

# Clinical audit

## Introduction

Clinical audit is defined as:

**'the systematic and critical analysis of the quality of clinical care, including the procedures used for diagnosis, treatment, and care, the associated use of resources, and the resulting outcome and quality of life for the patient'** (NHS Training Directorate, 1994).

In other words, clinical audit is about finding out whether a clinical team is doing what they should be doing – properly, and that means taking into account the views of patients as well as health-care professionals. This article offers advice on how to answer job interview questions about audit and how to undertake a simple audit.

## The audit cycle

The concept of the audit cycle is simple (Figure 1). A group of clinicians agrees, using national or local guidelines, what levels of performance they ought to be achieving. They then measure how well things are working in reality; and should there be a deviation from target performance, they try to work out why. If a problem is discovered they should take action to change the situation, and subsequent re-audit should show improvement. This simple concept disguises many complexities, and in reality it is very difficult to achieve effective long-term change in a system as complex as the NHS.

## History of audit

Good doctors have always wanted to improve their performance. In North America, hospital accreditation schemes began in the 1920s, and in Britain systematic enquiries into maternal mortality began in the 1950s (Ngan Kee, 2005). By the 1980s, major studies by surgeons and anaesthetists such as the Confidential Enquiry into Perioperative Deaths (CEPOD), and successive National CEPOD reports were revealing problems

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in the way that emergency surgical services were run and lead to slow but profound changes in the way that UK hospitals were organized. The advent of personal computers in the late 1980s made it easier to analyse large amounts of data and encouraged individual groups of practitioners to look at their performance. Leading this work were cardiac surgical teams, but the complexities of data analysis were revealed during the debates about the Bristol cardiac unit, where a fundamental controversy arose because of differences revealed when 'mortality by diagnosis' was compared to 'mortality by operative procedure' (Bristol Royal Infirmary Inquiry, 2001).

Merely looking at deaths following surgery is too simplistic – complex risk stratification is required to establish whether a surgeon with high mortality is performing poorly, or is instead a skilled surgeon trying to help the sickest patients. Following the Bristol inquiry, clinical governance was introduced – making managers responsible for the clinical as well as the financial performance of their units.

Clinical audit was subsumed into the governance process, and the borders between clinical research, clinical audit, quality assurance and clinical effectiveness became blurred (Wade, 2005). Increasingly, government or national agencies such as the National Institute for Health and Clinical Excellence (NICE) are setting the standards of care, and managers' jobs depend upon meeting these targets. The needs of an individual patient are not always met by this demand for conformity.

## Types of audit

The classic 'criterion-based' audit cycle involves the measurement of performance against pre-determined criteria. But other types of audit are valid. Audit meetings should include regular discussions of morbidity and mortality. Even if no harm came to the patient, unusual but potentially serious incidents should be analysed. The definition of audit makes it clear that clinical teams should consider whether their work could be completed in a more

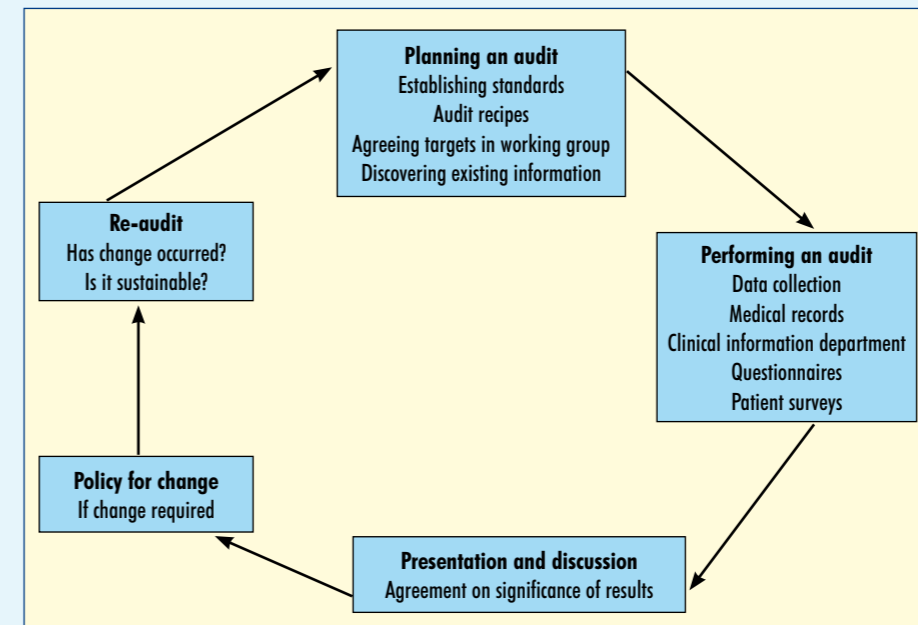


Figure 1. The audit cycle.

cost-effective manner. Sometimes a topic is selected for which there are no pre-existing standards and the study will effectively become research.

## Choosing an audit

Doctors need to understand the audit process and most senior trainees are expected to have completed several audits. Undertaking an audit enables the trainee to learn about the problems of collecting and collating information. Presenting an audit is a good opportunity to develop presentation skills and work with a presentation programme such as Powerpoint. When planning an audit it is important not to re-invent the wheel. The trainee should begin by talking to the consultant in charge of audit in the unit in question, and find out what needs to be looked at. It is commendable if the trainee has an original idea for a study, but most audits will involve repetition of work.

Some royal colleges, for instance the anaesthetists (Lack et al, 2001), have produced 'audit recipe books', giving details of useful topics and agreed standards. It is important that the trainee avoids over-ambitious plans, particularly if they involve retrospective analysis of clinical notes – a process that is time-consuming and frustrating. The trainee should ensure that he/she can complete and present the audit within the time in the department.

Audit does not have to be complex. In the author's department, a quick audit found that more than 10% of male medical students did not know the difference between a suppository and a pessary, while a follow-up of day-surgery patients showed that a high proportion could not remember being given any useful information about postoperative pain control. Questioning the different staff showed that everyone assumed that someone else had done the job when in fact no-one had, and that the system depended excessively on written information, taking no account of the 20% of patients with poor reading skills. In this case a simple, quick audit led to better education of both students and patients, and a better understanding of how the system was working.

## Computerized systems

The NHS gathers vast amounts of electronic data – reputedly three times as much as the American Central Intelligence Agency – but does remarkably little of clinical relevance with it. Looking at the information which is already collected in the trainee's unit may give him/her ideas for an audit study, or may enable him/her to select specific groups of patients for further study. The hospital's clinical information department can also help the trainee to extract any relevant information.

## Conducting an audit

A commonly omitted step is now to present the plans for the audit to the department, so that staff can comment on the proposals. Useful suggestions can help mould the study to suit local circumstances, and if the target standards of care are agreed beforehand, it is harder for senior staff to ignore the findings of the study. Depending upon local organization, the audit then needs to be registered with the clinical governance organization in the trust. While this step can appear bureaucratic, it is useful to discover how the audit system of the hospital can help.

Audit departments can provide the trainee with clinical notes, may know of computer databases that will save time and may be able to assist the trainee with both data extraction and analysis. If the audit involves patient interviews or questionnaires, the trainee should find out whether his/her trust requires the study to be registered with the ethics committee. Some trusts have established policies to prevent individual patients being inundated with excessive questionnaires from diverse departments.

Gathering clinical data requires time, effort and commitment. A common approach is to create a questionnaire and ask people to complete it. Completing forms is rarely done enthusiastically or accurately. The value of the results depends upon how well the questionnaire is designed. Unless the return rate is high, the audit will be of dubious value, so it is important that the trainee has a mechanism for measuring the return rate and is prepared to cajole colleagues to complete the forms in a timely manner. Gathering information him-/herself should be the best way for the trainee to guarantee good quality clinical information, but it takes time to obtain and read through clinical notes and discover if any of the information that is required is electronically coded on activity or audit databases. If collecting large amounts of information, a well-designed computer spreadsheet or database can speed up data entry and analysis.

## Presenting the results

Once the results have been analysed, the trainee must present them. They may show that everything is well – which is useful, if un-dramatic, quality assurance.

However, if local performance fails to match national standards, a solution must be sought. The simplistic solution is to produce a set of guidelines. Written guidelines tend to be filed in a folder together with countless other bits of paper and are generally ignored. Effective solutions require deeper analysis of the nature of the failings. Some problems may be caused by individual carelessness, but it is much more common for problems to arise through system failures in the organization. The skill of getting people to change is to create an environment where it is easier for them to conform to a standard than to ignore it. So, improved paperwork, better electronic information support systems, improved ergonomics on the ward or variations in deployment of support staff can improve efficiency or compliance with standards.

Redesign, for example, can be relatively simple. Providing alcohol wash dispensers at each bedside improves hand hygiene far more effectively than trying to persuade busy doctors or nurses to repeatedly move across the ward to a wash-basin between each patient. But re-design can be complex. Shortening the period between diagnosis and thrombolytic therapy for patients with myocardial infarction required immense changes in the way that hospitals admitted medical emergencies and, in some regions, provision of support systems and new training programmes for paramedics. So, in analysing the results of an audit, look not only at what people do, but why they are doing it.

The trainee will then move on from the department in which the audit was performed, but it's worth trying to keep in touch. If the trainee thinks that his/her audit was valuable, and the changes worthwhile, they should try to persuade one of the new trainees to repeat the audit and make the effort to discover the results. Interview panels will be impressed by such an effort, as enthusiasm and persistence in clinical studies are not as common as one might wish.

Many doctors are cynical about clinical audit, feeling either that it is an annoying intrusion on their care of patients, or that it is a time-wasting process. However, the Government-funded introduction of audit in the early 1990s led to significant changes in the way doctors thought.

The author took up a consultant post in 1989 in a hospital where the senior surgeon was seen as particularly innovative. He maintained a computerized database of all his patients and collected information on all patient morbidity and mortality. However, he refused to share these data with any of his colleagues, as he felt that it was none of their business how he conducted his clinical practice.

## Conclusions

The concept of multidisciplinary and multi-professional team-based audit meetings met with considerable opposition when it was proposed in the mid-1990s. Medical attitudes have changed enormously and the acceptance of the benefits of audit led on to the introduction of 'evidence-based medicine'. **BJHM**

*Conflict of interest: none.*

Bristol Royal Infirmary Inquiry (2001)

Understanding and assessing the quality of clinical care in Bristol. In: *Learning from Bristol: the report of the public inquiry into children's heart surgery at the Bristol Royal Infirmary 1984-1995*. Command Paper: CM 5207. The Stationery Office, London [www.bristol-inquiry.org.uk](http://www.bristol-inquiry.org.uk)

Lack JA, White LA, Thoms GM, Rollin AM, eds (2001) *Raising the Standard - a Compendium of Audit Recipes*. Royal College of Anaesthetists, London

NHS Training Directorate (1994) *Getting Ahead with Clinical Audit - a Facilitator's Guide*. NHS Training Directorate, Bristol

Ngan Kee WD (2005) Confidential Enquiries into Maternal Deaths: 50 years of closing the loop. *Br J Anaesth* **94**: 417-23

Wade DT (2005) Ethics, audit, and research: all shades of grey. *BMJ* **330**: 468-71

### Relevant websites

Audit Commission [www.audit-commission.gov.uk](http://www.audit-commission.gov.uk)  
National Institute for Health and Clinical Excellence [www.nice.org.uk](http://www.nice.org.uk)

## KEY POINTS

- Clinical audit is a process designed to improve the care provided to patients by clinical teams.
- Effective audit involves changing the way in which things are done and requires the support of the whole team.
- Audits do not have to be complicated to be useful.
- It is vital to be aware of the results of the audits with which one has become involved.