DISCUSSION PAPER

Audit as part of summative assessment of vocational training

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SUMMARY. Written evidence of the ability to carry out audit and performance review looks likely to be one of the four components of a summative assessment package for the end of vocational training. This paper seeks to raise the issues involved in this process. The features of audit which lend themselves to assessment of the attributes of a general practitioner are discussed. The criteria which might be used to assess a written submission are presented. A possible mechanism for marking and grading is suggested, and strategies for optimizing the validity and reliability of that assessment discussed. A timescale for implementation is also suggested. These issues need to be discussed and a process piloted if a credible mechanism is to be in place by August 1996.

Keywords: vocational training assessment; audit; performance review; assessment techniques.

Introduction

AUDIT has only comparatively recently become widely introduced into general practice in the United Kingdom,[1] although its use in medicine was advocated many years earlier.[2] This 'new' method was greeted with widespread approval by the profession.[3-6] Its main purpose is to improve performance and thus optimize patients' health gain.[7,8] It has also been realized that audit can be used as a method of identifying learning needs (formative assessment).[9] A further potential benefit of audit is that, in developing the skills of critical reading and problem-based thinking, doctors will begin to behave differently in their approaches to continuing medical education.[10,11]

It has been suggested that audit should be one component of a summative assessment package for entry into general practice.[12] A consensus view from the Royal College of General Practitioners' forum on assessment has stated that there should be 'written evidence of the ability to carry out audit and performance review' as one of the four components of a summative assessment package.[12] But what attributes does audit assess? What are the features of audit that lend themselves to summative assessment? How can the validity and reliability of such a test be maximized? What are the practical implications of implementing such a method?

This paper aims to discuss these issues in the hope that this will stimulate debate, clarify the issues, and create a platform upon which a consensus regarding implementation of this method of summative assessment can be based.

Attributes to be tested

The Joint Committee on Postgraduate Training for General Practice has published a list of competences which it believes to be the attributes of the general practitioner.[13] It would appear sensible to base summative assessment on these attributes. However, many are in fact attitudes, such as those referring to 'commitment' and 'willingness'. Since audit relates to performance rather than attitudes most of the attributes will need to be tested by other methods. The RCGP forum on assessment has suggested that the other three components of a summative assessment package should be a written test of basic knowledge, an appraisal of clinical competence and consulting skills, and an evaluation by those in regular contact with the trainee's work.[12]

The attribute which can be most readily tested by audit is the 'ability to organize and carry out effective clinical audit and to have the skills necessary to bring about change in the practice where audit shows this to be necessary'.[13] A written submission in the form of a dissertation could also demonstrate that the candidate has:

- The basic skills necessary to 'contribute to the advancement of medical knowledge'. Audit is a rigorous scientific discipline, indeed it has been called the third clinical science.[14] Many of the features of audit can introduce the trainee to concepts important in research. It begins with the the importance of defining an audit question against a background which makes the question important and relevant. The methods chosen to answer the question need to be appropriate, and are often similar to those used in research. Concepts such as validity and reliability, approaches to sampling and sample size, and the application of appropriate methods of analysis can be introduced into the learning of audit techniques. The conclusions drawn from the results need to take into account the limitations of the method used.
- An understanding of the value of teamwork. An important element of the audit cycle is to manage the changes suggested by the first part of the cycle. This may involve the ability to work with teams of medical and non-medical people. Therefore, problems and obstacles need to be identified and strategies developed for overcoming them.[15-19]
- Developed a skill which will contribute to keeping up to date with developments in practice and to improving the quality of professional performance. Audit is a method of identifying learning needs.[9-11,20-22] It therefore provides the participants with a framework for continuing education which will be relevant to their practices throughout their careers.

Criteria to be assessed

The following criteria are suggested as being important in the assessment of a written submission of an audit.

Title. The title should give an indication of the area of clinical activity audited and the audit question, for example 'Surveillance of people with asthma: do we conform to the British Thoracic Society's protocol?'

Introduction. This should include a statement about how an area of audit came to be important to the author and to the practice. For example, it may have followed on from another quantitative audit or be based upon an untoward event within the practice. This should be followed by a review of the relevant background literature. The audit question should be clearly stated.

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Method. The standards against which performance is being tested should be stated, and their source described. The method of data collection and analysis should be clearly stated. Quantitative audit should include statements describing how the study population was identified. If sampling methods were used the sampling frame and method of sampling should be described. The precise outcome measures should be stated and the method of data collection described. The method of analysis should be stated. Qualitative audit of single events should involve a detailed description of the precise method used. Qualitative audit should also contain a detailed explanation of how the data were analysed.

Results. This section should contain a presentation of all the relevant results. Description, tabulation and statistical tests should be used appropriately.

Discussion. This section should include discussion of the following:

- The method used including its advantages and limitations, for example the validity and reliability of the measurements and the possible sources of bias. Possible alternative methods should be discussed.
- The results and a reflection on the difficulties in interpreting the results, for example the response rates to questionnaires and the statistical tests used.
- The reasons why the measured performance fell short of the standards which had been set. If the performance was found to be acceptable there should be an explanation with reference to the original reasons for suspecting that this would not be so.
- The appropriate conclusions and implications of the results for the practice in terms of suggested areas where changes are needed. If no changes were felt necessary the author should justify this opinion in the light of the stated reasons for undertaking the audit.
- A clear plan of change and a strategy for implementation. The potential problems and obstacles should be identified and strategies described for overcoming them. If performance had been satisfactory the author should discuss the factors in the practice which facilitated this.
- A clear statement of how the author suggests the changes should be reviewed to assess whether performance has been improved. If no changes had been suggested the author should speculate on which audit questions should next be addressed.

References. The references should be up to date and relevant.

Presentation. The dissertation must be no more than 4000 words long, typewritten, comprehensive and presented clearly.

Choosing and carrying out the audit

The choice of audit should, where possible, be made by the trainee. The subject should arise from the day to day activity of the practice. In order to prevent trainees repeating the audits of previous trainees the current audit should not have been performed before in the practice. The trainer should be responsible for ensuring the originality of the work.

It is anticipated that trainees will begin to form ideas about the area they wish to audit within the first three months of their general practice attachment. Thus, trainees will need to learn the theoretical aspects of audit early in the training year, either at the day release course and/or from their trainers.

Planning the method, standard setting and data collection should begin at about this time and be complete by half way through the training year. The third quarter of the year should be devoted to writing up and submission. The last three months should be reserved for unforeseen delay or rewriting if necessary.

This is a short time-scale and will determine the complexity of the audit to be undertaken, bearing in mind the other priorities and concerns of the training year. Furthermore, it may not be possible for trainees to complete the audit cycle after implementing changes. However, this area should be addressed in the discussion part of the dissertation.

Grading

Submission of an audit will be one of the components of a summative assessment which will demonstrate competence to undertake independent practice as a principal. This certification is restrictive in that doctors will not be allowed practice without it.[23] It must therefore discriminate at that level. For this reason there should be pass or fail grades. To include a range of grades would risk losing discrimination at the pass/fail point, and may complicate the marking system. However, work of a particularly high standard should be rewarded with a distinction to act as a spur to excellence.

It is suggested that the audit should be marked against the criteria listed above. However, the weighting of each criterion will need to be agreed by some consensus, perhaps by a regional group or nationally. Thus, regions could reward, for example, innovative areas or methods of audit, clarity of definition of the audit question, thoroughness of background reading, appropriateness of method, quality of data collection and analysis, incisiveness of discussion, or excellence of presentation. A pass mark would be set in order to encourage imaginative and innovative thinking while allowing the possibility that all candidates could pass if their dissertation met the overall standard.

Who should be the examiners? Trainers and course organizers should have the skills to undertake and teach audit. Since they will be responsible for teaching their own trainees, they should be in a position to assess the dissertations of other trainees. It is suggested that this first tier of examiners should be trainers or courses organizers from within the same regional health authority area, but outside the same district health authority area as the trainee. Each dissertation should be graded by two examiners.

A fail grade should be accompanied by an explicit explanation of why this grade has been awarded, and suggestions of how the dissertation could be improved to achieve a pass. If either examiner fails the dissertation it should proceed to the second tier of assessment which should consist of the regional adviser or an associate adviser who, if in agreement with the first tier of examiners, should also give explicit reasons why the grade has been awarded and recommendations about how to improve the project. At this stage the applicant should be given the opportunity to rewrite and resubmit the dissertation, or to submit a different audit. If the revised dissertation is still graded as a fail by the regional associate adviser it should proceed to a third tier of assessment, a regional adviser or associate adviser from outside the region. If this assessment concurs with the others, the dissertation will be graded as a fail (again explicit reasons and recommendations would be given).

It is anticipated that the trainee will have ample opportunity to submit a paper of sufficiently high standard to pass. Those who fail should still be able to resubmit an audit after the training year is complete, particularly if this is the only component of the total summative assessment which has not been passed. Audits of particularly high standard should be awarded a distinction. This should be accompanied by a recommendation for, and advice about, possible publication.

Validity and reliability

The following strategies should maximize the reliability of the

marking system. A random selection of dissertations receiving a pass grade should be reviewed by the local regional adviser and associate advisers; the results of their review would be fed back to trainers and the examining body. To maximize uniformity across regions, a further random selection should be sent to regional advisers and associate advisers from other regions. All dissertations graded as a fail would have been assessed as such by at least three examiners — one of the two original trainers or course organizers, a regional or associate adviser within the same region, and an external regional or associate adviser. Each examiner would have stated explicitly their reasons for failing the dissertation.

The validity of the examiners' assessments would be maximized by: careful training of the examiners; agreement between the examiners on the reasons for failing a dissertation; feedback of the assessments of each examiner to that examiner, and comparison of his or her marking with other examiners, perhaps at yearly meetings; and the experience of coaching his or her own trainee.

Implementation

The first stage in the implementation of this method of summative assessment is to gain agreement from the regional health authorities in England and Wales to adopt the same method of assessment. Once this agreement has been reached the method and grading system should be disseminated to trainers within the region. Specific training sessions should be established to ensure that all trainers are familiar with the process of teaching and marking, and that their concerns and anxieties are aired and addressed.

The scheme should be piloted in one or two of the regions. This should begin by the middle of 1995 so that preliminary results can be assessed and widespread implementation begun by August 1996. All trainees starting their training year in general practice after that time will be subject to this form of assessment. There should be a mechanism for ongoing assessment and review of the procedure, and the facility to modify the process in the light of experience.

Conclusion

It is suggested that submission of an audit as part of a summative assessment package is a feasible proposition. Such a submission has features which will test the attributes of a future general practitioner. The method proposed here optimizes the validity and reliability of the test, particularly with respect to dissertations which fail to achieve a pass grade: three tiers of examiners would all have to agree before a dissertation could be graded as a fail and there would be ample opportunity for failed dissertations to be improved. If implementation is to be achieve by 1996 a method will have to be agreed and piloted before then. This paper seeks to stimulate a debate to that end.

References

1. Secretaries of State for Social Services, Wales, Northern Ireland and Scotland. *Promoting better health. The government's programme for improving primary health care (Cm 249).* London: HMSO, 1987.
2. Donabedian A. Evaluating the quality of medical care. *Milbank Mem Fund Q* 1966; **66:** 160-206.
3. General Medical Services Committee. *Building your own future.* London: British Medical Association, 1986.
4. Royal College of Physicians. *Medical audit — a first report.* London: RCP, 1989.
5. Royal College of Surgeons of England. *Guidelines to clinical audit in surgical practice.* London: RCS, 1989.
6. Standing Committee on Postgraduate Medical Education. *Medical audit — the educational implications.* London: SCOPME, 1989.
7. Secretaries of State for Health, Wales, Northern Ireland and Scotland. *Working for patients (Cm 555).* London: HMSO, 1989.
8. Department of Health. *The quality of medical care, report of the standing medical advisory committee for the secretaries of state for health and Wales.* London: HMSO, 1990.
9. Coles C. Self assessment and medical audit: an educational approach [editorial]. *BMJ* 1989; **299:** 807-808.
10. Shin JH, Haynes RB, Johnston ME. Effect of problem-based, self-directed undergraduate education on life-long learning. *Can Med Assoc J* 1993; **148:** 969-976.
11. Vernon DTA, Blake RI. Does problem-based learning work? A meta-analysis of evaluative research. *Acad Med* 1993; **68:** 550-563.
12. Royal College of General Practitioners forum on assessment. *Summative assessment of trainee general practitioners: a statement of consensus.* London: RCGP, 1992.
13. Joint Committee on Postgraduate Training for General Practice. *The attributes of the general practitioner.* London: JCPTGP, 1992.
14. Russell IT, Wilson BJ. Audit: the third clinical science? *Qual Health Care* 1992; **1:** 51-55.
15. Pritchard P, Low K, Whalen M. *Management in general practice.* Oxford University Press, 1984.
16. Irvine DH. *Managing for quality in general practice.* London: King's Fund Centre, 1990.
17. Baker R. Audit and standards in new general practice. *BMJ* 1991; **303:** 32-34.
18. Pringle M, Bilkhu J, Dornan M, Head S. *Managing change in primary care.* Oxford: Radcliffe, 1991.
19. Pringle M. The developing primary care partnership. *BMJ* 1992; **305:** 624-626.
20. Rogers C. *Freedom to learn for the 80s.* Columbus, OH: Charles E Merrill, 1983.
21. Richards RK. Physicians' self-directed learning. *Möbius* 1986; **6:** 4.
22. Metcalfe DHH. Audit in general practice [editorial]. *BMJ* 1989; **299:** 1293-1294.
23. Irvine D. General practice in the 1990s: a personal view on future developments. *Br J Gen Pract* 1993; **43:** 121-125.

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