

# Innovation in general practice: is the gap between training and non-training practices getting wider?

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## SUMMARY

**Background.** Training practices are more developed than non-training practices in terms of a wide range of educational and clinical activities, facilities and staff. If training practices are also adopting new innovations at a faster rate than non-training practices the gap between them will increase.

**Aim.** The aim of this study was to determine whether, between 1982 and 1990, training practices did develop at a faster rate than non-training practices.

**Method.** In 1982 a questionnaire was sent to 153 practices in Gloucestershire, Avon and Somerset which all had one or more partners who were members of the Royal College of General Practitioners. A second questionnaire was sent to the same practices in 1990. Information was sought about practice features including organization, size, facilities, staff and clinical and educational activities. A total of 124 practices (62 training and 62 non-training) completed questionnaires on both occasions.

**Results.** There were substantial changes in the cohort between the surveys in 1982 and 1990, with many practices gaining, for example, a practice manager, practice nurse and purpose built premises, and introducing audits, screening activities and specific clinics. For each feature of practice a logistic regression was undertaken with training used as an explanatory variable. Training practices were more likely to develop than non-training practices for a number of features including personnel, aspects of practice organization, educational activities, clinical activities and equipment.

**Conclusion.** Training practices are not only more developed than non-training practices but are also more innovative. The gap between training and non-training practices did grow wider between 1982 and 1990. This may be because the members of training practices are inherently more innovative, face fewer obstacles to innovation or that the scheme for approval of practices for training has encouraged specific innovations. Any future accreditation scheme for general practices must be organized to encourage accelerated development in less developed practices rather than only stimulate innovation in already advanced practices.

**Keywords:** general practitioner initiatives; general practitioner services; quality in general practice; training practices; non-training practices; comparative studies.

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## Introduction

SINCE the creation of the National Health Service a variety of strategies has been used to improve standards in general practice. Compulsory vocational training is one strategy that has been established for over a decade,<sup>1</sup> while more recently a new contract for general practitioners was introduced with the explicit aim of raising the standards of all practices to those of the best.<sup>2</sup> Accreditation, either of practitioners individually or of practices as a whole, is a further approach now being discussed by the General Medical Services Committee and the Royal College of General Practitioners<sup>3</sup> in the light of a survey indicating that a substantial minority of general practitioners agree that an accreditation system is overdue and would improve standards of patient care.<sup>4</sup> The procedures used to select and reapprove trainers and their practices constitute a well developed form of accreditation which includes a set of criteria specified by the regional general practice education committee.<sup>5</sup> If approved the trainer receives an allowance for providing training and the practice has an additional doctor who can, during the training year, take on a limited share of the workload.

A survey conducted in 1982 of 153 practices in Gloucestershire, Avon and Somerset<sup>6</sup> demonstrated extensive differences in the level of development between training and non-training practices. The differences included aspects of clinical services as well as aspects related specifically to training, such as practice libraries, educational meetings and audit. General practitioners from training practices have been found to be more likely to attend educational meetings<sup>7</sup> and in one study training practices were found to be more successful in providing preventive care.<sup>8</sup> Participation in the vocational training scheme has been used as an indicator of innovative practices<sup>9,10</sup> and training practices have been found to be more likely to have more partners.<sup>6</sup> A second survey in Gloucestershire, Avon and Somerset was undertaken in 1990 to identify those variables that helped to explain practice development.<sup>11</sup> The most important explanatory variable was found to be approval for training, with training practices having more facilities, staff, and clinical and educational activities. The other less important explanatory variables for higher levels of practice development were having a practice manager, younger partners, a larger total list size and a lower Jarman underprivileged area score.<sup>12</sup>

To be approved for training, practices must demonstrate that according to explicit criteria they are already highly developed. The criteria for the appointment and reappointment of general practitioner trainers used in the South Western Region Health Authority<sup>13</sup> in 1986 were:

- The trainer as a clinician must be open to peer review; undertake audit; offer preventive medicine; attend educational clinical courses; and not normally use a deputizing service.
- The trainer as a teacher must be enthusiastic about teaching; have attended a course on training; and provide three and a half hours teaching time per week.
- The trainer as a member of a teaching practice must ensure that the practice premises are at least as good as the average in the locality; there are adequate ancillary staff to cover reception, secretarial and nursing functions; there is a qualified

nurse on the premises who contributes to preventive care; there is the usual equipment (sphygmomanometers, ophthalmoscopes, specula, peak flow meters, sterile dressings, proctoscope); the practice is creating summary problem cards in patient records; the practice has a library of at least 10 books from and about general practice; an age-sex register is in use for at least one preventive medical programme; there is a reasonably complete diagnostic register for at least one common disease; a workload record of consultations and home visits is kept; and patients receive antenatal and postnatal care within the practice.

However, training practices may not only be more developed than non-training practices, they may also be inherently more innovative. Furthermore, the reaccreditation procedure for training practices is intended to act as an external stimulus to introduce changes such as implementing audit and improving record systems. Therefore, it is possible that these factors will combine to increase the gap in the level of development between training and non-training practices.

This study was undertaken to discover whether, between 1982 and 1990, training practices were indeed more likely than non-training practices to introduce changes in their services. The demonstration of a faster rate of innovation in training practices and a widening gap between training and non-training practices would have important implications for strategies such as a revised contract for general practitioners or accreditation of practices, which are intended not only to promote the development of all practices but also to close the gap between the more and less developed.

Evaluations of the quality of care are frequently categorized into review of structure, process and outcome. However, the study in 1982 was restricted to a review of practice structure such as personnel, clinical services, organization and educational activities.<sup>6</sup> In order to enable comparisons to be made the 1990 survey also included consideration of these issues,<sup>11</sup> and so the present study does not address the broad theme of quality of care, but merely one component of quality, the level of development of the services offered to patients.

## Method

The methods used in the surveys conducted in 1982 and 1990 have been described in detail.<sup>6,11</sup> In 1982 a 69-item questionnaire was sent to those practices in Gloucestershire, Avon and Somerset that had at least one partner who was a member of the Severn faculty of the RCGP. The questionnaire sought details of practice size, location, premises, clinical and clerical equipment, ancillary and attached staff, appointment systems, screening programmes, clinics and educational activities.

In February and March 1990 an extended version of the questionnaire, consisting of 76 main items was sent to all those practices for which the family health services authorities of Gloucestershire, Avon and Somerset were responsible. There was therefore a group of practices who had completed questionnaires in both 1982 and 1990 and these are the subjects of this study.

The analysis was undertaken by first dividing the study group into practices that did or did not have a trainee in 1982. These two groups, training and non-training, were then compared for each item included in both questionnaires. The number of practices that could change by gaining or losing each feature of practice between 1982 and 1990 was calculated. In order to determine whether change was more likely in training or non-training practices the presence or absence of each feature in 1990 was analysed using logistic regression.<sup>14</sup> The presence of the same feature in 1982 was entered as an explanatory variable and the variable that described whether or not the practice had a trainee in 1982 was then added. The significance of that term gave the

measure of the effect of training. A check was made for any interaction between training and the presence of the feature in 1982. The statistics package used was *GENSTAT*.<sup>15</sup>

In order to determine whether the level of development of practices was influenced by having a partner who was a member of the RCGP the findings from the survey of practices in 1990 were used to compare those practices that were included in 1982 (and had an RCGP member) with those that did not have an RCGP member and were not included in 1982.

## Results

Of the 153 practices approached in 1982, 150 responded. Ten of the original 150 practices could not be included in the 1990 study because they were either single-handed in 1982 and had been absorbed into other practices by 1990, or had been transferred to the neighbouring family health services authority. Of the 140 practices that could be traced, 124 (88.6%) completed questionnaires in 1982 and 1990 — 62 of these had a trainee in 1982 and 62 did not.

There were substantial changes in this cohort of practices in the period 1982–90 (Tables 1 and 2). For example, all of the 21 training practices and 98% of the 42 non-training practices that in 1982 did not have a practice nurse had gained one by 1990. More than half of those training and non-training practices that did not have the following features in 1982 had gained that feature by 1990: a practice manager (67%), practice library (74%), age-sex register (72%), blood pressure screening (76%), developmental screening (63%), summary cards in notes (90%), photocopier (75%), dictation machine (65%), and computer (69%) (Tables 1 and 2). Moreover, there were increases in the mean number of partners and patients. For non-training practices the mean number of partners increased from 3.3 (standard deviation 1.6) for 60 practices in 1982 to 3.7 (SD 1.5) for 62 practices in 1990, while for training practices the increase was from 4.1 (SD 1.7) for 61 practices in 1982 to 5.0 (SD 1.8) for 62 practices in 1990 (*t*-test of the difference between training and non-training practices in mean change in scores,  $P < 0.01$ ). For non-training practices the mean number of patients increased from 6790 (SD 3520) for 57 practices in 1982 to 6940 (SD 3520) for 62 practices in 1990, while for training practices the increase was from 8790 (SD 4050) for 59 practices in 1982 to 9270 (SD 3380) for 61 practices in 1990. There were also changes in the training status of practices, 10 of the 62 practices that were training practices in 1982 had stopped training by 1990, and 15 of the 62 non-training practices in 1982 had become training practices by 1990.

The data presented in Tables 1 and 2 were used to undertake logistic regression analysis, with possession of the feature in 1982 being the first explanatory variable and approval of the practice for training being the second. The results show that for the 39 features of practice included in the study (excluding number of partners and total list size), 12 were significantly more likely to have been gained or less likely to have been lost by training practices than non-training practices (Tables 1 and 2). These features were marriage guidance counsellor, patient participation group, audit, collaborative research, computer, diagnostic index, individual practice research, library, workload analysis, screening of the elderly, diabetic clinic and sigmoidoscope. Research activity, undertaken either individually by the practice or in collaboration with others, in training and non-training practices showed an overall decline between 1982 and 1990, although the decline was less in training than in non-training practices.

For several features there were interactions between being a training practice and presence of a feature in 1982. For example, more training than non-training practices were undertaking workload analysis in 1982 (Table 1).

**Table 1.** Changes in personnel, practice organization, record systems and educational activities between 1982 and 1990 for 62 non-training practices and 62 training practices.

Feature	No. of non-training practices (training practices) <sup>a</sup> which			
	Did not have feature		Had feature	
	In 1990 or 1982	In 1982 but did in 1990	In 1982 but not in 1990	In 1982 and 1990
<i>Personnel</i>				
Employed nurse	1 (0)	41 (21)	0 (0)	19 (41)
Marriage counsellor	56 (33)	2 (15)	2 (10)	1 (4)***
Medical student	17 (9)	11 (7)	7 (2)	26 (44)
Practice manager	14 (6)	22 (18)	3 (3)	22 (35)
Social worker	34 (30)	4 (11)	8 (8)	15 (13)
<i>Practice organization</i>				
Appointment system	11 (5)	11 (2)	3 (5)	37 (50)
Deputizing service used	51 (54)	2 (4)	3 (1)	6 (3)
Dispensing practice	40 (54)	0 (2)	1 (3)	21 (3)**
Inter-practice rota for out-of-hours care	36 (33)	8 (11)	2 (8)	16 (10)*
Patient participation group	60 (49)	1 (11)	0 (1)	1 (1)**
Pooled list of registered patients	18 (23)	10 (5)	11 (13)	23 (21)
Purpose-built premises	23 (24)	23 (11)	3 (2)	12 (24)
<i>Record systems and educational activities</i>				
A4 records	54 (54)	4 (1)	2 (2)	2 (5)
Age-sex register	8 (4)	24 (7)	1 (4)	29 (47)
Audit	36 (15)	15 (17)	4 (6)	7 (24)*
Collaborative research	51 (40)	1 (5)	8 (6)	2 (11)**
Computer	25 (11)	33 (49)	0 (1)	4 (1)***
Diagnostic index	35 (15)	17 (24)	3 (2)	6 (20)**
Individual/practice research	45 (27)	3 (10)	9 (16)	5 (9)*
Library	9 (1)	24 (5)	3 (0)	26 (56)*
Practice educational meetings	27 (12)	21 (14)	5 (7)	9 (29)
Summary cards in notes	5 (1)	34 (19)	1 (1)	20 (40)
Workload analysis	39 (18)	16 (26)	1 (7)	6 (11)**

<sup>a</sup>Total less than 62 in some cases. Significance of effect of training, from logistic regression analysis: \* $P<0.05$ ; \*\* $P<0.01$ ; \*\*\* $P<0.001$ . Significance of interaction between being a training practice and presence of feature in 1982: \* $P<0.005$ ; \*\* $P<0.01$ .

There were no statistically significant differences in 1990 between the 124 practices with an RCGP member in 1982 and the 163 without for the mean age of partners (42.7 and 42.1 years, respectively), the mean list size for each partner (1860 and 1779, respectively) or the Jarman underprivileged area score of the ward in which the practice was located (0.7 and 1.5, respectively).

## Discussion

The sample of practices in this study was one of opportunity and was not a random sample of practices throughout the United Kingdom. Nevertheless, there are few studies of change in practices over intervals of several years. One example is the work of Cartwright and Anderson.<sup>16</sup> The Gloucestershire, Avon and Somerset study is simpler in design and on a smaller scale than their work although it has followed progress in a cohort of prac-

**Table 2.** Changes in clinical activities and clinical and office equipment between 1982 and 1990 for 62 non-training practices and 62 training practices.

Feature	No. of non-training practices (training practices) which			
	Did not have feature		Had feature	
	In 1990 or 1982	In 1982 but did in 1990	In 1982 but not in 1990	In 1982 and 1990
<i>Clinical activities</i>				
Blood pressure screening	15 (5)	36 (28)	0 (2)	11 (27)
Developmental screening	13 (6)	19 (14)	3 (4)	27 (38)
Diabetes clinic	41 (23)	17 (31)	0 (2)	4 (6)**
Elderly patient screening	37 (25)	21 (29)	4 (1)	0 (7)***
Obesity clinic	48 (42)	11 (12)	3 (4)	0 (4)
Smoking clinic	55 (50)	7 (11)	0 (0)	0 (1)
<i>Clinical and office equipment</i>				
Dictating machine	6 (1)	10 (3)	2 (1)	44 (57)
Electrocardiograph	12 (4)	10 (7)	5 (3)	35 (48)
Microscope	34 (31)	7 (6)	10 (9)	11 (16)
Peak flow meter	0 (0)	6 (0)	0 (0)	56 (62)
Photocopier	9 (6)	20 (24)	1 (3)	32 (29)
Proctoscope	4 (0)	14 (7)	3 (3)	41 (52)
Sigmoidoscope	50 (43)	4 (9)	5 (3)	3 (7)*
Sterile dressings	1 (0)	11 (4)	0 (0)	50 (58)
Typewriter	0 (0)	1 (0)	1 (0)	60 (62)
Vaginal speculum	0 (0)	1 (0)	0 (0)	61 (62)

Significance of effect of training, from logistic regression analysis: \* $P<0.05$ ; \*\* $P<0.01$ . Significance of interaction between being a training practice and presence of feature in 1982: \* $P<0.01$ .

tices. Some sequential descriptions of general practice can also be found in government statistical bulletins,<sup>17</sup> but these are limited to reports of trends in basic aspects of practice such as list size or the number of partners or assistants. The process and rate of change in a cohort of practices have not been directly investigated in previous studies so the findings presented here are an important contribution to the understanding of development in general practice.

In 1982 the practices in this study all had at least one partner who was a member of the RCGP and it is possible that the level of development of practices without a member of the RCGP and which were not included in the study may have been lower than those that were included. Therefore, the present study may not have investigated change or innovation in the least developed practices and it may be that there is a group of practices which have developed even less quickly than the non-training practices that were included. However, there were no statistically significant differences between practices with and without an RCGP member for the mean age of partners, the mean list size for each partner or the Jarman underprivileged area score of the ward in which the practice was located.

Despite these qualifications a number of conclusions can be drawn. In the study practices the changes that had taken place between 1982 and 1990 were considerable. This extended over a range of services such as staff, items of equipment, clinical activities such as screening and clinics, and educational activities. Moreover, 31% of training practices that did not have purpose built premises in 1982 had such premises by 1990 and for non-training practices the proportion was 50%. Thus, even before the

1990 general practitioner contract, the pace of change in many practices was rapid.

Against this background of considerable change, practices that had a trainee in 1982 were more likely to be innovative despite the fact that they were already more developed, indicating that non-training practices were not only failing to catch up with training practices, but that the gap between them became wider in the period 1982–90. Some patients attend highly developed practices that offer a range of clinical facilities, comprehensive equipment and a full complement of staff, and which are continuing to develop but there must be concern that other patients attend less developed practices that are making progress at a slower rate. Strategies to improve general practice have to be judged by whether they encourage undeveloped practices to change rapidly and thereby close the gap between the most and the least advanced. Some elements of the new contract have promoted an accelerated phase of development for certain aspects of care such as the number of specific clinics offered by practices, and the number of practice nurses and computers.<sup>18</sup> However, the fundholding scheme may result in an already developed group of practices advancing even more quickly and thereby widening the gap between the most and the least developed. Future research should seek to document the effects of the health service reforms and new contract for general practitioners on innovation in general practice. Studies that record the progress of development in practices over a period of years rather than studies undertaken at a single point in time are preferable as they provide direct information about change. Some light may be thrown onto the process of innovation in practices by the study of practices that decide to seek training status. During the period under investigation in this study some non-training practices became training practices, and vice versa, and this might have led to an underestimation of the effect of being a training practice on changes in practices.

Three factors may explain the different rates of innovation in the two groups of practices found here. First, the doctors and staff in training practices may be inherently more innovative. Secondly, they may face fewer obstacles to the introduction of innovations. Finally, the accreditation procedure itself may serve as a stimulus to innovation. This study provides some limited evidence about the value of reaccreditation of practices as a method to promote practice development. Although the differences between training and non-training practices include clinical activities, organization and equipment, there are a group of features that reflect the specific requirements for accreditation as a training practice by the Regional General Practice Postgraduate Education Committee in the South Western Region Health Authority (see above).<sup>13</sup> The criteria for the appointment and reappointment of general practitioner trainers are discussed with trainers, reviewed regularly and issued to trainers and those seeking to apply for approval. Therefore, while training practices in this study were more likely to be innovative over a range of clinical and organizational activities, many features were directly considered in the accreditation procedure, such as age–sex and diagnostic registers, audit, workload analysis and practice libraries. This finding suggests that while training practices may be inherently more innovative, the accreditation scheme has promoted either additional innovation or channelled innovation towards specific areas of practice.

While a formal randomized controlled trial is necessary to evaluate the full effects of accreditation of practices, these findings provide guidance about the potential role of a future scheme. For more advanced practices a number of accreditation schemes are already available, including not only accreditation for vocational training but also for organizational audit<sup>19</sup> and British Standard BS5750.<sup>20</sup> It is appropriate that there should be

challenging targets for innovative practices, but any generally applied scheme must take into account the needs of less developed, less innovative practices. Unless this approach is adopted the gap between the 'haves' and 'have nots' of general practice will continue to grow.

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## Food for thought...

*'The pressures and stresses on junior doctors have been well documented... but the possibility that young general practitioners already suffer from burnout at the start of their careers is of some concern'*.

Kirwan M and Armstrong D. Investigation of burnout in a sample of British general practitioners. *May Journal*, p.259.