics discussed suggest that hospital medical

audit meetings are becoming more of a medium for the education and training of junior doctors, consultants perhaps gaining their education from more specialised audit events organised by the Royal Colleges and the regions. This may be no bad thing as the junior staff form the majority of those attending audit meetings. The education provided by medical audit appears to be clearly linked to the juniors' professional experience. In responding to our survey, juniors emphasised audit meetings as a means of learning about local policies and consultants' expectations. Very few saw them as a source of information about new developments or of material for professional examinations. This is compatible with a view that audit meetings provide an important means of socialisation, demonstrating the expectations of behaviour held by senior professionals to the juniors, and help in developing a sense of corporate identity. One of the more intangible benefits attributed to medical audit by our respondents was the development of a more open relationship between clinicians.

From our experience, this has been a rather successful aspect of the implementation of medical audit. Consultants have taken the time to attend audit meetings and encouraged their juniors to attend, and, once present, to participate. Although individuals obviously feel sensitive to criticism and are aware of the distance in status and authority between a consultant and a house officer, the atmosphere aimed at in audit meetings is to provide a forum for members of a common profession, motivated by a common desire to provide appropriate medicine.

4 Medical Audit as Medical Management

It appears to us that medical audit has had the unintended effect of strengthening the management of junior doctors. This is partly because, as was said earlier, if medical audit was to lead to changes in practice by clinical teams, it was always clear that it required the approval, tacit or otherwise, of the individual consultant heads. One of the benefits of audit for junior staff was that it made them more aware of the opinions of their consultant managers.

Further, mention has already been made of the way in which medical audit meetings served to socialise the attitudes and behaviour of junior doctors. One strong set of messages came over from the way in which meetings were conducted: although all present were members of a common profession and could relate, doctor to doctor, through their common interest in maintaining and improving the quality of their patient care, there was nonetheless a strong managerial relationship, with very real properties of authority and accountability, between a consultant and his, or her, junior staff.

INTERESTS IN MEDICAL AUDIT

The preceding analysis of the purposes of medical audit suggests that it offers rather different incentives for participation to different staff groups.

1 Medical Staff

The Government consciously left the operation of medical audit to the medical profession, thereby no doubt defusing some of the suspicions of audit as a means of central control by 'the back door' that were harboured by some clinicians. But despite their common professional membership, the interests of the consultants, as fully qualified and experienced professionals and members of a collective that reaches decisions on the basis of agreement, have to be separated from those of the junior staff. The latter are less well-qualified and less experienced and are members of a strong managerial hierarchy where decisions are subject to the authority of the consultant (or consultants) who is head of the clinical team.

So if medical audit is to influence the consultants, it is by their individual and corporate agreement. If it is to influence the juniors, it is by managerial fiat.

It was suggested earlier that it is difficult to cater for the educational needs of the two groups in the one medical audit forum, it is similarly difficult to cater for the presence of two different forms of authority and accountability. They engender different forms of commitment. For the individual consultant, professional values are exemplified locally by the opinions of the collective of consultant staff; these are the people with whom a consultant has to live and work possibly for the remainder of his or her career. This being so, he or she is likely to be wary of audit entering into conflicts with colleagues. It is safer if audit can be depersonalised and kept as an educational activity. For the junior doctor, professional values are exemplified locally by the opinions of the particular managing consultant. But this position of subordination is temporary; in a few months or years the junior doctor will hopefully move on to another position, in another firm, with another consultant manager. This being so, the junior doctors are likely to be wary of audit drawing them into a position of being thought to criticise seniors, which might be detrimental to future career prospects. However, by the same token, this career is probably going to be in a different unit, in a different hospital, so the junior doctors do not have the same long-term commitment to the local arrangements.

These differences suggest that both the content and authority of audit cannot readily be combined for consultants and junior medical staff. The position is further complicated when consultants occupy managerial roles in respect of the other consultant staff, such as clinical directors or heads of clinical specialties, exercising authority and accountability in respect of performance of activities and use of resources. As a manager, the consultant may have a concern with the efficiency as well as the quality aspects of audit and may well feel the necessity to take up managerial implications from audit meetings even if they haven't been agreed by the collective.

The organisational framework laid down for medical audit, is, perhaps inevitably, uneasily suspended between the two different patterns of organisation: the professional collective reaching decisions on the basis of agreement and the hierarchy based on the authority of those occupying managerial positions. Lead clinicians in the specialties and audit committees in the units and districts appear to be part of an 'audit hierarchy'; but this is required to operate within a professional environment functioning on the basis of collective agreement and power, rather than on hierarchical principles of authority based on organisational position. As a result, their authority and accountability is unclear or subject to divided loyalties. The organisational basis for medical audit within the medical profession turns out to be uncertain.

2 General Managers

It was suggested above that as a discipline, general managers, at district, unit or specialty level, had hitherto tended to refrain from a direct involvement with the medical audit process. This was due both to other heavy calls upon their energies and a disinclination to invite their participation by the doctors, who feared that this might result in efficiency being given predominance over quality. Further, the ambiguous and diffuse nature of authority and accountability in medical audit, coupled with its uncertain and unsystematic organisational processes, made it difficult terrain for management. But of course their isolation was not complete; if general managers were clinicians they could participate in audit meetings, general

managers or their representatives served on local audit committees and they received the general and anonymised reports of audit activities. Where the doctors reached decisions in their audit meetings that required different patterns of resource use or negotiations with other disciplines across a unit of hospital, the absence of a managerial input proved a hindrance.

It was also suggested that general managers are going to want to play a stronger role in audit in the future. This is partly due to the increasing familiarity and sophistication of the contracting process and the place of medical audit within this as a means of quality assurance. However, it remains to be seen how far information gathered in auditing technical medical processes would be suitable for inclusion in contracts.

But there is a second and more important reason. Hitherto, the audit management process, if unclear, has been by means of professionally dominated committees separated from wider management concerns. This separation has been feasible because audit has been financed from a specific allocation, unrelated to other local requirements and policies. But once audit monies cease to be ring-fenced and must rather be drawn from general financial allocations and compete with other claims on resources, so managers will also expect a greater involvement with the process to satisfy their accountability for seeing that resources are being well spent.

The respective interests of doctors and managers in medical audit are too readily stereotyped as quality and efficiency. It has already been asserted that doctors will have no choice but to become more concerned with the efficient use of resources and indeed many have consistently been working to this end; likewise the managers of provider units will have to become more actively concerned with the quality as well as the cost of their provision.

3 Other Service Professions

Members of other clinical service disciplines, such as nurses, pharmacists, dieticians, do attend medical audit meetings. They may be invited to present a particular audit, suggesting desirable standards of performance or reporting on the actual performance of the relevant medical specialty, and/or they may be invited to attend the general run of audit meetings and contribute to discussion as they feel appropriate. We would suggest that their status as guests is important. Members of other disciplines attend audit meetings as a special arrangement, not as a right. The programme and implementation of medial audit at the specialty level is medically focused and medically controlled. However, the delivery of medical care is increasingly a wider clinical matter which involves many other disciplines. The isolation of medical audit from the insights that could be offered by other disciplines, and its separation from the audit and quality management activities that are engaged in by other disciplines, must limit what medical audit can achieve and make the process of achieving improved health services more complicated and time-consuming.

But although in our experience medical audit was strongly medically encapsulated, we were informed of examples where audit was seen as a multi-disciplinary activity. This generally seemed to occur in specialties such as geriatrics or psychiatry, where there was a stronger tradition of a broad multi-disciplinary clinical involvement in patient care. It was also suggested that as sub-units, such as clinical directorates or departments, take on a more definitive role within hospitals, emphasising a common service product, so multi-disciplinary audit activities will become more the norm.

Clinical audit activities in nursing, and the professions allied to medicine, have not been funded on such a generous scale as has medical audit. One area where this is particularly noticeable is in the provision of audit support. Certainly the new discipline of medical audit officers has helped both formalise the medical performance of audit activities, having overcome initial suspicions and been largely accepted as part of the process, and has also assisted in implementing the results with management and other service disciplines. In one sense the audit officers can attempt to span the collective/management divide. They have legitimacy in the former because they are generally accountable, through an Audit Co-ordinator or Facilitator, to the lead clinician responsible for ensuring that medical audit is being undertaken in a hospital or health district, while providing a service to the specialty groups that actually undertake audit activities. However, their success in the 'brokerage' role also depends on their status with management. In some cases this is legitimised by a dual accountability: their management shared between the lead clinician and a senior unit manager.

4 Consumers

In our experience consumer interests only figure indirectly in medical audit. Usually consumers are implicitly represented by the medical staff. If medical care is improved or made more efficient, if doctors gain more knowledge, then it can be assumed that the patient will benefit. In discussing audit results, reference may be made to opinions allegedly held or expressed by patients but the evidence is generally anecdotal. In one of our sites reference was made to a survey that had been undertaken by the Community Health Council. Interpretation of the results, however, came back to normative medical opinion. Other issues important to patients, such as the quality of communications and relationships with doctors, also appear to escape the audit process.

It seems possible that consumer interests in medical audit could be strengthened in two ways. First, some doctors have expressed the wish to agree standards for medical outcomes and measure their attainment, although these tasks are seen as presenting considerable methodological problems. A greater emphasis on outcomes would clearly make audit more comprehensible to consumers, although their access to the information would require both wider circulation of reports and an expansion of their contents. Second, the higher profile obtained by quality issues may cause pressure from purchasers for consumer opinions to be placed alongside medical audit as a requirement of the contractual process.

COMPLETING THE FRAMEWORK

We can now conclude by using Figure 3 below to summarise the preceding argument and suggest how far the different interests potentially involved in medical audit are involved in promoting the various purposes.

It is this configuration of interest and purpose that gives medical audit its particular character.

First, it is impressive how rapidly, and relatively painlessly, the medical audit process has been implemented. But the speed with which it has got off the ground has not been matched by its ability as a mechanism for change. Second, to date it has chiefly served professional interests: a medical preserve, used as an educational and managerial instrument, to improve technical aspects of service quality and socialise junior staff. It does, then, provide an important symbol of professional commitment to a degree of collective medical management. But predictions by writers such as Flynn (1992) that medical audit would be a means of asserting managerial values have not been borne out – yet.

The provision of medical audit cannot help but reflect developments in the wider health service environment and these have undoubtedly afforded managers 'new levers of influence' with doctors (Pollitt, 1993). However, as the writer indicates, this is not the same thing as increasing the influence of patients or the public. We have tried to indicate some of the pressures and possible future directions for medical audit in the preceding discussion. There is a balance to be struck between, on the one hand, apparently offering a panacea to all kinds of demands while in reality stagnating as a successful demonstration of professional protectionism and, on the other, the possibility of pluralist conflict as new interests, or interests hitherto repressed, begin to be more involved in medical audit.

Figure 3 Nature of Medical Audit

Purposes	Interests				
	Consultant	Junior doctors	Managers	Other service professions	Consumers
Improved quality	Yes	Yes	Developing		
Improved efficiency	Developing	Developing	Developing		
Medical education	Partially	Yes			
Medical management	Yes	Yes			

PART II
SUPPORTING AUDIT

SUMMARY

Context for the Survey

This introductory section sets out the background to the questionnaire survey and the origin of the sample. The survey arose out of the work of two organisations: the Health Economics Research Group at Brunel University and the Medical Audit Information Service at the King's Fund Centre. The former was undertaking research on the introduction of audit in general medicine at four study sites, while the latter was providing an information service for medical audit support staff. The aim of the survey was to provide basic descriptive information about this new group of staff, and their perceptions of their work and the audit process. The survey sample was 557 audit support staff who had registered with the information service or were known by them. In all, 382 questionnaires were returned (response rate 69 per cent).

Chapter I – Who are Medical Audit Support Staff and What do They do?

- ❑ 86% of Medical Audit Support Staff respondents were women.
- ❑ 77% had previously worked in the NHS in predominantly nursing or secretarial work.
- ❑ 39% had a first degree or equivalent.
- ❑ 84% of respondents earned £16,000 a year or less.
- ❑ 39% had a fixed-term contract.
- ❑ Respondents' training priorities were audit methodologies and computer systems.
- ❑ Collection of data for audits is primarily a manual activity with only 10% of respondents reporting using a case-mix management system and 20% an order communication system in an audit.

Chapter II – The Role of Medical Audit Support Staff

This chapter examines whether medical audit support staff have proactive or reactive roles in audit.

Respondents have difficulties in fulfilling a proactive role because:

- ❑ no clear framework exists for audit;
- ❑ audit is perceived as a fragile enterprise with an uncertain future;
- ❑ the external expectations of purposes of audit may be different from the clinicians who undertake it. For example, although the White Paper definition includes use of resources as part of the scope of audit, there is little evidence that this is being undertaken in a structured way. Only 3 per cent of respondents report using cost data in an audit;
- ❑ audit appears isolated from post-graduate medical education and other quality initiatives. Audit results are unlikely to lead to action in the form of contact with hospital management or other hospital departments. The use of audit in contracting is underdeveloped. Only 8 per cent of audit support staff reported being involved in formulating criteria or standards for use in contracts and only 17 per cent have been involved in providing audit information for monitoring contracts.

Chapter III – The Successes of Audit

Despite the problems identified in Chapter II many successful audits have been undertaken.

Factors which contribute towards success were seen to include:

- ❑ choosing a subject about which many were concerned or interested;
- ❑ an audit design which was straightforward and where the results were easy to analyse;
- ❑ results which illuminated problems that many were unaware of;
- ❑ enthusiastic, well-motivated clinicians;
- ❑ involvement of audit staff at all stages in the process;
- ❑ audits which brought together different professions and specialties to develop a common perspective.

CONTEXT AND ORIGIN OF THE SURVEY

When medical audit was introduced as part of the NHS reforms there was widespread agreement that such a technique would be beneficial in improving patient care. But getting such an initiative under way throughout the NHS clearly required resources. The Government's commitment to medical audit was signalled by the allocation of £48m and £42m in 1991/92 and 1992/93. In order to secure accountability for audit and audit monies, the Government required the NHS to set up a series of local audit committees (DoH 1991). These were charged with both promoting and overseeing audit and the allocation of resources. In the split between purchaser and provider, these local audit committees aligned themselves with providers. Many of these committees decided that the appointment of staff would be one way in which audit could be promoted and their duties discharged. Thus the Government, by allocating resources to audit, indirectly aided the emergence of a new occupational group within the NHS, medical audit support staff.

Initially no central direction was given in terms of pay, accountability or job descriptions; these emerged as staff were appointed, and as different districts and regions compared decisions. Similarly once in post, support staff found that the nature of the work was unclear and subject to much negotiation between themselves, audit committees, local clinicians and the institution in which they worked. This paper reports on the outcomes of these negotiations as seen through the findings of a first national survey on medical audit support staff.

The survey grew out of work on medical audit being undertaken by two organisations. As part of an initiative to monitor the introduction of the NHS reforms, the Health Economics Research Group at Brunel University was funded by the King's Fund to study the implementation of medical audit. The King's Fund Centre itself had also been charged by the DoH with the task of developing an information service for medical audit support staff.

The national survey was devised to take into account the aims of both organisations. The group at Brunel University had chosen a research design for their study which was based on in-depth case-studies of the introduction of audit at four hospitals. It was felt that a national survey of audit support staff would complement and support this study by showing to what extent the four sites chosen appeared typical. The King's Fund Centre felt that data about the training needs and background of support staff who were clients of their information service would enable them to tailor it to their needs. In order to fulfil these aims, the questionnaire attempted to elicit three different types of information:

a) Descriptive details about the background, post held and training needs of audit support staff.
b) Details of the type of work undertaken by audit staff.
c) Audit staff's perception of the audit process including the data source used, the outcomes of audit, degree of integration of audit into provider units and factors that inhibited or promoted audit.

As part of the development of the information service, the King's Fund Centre actively compiled a list of all those working as medical audit support staff. A variety of formal and informal means were used for this purpose: personal contact through use of information service, word of mouth, and advertisement in journals and newsletters. By September 1991 this list consisted of some 557 people. Although this may not include

Table 1 Geographical distribution of respondents

South East Thames Regional Health Authority	12%
North Western Regional Health Authority	10%
Northern Regional Health Authority	8%
Wessex Regional Health Authority	7%
North West Thames Regional Health Authority	7%
Mersey Regional Health Authority	7%
Oxford Regional Health Authority	6%
West Midlands Regional Health Authority	6%
South Western Regional Health Authority	6%
North East Thames Regional Health Authority	5%
Trent Regional Health Authority	5%
South West Thames Regional Health Authority	4%
Yorkshire Regional Health Authority	3%
Northern Ireland	3%
East Anglian Regional Health Authority	3%
Scotland	3%
Wales	2%
Other	2%

everyone working on audit, it was at the time the most comprehensive list of audit support staff available. This list formed the sample surveyed. The questionnaire was piloted in the summer of 1991 and administered in the autumn. All 557 individuals on the King's Fund Centre data base were mailed with a questionnaire and 382 were returned (69 per cent). The breakdown of the returns by region is shown in Table 1.

Part II is in three chapters. Chapter I reports the basic descriptive findings of the survey about the background and work of support staff. Chapter II considers the broader issues which emerge for audit support staff in negotiating a role for themselves, and Chapter III reports some of the successes of audit.

From the returned questionnaires, it is clear that audit support staff work in a variety of settings. Of the respondents, 17 per cent had a regional brief and a further 7 per cent (25) worked for FHSAs or General Practitioner Medical Audit Advisory Groups. Although information from these two groups was included in the descriptive details of the medical audit support staff as a whole, their responses were excluded from those parts of the survey which were aimed to focus on the nature of audit in hospital or community provider units. Where the whole returned sample has been used in the results, the denominator ranges from 350-382. (Some respondents did not answer all questions, therefore the data set has some missing items.) Where a sub sample has been used the denominator is stated.

CHAPTER 1
WHO ARE MEDICAL AUDIT SUPPORT STAFF AND WHAT DO THEY DO?

The Staff and their Background

The results of the survey suggest that a typical person working in medical audit is a woman between the age of 20 and 50. Of our respondents 86 per cent were women, 64 per cent of them were under 40 and 94 per cent of them were under the age of fifty (see Table 2). The gender bias of medical audit support staff may be a consequence of the recruitment origin. Of our respondents 77 per cent had previously worked in the NHS and the mean number of years worked was ten. Of these, 32 per cent had a background in nursing and 47 per cent in secretarial work (see Table 3). These are occupations where the workforce is predominantly women.

Of our respondents, 39 per cent were educated to degree level or higher with 29 per cent having a first degree and 10 per cent with a higher degree. A further 30 per cent stated that their highest qualification was in secretarial work and for 19 per cent their highest qualification was in health care (see Table 4). Of those with degrees, only 3 per cent (four) had a degree in medicine. Eight per cent (12) were computing or information technology graduates (see Table 5).

The Post and the Pay

Not surprisingly, many audit support staff were new in post. The mean length of time they had been in post at the time of survey in November 1992 was nine months with a range of one week to 26 months.

Of the respondents, 37 per cent were called audit assistants, 19 per cent co-ordinators and 10 per cent facilitators. A sizeable minority appeared to be unhappy with these job titles. Of all respondents 21 per cent had changed title since being in post and 32 per cent would liked it changed. The job title of audit assistant seemed the most unpopular with 50 per cent of this group expressing a wish to change their job title as compared to 22 per cent of the others.

Table 2 Age of respondents

Year		
20 – 30	–	32%
31 – 40	–	32%
41 – 50	–	30%
51 – 60	–	6%
Over 60	–	0%

Table 3 Previous experience of NHS (n = 271)

Secretarial alone	29%
Nursing alone	22%
Secretarial and another occupation	18%
Nursing and another occupation	10%
Management	5%
Information technology alone	5%
Other occupations or combinations	5%
Research	5%

A regional brief was held by 17 per cent of respondents, 29 per cent were accountable to another member of the audit support staff and 31 per cent had support staff accountable to them. The remaining 23 per cent appeared to be working either in a non-hierarchical department or on their own. Excluding those with a regional brief, the mean number of subordinates was 2.5 with a range of 0.5 – 14 FTE. One quarter of our respondents were employed on audit part-time and 39 per cent of all respondents had a fixed term contract.

Of all respondents, 80 per cent were paid on administrative and clerical salary, with a further 10 per cent on nursing scales and 6 per cent on managerial scales. The salary scales staff were employed on are shown in Table 6. Taking the mid point of these scales and excluding London weighting, enables an estimate of the

Table 4 Highest educational qualifications

Secretarial qualification	30%
First degree or equivalent	29%
Health care professional eg RGN	19%
Higher degree	10%
Other	9%
NHS management qualifications	3%

Table 5 Degree subjects (n = 144)

Social Sciences	34%
Science	34%
Humanities and Arts	21%
Information technology or computing	8%
Medicine	3%

Table 6 Numbers of respondents paid on A&C, managerial or nursing salary scales

Ancillary and Clerical		Managerial		Nursing	
A3	43	M16	1	D	2
A4	75	M19	1	E	2
A5	89	M21	1	F	5
A6	55	M24	2	G	14
A7	17	M25	3	H	4
A8	5	M26	1	I	2
Other/	19	M27	1	Other/	10
Unclassified	—	M28	1	Unclassified	—
	303	M30	1		39
		Other/	12		
		Unclassified	—		
			24		

Table 7 Pay of medical audit support staff (full time equivalents excluding London Weighting)

<£12,000 pa	–	37%
£12,000 – £16,000	–	47%
£16,001 – £20,000	–	14%
>£20,000	–	2%

actual full time pay of these staff to be made. This suggests that an estimated 84 per cent of respondents earn £16,000 a year or less (see Table 7).

Training

Some 71 per cent had received training in the basics of audit but 29 per cent (109) had had no training in this at the time of the survey. The mean length of basic training was three days with a range of one to 15 days. Approximately the same number (71 per cent, 271) as received basic training, received additional training of varying lengths (see Table 8).

Nearly half of all respondents (49 per cent) felt that their training was barely adequate or inadequate. Respondents' top priorities were for training in basic subjects such as audit methodologies and computers and NHS information systems (see Table 9). Subjects which would have allowed them to develop more sophisticated audits such as epidemiology received low priority.

The Work of Medical Audit Support Staff

The survey aimed to obtain information about the pattern of work of medical audit support staff. The activities we asked about were in the main those connected with undertaking an audit. The results are shown in Table 10. In practice, the role we anticipated appeared too narrow for many of the respondents. Forty-four respondents provided supplementary details of their activities and a further 48 details of why they were not carrying out the majority of the activities listed. Of the latter group, 23 felt that they had not been in post long enough to be undertaking such activities, ten said they had a regional brief, 15 felt that as their role was primarily managing and facilitating they did not get involved in individual audit and ten stated that their role was entirely involved with the development of computing technology.

Of those who did feel that the activities stated adequately described their work, half reported that the activity they would like to spend most time on was designing and researching specific audits; this was the most popular activity. In order to do this, support staff would turn most frequently to the BMJ Audit in Practice series for information (see Table 11). The least

Table 8 Number of days training excluding a course on basics of audit (n=271)

0.5 – 2	–	24%
2.5 – 5	–	25%
5.5 – 7	–	8%
7.5 – 10	–	8%
10.5 – 15	–	3%
>15	–	2%

Table 9 Training priorities (n=368-374)

	% giving highest priority
Computers and NHS information systems	30%
Audit methodologies	29%
Interpersonal skills	12%
Statistics	10%
Clinical medicine	10%
Organisation of NHS and health policy	6%
Economics and cost-effectiveness methods	5%
Epidemiology	4%
Resource management	4%

popular activities were retrieving case notes and secretarial and administrative work. As less than half (45 per cent) of the respondents had secretarial support for their work, this was not surprising.

Where audit has been undertaken, criteria audit is the most common method, with 61 per cent of respondents using this frequently. Data collection appears to be a manual activity. Of those who had undertaken audit, only ten per cent had ever used an RM or case-mix data base for audit and 20 per cent a HISS data base (see Table 12). This finding does not, of course, preclude the use of other computer systems but 70 per cent of respondents report spending time collating data from case notes in the last month (see Table 10) and this was the activity which they felt that they spent most time on (see Table 13).

Large-scale computerised data bases may not be used for many reasons; lack of skills, lack of access or no data base available. In some cases even access to the widely available PAS system was poor with 31 per cent of respondents having no PAS system in their office.

The issue of information technology is clearly vexed. In response to the question about what inhibited audit, some staff identified the lack of their own information technology which made audit time consuming, as these comments illustrate:

'We do not have a computerised master index let alone PAS. Finding our patient sample takes many hours of work, very often more than collating data from records when and if we eventually find them.'

Table 10 Which of the following activities have you personally undertaken in last months? (n=378-380)

Attending audit meetings	91%
Secretarial and administration work	88%
Preparing data for presentation	86%
Researching, designing specific audits	75%
Retrieving data from computer	73%
Collating data from case notes	70%
Entering data on computer for audit	70%
Collating data manually from sources other than medical records	69%
Writing audit reports	64%
Writing up minutes of meeting	62%
Retrieving case notes	58%
Following up decisions from specialty meetings	44%
Servicing and supporting district or unit audit committee	42%
Work connected with conducting surveys of patients' views of their care	39%
Attending audit training sessions	38%
Repeating an audit which had been previously undertaken by you or someone else	16%

Table 11 Most frequently used sources of information

	Number of responses
BMJ 'Audit in Practice'	144
NHS District or Board Libraries	112
Medical Audit Programme and Information Service at the King's Fund Centre	98
Network (from King's Fund)	92
Medical School Libraries	76
Medical Audit News	40
NHS Regional Libraries	29
King's Fund Centre Library	25
Quality Information Service at the King's Fund Centre	9

'Insufficient access to hospital information systems, ie: Casemix. Antiquated systems for storage of Medical Records, ie: all medical records are held manually and it requires a great deal of time to access the information as compared to files stored on Magnetic Media, ie: on computer.'

But this lack also meant that access to information and to computers for processing information had to be negotiated with other departments. These may be unsympathetic or have other priorities:

'Lack of statistical information from the hospital computers and the Information Department's policy of "limited" co-operation.'

'No computing facilities, therefore I waste precious time collecting manual data which I then endeavour to put on to a computer in the Division of Medicine Unit – this is for general research use for Doctors, etc, – not me – and I'm very wary of using it.'

On the other hand, others saw the preoccupation with information technology as a factor which detracted from undertaking 'proper' audits. Comments about factors which inhibited their work and inhibited audit included:

'Computers – consultants cannot grasp the philosophy of standard-setting if there is a computer around.'

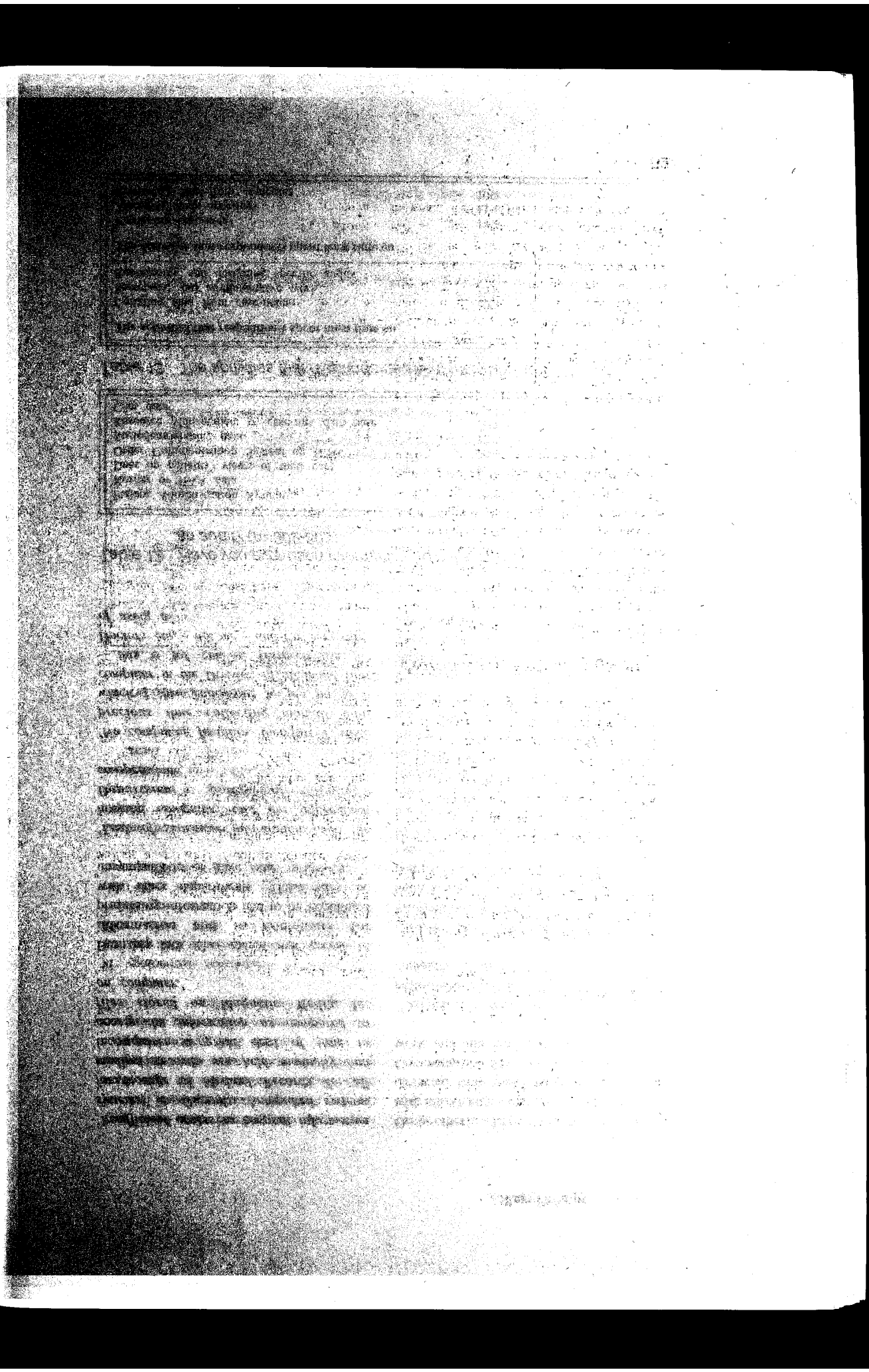
Clearly the availability or absence of information technology shapes the way audit is undertaken. Although smaller scale computerised information systems may be used for processing audit data, the findings of this survey suggest that the case notes are still the most important source of audit data. The labour intensive nature of obtaining data from this source would tend to inhibit the collection of large data sets limiting the power of the audit and its repeatability, but this may not be the only or most important factor which influences the nature or success of the medical audit support staff's work or the audit process. These other issues are considered in the next chapter.

Table 12 Have you ever used information from the following sources in an audit? (n=302-305)

Patient Administration Systems	74%
Korner or HAA data	41%
Data on patients' views of their care	37%
Order Communication System eg HISS	20%
Sociodemographic data	12%
Resource Management or case-mix data base	10%
Cost data	3%

Table 13 The activities that respondents spent most and least time on

The activities that respondents spent most time on	
Collating data from case-notes	20%
Secretarial and administrative work	15%
Researching and designing specific audits	14%
The activities that respondents spent least time on	
Retrieving case-notes	14%
Attending audit meetings	11%
Retrieving data from computer	10%



CHAPTER II
THE ROLE OF MEDICAL AUDIT SUPPORT STAFF

Reactive or Proactive Support for Audit?

One of the key dilemmas medical audit support staff face is whether their role is one of supporting doctors reactively by undertaking delegated tasks in connection with audit, or whether to adopt a proactive role in promoting audit. The two articles written in the BMJ 'Audit in Practice' series about the work of medical audit support staff suggested that at a provider unit level the role is the former reactive role, while at a regional level it is the latter (Fielding 1992, Firth-Cozens 1992). Clearly circumstances may play an important part in this. Where audit is underdeveloped, medical audit support staff may be forced into the proactive role when they believe their skills, pay and status suggest the reactive role, and conversely they may feel that it is their role actively to promote audit but are forced into a more delegated role by consultants' expectations, as these comments about the factors which inhibit support staff suggest:

'Conflicting expectations, usually from consultants, etc, about what my role is.'

'I see my role (hopefully) as a facilitator but seem to be used more as a glorified secretary and report writer!!'

'Inability to take the lead in suggesting or designing audits from scratch. Job too narrowly defined in assisting clinicians after they have decided to audit. I am not suggesting one can dictate audit to clinicians but there is not even any scope in "quiet" periods to initiate a general review of medical record standards based on surveys done elsewhere. I think this would be a good starting point to discussion in all specialties but unless a clinician suggests it – my hands are tied!'

'Still being thought of as a secretary. Getting across the fact that I can help the consultants with the audit, and I am not just there to be a clerical help.'

However, should audit support staff decide either by circumstance or inclination to attempt to facilitate and promote audit, then experience with the use of 'change agents' in General Practice suggests that the task is not an easy one, particularly under the circumstances which prevail at the present time in the introduction of audit.

Medical Audit Staff as 'Change Agents'

The Experience in General Practice

There is precedence within general practice for the use of specialist non-medical staff to facilitate policy initiatives aimed at enabling a change in the nature of medical work. In some ways medical audit support staff may be perceived as performing a similar role, although the use of non-medical facilitators or 'change agents' within hospital medicine has hitherto been rare.

In the 1980s specialist facilitators were employed by the Family Practitioner Committees to stimulate the development of GP practices. A study of these facilitators revealed that, broadly, they had two different types of roles (Allsop, 1990). They either developed new services for patients, for example health promotion clinics, or their role was to act as the GP's 'best friend' and develop links between FPCs, DHAs and GPs, so that

GPs could make the best use of the resources these organisations had to offer. They were primarily considered as 'change agents' and their overall purpose was to:

'move general practice from a fragmented, unmanaged and unaccountable service, to one in which there was greater accountability for the use of resources, the pursuit of policies and the maintenance of standards and quality of care for patients' (Allsop, 1990, p40).

This definition of purpose clearly has some similarities with medical audit. Although medical audit support staff do not work across agency boundaries, if medical audit is to bring about change in quality of care then support staff will need to work across the intra-organisational boundaries between doctors and other health care professionals, and doctors and managers. In effect, as audit has been set up as a process encapsulated within the medical profession, audit staff are in sense working for an organisation within an organisation. Yet in order to function as 'change agents' they are required to liaise between the profession and the wider organisation.

The GP study concluded that facilitators were more successful in this role if, first, there was a clear vision and framework for service development between the different agencies, and, secondly, they occupied a position in both organisations which gave them sufficient status to have access to negotiate with decision makers. Are these two conditions present in the medical audit support staff role?

A Clear Vision of Audit?

Many of our respondents suggested that a unified view of the nature of audit was lacking both nationally and at a local level. This was a major inhibitory factor in their work.

'Apparent lack of cohesion – nationally, regionally and locally. Lack of specific and clear guide-lines. Apparent diversity of approaches and emphasis by the Royal Colleges.'

'It gets confused with research. There seems to be a gap in their education!'

'As I see it consultants do not fully understand the term audit. Their ideas range from short term monitoring to long term statistic gathering.'

'An extreme lack of understanding on the part of clinicians as to what is audit and what methods can be used.'

This lack of clarity or cohesion may be the result of ambiguity of purpose which has characterised the introduction of audit (Packwood 1991).

Audit has been implemented at a time when the medical profession is being challenged from two different quarters. The pressing need for increased cost-effectiveness in health care has led to attempts to increase the accountability of the medical profession. As disillusionment with the power of medicine to cure all ills increases, doctors are being increasingly required to demonstrate that the treatments they employ are of benefit, not only to the individual, but also are a good use of scarce resources for society at large. In effect, doctors are being asked to shift the focus of medical care. It is argued that they should cease being advocates of the individual patient and become managers of resources for populations (Hunter, 1991).

Patients, too, are presenting challenges to the profession and health care is undergoing something of a consumer revolution. Patients now expect that their relationship with their doctor will be one of mutual respect, with active participation in decisions about their care (Elston, 1991). Although those providing health care may not necessarily see it in these terms, a climate is now emerging where more

emphasis is being placed on patients' views of their care.

These issues are not unconnected with the introduction of medical audit. Indeed, audit is one of the policies through which these issues find practical expression. Therefore it is not surprising that echoes of these challenges are encapsulated in the definition of audit in the White Paper. For the Department of Health, audit is:

'the systematic, critical analysis of the quality of medical care, including the procedures used for diagnosis and treatment, the use of resources, and the resulting outcome and quality of life for the patient' (Department of Health, 1989).

Thus medical audit is seen as having a dual, potentially conflicting, role of both ensuring that quality of care is maintained in provider institutions where definitions of quality may emphasise excellence of care and responsiveness to patients' views, and supplying data which will provide a basis for cost-effective purchasing decisions. The lack of direction may therefore be a symptom of hidden conflict and ambiguities about the purposes of audit.

With the responses to this survey, it is possible to build up a picture of the characteristics of audit as it is being implemented in the NHS. The training priorities of medical audit support staff, their perception of the outcomes of audit, their work activities and the data sources used in audit, and the relationship between audit departments and other parts of provider units, all these factors give an indication of whether these external policy aims for audit are being addressed.

Responses to the survey suggests that some aspects of the White Paper definition are emphasised while others have yet to be developed. There is some evidence that audit or audit support staff are involved in assessing patients' views of their own care: 37 per cent report using such views in an audit (see Table 12), 39 per cent report undertaking such an activity in the last month (see Table 10), although less than 16 per cent saw it as an outcome of audit (see Table 14). But the responses also suggest that the other aspect of this definition, use of resources, has received less attention. Although 21 per cent saw the outcome of audit as more cost-effective care (see Table 14), there is little evidence that analysis of efficiency is taking place in a structured way. Cost-effectiveness methodologies or Resource Management received low priority for training (see Table 9). This is possibly because the nature of audit does not require audit support staff to be able to undertake these activities as part of their work. In fact only 3 per cent of those who have undertaken audit have used cost data (see Table 12). Furthermore, there is little evidence that audit is being used as a basis for contracting

Table 14 Medical audit support staff's perceptions of outcomes of audit (n=362-365)

	% of positive responses
Changes in practice or policies	86%
Better informed doctors	54%
The development of written guide-lines or protocols	52%
Impossible to say	24%
More cost-effective care	21%
Meetings with hospital management or other hospital departments	16%
Services which are tailored to patients' wishes	16%
Other	16%

decisions. In addition, only 8 per cent (18, n=225) of those who worked in provider units as heads or sole members of audit departments reported being involved in formulating criteria or standards for use in contracting, and 17 per cent (39, n=225) have been involved in providing audit information for monitoring contracts.

The lack of emphasis on some aspects of the external aims for audit has consequences for the audit support staff in that it may create a potential tension between the role expected of them, as a result of external perceptions of the nature of audit whether this be in the minds of local managers or the wider policy community, and the role shaped for them by the medical profession. Attempts by audit support staff to resolve these different views of audit are very tricky, particularly as there is an element of compulsion attached to audit. The spectre of external control that such compulsion raises means that issues about what sort of audit should be undertaken, and the subjects and the results of audit, may become very contentious. Consequently, for all those involved in audit, the question of whom or what audit is for and whose purposes it is meant to serve is unclear and anxiety laden.

The Status of Audit Support Staff

The most successful facilitators in general practice had both status within the organisation and professional status as they were often retired GPs. This is not the case with audit support staff who perceived that their lack of status both within the medical profession and within the wider organisation affected their ability to facilitate audit. It is hardly surprising that an occupational group, where, as this survey suggests, 86 per cent of the members are women, where the pay is relatively poor and where the majority of employees come from occupational groups of nursing and secretarial work which are regarded as having low status, has difficulty in convincing doctors of their abilities:

'It has taken time for the clinicians to accept me as a fellow "colleague" rather than as the secretary they previously knew.'

'Isolation – lack of control over budget. Perceived lack of credibility with medical staff (my problem – not theirs!).'

'Personally I find it difficult to liaise at consultant level, as many consultants refuse to deal with staff without medical knowledge.'

'Awareness of my existence. Reluctance/ refusal to acknowledge my views even if they are aware of my existence unless there's money attached!'

Moreover this lack of status may extend to communications between the audit department and those support staff undertaking audit. Of respondents who worked in provider units as heads or sole members of audit departments, 38 per cent (n=225) receive copies of all or the majority of the written records of audit meetings, with 49 per cent (n=225) reporting that they only receive a few or none of these records (see Table 15). Twenty-three per cent (54, n=230) did not know the

Table 15 What proportion of the written records of specialty or team audit meetings do you receive copies of? (n=225)

All of them	14%
Majority of them	24%
About half	13%
A few of them	26%
None of them	24%

Table 16 How many specialty audit meetings are you invited to?

All of them	20%
Majority of them	26%
A few of them	39%
None of them	14%

budget allocation for medical audit and 20 per cent (n=229) did not know how audit monies were being spent. In addition, less than half of all respondents (46 per cent) were invited to all or the majority of specialty audit meetings (see Table 16).

But as well as a lack of authority in the eyes of clinicians they also perceived that they lacked status within the broader organisational hierarchy:

'No "voice" at senior management level. No "stick" for those who do not participate or who are found to have poor practice.'

'Lack of power-base, everything must be done by persuasion and some antipathy very entrenched.'

'It is difficult to speak to medical staff who have little knowledge of audit, do not have enough time and do not think me of enough seniority to pose any "threat" regarding the implications of doing or not doing audit.'

In some ways this lack of authority within the wider institution is not surprising and is in part a consequence of the isolation of audit itself within organisations. For example, in provider units audit does not appear to be well integrated with quality assurance programmes or post-graduate medical education (PGME). Focusing down on those who work in provider units as heads or sole members of audit departments, 34 per cent (n=277) did not know whether there was a Quality Assurance committee in their hospital or provider unit. Even if there was a committee only 26 per cent (38, n=146) were likely to be invited to the meetings or receive minutes; 22 per cent (36, n=166) met the person responsible for Quality Assurance regularly, with a further 40 per cent (66) meeting occasionally. The audit department seems even less integrated with PGME with 51 per cent (n=220) never meeting the person responsible for PGME. Other responses also suggest audit is an inward looking process. Respondents perceived the outcomes of audit as the development of written guidance in protocols, changes in practice or policies and education in the form of better informed doctors rather than meetings with hospital management or other hospital departments (see Table 14). The latter would suggest a process having an impact on the wider organisation.

This situation means that it is difficult for audit staff to liaise across internal organisational boundaries. Factors in the wider organisation, identified by audit, which promote or inhibit improvements in the quality of medical care cannot be pursued. Moreover, the isolation of audit within organisations means that if audit staff are denied authority by clinicians, then they have very little other basis for obtaining it.

The Problems of Implementing Audit

Leaving aside the issues of the different views of audit and the status of support staff, respondents felt that there were a number of other issues affecting the implementation of audit. We asked respondents for factors which they perceived as inhibiting audit and for factors which they thought inhibited them in their

own work. We received 277 responses to the former question. An analysis of these suggest that support staff saw the following factors as constraining the development of audit:

- other pressures on the medical profession and low morale, coupled with lack of examples of successful audit having had a great effect on patient care, mean that doctors were unwilling to commit the necessary time to audit;
- lack of commitment and motivation;
- poor information sources;
- lack of integration with other Quality Assurance initiatives;
- lack of organisation and structure for audit;
- lack of skills and training for both doctors and audit support staff;
- no direction, leadership or cohesion at national, regional or local level. Nationally, diversity of approach and emphasis by Royal Colleges suggest a lack of direction. At a local level, lack of direction, leadership and reluctance of consultants to try and influence colleagues.

Examples of comments which illustrate these issues are given in Appendix I. The concerns raised by audit support staff demonstrate the complexity of the problems faced by both the medical profession and support staff in trying to implement audit.

Ultimately, as audit is defined as medical peer review not audit staff review, then the success or failure of support staff in their work depends not on their own abilities but on the motivation and ability of doctors to undertake audit. The comment below graphically illustrates this dependency. It is difficult for medical audit support staff to promote audit because they have:

*'No real **power** to push consultants to carry out audit in a meaningful way. I can "sell" the support, but "Medical Audit" itself must be sold by the Medical Profession.'*

Job Satisfaction

Given these problems it is not surprising that many respondents expressed some dissatisfaction with their work. As well as asking for factors which inhibited audit, we also asked in the survey which factors inhibited medical audit support staff in their own work. We received 294 replies for this section of which 17 replied positively to this question stating that they did believe they were fulfilling their role:

'The set-up for our department is excellent – supportive; values individuals personally and as part of team. Facilities are good, we are involved in projects throughout the whole audit process.'

'There is much enthusiasm at this district. I have had in excess of 40 projects in the last six months. I believe the factors which ensure success here are:

- *Consultant-led (no registrars)*
- *Training for clinicians and staff*
- *A strong audit committee*
- *A genuine desire to improve quality and promote effective care*
- *A central medical audit department.'*

However, in provider units where audit is successful and burgeoning, support staff then run into problems of finding enough time and resources to cope with all the demands being made on them. This was a problem for 40 respondents in their work:

'So many projects I could be doing, but there is only one of me, therefore doctors may become despondent if they have to wait.'

But many more clearly felt some unease in negotiating a role for themselves. As reported previously, not only is there

tension between the medical and broader expectations of audit but also there are different perceptions about what promoting audit means in practice and whether in fact audit staff are 'change agents'. Unease with the job was manifest in a number of different ways: 53 per cent wanted to change their job title or had changed it; 30 per cent felt that the job title did not accurately describe what they did. Although 81 per cent felt that there was a future in medical audit for them, 77 respondents qualified their response in some way. An analysis of these responses reveals that a sizeable minority felt that their future in audit was insecure as they perceived audit as a fragile enterprise. No doubt this sense of insecurity was added to by the fact that 39 per cent of the respondents were on fixed term contract. Twenty-two were concerned about the future either because of a lack of Government funding for audit, or the possibility of merging audit into quality assurance:

'I am worried about the funding of medical audit and whether I would still have a job after Government funding ceased.'

'Is there a future in medical audit? We don't know whether it will be successful to incur funding beyond a maximum of three years.'

Some of this group saw their role as literally initiating a project then leaving, playing a transitional role in the process of change:

'I think that when adequate systems are in place and when audit becomes accepted it will be incorporated into routine quality monitoring. I think that there will be less of a challenge.'

'I think audit will become part of quality control and be dealt with by different people.'

'I see this as the implementation of a project and not the start of a new profession.'

A further 21 felt that audit was not part of their long term career plans. Some members of this group pointed to the lack of career structure for audit posts and others wished to return to nursing as they missed the patient contact:

'The job that I have does not have a career structure. There is no prospect of promotion in this area of audit and the job will not be permanent. I do not want to become involved with hospital audit.'

'I miss the patient contact but I am enjoying it, and will do more when I can do more audit work on the computer.'

And 21 were disillusioned with the whole enterprise:

'Although academically I am enthused by its application in health service research, I am becoming increasingly anxious, as I have now been isolated in an office with a secretary for seven months.'

'I find the negative attitude towards audit difficult to cope with at times and feel very demoralised by the lack of response and the fact that probably few people will miss us if we disappear tomorrow!'

'I wish to return to a nursing management role. I am fed up with battling against a brick wall. I wish to do a job which has a more tangible effect on patient care.'

CHAPTER III
THE SUCCESSES OF AUDIT

Despite the problems identified in Chapter II, we elicited many examples of successful and worthwhile audits. We asked respondents to tell us about the two most successful audits they had undertaken, why they were successful and what changes had occurred as a result of them. Successful audit examples were provided by 192 respondents. These revealed that audits of considerable depth, breadth and impact were being undertaken. Examples we received included both the traditional criteria audits about the technical aspects of care, and audits of wider scope – interdisciplinary audit, audit using cost data and audits which involved obtaining patients' views of their care. Sixty-two of the most clear detailed accounts (see Appendix II) have been analysed further to identify those factors which appear to contribute towards a successful audit. In the views of respondents these successful audits depend upon:

- choosing a subject which was perceived as a 'problem' by many different interest groups (eg audits: 4, 5 [see Appendix II]) or one where there was widespread concern and interest (eg audits: 6, 12, 13);

- an audit design which was straightforward and easy to analyse (eg audits: 24, 25, 63), where criteria or protocols already existed so that measurement was straightforward (eg audits: 3, 12) and where data was easy to collect (eg audits: 28, 43).

The results contributed towards the success when:

- they were enlightening and stimulated lively debate, highlighting defects in the system which many were unaware of (eg audits: 4, 57, 60);

- they led to debate where policies were clarified and uncertainties relieved (audits: 12, 19, 45), or led to the creation of guide-lines (audits: 18, 61), or led to recommendations which were easy to implement (audits: 47, 52).

Also considered important contributory factors were:

- enthusiastic, well-motivated clinician (eg audits: 11, 16);

- the influential involvement of audit support staff at all stages of the process (eg audits: 4, 5, 8);

- audits which brought people together across professions and specialties to develop common perspectives (eg audits: 32, 35).

The tangible outcomes of these audits are shown in Table 17.

This analysis suggests that, first, despite the ethos of audit as an educational process, the predominant product of audit is unlikely to be formal education or training. Second, the main product of audit is policies or protocols developed by and for clinicians without any reference to external agencies. Earlier it was suggested that one of the main uses of audit may be for the internal management of the medical profession; the changes which in the views of respondents result from successful audit tend to support this view.

Table 17 Outcomes to successful audit

	Number of times mentioned	Examples, Audit Numbers (see Appendix II)
The development of policies or protocols	21	44, 45
The implementation of policies or changes to policies	16	35, 47
Better communication between different professions or organisations	9	27, 50
Formal training	4	12, 23
Meeting with management	3	12, 31

CONCLUSION

Audit, and consequently the future of medical audit support staff, appears to be at something of a crossroads. On the one hand, the examples of successful audit identified by respondents suggest that in many parts of the NHS audit is perceived as a powerful tool in bringing about changes to both medical practice and the organisation of medical work. But on the other hand the problems identified by medical audit support staff suggest that audit is still a fragile flower with support staff facing an uncertain future. Measures could be taken such as the development of formal training. Other problems such as the development of a career structure for audit support staff could prove more difficult to resolve. One initiative which could be advantageous would be to integrate audit and audit staff into the general organisation of provider units. Although such integration is often perceived as a threat, it could provide the support that both audit and audit support staff require to become firmly established. This would have the added advantage of enabling audit support staff to obtain an overview of all quality initiatives in provider units with the possibility of integrating these with medical audit work. If undertaken, these initiatives would undoubtably assist in placing the occupation of medical audit support staff on a firmer basis and they may play a role in securing the future of audit itself.

APPENDIX I
RESPONDENTS' VIEWS OF THE FACTORS INHIBITING AUDIT

'People see it as a threat. Those who embrace it do not necessarily do so in order to critically evaluate and change their own practise. This on turn puts off those who are less enthusiastic. Legal considerations (law suits etc).'

'Lack of training for medical staff. I feel we need more training across the whole range of medical staff and awareness of the methodology of audit.'

'Too many other changes/pressures clinicians are having to cope with. Difficult for clinicians to make time for audit. Too few examples of audit with useful/ constructive outcome, which have a positive effect on patient care, to convince clinician time for audit is well spent.'

'I believe that currently there is insufficient commitment to audit on behalf of consultants. Much of this can be explained by the facts that they have numerous other responsibilities and interests, a poor grasp of the benefits of audit and the danger of allowing audit to fail and thereby their loss of its direction and management. If the consultant body accepted that organised and structured audit is beneficial, satisfying and educational, junior doctors would willingly join in. In the future finance may become a larger inhibitor.'

'The Chair of the Medical Audit Committee. NHS resistance to change. Slowness of bureaucratic procedure. People (clinicians) claiming that what they are doing is audit when it isn't – complacency. No firm directive to clinicians to implement audit. Lack of leadership from clinicians to one another (in audit). Others caution about trying to influence colleagues.'

'District Audit Chair – unclear understanding of audit/lack of dynamism. Lack of training of doctors. Lack of structures to ensure administrative side and practise is enabled. Lack of management understanding of it. Doctor's apprehension in setting guide-lines. My lack of assertiveness to hold out to only do true audits. Few projects existing which demonstrate good results.'

'Apparent lack of cohesion – nationally, regionally and locally. Lack of specific and clear guide-lines. Apparent diversity of approaches and emphasis by the Royal Colleges. Lack of commitment and low rating of importance by clinical leads. Theoretical knowledge not applied in practise. Disillusionment, low moral and heavy clinical workloads.'

'Computers – consultants cannot grasp the philosophy of standard setting if there is a computer around. Money – more time is spent deciding on how to claim the money, than doing audit. Fear – consultants are frightened by audit, mainly because they don't understand it – Royal Colleges give no direction – publications such as 'Audit in Practice' are not pure audit!!'

'Poor information resources. Resistance and obstruction from some consultants, and time pressures on all of them. Poor education of doctors about the objectives and methods of audit. General atmosphere of suspicion and contempt for "new managers." Despite that, the majority of consultants are helpful and constructive to some extent, however small.'

'Consultant apathy in some cases, but more frequently apathy from junior staff. Also the inefficiency of hospital systems. There would also seem to be a conflict bubbling away under the surface between management and clinicians as to who has the right to information. Clinicians feeling that audit is a personal thing, management feeling that any information about any aspect of Hospital life is within their jurisdiction.'

'Lack of access to PAS. No co-ordination between medical and nursing staff and coding clerks. Length of time spent in retrieving case notes. Increasing disaffection of patients with the increasing number of questionnaires. Lack of concrete evidence of the effectiveness of audit. Lack of personnel management. Short term contracts leading to a lack of motivation of support staff. No commitment to Total Quality Management – audit seems to be isolated to those areas where it can be used as a mechanism for gathering documentary proof that a specialty or unit has a good claim to resources. Audit is resource led rather than quality led.'

APPENDIX II
EXAMPLES OF SUCCESSFUL AUDIT

MEDICINE

No	Topic	Factors contributing towards success	Changes that have occurred
1	Acute GI bleeds. An audit to assess the need for immediate endoscopy in patients with melaena/ haematemesis.	All patients admitted for a two month interval with symptoms of acute GI bleeding (melaena, haematemesis) were identified. A data collection sheet was completed on each patient with specific information concerning their presenting symptoms, history, investigations, treat-ment and outcome. The doctor initiating this audit was very clear on the purpose and criteria which always help make an audit successful.	I presented this audit to a combined meeting of the medical and surgical directorate. They discussed the audit data and agreed that increasing the availability and frequency of endoscopy services would be beneficial for the patient. Specific protocols for treating acute GI bleed patients were discussed and will soon be implemented. I am currently doing further audit on this same subject.
2	Management of patients with GI bleeds.	It's still in progress, but already it has identified problems in the management of pts, which may have affected the mortality rate. It has brought together surgeons and physicians.	It has introduced a new policy for health management, which in itself is auditable.
3	Treatment of Paracetamol overdose.	(i) Data generally easy to collect. (ii) Protocol existed, therefore measurement against these guide-lines was easy. (iii) New firm just in post when the audit was presented. Were not threatened by the findings but were able to learn from others' shortcomings.	More appropriate protocol written. Greater awareness of optimum methods of treatment.
4	Audit of cardiac pacing.	Clear guide-lines already existed. Dynamic clinician - clear understanding of audit. Not afraid to 'spell things out' to other doctors. Showed high infection/complication rates; involvement of audit assistants from the start. Applicable to all general physicians: all were interested.	Specific junior training of cardiac pacing and SR/ consultant supervision at the time of pacing.
5	Audit of the anti-biotic treatment of pneumonia in previously healthy adults.	Involvement of pharmacists and biochemists. Involvement of audit assistants from the start. Applicable to all general physicians: all were interested. Showed poor compliance with guide-lines.	Redistribution of guide-lines. Revamped guide-line for wards. Pharmacist 'pick up' on prescriptions not defined in guide-lines.

MEDICINE

No	Topic	Factors contributing towards success	Changes that have occurred
6	Study of care to patients on methotrexate dermatology.	This was the most beneficial study in terms of very obviously increased patient care. It introduced a system whereby each patient could be individually monitored at every attendance, therefore reducing a lot of risks involved with the drug. It would however, be very difficult to monitor or re-audit the changes implemented.	Increased liver biopsies on patients having large doses of methotrexate.
7	Audit of anti-epilepsy medication.	Anti-epilepsy audit was completed, a report written and protocols and guide-lines drawn up. However it is yet to be seen if guide-lines are being adhered to.	Epilepsy audit has resulted in a new epilepsy chart being devised and there are now written guide-lines for good practice in treatment of epilepsy. Medicine has been changed for some patients involved in the audit.
8	Audit of liver biopsies.	This was a re-audit, which demonstrated a major im-provement compared with the first one, but still identified some shortcomings from which the current junior staff could learn. I am especially fond of this one because the consultant took my advice and help at every step of the process, so the audit was able to focus on the few deficiencies found. It was one of my first!	Very little scope for change here - fortunately, perhaps - but I hope that future re-audit will show that the improvement has been maintained or further enhanced.
9	Audit of management of patients having oxygen therapy.	It involved a multi-disciplinary team. Changes in practice were made. It won us respect from both medical and nursing staff.	New forms. Profile of care - specific standards that can be measured later.
10	Management of asthma.		After a lot of hard labour it was very well received by clinicians. Steps have been taken to improve care eg nurses now undertaking a standard protocol for the administration of O^2. A&E are made aware of problems. Improvement in documentation.
11	Asthma.	Consultant was enthusiast - had the influence to overcome the opposition.	Shortfall in care was shown, and asthma protocol was re-written - re-run to be done in April.
12	Management of acute asthma in adults.	There is a lot of information readily available on the guide-lines of management thus making it easy to set the criteria. It is a common condition which all the physicians deal with. The junior doctors were pleased to have guide-lines set after the audit from which they could work. The audit has now been repeated and an improvement in management demonstrated.	The changes proposed due to the asthma audit are: (i) A request for the A & E department to have its own blood gas analyser. (ii) Asthma patient to carry cards to show their history. (iii) A lecture to A & E junior staff on the management of asthma.

MEDICINE

No	Topic	Factors contributing towards success	Changes that have occurred
13	Discharge teaching. An audit to assess the effectiveness of current patient teaching on medical wards.	A questionnaire was developed to ask recently discharged patients their understanding of their diagnosis, treatment and follow up care after discharge. Patients were selected randomly and depended on their willingness to participate in the audit. Patient teaching and it's effectiveness is a subject that the doctors seem to be very concerned about, so I think their interest in the project helped make it a success.	My presentation resulted in a discussion of how, when and by whom patient teaching should be done. Plans to create a proforma for teaching and evaluation of this teaching before discharge were made. Recently a doctor and I have developed two forms for patient teaching which I will be presenting in an audit meeting this week. If accepted (with possible alteration of the forms resulting from all the doctor's recommendations) then it is planned to implement these proformas for a trial period of several months. I will then repeat the audit to see what, if any, effect these changes have had.

SURGERY

No	Topic	Factors contributing towards success	Changes that have occurred
14	Out-of-hours surgery - emergencies.	Because they changed practice and brought misconceptions into reality (changed attitudes) made doctors more aware of what they were doing and why. Made them think before going into action.	We now do 'booked appendix', we no longer mobilise a night theatre team unless it is a real emergency (less theatre staff 'sickness' next morning) etc.
15	TURP* review. Review of the outcome of patients undergoing TURP with ref to presentation, grade of surgeon, and on treatment given.	TURP - areas for improvement and changes in policy have been made which has a huge effect on cutting outpatient time.	Changes in availability of radiologist, decrease in outpatient return appointments. Increase in day cases.
16	Audit of TURPS (re incidence of UTI post-op in particular).	Willing co-operation between the surgeons concerned, plus their secretaries who did much to facilitate the audit. The audit was carefully discussed and the final audit worksheet was quick and easy to use.	One surgeon now gives prophylactic antibiotics regularly where he did not before the audit, and the antibiotic of choice for prophylaxis has been changed.
17	Combined audit between ENT/ anaesthetists to assess the incidence of nausea, vomiting and pain control in post-op patients.	Initial discussion tended to be acrimonious but after much hard work by clinicians, nursing staff and (perhaps, most of all!!) myself, a good audit design was achieved and interest and enthusiasm developed as we went along. It was necessary to run two pilot audits before we achieved a recording method for all the necessary data which really worked in practice.	Protocols are being discussed currently re the use/type of premeds, prescription of antimetics and use of packs.
18	Pain relief - post major abdominal surgery - to compare post-op recovery course, using different types of pain relief.	We were able to find the criteria for patients who would be at most risk from post-op chest infections, urine retention and other complications. The anaesthetists were able to pinpoint the best type of pain relief to use for a particular patient.	Criteria have been set for selection of patients for pain relief using PCAS, epidural and IM methods. All anaesthetists have agreed to use this for a six month trial period.
19	Audit of inpatient activity in the ENT dept.	Although it was really an organisational audit, it identified problems of pt. administration which affected reduced theatre utilisation. This has now been remedied with change in policy.	
20	Cholecystectomy.	After the presentation of the results, it was found that admin work was taking too long and there was debate whether cross-matching of bloods should be done.	This has been re-audited and due to be presented. Decided cross-matching didn't need to be carried out.

* *Trans-urethral resection of the prostate*

SURGERY

No	Topic	Factors contributing towards success	Changes that have occurred
21	Cardiothoracic patient satisfaction questionnaire.	Patient satisfaction asked for specific information: - what the patient understood - which parts were disturbing - where got most useful info from - wealth status outcomes	Results not yet presented but cardiothoracic audit will probably confirm import-ance of preparatory pre-op clinics and make them a standard, and ward rounds in cardiothoracic ward will consider the sensi-tivity of the patient a bit more.
22	TPN audit not completed but very satisfying.	In TPN identified which areas of current practice controversial and compared what was said in guide-lines with reality of practice in several different firms with a view to produce some conformity and agreement with more practical guide-lines.	
23	Post-operative pain relief.	Gave nurses and clinicians accurate data on what was occurring in terms of their practises of prescribing, and administering post-op analgesia, establishing the use of post-op pain assessment charts as a useful means of communicating the status of individual patients' pain levels. (Had a useful clinical application.)	Protocols for administering post-op analgesia. Post-op pain assessment forms. Patient information leaflets covering post-op pain relief. Nurses' study day on 'pain'. Introduction of patient-controlled analgesia.
24	Pain relief in the adult day care.	The staff of the ward were interviewed and they were very interested in the outcome. Therefore there was enthusiasm to push the audit to work. It was relatively straightforward and not complicated to analyse, so the results were very quick.	Different analgesics have been given to day care surgery patients.
25	Arthroscopy of the knee - clinical indications and operative findings.	We kept to a small number and fed back results promptly. We chose simple measurable indicators. These were the first audits carried out for each specialty and so were designed to test me and the system. They produced results that were not anticipated - showed additional areas for improvements - mainly documentation. Gave a good grounding for the next audit of the same topic.	Protocols and guide-lines for improved documentation.

PAEDIATRICS

No	Topic	Factors contributing towards success	Changes that have occurred
26	Management of acute admissions for bronchiolitis - paediatrics.	The audit project identified shortcomings of the identification of cases of acute bronchiolitis, the delay in receiving pathology results, which resulted in inefficient use of incubators.	Clinical indicators for the use of oxygen treatment were identified and this process will be re-audited next January to assess whether changes in practice have been implemented.
27	Children's ward discharges - this system records data about general patients with specific subsets of data for asthma, acute bronchiolitis and febrile convulsions.	The aims of this project have been to assess the role of a centralised computer system in clinical audit. Two systems are now well established and have been in operation for one year. Each data base has been designed to meet the audit requirement of the paediatrics department. A secondary aim of this project has been to employ the database in the production of computer generated discharge summaries. The junior doctors complete a standard proforma on a patient's discharge (much of this information is coded - either specialty defined code list or ICD9/OPCs order) which is entered onto a personal computer which act as remote terminals to the central system. Discharge letters are then produced soon after patient discharge.	The medical staff are now directly involved in coding diagnoses and operations. Computer generated discharge summaries have replaced typed letters and have speeded up communication with the GPs. The follow up of asthma patients from the children's ward has been improved, since comprehensive lists of all patients discharged within a month are now available from the system. As the data base grows we hope to analyse the data further to attempt to identify standard profiles of care.
28	Meningitis in children.	Highlighted the shortfall in documentation of physical findings, result of investigations and follow up arrangements.	Meningitis protocol now in use.
29	Gastroenteritis in children under the age of two years.	The paediatricians are very organised and interested in audit. We collected too much data really, but they have now introduced guide-lines for management and we are re-auditing. This was a complex audit using criterion, occurrence screening and outcome method-ologies. It was a topic which crossed several specialities and therefore generated much interest. It was the kind of audit that clinicians would do themselves, if they had the time and I think it was the most complex, difficult (because of the topic) audit we have done in the department.	Introduction of management guide-lines.
30	Paediatric discharge forms.	The design of the discharge form is such that considerable time is saved from the junior doctors to the coders. The GPs are receiving notice of discharge much more quickly. In both these audits the consultants were very involved and helpful with all fine details.	This information is confidential to those consultants concerned with each audit. This has been confirmed by our chairman.

TRAUMA/ITU

No	Topic	Factors contributing towards success	Changes that have occurred
31	Patient outcomes following a stay in ITU.	(i) Appache II not yet used in our hospital and this audit was aimed at demonstrating its predictive qualities as against the method currently used. (ii) The disability categories before and after were noticeably different and the medical staff at the presentation were particularly interested in this. (iii) Comments written on the questionnaires by the patients were taken up with management.	More work to be done on implement Apache II. Analysis of the caseload has shown that a high dependency unit would be more appropriate for many patients and this is being pressed with management.
32	Trauma audit. Triss method-ology of all trauma cases admitted from the A & E dept.	Development of a trauma team within the hospital to give specialist care to trauma patients in the A & E dept. The trauma audit meetings have brought senior staff from all specialities together and led to changes in the hospital practices. Average attendance of medical staff at a trauma audit meeting exceeds 50.	Development of trauma and protocol for call out guide-lines.
33	Post-op complications of emergency admissions - Intensive Care Unit.	After the audit was completed and presented, there was a strong case for a high dependency unit to be set up at another hospital, so that post-op patients didn't have to go to ICU and block beds. This was presented to management.	

ELDERLY

No	Topic	Factors contributing towards success	Changes that have occurred
34	Incontinence audit.	This audit brought to light deficiencies in other areas, ie current charts inadequate, and problems with all sorts of other charts. (This area to be audited at a later date.) Many deficiencies found in the management of incontinence.	'Essentials of good practice' drawn up for general use.
35	Audit of primary hip replacement.	A pilot has been completed to look at the in-patient manage-ment of patients undergoing primary hip replacement. The study has now been extended to include patient outcomes and their satisfaction with the care provided. Various departments are now involved in the study (eg public health, nursing, medical, theatres).	Small changes in procedure have been made eg all patients are now weighed on admission.
36	Fractured neck of femur - audit on length of stay and social/ medical reasons for delays.	Areas of great concern to those involved were dealt with. More than one department or social workers were involved. Changes affected patient distress and inconvenience. Freed resources to improve patient treatment. Reduced costs to specialty/district.	Consultations with outside agencies initiated/changed to ensure better patient monitoring etc. Inter-specialty discussions to institute new guide-lines.
37	Nutrition in the elderly.	Staff wanted to prove the need for a cooked breakfast - (a myth) - and so they were enthusiastic.	Showed patients to be badly malnourished, catering and nursing **changed** and nourishment improved. (Mainly organisational changes.)
38	Patients admitted from nursing homes.	This audit was set up to try and find out where patients who came in from nursing homes were admitted to. Most of the patients were admitted to geriatric beds, but some were admitted to medical beds which then caused a block in some cases. The idea of the audit was to identify why the beds were blocked and to try and solve the problem. This was achieved by eliciting the patient's age, diagnosis and past medical history before designating them a bed to try and keep geriatric and medical problems in the correct beds.	Doctors will be made aware that not all elderly patients are to be assigned to geriatric beds and not all medical diagnoses mean a patient is to be placed in a medical bed. Each patient should be assessed on his/her own merits and then assigned to the geriatric or medical unit as appropriate. This audit will be repeated at a later date to see if any changes have occurred to see if the doctors have noted the information given.

MENTAL ILLNESS

No	Topic	Factors contributing towards success	Changes that have occurred
39	Re-admissions - suicide attempts and self-harm - psychiatry.		After a retrospective analysis of re-admission, including pre and post event psychiatric admissions, and assessments of patients in casualty, protocols were set up to ensure that junior staff were adequately supported by consultants during weekend admissions and for the actual assessment of a patient admitted to casualty re whether they should be admitted for psychiatric care.
40	Audit of admission procedure at the acute psychiatric inpatient unit.	This audit involved seeking the co-operation of admitting doctors who had had many complaints about this aspect of their work. The audit dealt in a structured way with this area of work where trainee doctors rely on consultants to provide them with information about patients.	Recommendations were made resulting in the introduction of a form on which vital information about patients, for use at the time of admission, is recorded. The effect of introducing the form is to be audited later.
41	Peer review of the treatment of patients with addiction.	This review included background information obtained from the District Patient Administration System from which numbers of admissions, age/sex analysis, length of stay and some residential background of patients admitted during one year was provided. Addiction treatment was illustrated with considerable details on a small number of inpatients obtained from case notes. Discussion of this specialised area of psychiatric practice was useful to peers.	
42	Audit of non-attendance at psychiatric day centre.	Although this audit did not help reveal any reasons for non-attendance for admission (psychiatric day hospital), it did reveal basic failures of record keeping and policy inconsistencies which resulted in poor communication with patients and wastage of staff time. These can be quite easily remedied.	I have designed a new system for monitoring referrals which is being assessed and accepted by the staff prior to implementation. Referrals will be reviewed on a regular basis rather than in a hit-or-miss manner as before.
43	Day hospital activity - an audit of the activity of new patients over a three month period in the Psychiatric Day Hospital.	The day hospital has only been established for one year, and we found that patients who would otherwise have had to be treated as inpatients could not be treated as day-patients. We found the diagnostic group who D.N.Ad the most, thus wasting resources. We also found the areas which needed more money spent on them, eg therapy depts.	A trial is being run at the moment. Patients from certain diagnostic groups are being treated exclusively as day patients. This will mean a great saving on resources, and is popular with the patients.

PATHOLOGY

No	Topic	Factors contributing towards success	Changes that have occurred
44	Review of PMs - Diagnosis on death compared with PM results.	This audit revealed the very low number of requested PMs taking place and the lack of communication between PM technician and junior staff - who never attended PMs. It also revealed a misunderstanding of who and how relatives should be approached and the delay in performing PMs which deterred relatives from agreeing. The attendance at the meeting was very good. The audit will be repeated in 1992.	Improved incidence of 'requested' PMs. Firmer guide-lines on how to approach relatives for permission for PM. Improved communication between PM technician and junior staff. PMs being performed quicker.
45	Audit of the anti-coagulation clinic.	The Consultant Haematologist in charge of the clinic now has exact information on the number in her clinic, the reason patients are on anti-coagulation, and how well her staff manage the patients. The results of the audit were enthusiastically received by the medical staff in the hospital.	The length of time and contraindications are now more clearly defined.
46	Histopathology quality assurance scheme.	We were able to try out a couple of schemes in existence and adapt them for ourselves.	More involvement of MLSO. Build up of trust (they're not going to be audited out of a job).
47	Study of on call investigations haematology.	This was initiated by a very thorough and enthusiastic consultant, which always helps. The study involved retrospective audit and a staff questionnaire and so had a personal interest for the junior staff. The statistics were in themselves an education. Guide-lines for junior staff, and the presentation, culminated in recommendations that could be easily implemented.	Guide-lines implemented as to when on-call investigations are necessary and when they can be deferred until normal laboratory hours.

OBSTETRICS/GYNAECOLOGY

No	Topic	Factors contributing towards success	Changes that have occurred
48	Audit of pelvic inflammatory disease.	The results of the first study led to a great deal of discussion between the medical and nursing staff.	A management protocol was introduced and the study repeated. Results of the repeat showed a marked improvement in the care provided. It also stimulated other work, which I feel contributed to the impact of the study.
49	PPH - a better understanding of management.		Obstetricians were unhappy with the incidence of PPH and did a retrospective study of occurrences. The discussion has resulted in a special 'work-in' for the department. All aspects of improved outcome will be considered.
50	Epidural for obstetric patients during labour.		The design of the epidural form placed in case notes has been reformatted to alleviate time spent on completing it: the consultants are going to see how patients can be made more aware of the service available to them. The consultant was most helpful.
51	GTT requesting for the diagnosis of gestational diabetes.	Plenty of time to re-hash and do the audit. Easy access to more than one clinician as problems occurred. Appreciation that the task was difficult.	'Evidence' of what was suspected regarding the referrals. Pinpointed problems in collection, reporting, and execution protocols/standards of the GTT.

OUTPATIENTS

No	Topic	Factors contributing towards success	Changes that have occurred
52	Waiting times in out-patient clinics.	Because it was highly visible and very well presented (even though I say so myself). It was a large audit which covered an obvious problem area but one where the problems would be manageable with the right motivation.	Individual appointment times. Outpatient information leaflets. Rewriting of clinic booking rules.
53	Understanding why patients fail to attend out-patient appointments.		It led to improvements in: the appointment system, GP communication, communication to patient of need for follow ups (ie patients discharge themselves therefore they feel better but often it is necessary to check situation is controlled), and understanding of 'DNAs' other than just forgetfulness and laziness.
54	Audit of a speciality out-patient clinic.	Highlighted lots of problem areas for improvement. I did all the work but this assisted in 'getting off the ground' in OPD. Hidden agenda fulfilled - hoping this would be first of many OPD audits - onto my third. I personally enjoyed it - received well by other consultants re success - why? non-threatening.	Guide-lines written. Planning to complete audit loop in few months. Incorporated peer review. Information posted to patients prior to coming to clinic - could be many more but hopefully when compared to other clinics more change will be forthcoming. 'Won over' my lead clinician - initially I thought he was going to throw me out of his office window when he saw questionnaire - but now I can audit his clinic!

MISCELLANEOUS

No	Topic	Factors contributing towards success	Changes that have occurred
55	Use of ambulances.	The problem with transporting elderly patients to another hospital for treatment was acute. By auditing the ambulance service, I found most wards were unaware of the correct 'ordering' of ambulances resulting in delays and cancellation of appointments.	A list 'Priority of Patient Movement' was circulated to all wards which produced good results. A 'Question and Answer' booklet on 'How to book an Ambulance' is in the process of being produced.
56	Incomplete episodes/ incorrect coding.	The audit highlighted gross inaccuracies in coding and also in the number of notes never reaching the coding section.	Senior doctors being involved in ensuring correct diagnosis is on the front of the case sheet. Extra coders being employed and part of their duties to visit wards and spend time with senior medical staff regarding problems.
57	Audit of school medical examinations in primary school children.	This audit introduced me to the community clinical medical officers and there was found to be a lack of information recorded about children attending medicals. This was healthily discussed and accepted by the clinicians who now plan a prospective audit.	All details entered in the appropriate spaces on school medical forms. CMO's now aware of the importance of detailed information.
58	Case note audit.	The case note audit has been particularly successful as the one form devised to take down the notes is now in use at all three hospitals in the unit and has sparked off other audit topics. A working party has been formed to look at new case note folders and at one of the hospitals it is becoming our first multi-disciplinary audit project with a consultant, ward manager and myself auditing each set of notes through discussion together - looks very promising!!	Case note folders are about to be changed. Also some patients benefited through their notes being audited as they were due for a case conference and had been very badly overlooked!!
59	Medical case notes.	The medical case notes within our authority are very badly kept and it was decided to see if in any way this could be improved. It was a fairly suc-cessful audit in that all staff handling case notes are now trained on how they should be kept and understand that they are responsible for them.	The change implemented is that all clerical staff who handled case notes are trained by going to a medical record casenote workshop and shown how to handle case notes correctly.
60	Audit of the use of Streptokinase.	This and the following topic stimulated lively discussion by doctors of all grades and sharing of team differences in procedure. Thus they were educational and engendered professional approaches and sentiments.	A & E guide-lines for handling MI. Guide-lines to junior physician on contraindications of Streptokinase.

MISCELLANEOUS

No	Topic	Factors contributing towards success	Changes that have occurred
61	Audit of the use of tourniquets by orthopaedic surgeons for open reduction of ankle fractures.	This and the previous topic enabled guide-lines for practice to be set. Both topics can be re-audited.	Operation notes header stickers for the notes. Agreed policy for recording tourniquet details in operation notes.
62	Audit of discharge summaries.	The audit of discharge summaries was a good introduction for myself into this hospital's case note format. There was a great delay in discharge summaries and also a lack of details (important details, eg name of patients, DOA, date of discharge and drugs!!). Also it was found that if patients were discharged to nursing homes, the home was not given important information eg drugs etc immediately. It had highly successful results and with the implementation of a few different proformas everyone is happy and the patient is being treated effectively.	Proformas to be filled in by nursing staff and taken with patient upon transfer to nursing home. Discharge summaries simplified and now sent out within two weeks instead of two to three months!

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The NHS reforms placed a requirement on all doctors to improve the quality, effectiveness and efficiency of medical practice by undertaking a regular programme of audit. Through a case study of the introduction of audit in general medicine at four hospitals and a national survey of medical audit support staff, *Medical Audit: Taking Stock* documents how this process has been accomplished to date.

- It indicates ways to improve the organisation, management planning and follow-up of audit.
- It describes examples of successful audit projects, the factors contributing towards their success and the resulting changes.
- It analyses the major issues emerging for medical audit support staff.

The authors conclude that the success of audit is being held back by a lack of common agreement as to its scope and objectives. The report emphasises the need for debate among clinicians, managers and policy makers about the future direction of audit.

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