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**Measuring Skill Mix in Primary Care:  
Dilemmas of Delegation and Diversification**

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***DISCUSSION PAPER 144***



**MEASURING SKILL MIX IN PRIMARY CARE:  
DILEMMAS OF DELEGATION AND DIVERSIFICATION**

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## **ABSTRACT**

The purpose of this Discussion Paper is to examine the constraints upon, and opportunities for, spreading the workload of general practitioners (GPs) more effectively and efficiently among members of the Primary Health Care Team (PHCT). Current knowledge of GP activity is outdated and based on self-reporting by GPs and nurses using methods which may be unreliable.

The policy background and the research background are briefly outlined before discussing methodologies for examining the activities of the PHCT and assessing whether tasks can be delegated. Attitudes to delegation and examination of outcomes are also addressed. The central concept of the proposed study design described here relates to delegation and the issues arising thereof, thus taking account of the identification of tasks suitable for delegation and the acceptability of delegation to other members of the PHCT and to patients. There are few studies which investigate the feasibility of tasks currently undertaken by one group of professionals which could be carried out by another group. If the study proposed here is able to demonstrate that delegation of at least some tasks is both feasible and acceptable, changes in health care delivery in general practice would be inevitable.

## INTRODUCTION

### Policy Background

At a time of rapid changes in primary care provision the concept and implementation of skill mixing in Primary Health Care Teams (PHCTs) becomes ever more elusive. Broadly the main issues are:-

- *changes in the primary care sector* arising from government policies such as the Community Care Act (1990), Health of the Nation (1991) and the increasing emphasis on a primary care-led NHS mean that more people are being cared for in their own homes than ever before with particular reference to early discharge from hospital, shared care of chronically ill people, an increasingly ageing population and the mandatory requirements of annual surveillance for everyone over the age of 75.
- *manpower issues* - the anecdotal reports of difficulties in recruiting new partners into some practices and of reduced numbers applying for vocational training posts. There is also a rise in the number of part-time GPs, particularly female doctors and GPs retiring earlier. Thus the quoted prediction that the number of new GPs may ultimately fail to meet demand may be realised. Equally, there are substantial shifts in the numbers of district nurses, health visitors and practice nurses. This is an elaborate and complex issue where long term planning is needed rather than short term "stop gap" solutions.
- *boundary definitions and enhanced roles* - the professionalisation and rise in the numbers of practice nurses coupled with the emergence of the nurse practitioner and the clinical nurse specialist in the UK. The numbers of practice nurses have more than doubled, from 4,632 weighted whole time equivalents in 1989 to 9,500 weighted whole time equivalents in 1993 (Atkin et al, 1993), and 58% of practice nurses had been in their current post for less than 5 years. This rise in (wo)manpower is taking place alongside declining numbers being recruited into health visiting. Thus boundaries are becoming blurred and roles extended.

It is critical to the success of a primary care-led NHS that services are cost-effective and responsive to the needs of patients. In providing such services it is also critical to ensure that good, worthwhile career opportunities exist for those wishing to work in a primary care setting. This, taken together with the factors listed above, suggest that changes in workload distribution need to be fully explored to provide every opportunity for delegation from the GP to other members of the PHCT.

## **PURPOSES OF THE PAPER**

The purposes of the paper are two-fold:

*Firstly*, to review the limited evidence available and the research methods employed or which could be employed to answer some of these questions and:

*Secondly*, to propose ways of examining the constraints upon, and the opportunities for, spreading workload more effectively and efficiently amongst members of the PHCT.

Although transfer of tasks is possible between *all* members of the PHCT, the central issue raised by the second question is how to assess the acceptability and appropriateness of delegation from the GP to other workers in the PHCT.

If GPs were able to delegate some of their work to other staff, then they would, in principle, be able to change the balance of their own activities possibly towards more intensive management of "serious" patient problems; moreover, practices with many non-medical clinicians may be able to deal more fully with a wider range of work - thereby increasing the quality of services provided - and they may be able to deal with problems that would otherwise be referred elsewhere for treatment. More prosaically, it may simply ensure that the current level of activity in primary care can be maintained and possibly increased.

The principal concern, therefore, is that of delegation or referral, although the possibility of increasing the quality and range of services that can be provided by the PHCT is also important. To establish whether or not either is a realistic possibility, it is essential that the *nature and pattern*

*of GP activity* is reliably documented; to assess which if any of these activities *could be carried out by other members of the PHCT*; to explore the *acceptability of new arrangements* to all the partners in the primary health care team and to patients; and to *examine what impact* this might have *on patients* and the nature and scale of *practice activity*.

There have been some studies in cognate areas: for example, the debates about the working patterns of junior hospital doctors and in particular the number of hours worked (Greenhalgh, 1994), but there have been very few which directly address the problem of whether or not tasks currently undertaken by one group of professionals can be undertaken by another. There are a number of complex methodological issues involved in assessing the relationship between skill mix and activity and outcome, which need to be clarified before showing how we intend to collect data to answer that problem. In the next section, the literature in this field is briefly reviewed focusing on the methodologies that have been used by other researchers; we have chosen only to review UK literature since we believe that the issues surrounding skill mix in PHCTs are peculiar to the UK. A literature review is currently being undertaken which will take into account the broader aspects of skill mix and Richardson and Maynard have recently reviewed the issues surrounding doctor-nurse substitution (1995). In the following section we assess the methodological options available in order to justify the chosen study design.

## **RESEARCH BACKGROUND**

There have been several studies of GPs self-assessed workload. For example, the review by Thomas et al (1989) of four Department of Health studies in the 1980s shows that, in a 'normal working week', general practitioners spent about 38 hours on general medical service duties (including 24 hours of patient contact and five hours of travel to home visits), they saw 150 patients or their representatives in surgery, and made 26 home visits. In an "annual average week", taking into account holidays and sick leave, general practitioners undertook 90% of this workload.

There is, however, little useful evidence on the nature and pattern of GP activity which distinguishes between clinical tasks of differing complexity and includes non-clinical tasks except in respect of specific conditions such as diabetes (Hayes and Harries, 1984; Farmer and Coulter,



1990) or specific programmes such as the breast screening programme (Ashby, Buxton and Gravelle, 1990); and hence on the possibility for delegation. Furthermore, although there have been many recent changes in the GP's conditions of service, and several discussions about the importance of developing partnerships (Irvine, 1993; Pringle, 1992), there is little recent evidence on GPs' attitudes towards delegation. In addition to the study by Bowling (1981), the Georgian Research Society in their pilot study reported in 1991 found that practice nurses were performing tasks of greater complexity than had previously been reported by Greenfield et al (1987) and which included recognition of anxiety and depression and examination for breast lumps.

## **RESEARCH ON ACTIVITY**

Current knowledge on GP activity is based on self-reporting by the GPs themselves. Thomas et al (1989) concluded that there were fundamental weaknesses in the individual study designs leading to biased and unrepresentative conclusions. Three of the studies reviewed relied upon GPs keeping diaries of their activities and one study collected data by a postal questionnaire. Moreover, as the data for the studies reviewed was collected between 1981 to 1986, it has little relevance for general practice under the new contract -especially, of course, for fundholders who are having to take on additional responsibilities for purchasing and for needs assessment. A more recent workload survey has been carried out for the Doctors and Dentists Review Board (Department of Health, 1991) but - like the previous ones - it also relies on self-report about activity in half-hour periods over one week using postal questionnaires.

It is therefore imperative to find a way of collecting more valid data on GP activity: ideally, one would "shadow" a GP throughout the day but this is impractical, labour intensive and expensive; the approach suggested here - to "help" them complete the questionnaires whilst on site - is based on the view that there will be more incentive to be accurate in the presence of a research observer.

It is also important to document the current activities and "typical" skills of the other members of the PHCT. Once again, although there have been significant innovations in terms of nurse prescribing and the evolution of the nurse practitioner, there is little evidence on what they actually do; and current evidence relies on diary and questionnaire data of unknown validity (Atkin et al 1993; Dunnel and Dobbs, 1982; Anon, 1994). For example, Atkin et al (1993), in

their national census by postal questionnaire of practice nurses reported that most practice nurses undertook a variety of tasks ranging from immunisation and vaccination to taking ECGs, and over 90% ran general health promotion clinics. Attitudes to delegation were not addressed in that project.

However, the Georgian Research Society, in their pilot study, found that general practitioners responded positively to the extension of the role of the practice nurse in providing counselling and advice (93%) and being directly available to patients (98%), but had reservations about the evolution of that role towards nurse practitioner status in terms of being able to diagnose and initiate treatment independently (38%). In their later national sample in 1993 (2,013 out of 4,800 mailed out), Robinson, Beaton and White found that 93% of GPs would welcome expansion of the work carried out by practice nurses and nearly a third (30%) wished to see those nurses acting as independent practitioners (see Fig.1).

## **RESEARCH ON DELEGATION**

These studies provide the background for research directly on the more contentious issue of delegation. There have been a small number of studies on the effectiveness of health care being carried out by nurses in primary care - for example, general health checks were reported to be ineffective in helping smokers to give up smoking, but contributed towards patients modifying their diet and total cholesterol concentration (Muir et al, 1994). Primary care interventions have also been shown to be effective in stopping a small proportion of patients (5% to 10%) smoking over the medium term.

**Fig.1 Tasks that the general practitioners expected the practice nurses to undertake**

| Task   | % of GPs expecting practice nurses to undertake task (n = 1748-1797) |
|--|--|
| Measuring blood pressure                           | 99.2   |
| Sterilizing and maintaining equipment              | 95.5   |
| Running health promotion clinics                   | 92.7   |
| Advising on and giving travel immunization         | 92.4   |
| Carrying out venepuncture for blood sampling       | 89.5   |
| Measuring blood glucose level                      | 85.5   |
| Performing cervical smears                         | 84.1   |
| Performing childhood immunization                  | 82.1   |
| Helping with minor surgery clinics                 | 76.0   |
| Measuring peak expiratory flow rate                | 75.4   |
| Examining for breast lumps                         | 64.5   |
| Performing electrocardiograph recording            | 61.1   |
| Carrying out home visiting of over 75 years olds   | 55.2   |
| Recognizing anxiety and depression                 | 53.6   |
| Observing skin for signs of disease                | 38.4   |
| Carrying out home visits for other reasons         | 32.4   |
| Making referrals directly to social services       | 31.3   |
| Summarizing medical notes                          | 27.5   |
| Performing stethoscopic examination of heart/chest | 8.2  |
| Making referrals directly to hospital departments  | 7.0  |

n = range of number of respondents replying to questions

Source: Robinson, Beaton and White, *British Journal of General Practice*, 1993; **43** 25-29

Brown et al (1992) reported that health check procedures on patients aged 75 and over varied greatly and most of the practices surveyed used their practice nurses to undertake these health checks. However, over a third of these practice nurses had no training in the surveillance of the elderly population.

Whether there is, in fact, any possibility *in practice* for other members of the PHCT to substitute for the doctor depends not only on their skills and the mix of clinical and non-clinical skills required and their potential effectiveness (Muir et al, 1994), but also on the extent to which they are fulfilling their other roles and responsibilities.

The potential for substitution depends, of course, on the current division of labour and the size of the market: typically, in the UK, general practices are relatively small "firms"; so that "substitution" may actually involve additional staff. Empirical examinations of skill mix in the health services have usually been concerned with larger groups of staff - for example nurses on a ward (Poole, 1987). Thus, whilst a broad-brush or macro examination might, for example, show that 20% of a doctor's time could be substituted by a mix of other fractions of the manager and the practice nurse (and perhaps other members of the PHCT), the practicalities of weaving together such a collection of part-time workers into a coherent team may be insurmountable. Whilst this depends on the size and stage of organisational development of the practice, it is clearly pertinent to enquire not only about the GP's attitude towards delegation, but also about the views of all the members of the PHCT towards team management, together with an assessment of patients' views on the acceptability of the different kinds of arrangements which result.

The possible disbenefits of GP delegation to other members of the PHCT should also be addressed. There may be fragmentation of care, loss of "whole person" holistic care and/or collusion of anonymity - all of which may reduce the quality of care. Note that the existence of holistic care - and even the building of a good doctor-patient relationship - is perhaps an expression of professional optimism rather than of serious concern to the patient. Moreover, there is no systematic research data; interviews with patients or questionnaires self-completed by them typically refer to the anticipated or previous consultation (with questions such as "Do you want to see a particular GP/nurse?" or "Were you able to see the GP/nurse you wanted to; how long did you have to wait?"), in other words to the instantaneous relationship which might be or was established during the ten minute interaction, rather than any assessment of satisfaction with the current encounter in terms of the quality of a relationship *previously* established. Obviously, this issue needs to be incorporated in a study design. Data are also required on outcomes for patients - even if only to show that there is no discernable difference with different organisational arrangements and no negative impact on patients' health.

Finally, there is also a potential cost implication: is it possible to increase the throughput of primary care without increasing costs so that the cost per patient treated is reduced, or is delegation more expensive? Whilst "diluting" the skill mix in a practice may enable more care to be delivered to the same patients because additional staff can carry out some of the existing functions and activities of the GP, more extensive delegation may imply additional administrative costs.

## **OBJECTIVES OF ANY EVALUATION**

This discussion allows us to be more specific about what needs to be ascertained in order to evaluate the impact of different skill mixes in PHCTs:

- 1\* To document the current pattern of activities of the GP and the other members of the PHCT and the interactions between them.
- 2\* To assess the potential for some of the GP's activities to be performed by other staff in terms of the mix of skills required.
- 3\* To examine the attitudes of the GPs towards delegation, of the managers and nurses to taking on other responsibilities, and of everyone's attitudes towards team management.
- 4\* To document the effects on patients (for example referral rates, repeat visits, satisfaction, symptom control etc.) and their views of the different working arrangements of the PHCT.
- 5\* To estimate the costs of delegation in practices of varying size and configuration in order to make a preliminary assessment of cost-effectiveness of changes in skill mix in terms of the above outcomes

## EXPLORING METHODOLOGIES

It should be emphasised that we are searching to evaluate the effects/impacts of a relatively minor restructuring of a small group of health service providers *in vivo* and not in theory. In such a situation, the interactions between individual members of the group are an important factor; it is therefore inappropriate to conduct a pure controlled trial.

The discussion below is organised in terms of the five objectives listed above: however, there are two preliminaries: the measurement of the skill mix itself and the measurement of practice collaboration among members of the primary health care team.

### ***Measurement of skill mix:***

The skill mix of a team can, in principle, be measured in a number of ways: in terms of disciplines, level of qualifications within a discipline, relevant experience or competence (skills). Given the mixture of professions in the primary health care team it is probably inappropriate to use team members' qualifications or experience as a direct measure for aggregating across the primary health care team; however, it *would* be appropriate to make an assessment of the mixture of qualifications within the GPs in a PHCT, or the mixture of nurses within a PHCT, in terms of both experience and qualifications. Assessing relative competence by direct measurement would be difficult as well as requiring a longer period in order to develop a consensus on the equivalences of apparently different skills.

***Conclusion:*** *The only feasible measure of skill mix, therefore, is also the simplest: viz., what is the practice configuration in terms of weighted time equivalents of doctors, managers, and nurses.*

### ***Measurement of practice collaboration:***

There are two possible sources for the measurement of practice collaboration or the extent to which the members of the primary health care team work together. Gregson, Cartlidge and Bond based indices of collaboration on interviews with 148 doctor-nurse and 161 doctor-health visitor pairs about the extent of their cooperation when they had patients in common. The authors propose that the indices might be used as a measure of one aspect of the quality of service offered by a PHCT or *to assess the effect of changes in working patterns* or the degree of collaboration within the organisation. However, that method presupposes that there is a circumscribed list of 'patients in common'; our concern is to assess the extent of intra-PHCT collaboration across all patients on the list and amongst all professionals.

Another possible instrument for measuring practice collaboration would be to examine teamworking using a questionnaire designed by Poulton and West (1993). This questionnaire has been used in a wide variety of PHCTs (approximately 50 teams in total) and has been evaluated for reliability and validity.

***Conclusion:*** *There are methods of constructing simple indices of collaboration which are reliable and valid.*

### **OBJECTIVE 1\*: Possible Methods for Documenting the Activities of the PHCT**

In addition to self-reporting via questionnaires, a number of methods have been developed to document the patterns of activity of groups of workers.

- (i) Activity analysis growing out of the work study methods of the 1930s. Based on sampling principles, an observer records, at regular and frequent intervals (for example 5, 10 or 15 minutes) according to pre-defined classification of activities, what each member of a group of staff is doing at that moment. When recording joint activities, a judgement has to be made by the observer as to which particular activity is to be recorded Overall, these data are taken to

reflect the sum of activities of the different categories of staff over the whole period.

- (ii) Time diaries in which the index member of staff completes a diary of their activities over, say, a week or a fortnight, also according to a predefined classification of activities and at a specified interval and cross-checked with other members of the team.
- (iii) Non-participant observation which involves a field-worker shadowing the index member of staff for extended periods, allowing the staff member to explain what they have been doing. Another possibility for generating collateral data is to video interactions between patients and health care professionals.

Asking a selection of GPs to record their activities in a time diary has already been criticised by Thomas et al (1989) in that different estimates of time spent with patients varies whether, for example, data refer to a "normal working week" or an "annual average working week". The method is based on the principal activity recorded during a half hour period. Memory recall and tendency to maximise time spent in patient contact contribute to the lack of reliability in the method of data collection. For example, the numbers of consultations estimated in the GP workload survey is high compared to the Third National Morbidity Survey of General Practices (RCGP, OPCS and DHSS, 1986). Similar criticisms have been made of studies where other groups of NHS professionals have been asked to complete diaries.

Whilst the problem of representativeness (of the time period used for recording) is also a problem for other methods, the additional difficulty with the way time diaries have been used is that respondents may have every incentive to inflate their reported working hours, given that the professionals have perceived that the results were to be used to determine pay rates for example within a "cost-effectiveness" perspective. However, inasmuch as the basic distortion arises from time inflation, this is likely to apply equally to all activities: it would not, therefore, affect an estimate of the relative frequency of different activities. Clearly, however, diaries cannot be relied on as the sole source of documenting workload activity.



Activity analysis, ie systematic observation by a third party, in principle, avoids these problems. Whilst it is a time-consuming labour-intensive method of estimating workload, it has achieved prominence in recent years for estimating nursing workload in hospitals and in the community sector. Disadvantages of this method in this context are that it is intrusive and that, as usually practised (at intervals of 5, 10 or 15 minutes), is inappropriate for monitoring the content of consultations which take on average only about ten minutes and often less. The only method, therefore, of collecting reliable data about activity and routine workload during the consultations is to have a very short inter-recording interval (for example 30 seconds) - effectively a continuous time record of activity.

Because the consultation time is very short, and the GP's consultation with the patient is backed up by records and supported by entries into notes, it may not always be easy for an observer to interpret the interaction between doctor and patient. Any study design incorporating the observation of the consultations as part of the methodology should therefore allow a period either at the end of each consultation or at the end of a block of consultations for clarification.

These methods only provide data from the professional's perspective: this will not tell us the patients' experience. In particular, unless the Korner categories are completed by the nurse on the patient record, we do not know whether or not the doctor has referred the patient to the practice nurse or vice versa for the specific condition. Essentially, although the majority of patients may only see one professional on any surgery visit, a proper picture of the pattern of care received requires a resume of the patients' path through the surgery encounter. This would also be a very labour intensive exercise.

***Conclusion:*** *Taken together, the three basic methods of estimating workload should provide an accurate, reliable and valid picture of GP activity. Ideally they should be supplemented by a record of the patients path through the surgery encounter.*

## **OBJECTIVE 2\*: Possible methods of assessing whether tasks can be delegated**

The main challenge of an investigation of this kind is to assess whether activities could have been referred. Forming a judgement about whether or not a task currently performed by one professional group could in fact be performed by another is obviously highly contentious. However, Robinson's study suggests that there is already a relatively high level of agreement among both GPs and nurses as to which tasks can be delegated - and which tasks should not be delegated.

One possible approach, given this apparently high level of agreement, is to use a consensus conferencing technique in which representative GPs (perhaps of those practices likely to be involved in the study) are brought together to discuss the specific tasks which they would expect practice nurses to carry out competently and those which should not be delegated. Another possibility is to use video recordings of cases using actors to play the roles of both doctor and patient as the focus for these discussions.

However, despite the relatively high level of agreement recorded between GPs, the focus for delegation is on those activities "at the margin", where some GPs are not delegating when others are. These variations in the level of delegation are likely to depend on the organisational stage of development of a practice and/or the size and composition of the PHCT. Consensus conferencing may only demonstrate differences between doctors who are in practices at different stages in their organisational development: this may not therefore be helpful.

An alternative is to carry out a focused group discussion separately in each of the practices with the same questions being posed. This should yield a consensus view, *within each practice*, as to what tasks should only be performed by a GP, those which can be delegated under supervision, and those that can be delegated without supervision. Moreover, this is unlikely to change dramatically over the period of the study. Although this means that different thresholds might be used in different practices, it makes the observation fieldwork more relevant and interpretable and allows for the comparison of thresholds of delegation with the

organisational stage of development of the practice and the size and composition of each PHCT.

It will probably be easier to reach agreement on which of the clerical and administrative tasks currently performed by GPs could be carried out by others (practice managers, receptionists, secretaries, technical support staff). For both clinical and administrative/clerical tasks, it will also be important to discuss how things could or will change in the future in order to provide better quality care for the practice population; and also what the implications are in terms of additional staff, training, or other resource needed to implement those changes.

These procedures will enable us to reach a clear view as to what ought to happen in the practice. Clearly, reality might be different. We would therefore propose to collect evidence on existing patterns of delegation via an addition to the procedure described for the activity analysis by asking the GP at the end of each consultation not only for clarification of what they were doing, if that is seen as necessary, but also whether or not some or all of the tasks involved in that consultation could have been delegated. In this manner, it should be possible to identify the "critical skills", namely those which, although they may be needed only occasionally, have a large impact on patient outcome.

It would then be appropriate, at the end of the period of fieldwork in the practice, to include a session where any differences between what ought to happen and what actually happened can be examined.

***Conclusion:** The appropriateness of delegation of specific tasks can be assessed from the point of view of the GPs both collectively in focused group discussions and individually at the end of each consultation*

### **OBJECTIVE 3\*: Possible methods of examining attitudes to delegation**

Attitudes towards delegation can be examined in a number of ways:

- individual questionnaires or interviews with the concerned parties

- group discussions using psychometric measurements of cooperation and non-cooperation
- a proxy for attitudes could be based on a "score" of observed collaboration on the basis of joint working and other administrative records
- another possible source of data would be based on reasons given for any recent changes in the pattern of activity.

Because we are dealing with the attitudes and intentions of the individuals directly concerned, individual questionnaires have a privileged status. However, in order to explore some of these answers and to see the extent to which they are currently translated into behaviour, it will be important to triangulate these data with group discussions and a "meta-assessment" of the level of collaboration.

**Conclusion:** *There are a number of different ways in which attitudes to delegation can be examined. These were explored in the pilot phase in order to establish the most appropriate mechanisms which were meaningful to each of the professional groups involved.*

#### **OBJECTIVE 4\*: Possible methods of examining "outcomes"**

The measurement of outcome in primary care is complex: the measurement of any health change due to minor in-service restructuring especially so. We can consider four types of outcome: change in skill mix and practice population health; change in health of individual patients/groups of patients; other "intermediate" outcomes for the patient; impact on practice activity that directly affects the patient and impact on other aspects of the practice activity.

##### *(i) Change in skill mix and practice population health*

Whilst there are some current projects exploring whether generic health status instruments such as the SF-36 can detect the impact of primary care restructuring such as the move towards fundholding, it is unlikely that there will be any measurable impact of skill mix changes in the primary health care team on the health of the entire practice population,

(ii) *Change in health of individual patients/groups of patients*

Although there is unlikely to be a general impact, the health/morbidity status of specific groups of patients may be more sensitive to specific organisational arrangements of the PHCT. There are potentially a wide range of possible condition-specific impacts such as better symptom control and reduced complications. These could be measured directly or indirectly via the incidence of adverse events; the extreme being admissions to Accident and Emergency Departments for conditions that should be manageable by primary care interventions. Currently popular targets for shared care arrangements are asthmatics and diabetics. Asthmatic control can be monitored in terms of peak flow assessments associated with the use of maintenance doses or with the acute treatment with steroids; and there have been numerous monitoring and effectiveness studies usually based on glycaemic control, which have accompanied the restructuring of diabetes care (Hayes and Harries, 1984; Bardsley, Astell, McCallum and Home, 1993).

(iii) *Other "Intermediate" Outcomes*

There are a wide range of other possible impacts both in terms of intermediate outcomes for the patients (such as referral rates) and impacts on the practice activity which might affect the patients. These are detailed in Annexe 1: however, they are unlikely to be of practical utility unless one is able to carry out a very large study, because there would be an insurmountable problem of attribution.

(iv) *Impact on Practice Activity*

There are also more general impacts on self-perceived health and satisfaction with the care provided which may improve if new practice arrangements provide the support to make people better informed and more in control of their condition, or more confident that help will be there when needed. Both types of health outcome are potentially measurable and suitable instruments exist.

**Conclusion:** *It is unrealistic to expect a straightforward improvement in the practice population's health as a consequence of organisational changes. However, the outcomes for selected patient groups such as asthmatics and diabetics can be monitored by targeted questionnaires about the management of their care, in conjunction with scrutiny of computerised health records.*

## **PROPOSED STUDY DESIGN**

The second purpose of this paper was to draw on these reviews of previous research and possible methodologies in this area so as to propose practicable ways of examining workload and referral within one or more PHCTs. The four objectives of any evaluation have been described above: below, we outline a model study design corresponding to each of the four objectives based on the preceding review of methodological options; and then briefly consider some sampling and data collection issues. In total, ten PHCTs are participating in this exercise.

### **Objective 1**

*To document the current pattern of activities and interactions between the GP and other members of the PHCT.*

Two sources provide quantitative estimates:

- continuous time recording (actually recorded every 30 seconds) of a sample of the consultations with each GP in the practice (Instrument 1 - GP Consultation Matrices).
- all GP and nurse members of the PHCT complete diaries on their activities on a half hourly basis for at least a complete week during the observation period (Instrument 2 and 3 - GP and Nurse Diaries respectively).

## **Objective 2**

*To assess the potential for some of the GP's activities to be performed by other members of staff in terms of the mix of skills required.*

Information is recorded in three different ways:

- focused group discussions in each practice in order to define which activities ought to be performed by each member of the PHCT and to discuss possible ways of change for the future (Instrument 7 - Protocol for Focused Group Discussions)
- professional assessment to include a short period at the end of each consultation observed (or after a group of consultations) to see whether all or part of the consultation could be delegated or not (Instrument 1 - GP Consultation Matrices)
- professional self-assessment of which activities other than consultations during the working day could have been delegated to someone else (Instrument 8 - GP Delegation Diary)

## **Objective 3**

*To examine the attitude of GPs towards delegation, of the practice managers and nurses to taking on other responsibilities, and of everyone's attitude towards team management.*

This is achieved by:

- individual questionnaires to all members of the PHCT on teamworking, (Instrument 6 - RCN Teamworking questionnaire) sources of referral (Instruments 2 and 3) and attitudes towards delegation (Instrument 7)
- a practice view of the acceptability and appropriateness of task delegation solicited through focus group discussions held at the beginning and again at the end of our observation period (Instrument 7 - Protocol for Focused Group Discussions)
- a specific questionnaire to the practice manager (Instrument 9)

#### **Objective 4**

*To document the outcomes for patients and their views of the different working arrangements of the PHCT.*

An assessment of the quality of the service provided is obtained from reviews of the care of patients from specific target groups (asthmatics and diabetics) as documented in their records (Instruments 4A and 4D - protocols for records of asthmatics and diabetics respectively), and a record of patients' surgery visits made at the same time as they complete a satisfaction questionnaire (Instrument 5 - Patient Satisfaction Questionnaire) in order to check whether or not there is any evidence of shared care and, if so, the nature of this shared care.

This is achieved by:

- questionnaires distributed to specific tracer groups (asthmatics and diabetics) (Instrument 10A and Instrument 10D)
- questionnaires to patients attending the surgery during our observation period in order to record type of, and satisfaction with, consultation (Instrument 5)



## **Objective 5**

*To estimate the costs of delegation in practices of varying size and configuration in order to make a preliminary assessment of cost-effectiveness.*

Data collected via "practice profiles" and through doctors' and nurses' diaries will be used to estimate relative costs of consultations. When compared with the delegation diaries, these can be used to estimate the potential cost savings attributable to delegation and referral (in the absence of any observable differences in any of the outcome measures). Where there are differences in outcome measures, these can be compared directly with the differences in costs.

At a later stage it may be possible to return to the practices (perhaps after 6-9 months) to document whether any changes have taken place in the configuration of the PHCTs and their costs and any changes in outcomes.

## **SAMPLING AND DATA COLLECTION ISSUES**

### ***Sampling***

The objective of the study is to assess whether a richer mix in the PHCT makes any difference to what the GP actually does; and to the outcomes both for the patients and in terms of the impact on practice activity. In principle, several of the sub-questions are amenable to large-scale data collection but the documentation of the distribution of activities within the PHCT and an assessment of the possibility of delegation/referral and its impact upon the workload of the GP require detailed case studies. This implies an explicit selection of "typical" practices, chosen purposefully to have very different configurations of the Primary Health Care Teams. It seemed essential that the practices should include at least one practice nurse in order to explore the hypotheses of the study; initially, we also specified that there should be at least one practice manager; but on further enquiry we found that the post was not sufficiently well defined to distinguish substantively between a practice with a senior receptionist and no

practice manager and a practice where the hitherto senior receptionist has just been promoted to - or renamed as - practice manager(ess).

Although it did not appear to be essential from the point of view of the study, it was seen as preferable to carry out the study in different locations: city vs suburban vs rural. Within this framework, the paramount dimension for stratification would be the discipline mix in the practices<sup>1</sup>.

### ***Activity Analysis and Non-Participant Observation***

The full scale study is currently being undertaken by three field workers in each of the ten practices over a period of a fortnight in two-hour sessions. The observer(s) also document activities during and around domiciliary visits.

The crucial basis for an activity analysis is the classification of activities. The broad categories of activities cover diagnosis and follow-up, health promotion and screening, treatment, and so on. The initial instrument developed was based on those activities used in assessing trainee GPs (see Annexe 2). This was then tested in two pilot practices in order to develop the most appropriate classification of activities for identifying possible delegation. The proposed modifications have been discussed in a seminar/workshop of academic GP researchers.

### ***Questionnaires on Patient Satisfaction***

There have been several reviews of patient satisfaction questionnaires (for example, Carr-Hill et al, 1989) which were used as a base for the instrument. However, there were specific

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<sup>1</sup> There are several other axes on which the practices could be characterised. One could, in principle, distinguish between fund-holding and non-fund-holding because in the former the GP exercises greater control over skill mix and task allocation; the problem is that there are unlikely to be many large non-fund-holding practices beyond 1996 (the end of the study period). Distinguishing between those with and without trainers would probably overlap with the selection by discipline mix; and one could also stratify by list or preferably partnership size. One possibility was to consider extreme examples as case studies ("leading edge practices") but this was thought to be unlikely to provide material useful for generalisation.

questions which had to be introduced: for example, whether or not the patient prefers waiting in order to be seen by one particular member of the PHCT; and whether they believe they get equally good "treatment" from the different members of the PHCT.

### ***Focused Group Discussion***

The purpose of these group discussions is to identify, according to the members of the PHCT, which groups of activities can be, and which group of activities should not be, delegated. The main questions for discussion are: what has happened to the skill mix in this practice over the last few years; is the current distribution of activities satisfactory; what ought to happen in the future; and what is needed to facilitate that?

### ***Administrative Records***

It can be assumed that practices which are large enough to employ both a practice nurse and a practice manager will be computerised. It should therefore be possible, in principle, to identify referrals and patients with frequent repeat visits relatively easily; and to identify which patients have contact with more than one member of the team.

There will also be a potential source of data at the FHSA in terms of ancillary staff - working as part of the PHCT but not on the books of the practice - and such quality indicators as cervical cytology screening rates and immunisation rates.

### ***Access to Practices***

The suite of data collection instruments described above in the study design mean that the process of data collection is not only detailed and time-consuming from the researchers' point of view, but also onerous from the point of view of the practices. Access to practices has therefore to be negotiated very carefully, which further limits the potential sample.

## CONCLUSIONS

There is enormous interest in the possibility of changing the distribution of tasks between different groups of professionals because of the potential for cost savings and for more effective working. Any proposed systemic changes in skill mix will also have important implications for training.

The difficulty is to find ways to assess which types of task can realistically be delegated/referred (taking into account professional concerns and other issues) and to what extent and, in particular, to assess the extent to which different professional groups will actually co-operate with such changes and to evaluate the impact upon patients of any changes in practice.

It is clear that this is a complex research task. The review of methodologies showed that there was considerable disagreement on the most appropriate methods - and even doubt as to whether the exercise was feasible at all. Based on the review of methodologies that have been proposed by others, we have developed 10 different instruments:

|               |   |
|---------------|---|
| Instrument 1  | GP consultation matrices                      |
| Instrument 2  | GP diaries                                    |
| Instrument 3  | Nurse diaries                                 |
| Instrument 4  | Asthma/diabetes records                       |
| Instrument 5  | Patient satisfaction questionnaires (generic) |
| Instrument 6  | Teamwork questionnaires                       |
| Instrument 7  | Protocol for focus group discussions          |
| Instrument 8  | GP delegation diaries                         |
| Instrument 9  | Practice manager questionnaires               |
| Instrument 10 | Asthma/diabetes questionnaires                |

In addition, practice information will also be collected from the practice manager and the receptionists.

Our pilot study, which was essentially a feasibility exercise, has demonstrated that our research objectives can be achieved. The practices for the main study have been chosen so as to vary in terms of numbers of GPs (and therefore list size) and numbers of practice nurses so that we sample large and small practices with weak and rich skill mixes.

Data collection is currently in progress with analyses being undertaken on a site by site basis; results are fed back to each practice. The proposed framework for presenting the results will be as follows:-

- Structure:** skill mix of practice (eg PN/GP; PAMS/GP)  
demographics of list  
establishment (practice profile)
- Process:** percentage of patients seeing a nurse (feedback survey)  
who does asthma and diabetes care? (records and patient questionnaires)  
GP and nurse activity patterns (workload diaries)  
referral within practice (delegation diaries)
- Outcomes:** perceived potential for further delegation (delegation diaries)  
team morale (teamwork questionnaire)  
effectiveness of asthma and diabetes management (records and patient questionnaires)  
patient satisfaction with GPs and nurses (patient questionnaires)

This complex and rich data set, with an attempt being made to address the contentious issue of delegation within existing and enhanced PHCTs, will, we believe, contribute to the debate of skill mixing in general practice and inform primary care providers of the opportunities for spreading workload more effectively and efficiently amongst all members of PHCT.

## ANNEX 1

### *Other 'intermediate' outcomes for the patient*

There are several other impacts which, given the location in the health care system, can be regarded as outcomes. For patients, the minimum would be to document referral rates and numbers of repeat visits under different working arrangements; and data on other statistics of the practice would be important for assessing the efficacy of the working arrangements themselves.

For example, whilst referral rates are records of process to management, a referral might be seen as a valued outcome of a primary care episode to a patient. However, given the high between-GP and between-practice variations (Fertig et al, 1993), it will probably not be possible to use overall referral rates as an indicator in a cross-sectional study. Whilst it would be more promising to look at the distribution of referrals to different specialties or the rates for different conditions which might be sensitive to the changes that are being studied, such as: cardiology, dermatology, gastroenterology, paediatrics and psychiatry; in all but the largest practices, numbers for any one specialty will be very small even during the whole period of the study.

One possible approach might be to see how many of those who were referred, had expected or had wanted this to happen (at least retrospectively). More promising as a proxy would be the number of repeat visits although the sources of variation here are still largely unexplained. It may also be useful to examine the use of pharmaceuticals for the tracer groups compared to a population norm either derived from data collected by the Prescription Pricing Authority or by Intercontinental Medical Statistics.

### *Impact on practice activity that directly affects the patient*

Given the difficulties of measuring health outcomes or their proxies, patient and carer views and satisfaction are bound to be prominent. Key topics likely to be influenced by changes in skill mix of the primary health care team are:

- \* appointment arrangements
- \* choice of members of a PHCT to see (e.g. GP or Health Visitor)
- \* length of consultation satisfaction with the information received
- \* satisfaction with any treatment
- \* views on access to care and confidence that future needs will be met
- \* range of information/knowledge acquired on health promotion and self-management of conditions.

The focus of data collection among these would depend upon which types of skill mix arrangements are being explored and whether the main impact is likely to be on administration of the practice or on the pattern of care. This information should be collected from the designated tracer groups (or all consulting patients). There is also the possibility of asking patient's satisfaction with previous care.

There may also be a number of 'marker' process measurements that could be used to assess the extent to which variations in skill mix has enabled practices to expand/improve the range of their services to patients to complement the patient views:

- \* time to get appointment
- \* time to get appointment with preferred GP
- \* opportunity to self-refer to practice nurse
- \* range of clinic and other supporting activities (use and access)
- \* length of consultations
- \* organisation of repeat prescribing, including frequency of reassessments
- \* extent of pro-active health checks and health promotion activities
- \* numbers of procedures conducted in the practice that might otherwise have required out-patient referral or day-hospitalisation
- \* arrangements regarding emergency and night visiting

One specific issue which has been posed in the literature as a criticism of teamwork is the lack of 'whole person' care; although others (Pringle, 1992) have argued that it is better for the patient to be treated by a collaborative team (rather than presumably by a single professional who may be absent on the day treatment is required).. This can be tested, at least on a basic level, in a very simple manner. A simple index could be devised by examining the patients records, seeing who was the most frequent professional seen during the last ten encounters and then constructing the index as the proportion of those encounters which were with the same person. The extent to which responsibility is diffused as a consequence of teamwork can be examined from both the carers and the patients by asking them to identify as the key worker.

#### *Impact on other aspects of the practice activity*

Variations in skill mix may also influence the opportunity to do research, the comprehensiveness of patient records, the quality and quantity of the annual report, the support given to trainees and other practice staff, the opportunity to undertake further education and training (study day leaves, etc.). None of these may be directly visible to the patients, though some, such as the quality and accessibility of records may be.

Paul Dixon  
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## ANNEX II

### *Essential Skills and Tasks*

In submitting the videotape of 20 consultations, the candidate will identify in a workbook where on the tape the essential skills and tasks can be seen to have been accomplished satisfactorily. The following is a first draft list of such skills and tasks [Note that for each item a clear definition and pass/fail criteria will be required]:

#### SKILLS

Minimum number of times should be shown in the 20 consultations

|   |   |
|---|---|
| Letting the patient talk                          | 5 |
| Use of silence                                    | 3 |
| Reflection of feelings                            | 1 |
| Exploration of patient's concepts                 | 3 |
| Use of open questions                             | 5 |
| Use of closed questions                           | 2 |
| Clarifying  | 5 |
| Interpreting                                      | 2 |
| Addressing the non-presenting complaint           | 5 |
| Rapport building                                  | 5 |
| Reacting to minimal clues                         | 2 |
| Management sharing                                | 3 |
| Challenge   | 1 |
| Information giving                                | 5 |
| Instructing                                       | 1 |
| Sensitive use of notes, telephone and/or computer | 5 |
| Non-directive counselling                         | 2 |
| Directive counselling                             | 1 |

#### SPECIAL CONSULTATIONS

|   |   |
|---|---|
| Consulting with a child (under 10)                                    | 3 |
| Consulting with an older patient (over 80)                            | 3 |
| Coping with a dysfunctional consultation                              | 1 |
| Patient consulting for the first time with that doctor                | 2 |
| Patient with a psychological illness                                  | 3 |
| Patient with a chronic disease for which the candidate has a protocol | 3 |



## FAIL SKILLS/ATTRIBUTES

Lack of respect for individual patients (on grounds of age, social class, mental ability etc) (0)

Evidence of racial, sexual or religious prejudice (0)

**TASKS:** Minimum number of times should be shown in the 20 consultations

[From "A clinical component for the MRCGP"]

### a. Discover the reason for the patient's attendance

Elicit the patient's account of the symptoms which made him/her turn to the doctor 5

Obtain relevant items of social and occupational circumstances 5

Explore the patient's health understanding 5

Enquire about continuing problems 5

### b. Define the clinical problem(s)

Obtain additional information about symptoms and details of medical history 5

Assess the condition of the patient by physical inspection if appropriate 5

Make a working diagnosis 20

### c. Explain the problem(s) to the patient

Share the findings with the patient 5

Tailor the explanation to the patient 5

Ensure that the explanation is understood and accepted by the patient 5

### d. Address the patient's problems

Assess the severity of the presenting problem(s) 5

Choose an appropriate form of management 5

Involve the patient in the management plan to the appropriate extent 5

e. Make effective use of the consultation

Make efficient use of resources 5

Establish a relationship with the patient 5

Give opportunistic health promotion advice 5

Professor Mike Pringle  
Chairman of the FBA Working Party  
22 May 1994

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