Clinical audit

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Introduction

Laboratory medicine was one of the first areas in clinical medicine to embrace the widespread use of audit. This reflective process undoubtedly contributed to the improvement in the standard of laboratory analyses and has been enhanced by the uptake of external as well as internal quality assurance. External quality assurance has been continuously refined and is now accepted as a routine component of everyday laboratory practice. Moreover, it is embraced by technologists and managers alike which ensures that problems are not only rapidly identified but proactively sought and actively rectified. EQA has continued to evolve and over recent years, some schemes, notably UK NEQAS, has introduced exercises to evaluate interpretative and investigation strategies of laboratories.

Clinical audit is the next step in the process of ensuring that laboratories provide accurate useful investigations for clinical care. This phase is being driven both by the evidence based philosophy of 21st century medicine and also by the near universal need to provide the most cost effective services. The funding position of laboratory medicine throughout the world is becoming critical. Over the past few decades, this has been approached by the use of increasing levels of automation and the use of discretionary test groups rather than indiscriminate profiles. At the same time, attempts have been made to improve clinicians use of laboratories; but this is quite labour intensive and only provides small benefits[1,2]. The next process in improving laboratory usage will be through electronic requesting linked to intelligent systems. However, these systems will need to be designed with appropriate guidelines and these will need to be continuously evaluated and updated.

Clinical audit

Clinical audit is a process of measuring clinical procedures and outcomes in order to improve practice. Audit might best be defined by comparison with clinical research: research is concerned with discovering the right thing to do whereas audit is concerned with ensuring that it is done right. There are two main forms of audit, the first is aimed at solving problems in either process or outcome. Typical examples might be the exploration of factors that delay turn around times or inconsistency in sample timing of dynamic endocrine tests. This type of audit requires the identification of rate limiting steps and needs imagination and inquisitiveness rather than precise scientific evaluation. The second form of audit involves a more systematic approach to a clinical area, in the first stage it may be determining practice or adherence to guidelines (if these exist). In either case, a very clear objective needs to be formulated in advance and data needs to be collected in a formal exact manner. Both forms of clinical audit should be subject to formal evaluation to determine the effectiveness and cost of the practise. This latter step is important because its is critical that audit becomes part of institutional organisation in order to ensure that its findings are incorporated into everyday practice.

Why?

There are clearly political and professional reasons for the implementation of clinical audit. Firstly, there is political concern at the variation in standards and outcomes of clinical practice across the country. It is hoped that audit will explore the reasons for some areas having above average outcomes and what factors lead to poor outcomes in other areas. It should not, however, be immediately anticipated that any improvements will be associated with cost savings. Audit may well reveal shortcomings initially introduced as cost measures. Secondly, one of the major benefits of clinical audit is the potential for improving professional job satisfaction.

The commitment to audit and, therefore, quality assurance will help uphold professional standards and ultimately fewer dissatisfied patients and clinical colleagues. On an individual level, it should lead to increased job satisfaction, an opportunity for continual improvement and recognition of achievements. Further benefits include productive use of time and effort by removal of inefficient practice, and the acquisition of new skills and experience. These are, of course, all the components and benefits of appropriate continuing professional development.

The Process of Audit

There are a number of related activities that are encom-

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passed by the term clinical audit. These include routine data collection, surveys and complete audit cycles. However, the former processes by themselves do not constitute real audit because there is no commitment to act on the findings and institute change. Some surveys will identify variations in practice that cannot be moved forward because no standards can be agreed eg urea and electrolyte profiles[3]. This should not be taken to denigrate the acquisition of data since this action alone does initiate inquisitiveness and therefore has the potential to induce change in practice. The complete audit cycle consists of a number of processes which include setting standards, observation, evaluation, reporting and making changes prior to starting again.

1. Choosing a topic to audit

The performance of good audit is as challenging as good research and posing appropriate questions is equally important. The process of selecting important questions will include whether it is worthwhile, measurable and achievable. If these parameters cannot be realised or the question cannot be clearly defined, it should be abandoned and another area should be explored. Audit projects are expensive and can only be justified if there is a measurable benefit to patient care.

2. Gaining support of colleagues

It is essential to gain the support of all individuals who are involved, or likely to be involved, in the audit. It is easy to be glib about the frequent use of term multidisciplinary in the context of clinical audit. The reality is that modern medicine involves an enormous raft of professional groups and unless they are all involved in the audit, then its conclusions will not necessarily be implemented.

3. Develop standards

Once the question has been posed, it is necessary to establish correct practice. This is traditionally performed by literature searches. Important questions are likely to have been considered by others who may have already prepared guidelines which can be used. These are not always easily found as they may have been prepared by another professional group without any laboratory medicine involvement. The searches should include professional societies web sites.

There may not be any evidence to answer your question. In this case, either convene a group of experts to provide a consensus on best practise, or alternatively it may be appropriate to perform a survey of current practice. This can help to define a baseline from which standards can be established and subsequently audited. An important component of a standard is a definition of measurement of that standard.

4. Project management

The multidisciplinary group involved in the audit will need to decide who is performing the audit. This aspect is clearly obvious for national or regional projects, indeed, a team may be required for these. However, even for local audits, appropriate individuals must be chosen in order to ensure that this exercise is not threatening to any member of the group.

5. Methods

Audit measures current practice. The methods used do not change practice and any intervention that does change practice should be the consequence of the audit process. Therefore, audit methods do not typically involve randomisation, use of control groups or placebo (see Audit or Research below). The main methods used in clinical audit are direct observation, checklists, documentation audit, questionnaires, interviews and case reviews.

It is worth spending time ensuring that your chosen methods are robust and that measurable parameters are selected whether they are qualitative or quantitative. The next step is method evaluation. This is standard practice in research projects and should equally be part of audit projects. A questionnaire can be piloted with a few colleagues. Data collection fields can be evaluated with a few cases. It is much easier to correct a poorly designed questionnaire or data collection form than to try to interpret muddled or incomplete data sets at the end of the data collection phase.

6. Collection, monitoring and reviewing of the data

The aim of performing an audit is to improve clinical care. Therefore, during the process of data collection, the data should be examined to determine whether there are obvious aspects of the process that are faulty. These can be rectified immediately. One is enough - there is no need to collect sufficient blunders to reach statistical significance.

7. Analysis and implementation

On completion of the collection process, the data can be fully analysed to answer the original question. A well designed audit will identify the stages in the process that functioning poorly and well and some that may be rate limiting. All these areas need to be identified so that the good parts can be complimented and the poorly functioning and rate limiting steps can be improved. These will require a formal action plan to ensure that resources can be directed to make the necessary improvements. These improvements will themselves need to be audited, firstly, to ensure that they are implemented and secondly, to ensure that implementation was the appropriate step.

Infrastructure for Clinical Audit

Clinical audit can be performed in isolation but this will limit its ability to provide significant wide-scale changes. The ideal situation is for it to be performed within a non-threatening environment that is equitable and, moreover, integrated within the organisation. This integration indicates that management processes are linked into the audit and the findings will therefore be implemented. In fact, management will want to ensure that the resources consumed by audit will have been well spent. Part of the understanding of creating multi-professional structures includes the understanding that independent units are limited in their ability to implement significant change.

Clinical audit is usually expected to include some patient input. It is unclear at present whether methods in laboratory based clinical audit are sufficiently well developed for patient input to be useful. It is clear that there should be links to postgraduate education units to ensure that there is an effector limb for the dissemination of the findings.

Guidelines for Success

Successful audit is a result of commitment by involved staff. Colleagues and other staff are best kept involved if they are included in the design and implementation of the audit and feel that their professional judgement has been included. Other important factors include the relevance of the project to the local environment and whilst specific data may remain confidential, the overall results should be freely communicated to all participants. Larger scale projects need the same factors to retain commitment but will involve larger teams making project planning and management as well as the dissemination of results more important. Regional and national projects require teams of audit officers who will need to be adequately trained, supported and resourced.

A sign of the successful incorporation of clinical audit is the development of a culture of questioning continuing evaluation and improvement of clinical effectiveness. Whilst this should be focused on patient outcomes, it is likely that laboratory medicine will continue to use surrogate markers[4].

References

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