

# Audit and summative assessment: a criterion-referenced marking schedule

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## SUMMARY

**Background.** 1996 will see the introduction of summative assessment of general practitioner registrars (trainees). One part of this assessment is the written submission of practical work. In the west of Scotland, audit projects have been chosen as the format for practical work. A valid and reliable marking schedule for such projects is needed.

**Aim.** A study was undertaken to develop a criterion-referenced marking schedule for assessing registrars' audit projects for summative assessment.

**Method.** Medical and non-medical professionals, in a series of workshops, compiled a list of essential elements of good audit. These features were tested and refined using registrars' audit projects. All trainers in the west of Scotland were then sent a list of 14 criteria and asked to indicate whether each criterion was an essential or desirable component of a registrar's audit project for summative assessment. A final workshop was held to develop an audit marking schedule.

**Results.** Of 155 trainers in the west of Scotland, 135 replied to the list of criteria for registrar audit projects (87%). Ten criteria were deemed essential or desirable by 80% or more of the respondents. Participants in the final workshop selected five criteria which would form the audit project marking schedule for registrars undergoing summative assessment. These were: defined reason for choice of audit project, relevance of criteria chosen, appropriate preparation and planning, appropriate interpretation of relevant data and detailed proposals for change. For an audit project to pass assessment all five criteria must be present.

**Conclusion.** A criterion-referenced approach to assessing registrars' audit projects, developed from their trainers' opinions of essential or desirable criteria for good audit, is described. Further evaluation of the criterion-referenced marking schedule is required.

**Keywords:** assessment techniques; trainee assessment; vocational training assessment; audit.

## Introduction

IN 1993 the Joint Committee on Postgraduate Training for General Practice published its policy document on summative assessment.<sup>1</sup> This will commence on a United Kingdom wide basis in 1996. The document states that every general practitioner registrar (trainee) must be assessed to demonstrate competence. The assessment is to be divided into four parts: tests of

factual knowledge and problem-solving skills, submission of practical work, evaluation of clinical and consulting skills and the trainer's overall assessment. This reflects a development by the west of Scotland Committee in General Practice which since 1991 has been exploring the possibility of formulating a credible, valid and reliable method of summative assessment. A pilot project in the west of Scotland involved all four aspects of assessment but highlighted the use of videotaped consultations, in assessing clinical and consulting skills, as a valid and feasible method of assessing the competence of general practitioner registrars.<sup>2</sup> Further work was required on the other components of the package, one of which was an audit project. It is desirable that any method devised for assessing registrars summatively should be criterion-referenced and accepted for publication by peer review (Gray DJP, personal communication).

The format of the practical work submitted by a registrar will be limited by the ability of an instrument to assess it. Audit is a method of identifying learning needs,<sup>3</sup> is useful in problem-based learning<sup>4</sup> and demonstrates that a registrar has understood and carried out performance review.<sup>5</sup> Benett and Hayden have stressed the need to optimize the validity and reliability of any system used in assessing audit projects and have highlighted the need to review the procedure and modify it, if necessary, in the light of experience.<sup>6</sup>

This paper describes the development of a criterion-referenced tool for assessing general practitioner registrars' audit projects for summative assessment.

## Method

Since August 1992 all general practitioner registrars in the west of Scotland have conducted an audit project as part of a pilot study for summative assessment. The audit projects allow registrars' practical work to be submitted in a standardized format.

A series of six small group discussions, led by J L, was held between August 1993 and January 1994 with general practitioner trainers and registrars. Discussions focused on the value of audit generally and on audit as a tool for assessment. These discussions produced a number of basic questions to be answered when formulating an audit project: Is the topic relevant to routine general practice? Is the present practice situation defined? Are the criteria chosen relevant to the choice of the audit? Have standards been set? Have changes been recommended which are realistic? These questions were used to produce a structured format to guide registrars in the submission of an audit project. At this time there was no mechanism for marking audit projects; submission of a project was sufficient to pass this aspect of assessment.

A series of workshops was held between February and July 1994 to achieve the following objectives:

- To define audit in a way that takes account of the level of general practitioner trainer and registrar experience in audit methods;
- To develop independent criteria against which an audit project could be judged;
- To produce an instrument which could be used to assess an audit project and appropriate instructions for assessors; and
- To develop an appropriate referral system for a substandard audit project.

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Eighteen participants, both medical and non-medical, were invited to participate in the workshops. They were chosen on the basis of their interest and practical involvement in audit in the west of Scotland, and to emphasize the multiprofessional nature of audit. There were seven general practitioners who were either trainers or practice partners of trainers, seven general practitioners who were audit facilitators, three doctors (one non-medical) from the University of Glasgow and one practice nurse who was also an audit facilitator.

The participants in the first three workshops used three questions — Why was the audit done? How was the audit done? What was found? — to identify the essential elements of good audit. The feasibility of the resulting framework was tested by workshop participants using two registrar audit projects. The framework was then further refined by participants in the workshops and the resulting criteria tested on 10 audit projects in order to minimize overlap between each criterion.

A list of 14 criteria was sent to all 155 general practitioner trainers in the west of Scotland. They were asked to mark each criterion as essential or desirable in a registrar audit project, taking into account their current confidence in and experience of audit methods. The final workshop of the series developed an audit marking schedule from the trainers' responses. The three questions used in the first workshops were supplemented by a fourth question — What next?

## Results

Of 155 general practitioner trainers in the west of Scotland sent a list of 14 criteria identifying good audit, 135 replied (87.1%). Trainers' responses to these criteria, from which the audit marking schedule was developed, are shown in Table 1. Almost all respondents (97.0%) considered the relevance of the criteria chosen to be an essential or desirable element of an audit project.

Those elements that were considered essential/desirable by 80% or more of trainers were then developed into a marking schedule. At the final workshop, five independent criteria that most closely reflected the work to be carried out in submitting a successful audit project were included in the final marking schedule. The information given in an accompanying instruction sheet for the assessors and the final marking schedule are shown in Figure 1. For an audit project to pass assessment, all five criteria must be present. Any missing criterion results in the project being referred whereby two of the most experienced assessors judge the project by the same five criteria. Failure at this stage is fed back to the registrars with comments from all the assessors. A project (whether the original one revised or a new audit project) must be passed by a specific date.

**Table 1.** Trainers' opinions on essential or desirable elements of a registrar's audit project.

Element of audit project	% of 135 trainers considering element essential/desirable
Relevance of criteria chosen	97.0
Standard setting	96.3
Preparation and planning of project	96.3
Interpretation of presented data	94.1
Potential for change	91.9
System for change described	87.4
Data presented: relevance to criteria	86.7
Negotiation with relevant team members	86.7
Reason for choice of project	85.9
Further change proposed where appropriate	82.2
Second collection of data compared	74.8
Timescale to complete project	74.1
Staff involvement	68.9
Money required	45.9

## Instructions for audit assessors

Please use the marking schedule to give your opinion of the general practitioner registrar's audit project. It is crucial that the whole project is read before marking begins.

The criteria to be used for marking are in bold print. The statements in less bold print should act as a guide when making your judgement.

There are five criteria to be marked for an audit project to pass assessment, all five criteria must be present.

Please comment at any stage of the process but specifically if the registrar audit project is being referred.

## Audit marking schedule

Please tick the box provided if the criterion/criteria for answering each question is/are present.

Question	Criterion	Criterion present
Why was the audit done?	<b>Reason for choice</b> Should be clearly defined and reflected in the title. Should include potential for change.	<input type="checkbox"/>
How was the audit done?	<b>Criteria chosen</b> Should be relevant to the subject of the audit. Should be justified, for example, from the literature.	<input type="checkbox"/>
	<b>Preparation and planning</b> Should show appropriate team-work and methodology in carrying out the audit. If standards are set they should be appropriate and justified.	<input type="checkbox"/>
What was found?	<b>Interpretation of data</b> Should use relevant data to allow appropriate conclusions to be drawn.	<input type="checkbox"/>
What next?	<b>Detailed proposals for change</b> Should show explicit details of proposed changes.	<input type="checkbox"/>
A satisfactory audit report should include all five criteria to pass. Please enter your opinion in the box provided.		
Pass	<input type="checkbox"/>	
Refer	<input type="checkbox"/>	
If refer, please comment on your reasons.		

**Figure 1.** Instructions for audit assessors and audit marking schedule.

A structured form for the audit project was also drawn up. Each page of the form was headed with one of the criteria. The instructions for submitting audit projects and the form for audit projects were given to the registrars at a regional study day at the start of their general practitioner registrar year in August 1994.

## Discussion

The development of a criterion-referenced marking schedule for the assessment of general practitioner registrar audit projects in summative assessment has taken more than two years. The aim from the outset was to produce a valid and reliable tool that would be relatively simple to use. Specific instructions were to be equally familiar to registrar, trainer and assessor (audit projects are marked by members of the original workshops and by some trainers).

To date, little work has been carried out on the evaluation of audit projects and no studies have been published on the assessment of general practitioner registrars' audit projects. Several simple frameworks do exist, however, and one such framework<sup>7</sup> provided the basis for the development of the instrument in the present study. This framework focused on the assessment of individual audit projects without necessarily considering wider issues, such as the setting in which the audit took place, which would have been difficult to verify.

Other models had been considered at the first workshop. Bhopal and Thomson's model was designed to evaluate papers published on audit.<sup>8</sup> It was constructed from the opinions and responses of a number of clinicians attending an audit workshop similar to those run in the present study and again focused on individual audit projects. Walshe and Tomalin, looking specifically at how to evaluate the funding of audit projects, considered five issues relating to objectives being met and resources being used.<sup>9</sup>

One benefit of a criterion-referenced model is its relative simplicity: each criterion is either passed or failed. The aim in testing the reliability of the instrument is to reduce to a minimum the judgement required for each decision. A form, issued to all registrars before they started their projects, with each page headed with the criterion to be judged, has two major advantages. First, it limits confusion among registrars as to what is being tested. Secondly, it limits the amount of writing submitted, thus helping the assessor.

There has been some debate about the nature of practical work to be submitted for summative assessment (Toby J, personal communication). Some have argued for breadth, suggesting that registrars submit a literature review, a critical event analysis, a business plan or a piece of research perhaps carried out during the hospital component of vocational training. However, it was felt that the ability to produce a single tool that would reliably detect a registrar of below minimal competence could only be achieved by using a method familiar to all training practices in the region, hence the decision to use audit.

Understanding of audit methods is still at an early stage for many training practices. This emphasizes the advantage of taking into account trainers' opinions on what constitutes essential or desirable criteria for a minimally competent registrar. These opinions will reflect the trainer's current ability to guide and support the registrar audit project. Once techniques for developing criteria to assess audit projects are in place, they should not be changed without involving the trainers. As experience with audit increases, however, there will be a need to revisit the criteria to reflect the increasing ability to complete the audit cycle, a criterion which trainers in the west of Scotland still feel may be difficult to achieve. This is likely to be a result of inexperience with audit methods, particularly in deciding on a project of realistic level which can be easily completed in the training year.

It is interesting to note that time, staff and money — often raised as issues crucial to the execution of an audit<sup>10</sup> — were scored least often by the trainers as criteria considered to be essential/desirable in a registrar's audit project.

The marking schedule is now undergoing rigorous testing to assess its reliability and the consistency of the assessors in using it. It is hoped that the issues raised in the paper will open discussion nationally about the best way forward for assessing practical work for summative assessment of general practitioner registrars.

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### Clinical performance assessment

THIS paper is from the *Family Medicine* series 'core concepts in family medicine education'. In it the author sets out to describe the state of the art in the use of standardized patients in clinical performance assessment in the United States of America. There are a number of interesting comparisons with the United Kingdom.

The standardized patient is a particular method of patient simulation that has been increasingly used in the USA to provide objective observational data about clinical skills. It is used in the USA and UK in two main formats: the objective structured clinical examination (OSCE), which was developed by Professor Harden in Dundee, and in the simulated clinical encounter which is in some ways analogous to the simulated surgery development which has been taking place in the UK. These techniques are mainly used in teaching clinical skills to medical students and in assessments of those skills at that level. There seems to be little use of these techniques in the USA in the assessment of high levels of training, nor in the performance of practising doctors; both types of applications have been considered in the UK.

The theory that seems to underpin the approach is that of the assessment of a specific domain of skills; the design of the simulations has that purpose in mind. It is therefore different from the current 'whole consultation' concept currently being developed in the UK, using both videorecorded and simulated patients, for the assessment of consulting skills of vocational registrars (trainees). There is also no thought in the paper for using the simulator's own view of the performance of the doctor, which is a concept that is becoming increasingly interesting in the UK.

As a review article this is a good primer for anyone who is interested in clinical performance assessment but has little knowledge of simulated patients.

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