General practitioner trainees' experience of undertaking audit projects: preliminary report from the west of Scotland region

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SUMMARY
Background. Departments of general practice increasingly provide formal teaching in audit. However, little is known about audit projects carried out by trainees in general practice.
Aim. A study was undertaken to ascertain general practitioner trainees' experience of undertaking an audit project in the trainee year, with reference to their understanding of audit theory, perceived usefulness of the project in enhancing clinical knowledge, time taken to do the audit and practice team involvement in the project.
Method. All 104 trainees in the west of Scotland region completing their trainee year on 31 July 1993 were sent a postal questionnaire that month. The replies to the questionnaire were analysed and compared with the audit project that each trainee had submitted in June 1993 as part of a pilot project for summative assessment.
Results. Responses were received from 103 trainees (99%). Seventy trainees (68%) felt strongly that their audit project was relevant to patient care but only 31 (30%) felt strongly that the project was a useful way of enhancing clinical knowledge of the disease process. Data collection was the most time consuming aspect of the audit project, 23% of trainees reporting taking a day or more to complete this stage. Trainees who chose their own audit project were more likely to complete two sets of data collection than those who had not chosen their own project. Seventy nine trainees (77%) indicated that trainers had been involved in their project and 51 trainees indicated that one of the other practice partners had been involved in their project.
Conclusion. Performing an audit as a trainee is feasible in the time limit of the one year in general practice. The educational benefit appears to be limited to the knowledge of audit process, rather than to clinical knowledge. Audit projects of relevant size and complexity, involving appropriate members of the practice team, are to be encouraged, as is the development of an instrument for assessing trainee audit.

Keywords: audit; trainee projects; trainees' knowledge; vocational training.

Introduction

IN their reports to the regional adviser, general practitioner trainees in the west of Scotland region have, in the past, commented on a lack of practical experience in audit. Medical audit project work by medical students has been described as an effective tool for motivating students to learn, and departments of general practice increasingly provide formal teaching in audit.[1,2] However, little is known about audit projects carried out by trainees in general practice.

As part of a pilot project for summative assessment, for the trainee year August 1992 to July 1993, trainees in the west of Scotland region were asked to submit an audit project of their choice. These trainees had each completed one year in a training practice. A study was undertaken to determine trainees' experience of the audit project with regard to their perceived knowledge of audit theory and terminology, the audit's educational value, time taken to do the audit and practice team involvment.

Method

In July 1993 a questionnaire, which had been piloted on five trainees, was posted to all 104 trainees in the west of Scotland region who had submitted an audit project in June 1993. A second questionnaire was sent to non-respondents two weeks later. The questionnaire was divided into four parts.

The first section assessed trainees' perceived understanding of audit theory and terminology. Respondents were asked to reply yes, no, or do not know to questions asking whether the project had increased their knowledge of: criteria, standard setting, the audit cycle and implementing change in their practice. The replies were then compared by the researchers with the criteria, standard setting, and recommendations for change in the trainees' individual audit projects which had been submitted for summative assessment. Trainees were also asked whether the audit project had increased their understanding of computers.

In the second section, respondents graded the project on five-point scales (1 = poor, through to 5 = excellent) regarding its usefulness in improving their clinical knowledge of disease processes and therapeutics, in improving their knowledge of practice administration, as a tool for future audits, and the project's relevance to patient care. Respondents were also asked to state who had chosen the subject of the audit project.

In the third section, respondents were asked to estimate the amount of time they had spent carrying out each stage of the audit cycle, and whether they had collected two sets of data. The chi square test was used to compare the proportion of trainees choosing and not choosing their own audit project who completed two sets of data collection.

In the fourth section, respondents were asked which other members of the practice team had been involved in the audit project and the nature of their involvment.

Results

Only one trainee failed to return a questionnaire, hence replies were received from 103 general practitioner trainees (99%).

Understanding of audit theory and terminology

Ninety trainees (87%) considered that the project had increased their knowledge of criteria, 89 (86%) felt that it had improved their knowledge of standard setting, and 95 (92%) considered that their knowledge of the audit cycle had increased. Eighty five trainees (83%) felt that they understood more about implementing change in practice. Sixty respondents (58%) felt the project had increased their understanding of the use of computers.

When the trainees' projects were analysed by the researchers, the researchers considered that all the trainees had set appropriate criteria and all had set standards to meet these criteria. All trainees were able to suggest appropriate areas for change and to suggest methods to do so.

Usefulness of audit project in improving clinical knowledge and patient care

Respondents' ratings of the usefulness of the audit project are shown in Table 1. Seventy trainees (68%) felt strongly (scored as four or five) that their audit project had been relevant to patient care, but only 31 trainees (30%) felt strongly that it had been a useful way of enhancing clinical knowledge of the disease process.

Forty seven trainees (46%) indicated they had chosen their own audit project. Fifty six trainees (54%) indicated that the subject had been suggested by the practice or that they had chosen an 'off-the-peg' audit available from the Department of Postgraduate Medicine at Glasgow University.

Division of time in audit project

The length of time trainees spent on the various stages of their audit project is shown in Table 2. Twenty three trainees (23%) reported spending a day or longer on data collection.

Of the 47 trainees who had chosen their own audit project, 33 (70%) completed two sets of data collection, and of the 56 trainees who had not chosen their own audit project, 16 (29%) collected two sets of data ($\chi^2 = 17.8$, 1 degree of freedom, $P<0.001$).

Involvement of practice team members in audit project

The general practitioner trainer had been involved in 77% of audit projects, most commonly in the area of standard setting. Other practice partners were involved in 51 audit projects (50%), again usually in the area of standard setting. Receptionists had been involved in 86 audit projects (83%), usually being involved in gathering case notes. Practice nurses had been involved in 18% of projects and health visitors in 3%.

Table 1. Respondents' ratings of the usefulness of the audit project in improving clinical knowledge and patient care.

Usefulness of project	% of 103 respondents rating project usefulness[a]				
	1	2	3	4	5
In enhancing clinical knowledge of disease process[b]	19	24	27	25	5
In enhancing clinical knowledge of therapeutics[b]	24	26	31	15	4
In enhancing knowledge of practice administration	6	13	38	36	7
As a tool for future audits	0	4	11	60	25
As relevant to patient care	2	5	25	44	24

[a]1 = poor, through to 5 = excellent. [b]Data missing for one trainee so n = 102.

Table 2. Respondents' estimates of the amount of time spent on the different stages of their audit project.

Time spent on	% of respondents reporting length of time taken (hours)				
	<1	1–3	4–7	8–23	24+
Background reading/ literature search (n = 101)	18	40	24	13	6
Discussion of criteria/ standard setting (n = 101)	51	40	9	0	0
Preparation for data collection[a] (n = 101)	6	33	61	0	0
Data collection (n = 102)	2	19	25	31	23
Discussion of results/ suggestions for improvement (n = 101)	39	51	10	0	0

n = number of respondents. [a]For example, running case note searches/fetching case notes.

Discussion

It is acknowledged that the trainees in this study were not told of the questionnaire until after the completion of their audit project and so their answers are subjective. In addition, because all trainees took part in summative assessment there is no comparable control group (trainees in previous years had not been required to perform an audit project). The trainees were not under any compulsion to answer the questionnaire although some may have felt coerced because of the association of the audit project with summative assessment.

As would be expected from having performed an audit, trainees considered that their understanding of audit theory and terminology had increased, although day-release programmes during the trainee year which involved discussion of audit may also have enhanced their understanding. As yet, no valid and reliable instrument is available to evaluate trainees' audit projects. The analysis of the trainees' criteria, standard setting, and implementation of change was therefore based on the researchers' subjective opinions. Trainees who chose their own audit project were more likely than those who did not to complete two sets of data collection and therefore were more likely to have had the chance to experience change in the delivery of care. The audit project was seen by most respondents as relevant to patient care and as a useful tool for future audits but it tended not to be seen as useful in enhancing clinical knowledge. Although enhancing clinical knowledge may not be the primary reason for trainee audit projects, and completing two sets of data collection may not be essential for summative assessment, these findings provide a challenge to involve trainees in projects of relevant size, complexity and interest.

Lack of time is often cited as the main barrier to audit, particularly within the time constraints of the trainee year which also involves assessment in other areas.[3] The data shown here imply that in the various stages of the audit project the majority of trainees spend the equivalent of a morning in each of the following areas: background reading, discussion of criteria/standard setting, discussion of results and suggestions for improvement. The time-consuming aspects of audit — preparation for data collection and data gathering — can be done, in most cases, in under 24 hours. The majority of trainees will therefore take little more than a working week to undertake an audit project. The amount of time a trainee spends undertaking an audit project could also be reduced if more of the practice team became involved in the audit. It is of little use to a trainee that approx-

imately 20% of trainers and half of the other practice partners took no part in the audit. Perhaps the training practice and the trainers need further education and motivation in audit to provide an enthusiastic audit environment in which to motivate the trainee.

In conclusion, an audit project in the trainee year is feasible and should involve the whole practice team. Help is required in choosing audit projects which can be relevant to trainee education and which allow the majority of the trainees to close the audit loop by completing a second data collection. A valid and reliable instrument to assess trainee audit is required. Further development of existing methods of audit assessment will help in the evaluation of audit projects and to focus trainees and practices towards improvements in their audits.[4,5]

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