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Skill Mix In Primary Care

A Study of the Interface between the General Practitioner and other members of the Primary Health Care Team

A Final Report

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SKILL MIX IN PRIMARY CARE

A Final Report On

THE INTERFACE BETWEEN GENERAL PRACTITIONERS AND OTHER MEMBERS OF THE PRIMARY HEALTH CARE TEAM

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PREFACE

This Final Report describes a Department of Health funded project entitled "The Interface between General Practitioners and other members of the Primary Health Care Team". The project started in September 1994; data collection commenced in January 1995 and was completed in December 1995. Coding, data preparation and analyses were undertaken in January-March 1996. An extension to the project was granted for the purposes of follow-up visits and dissemination.

The Research Team comprises Sue Jenkins-Clarke, Roy Carr-Hill, Paul Dixon and Mike Pringle. Barbara Duncan was employed as a Research Fellow from January 1995 until March 1996. In total there were five research nurses who undertook data collection at the sites on a rota basis; Elizabeth Allen, Jill Carley, Christine Dowell, Ann Richards and Bridget Smith.

Acknowledgements

We would like to thank the members of our Advisory Group - their observations and comments throughout the project have been most helpful and constructive. The Advisory Group members were: Professor Martin Roland, Mr Nicholas Mays, Mrs Maureen Rillands, Dr. Jim Parle and Professor Jane Robinson.

In addition to thanking the above research nurses who worked long hours at each site (most of which were far from their home bases thus necessitating overnight accommodation) and where they learnt the art of being unobtrusive in high profile situations, we would like to thank three students from Sheffield Hallam University, Alison Cadman, Dale Lord and Paul Fagg and also Diane Wilson, who took part in coding and data preparation. Dale Lord also supervised students from York University who undertook some of the coding. Thanks also to Vanessa Waby and Sal Wilson for their patience in arranging and re-arranging several versions of the report.

The project could not have been undertaken without the help and co-operation of all the community nurses, practice managers, secretarial and clerical staff and GPs at the sites we visited. To them we are most grateful; without exception they welcomed us into their premises, allowed us to document details of their working lives for two weeks and suffered the consequent disruption with equanimity. Lastly, our thanks go to the patients who completed questionnaires, either on surgery premises or in their own homes - the information that they so willingly provided has proved to be a most valuable insight into this enquiry.

PLAN OF THE REPORT

Two documents accompany this Final Report; firstly an Executive Summary containing a synopsis of the study and a discussion of the main findings relating to the study's five objectives and secondly a volume of appendices containing details of site studies, the instruments used and more detailed tabulations.

PART ONE: INTRODUCTION AND METHODS

In Chapter 1, the first section summarises the literature review undertaken during the course of the study highlighting the background to, and issues surrounding, the project and the second section provides a statement of the aims and objectives of the project. The remaining three sections provide a brief account of how the sites were selected, the instruments that were used and the data collection process. These sections are supported by detailed appendices in a separate volume.

PART TWO: RESULTS

Chapters 2 and 3: Activities and Workload

The first two chapters in this part present an analysis of the workload of GPs and nurses as an essential background to any discussion of delegation.

In Chapter 2, the first section describes the daily workload of GPs based on self-completed diaries, whilst the next three sections are based on an analysis of the consultation matrices completed by our research nurses sitting in on the consultations. The purpose of sections two and three is to show how variations in the length and pattern of consultations are related to characteristics of the GPs and of the patients, and a multivariate analysis in section 4 attempts to answer the question as to whether or not there is a practice style. The chapter concludes with

extracts of what GPs mentioned during the focus group discussions held with the Primary Health Care Team (PHCT).

In Chapter 3, the material from the diaries completed by nurses is analysed in the first twsections distinguishing between practice nurses, district nurses and health visitors and between the different practices. This chapter also concludes with extracts of what nurses said during the focus group discussions.

Chapters 4 and 5: Teamworking and the Process of Delegation

The next two chapters are concerned with the flow of activity in the practice between different professionals. Chapter 4 includes two main sections: an analysis of the responses of PHCT members to a questionnaire about their attitudes to the team, and a selection of relevant extracts from the focus group discussions; and an analysis of the source of the activities which the nurses reported in their workload diaries and of any activities which they reported on a separate instrument that could have been delegated to others in the team. The focus of the analysis was to relate any variations to characteristics of the nurses or of the practices; and in particular to assess whether there was any relation between the volumes of referral - either to them or from them - and their attitudes to the team.

Chapter 5 focuses on delegation by GPs drawing on the consultation matrices and the delegation diaries. The analysis in the first two sections shows the potential time-saving and the content of delegatable opportunity from the two different data sources in parallel; the extent to which the patterns of existing and potential delegation are the same or different is analysed in the third section based on the material in the delegation diaries; and the fourth section presents relevant extracts from the focus group discussions about the process of delegation.

Chapters 6 & 7: Outcomes - Patient "satisfaction" and Chronic Disease Management

The final two chapters are concerned with the extent to which any differences in outcomes can be related to variations in the organisation of the delivery of primary care.

Thus, the findings relating to the questionnaires distributed to patients attending surgeries during the period of the site visit are reviewed in Chapter 6. The first section focuses on the issue of 'continuity' (seeing the same professional on each visit) and the extent to which this is related to characteristics of the patients and of the professionals. The second section presents data on whether patients saw who they wanted to see and an analysis of more 'traditional' satisfaction questions such as their opinions of the GP's and nurse's competence. Finally, the third section assesses whether there is any association between preference for continuity and satisfaction.

The final results chapter includes an analysis of data collected both from practice records and by postal questionnaire from asthma sufferers (in the first two sections) and those with non-insulin dependent diabetes (in the third section). The first section examines the review process and pulmonary function measurements and relates those to levels of patient satisfaction; the second section analyses self-report data from the patients about disturbance and disruption and the extent to which these are bothersome and concludes with an analysis of the inter-relations between all three sets of data. The third section provides a brief analysis of the variations between practices in terms of the severity and care of non-insulin dependent diabetics. Throughout, the focus is on relating any variations to characteristics of the practices or the mix of professionals seen. The reason for the brevity of this chapter is because there do not appear to be any such associations.

PART THREE IMPLICATIONS

In Chapter 8, the report concludes with a review of the findings organised around the 'Objectives of the Study' followed by a discussion of the implications for the organisation of the delivery of primary care, based in part on some of the focus group discussions in the practices, and finally with a brief discussion of the implications for further research.

APPENDICES

The appendices referred to in this report are available on request from the Publications Office, Centre for Health Economics, University of York.

CHAPTER 1: INTRODUCTION

The starting point for this investigation into skill mix in primary care was a literature review, and a review of the methodological issues surrounding the measurement of skill mix. The literature review has been written by two members of the (nursing) research team (Jill Carley and Ann Richards) and the methodological review by Sue Jenkins-Clarke and Roy Carr-Hill (1996).

The former is summarised in the first section below because it introduces the issues surrounding skill mixing in the context of the current investigation. It is available in draft form at the present time and will be submitted for publication at the conclusion of this enquiry. Indeed, that review has helped to shape the precise objectives of the empirical enquiry within the broad aims of the whole project; and these are stated in section 1.2.

The methodological issues of skill mix measurement has been published in the Centre for Health Economics' Discussion Paper Series, (Number 144) entitled: "Measuring Skill Mix in Primary Care: Dilemmas of Delegation and Diversification" and will not be repeated here at length; however, the outcome of those discussions is, of course, reflected in the way in which we selected the sites, the choice of instruments that we developed and the ways in which we carried out the data collection. These are summarised in the subsequent sections of this chapter.

Delegation and referral are used interchangeably throughout the report. This was raised without exception in all focus group discussions held in the participating practices but a unanimous conclusion could not be reached. On reflection and with the wisdom of hindsight, delegation is the preferred term in view of the focus of the project on the interface between the GP and the other members of the Primary Health Care Team (PHCT) - since delegation infers the retention of responsibility for the actions of another (as opposed to referrals to an appropriately skilled colleague).

1.1 BACKGROUND

The concept of skill mix is widely recognised in the vocabulary of the National Health Service (NHS) workforce but because of its complexity is little understood, elusive to define and therefore difficult to measure. Many issues surround the concept of skill mix, some of which are concepts in their own right, but which also need to be recognised as an integral part of skill mix - such as delegation and teamwork. Despite the lack of definition and difficulty of measurement, these elements are central to the research project described here. Thus this project is also about developing and testing methodological approaches to measurement of skill mix in addition to fulfilling the aims and objectives set out in Section 1.2.

The following definition of skill mix has been adopted for this report:

"The balance between trained and untrained, qualified and unqualified and supervisory and operative staff within a service area as well as between staff groups." (Nessling 1990).

In the NHS, and particularly in the primary care sector, this balance between members of staff is crucial when taking into account the delivery of good quality, cost-effective care in the general practice setting and at the interface between the hospital sector and social service provision. At a time of rapid changes in primary care provision the concept and implementation of skill mixing in PHCTs becomes ever more elusive.

Broadly these changes are:-

- **manpower issues -** in particular a fall in the number of doctors applying for vocational training (Handysides 1994), a reduction in the number of training posts, and a rise in the number of general practitioners taking early retirement (McBride and Metcalfe 1995). There has also been a rise in the number of part time general doctors (Department of Health 1995) and in particular female general practitioners (Leigh 1996).

•**increased workload in the primary care sector.** There are a number of reasons for this increase in workload mainly attributable to government legislation (Community Care Act 1990, The General Practitioner Contract 1990 and The Health of the Nation, 1991). The shift from secondary to primary care means that more people are being cared for in their own homes than ever before in terms of early discharge from hospital, shared care of chronically ill people and an increasingly ageing population.

•**boundary definition and enhanced roles -** the professionalisation and rise in the number of practice nurses and the emergence of the practice manager, nurse practitioner and the clinical nurse specialist in the United Kingdom. The number of practice nurses has trebled between 1988 and 1993 (Atkin et al 1993). This rise in (wo)manpower is taking place alongside declining numbers being recruited into health visiting (DH 1992). Potentially, therefore, the boundaries of different professions are shifting and roles are changing not only within the PHCT but also at the interface of health and social service provision.

In order to address these issues it is important firstly to ascertain what members of the PHCT ***actually*** do and how this may have changed, and secondly, to assess the ***acceptability*** of spreading workload more effectively and efficiently amongst members of the PHCT. This may offer a solution to the above changes. It is important to assess the outcomes of such changes on the care delivered to patients, and the acceptability of these changes to patients.

The possibility of general practitioners being able to delegate activities to other staff would in principle allow them to shift the balance of their own activities towards managing patients with more "serious" problems (Jenkins-Clarke and Carr-Hill 1996) and also allow non-medical clinicians to be able to deal with problems which may otherwise have been overlooked by the general practitioner. This could provide an enhanced service to the practice population (Marsh 1991). Furthermore, it would allow current levels of activity to continue in the light of increased workload coupled with falling medical manpower.

There have been several studies looking at intra-professional skill mix (for example Carr-Hill et al 1992, Value for Money Unit 1992, Bagust et al 1992), but there have been very few examining skill mix inter-professionally and those that have been carried out have mainly focused on the acute sector (Greenhalgh et al 1994). However, a search of the literature reveals that although the concept of skill mix in primary health care is a complex area it is one in which four key areas emerge. These key areas form the foundations of this review.

The four key areas identified from the research literature are **workload, delegation, teamwork** and **patient outcomes/satisfaction**. Each area is briefly outlined below; a comprehensive account can be obtained by referring to the literature review of skill mix in primary care in its entirety (draft review by Ann Richards, Jill Carley and Susan Jenkins-Clarke 1996).

1.1.1 Workload activity (25 references)

Several surveys have been undertaken in the last five years examining the workload of general practitioners since the introduction of the general practitioner contract (for example: Myerson 1992, Chambers and Beltcher 1993). All indicate recent increases in workload, with an increase in administration being reported as one of the main reasons. This increase in workload has been identified as a possible cause of low morale (McBride and Metcalfe 1995), discontentment (Handysides 1994) and stress and exhaustion (Chambers and Butler 1993). The literature also reveals that the workload of general practitioners can be affected by a number of other variables such as list size, the characteristics of both the general practitioner and the practice (Groenewegen and Hutten 1991), socio-economic variables (Balarajan et al 1992) and in theory the services the general practitioner offers to his/her practice population (Albashir and Armstrong 1991, Thomas et al 1989).

However, whilst numerous studies have been conducted to try and measure the workload of general practitioners and the variables which may affect it, the design of many has been criticised for the following reasons. Current knowledge on the activities of general practitioners is based on self reporting diaries (for example, Department of Health and Social Security 1991,

Calnan and Butler 1988), the reliability of which is questionable. Secondly, comparisons are difficult because workload studies differ in their design and objectives (Thomas et al 1989). Furthermore, the measurement of mean workload can be problematic. Mean workload can be distorted by the hours of doctors who work part-time leading to an underestimate of the hours worked by those full-time doctors and by the inconsistencies of measuring weekly workload (Thomas et al 1989); weekly workload can be measured over a "normal" working week or an "average" working week taking into account sickness and annual leave.

There is a need therefore to attempt to collect reliable data on the workload activity of general practitioners in conjunction with recording the current activities and skills of other members of the PHCT in order to assess the potential and acceptability to delegation taking place.

1.1.2 Delegation (90 references)

(a) *Potential*

Richardson and Maynard (1995), in their recent discussion paper on doctor-nurse substitution, have indicated that 30-70% of tasks performed by a doctor could be carried out by a nurse. However, this review focused on work undertaken in the USA. The UK literature reveals many areas of patient care where activities are currently being delegated to nurses. For example:- the management of chronic disorders such as asthma (Charlton et al 1991), diabetes (Carr et al 1991) and hypertension (Jewell and Hope 1988), screening (Tulloch 1992), family planning (Murray and Paxton 1993) and minor illness clinics (Rees and Kinnersley 1996, Marsh and Dawes 1995). There are a number of references from the literature which identify an increase in the number of different activities carried out by the practice nurse since the introduction of the general practitioner contract (Robinson et al 1993, Hibble 1995, and Jeffereys et al 1995).

Marsh (1991) believes that delegation to other health professionals, for example, counsellors, can provide a better and often cheaper service for the patient population. Positive results have

been reported about delegation to social workers (Corney 1987), receptionists (Lawrence 1992), and nurse behaviour therapists (Marks 1985).

Whilst the literature demonstrates there are many areas where the workload of a general practitioner can be carried out by another member of the team, it also highlights a number a deficiencies in training and accountability. Practice nurses lack training in many areas, for example, in assessment of the over 75's (Brown et al 1992, Chew et al 1994, Mackereth 1995) health promotion, (Peters 1993) and chronic disease management (Atkin et al 1993). Sibbald et al (1993) found that counsellors also often lack appropriate qualifications too. Ridsdale (1993) expresses concern about the legal implications of other members of the PHCT expanding their role.

(b) ***Attitudes***

Attitudes of general practitioners towards delegation to other members of the PHCT, and in particular to nurses, seem to have altered over time. Bowling's research in 1981 identified negative feelings towards delegation. More recently, however, attitudes appear more positive with nurses expanding their roles into areas such as travel advice, health promotion and immunisation (Atkin and Lunt 1993, The Georgian Research Society 1991), and in a recent survey 30% of general practitioner respondents wanted to see practice nurses as independent practitioners (Robinson et al 1993).

However, potential fragmentation of care, reported by Lloyd et al (Joint Working Party of Welsh GPs 1994), casts some doubt on this expansion, advocating that it is the doctor-patient relationship which is the strength of general practice. There are doubts too for some nurses who are reluctant to take on certain delegated tasks; for example; confirmation of death and consenting patients for surgery (Allen and Hughes 1993).

Examination of both the potential and acceptability of delegation, and the attitudes to team management in view of the changing scenarios in primary care, is clearly required.

1.1.3 Teamwork (25 references)

There appears to be little empirical research in the literature to support the flourishing existence of teamwork within the PHCT, although authors report various strategies to enhance teamwork. These include workbooks and workshops (Hutchinson and Gordon 1992), "vision sharing" (Atkinson and Hayden 1992) and multidisciplinary learning (Irvine 1993). Teamworking is advocated as the way to provide the local practice population with good quality health care (Bond et al 1987, Pearson and Jones 1994) as well as increasing job satisfaction, morale and support (Pritchard and Pritchard 1992).

Co-operation and collaboration within PHCT's is generally cited in the literature as the key to effective teamwork (Poulton and West 1993). Bond et al (1987) reported that inter-professional collaboration does exist within PHCTs but at a very low level. However, others have questioned the "teams" existence at all (Pearson and Jones 1994, Reid and David 1994). There are many reported reasons why working as a team is difficult. For example, unclear roles (particularly with the recent rise in the number of practice nurses), inappropriate premises and lack of commonly accessible data (Welsh Office 1987, Ovretrveit 1990, Fatchett 1990, Potrykus 1993 and Poulton and West 1993).

There are fears too that the expectation for teamwork to flourish in primary care is naive because of different management structures, limited communication and general practitioner status (Salisbury 1991). Nurse managers have also been cited as inhibiting teamwork because of their controlling regimes over community nurses (Reid and David 1994).

There are clearly many barriers as well as benefits to effective teamwork. Salisbury (1991) believes the way forward is by way of partnerships between GPs and other health professionals; however, Wiles and Robinson (1994) believe that general practitioners are reluctant to relinquish their hierarchical position. In the light of recent debate over skill mix in primary care, feelings and attitudes of the whole team need to be identified and discussed.

1.1.4 Patient satisfaction/outcomes (21 references)

Consumer satisfaction has become increasingly important in the delivery of modern health care with patients' views potentially the most crucial in the changing NHS (Baker 1991). Consequently when care is transferred to other members of the PHCT it is important that the patient is satisfied and that the outcome of care is the same if not better.

Patient satisfaction is one (popular) way of measuring outcomes for patients and is frequently reported in the literature. Calnan et al (1994) describe satisfaction as a concept which may affect compliance with treatment and will also lead to a strengthening of trust (Rashid et al 1989). Evidence from the literature indicates that patients are generally satisfied with the care they receive from members of the PHCT (for example Jewell and Hope 1988, Murray and Paxton 1993, Calnan et al 1994).

However, the reliability of satisfaction questionnaires in this context has been questioned (Baker and Whitfield 1992) because of poor questionnaire or study design and lack of validation. Furthermore, whilst general satisfaction is generally high, further in-depth questioning has revealed underlying dissatisfaction (Coyle et al 1993). This questioning may also reveal additional unsatisfactory outcomes for patients - for example; levels of morbidity in patients suffering from asthma (Keeley 1993).

Gibbs et al (1991) have criticised skill mix reviews because they do not address the issue of patient outcomes. The literature reveals that measuring satisfaction and outcomes for patients has been problematic and fraught with difficulties. There is clearly a need therefore, to document outcomes for patients and their views on different working arrangements of the PHCT.

1.2 AIMS AND OBJECTIVES

The literature review outlined above identifies themes for investigation resulting from previous enquiries which shape the aims and objectives of this project. The broad aim of this work is to examine ways of exploring the constraints upon, and opportunities for, spreading workload more effectively and efficiently amongst members of the PHCT.

The objectives are:

- to document the current pattern of activities and interactions between the GP and other members of the PHCT.

- 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.

- 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.

- to document the outcomes for patients and their views of the different working arrangements of the PHCT.

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

Two workshops were held during the course of the project - one prior to the start of data collection and one following submission of the Interim Report constituting the first stage of the dissemination process and prior to submission of the Final Report. The first workshop was convened in York on December 1st 1994 to consider two main issues in the design of the study; first, to discuss issues surrounding the classification and measurement of the GP consultation

and specifically to address the question as to how the issue of "delegatability" might be tackled; and secondly, to discuss the problem of measuring outcomes in primary care.

Discrete data have been collected in respect of each of these aims except the last one. Given the known difficulty of collecting detailed data about practice budgets, and several unknowns in assessing cost-effectiveness of delegation, we decided not to jeopardize the process of collecting data for the first four objectives in order to collect data of doubtful utility.

1.3 METHODOLOGY (I) : DESIGN OF FIELDWORK

1.3.1 Selection of sites

In our proposal we had suggested including small, medium and large practices across a small number of FHSAs. In addition, given our specific focus on doctors and nurses, it was important to choose teams which were reasonably typical in terms of their doctor-nurse mix. Selection of sites was discussed at a meeting with the DH at the end of November where it was agreed that recruitment of sites should focus on FHSAs geographically spread between Nottinghamshire and North Yorkshire, that practices should have a minimum of two, but preferably a minimum of three partners. There was never any intention or claim that we would choose statistically representative teams nor ones which were considered "leading edge", but rather that we would endeavour to select "typical" teams.

However, it was seen as important to examine practices across a reasonable range of FHSAs and to select practices with a range of different (structural) characteristics which might be associated with patterns of delegation and referral. We considered differentiating between practices in different kinds of area (e.g. urban and rural); between fundholders (of different waves) and non-fundholders; and between training and non-training practices. However, given the small size of the sample, and, in the absence of any direct prior evidence linking these characteristics to patterns of delegation and referral, this seemed over-complicated.

Nevertheless, we were concerned to choose practices from reasonably 'typical' areas. Only two sets of data were immediately available to make a judgement about "'typicality:" the Health Services Indicators produced by the Department of Health; and the Census of Practice Nurses (P/Ns) carried out by Atkin et al (1993). The first has been used to assess the typicality of the FHSAs we chose and the range of doctor-nurse mixes; and the second in order to stratify our sample according to the type of doctor-nurse mix.

(i) ***Choice of FHSAs***

We tentatively suggested sampling across possibly five FHSAs choosing two practices from each FHSA. Five variables were extracted from the Health Service Indicator Data Set - this data set gives average values for each of the 90 FHSAs. The variables chosen were:-

- ratio of number of GPs for whom FHSA is responsible to number of patients (in 10,000s) for whom FHSA is responsible - XM21
- percentage of GPs with a list > 2500 - XM24
- percentage of single-handed GPs - XM34
- ratio of reimbursed practice nurses to GPs - XM93
- percentage of practices without a practice nurse - XM94

The values for the FHSAs we chose compared with the national median values are given in Table 1.1. The range of ratios of GPs per 10,0000 patients across the FHSAs is small except for Nottinghamshire and whilst there is quite a wide variation in the proportion of single-handed practices, the numbers of GPs with large list sizes is small (again with the exception of Nottinghamshire). The only two variables with small deviations from the median are those relating to number of GPs per patient and the ratio of P/Ns to GPs. It is also noticeable that

FHSAs with larger average list sizes also tend to have less of both single-handed practices and practices with more that 2,500 patients per GP. Choosing on the basis of list size would therefore be hazardous.

Table 1.1 FHSAs x HSIs : 1994 Values

FHSAs	GPs:Pts (in 10,000s)	GPs list size > 2500	% single-handed GPs	P/Ns : GPs	% practices without P/N
Birmingham	5.24	3.20	22.20	0.31	13.46
Derbyshire	5.19	5.12	9.22	0.37	3.11
Lancashire	5.06	8.18	14.98	0.32	7.67
Nottinghamshire	4.92	10.22	12.02	0.43	7.53
North Yorkshire	5.79	0.48	3.62	0.37	3.48
median	**5.15**	**7.92**	**11.4**	**0.36**	**5.02**

In contrast, although there are on average across FHSAs only just over a third as many practice nurses as there are GPs, there are relatively few areas where there are practices without a practice nurse (with the exception of Birmingham). There are no substantial relationships with the other variables apart from the obvious link between the proportion of single-handed practices and the proportion of practices without a practice nurse. However, on the whole these five FHSAs have about the average number of practice nurses - which fits with our philosophy of going for more or less typical areas.

To guide the choice of practices, we hypothesised that the size of the PHCTand the ratio of practice nurses to GPs might be important determinants of the patterns of delegation and referral.

(ii) ***Choice of Practices***

Given the volume of data collection required for the study, our notional maximum was 6 GP partners in a practice; and, at that same time, we had decided that 3 partners was a sensible minimum because we wanted to ensure that there was someone performing the functions of practice management which may not have been the case with a one or two-partner practice. For the purpose of this study we are calling practices with 3 or 4 partners "small", and practices with 5 or more partners "large". In fact we have six "small" practices and four "larger" practices.

Up to 4 partners		5 or more partners	
sites	1	sites	4
	2		5
	3		6
	8		7
	9		
	10		

Stratifying by skill mix

With only two sizes of practice, the issue of the professional skill mix then becomes more crucial. In the absence of any other information (such as the number and nature of attached staff) we have defined skill mix in terms of the ratio of P/Ns to GPs.

The main source of information for deciding the appropriate cut-off in terms of practice skill mix is Karl Atkin's data from *Nurses Count, published in 1993.* This was effectively a census of practice nurses with a sample of 12,000 individuals.

These data were then weighted and showed that, of the 1,037 3-partner practices nearly a half have only one P/N and an equal proportion have two P/Ns. The appropriate cut-off thus seems

to be that practices with more than half as many P/Ns as GPs counts as a "rich" practice. On this basis it seems reasonable at first sight to make the following approach:-

Table 1.2 First Choice of Practices x Skill Mix

Number of GPs	P/Ns : GPs < 1/2	P/Ns : GPs > 1/2
up to 4	2 or 3	2 or 3
5 or more	2 or 3	2 or 3

The difficulty of proceeding along these lines is that we know that there are very few P/Ns who work full-time; thus we need to translate the numbers in Table 1.2 above into WTEs, after weighting Karl Atkin's data. In order to distinguish between 'rich' and 'weak' skill mixes (in terms of nursing effort compared to GP effort), we have therefore calculated the number of practice nurse hours in different sized partnerships. These data showed that the average number of practice nurse hours for a 3 partner practice was 45 hours, and so on (Table 1.3). It can be seen from the table

Table 1.3 Average Number of Total Hours of P/Ns x Number of Gps

Number of GPs	Total hours - Practice Nurse
3	45
4	57
5	69
6	81
7	93
8	105
9	117
10	129

that the ratio of average practice nurse hours per partner drops slightly as the number of partners increases: so this notional cut-off of 45 hours for a 3-partner practice, translates into a further 12 hours of a practice nurse for 4- and 5-partner practices and a further 11 hours of a practice nurse for each extra partner up to 10 partners; (after this the numbers are too small).

Given our self-imposed restriction of medium-sized practices - with 3 to 6 partners - then we should choose practices with the following configuration:-

Table 1.4 Final Choice of Practices x Skill Mix Characteristics

Practice size	N partners	P/N hours cut-off	"weak" skill mix	"rich" skill mix
Small	if 3 then if 4 then	45 hours 57 hours	2 or 3	2 or 3
Large	if 5 then if 6 then	69 hours 80 hours	2 or 3	2 or 3

The final configuration of practices we selected looked like this:-

1 - weak	
2 - rich	
3 - rich	4 - weak
8 - weak	5 - rich
9 - rich	6 - weak
10 - weak	7 - weak

Some other salient characteristics of the practices are also included in Table 1.5; in fact, as can be seen from the table, six of the practices are fundholders and four were not; five were urban and five were rural and a detailed description of each of the practices is given in Appendix I.

Table 1.5 Structural Characteristics of Practices

Practices	Size/ Partners	Skill mix	Total N	PHCT wte	Fundholder	Urban Rural
1	S (3)	W	5600	15.7	No	U
2	S (4)	R	5617	19.5	Yes	R
3	S (3)	R	6839	15.8	No	U
4	L (5)	W	6095	16.8	No	U
5	L (5)	R	6685	21.5	Yes	R
6	L (6)	W	9439	18.7	Yes	R
7	L (8)	W	11287	31.7	Yes	R
8	S (3)	W	4946	12.8	Yes	U
9	S (4)	R	6816	15.5	No	R
10	S (4)	W	7335	13.0	Yes	U

In conclusion therefore we have demonstrated our attempt to select those teams with characteristics which our enquiries led us to conclude could be regarded as "typical" as opposed to "representative"; and that there are pitfalls in attempting to choose teams by any characteristic which one might, *a priori*, have thought would be associated with the "teaminess" of a team.

1.3.2 Preliminary meetings

These were conducted in various ways depending on the nature of the initial invitation to participate in the study; usually they involved a member of the research team (S J-C), accompanied in all instances with the exception of the last two practices, by one of the research

nurses. PHCT presence at these meetings varied; sometimes practice managers were present and, rarely practice nurses and attached staff - some or all GP partners were always present.

The reasons for undertaking the research exercise were explained briefly, followed by a more detailed discussion of what was expected of the PHCT during the two weeks of observation. Usually the template for this discussion was the document attached as appendix II; this may or may not have been sent to the practice prior to the meeting. The major concern of the practices at this stage was the re-structuring of surgery appointments around consultation observation by the research nurse(s) and, to a lesser extent, the logistics of pulling notes for registered asthmatics and diabetics.

Two meetings were sometimes necessary, particularly if the initial meeting was with GPs only. A second meeting was called for four of the practices to which most members of the PHCT were invited. Logistics were discussed in more detail here and information packs were distributed to members of the PHCT - these were handed out at the first meeting at the other practices. The contents of these packs generated much discussion and sometimes some anxiety (usually amongst the nursing members of the team). Practical issues, such as office accommodation/desk space, access to computer terminals and time to set aside for focus group discussions, had to be resolved at this juncture.

Following the first pilot site, all neighbourhood/locality nurse managers were contacted by letter, in order to explain that district nursing and health visitor staff attached to participating practices would be invited to two focus group discussions and would be asked to complete workload diaries for the two-week period. Most Local Medical Committee chairmen were also informed by letter of the impending data collection at the participating site.

1.3.3 Ethics committees

Each site required submission to the local Ethics Committee; different formats being required for each submission. The opportunity costs of this exercise had not been incorporated into our

original proposal and these submissions proved to be time-consuming with a heavy burden of administrative costs (for example having to submit 12 copies of our 32-page proposal). Our experience of the process of gaining Ethics Committee approval as part of this project is in common with that of others reflected in a series of articles in the British Medical Journal 9th September 1995 (Alberti, Thornton & Lilford, Middle et al, Garfield and While). Table 1.6 summarises the nature of approval granted. For site 4 "late" refers not to a late submission for Committee hearing but was due to the fact that the project had not been put on the agenda for consideration at the forthcoming meeting.

Table 1.6 Nature of Ethical Committee Approval

Site	Type of approval	Amendments required
1	Chairman's	
2	Committee	
3	Committee	**
4	Committee	(late)
5	Chairman's	
6	Committee *	**
7	Committee	**
8	Chairman's	
9	Committee	**
10	Chairman's	**

* presentation required

** these amendments comprised minor alterations to the wording of some of the questions in questionnaires that patients were asked to complete

This administrative oversight meant that data collection at this site had to be delayed by two days thereby starting on a Wednesday instead of a Monday.

The materials sent for consideration by Ethics Committees included the following:-

proposal
patient consent form
patient information sheet
patient (satisfaction) questionnaire
letters to accompany postal questionnaires:
(for asthmatics and diabetics)
postal questionnaire: asthmatics
postal questionnaires; diabetics
outcome forms: asthmatics & diabetics

These materials accompanied each individual Ethics Committee form.

Ethics Committee approval was granted for all sites approached to participate in the data collection exercise.

1.4 METHODOLOGY (II) : THE INSTRUMENTS

The conceptual framework underpinning the methodology of the project described here followed two pathways derived from the central tenet of this enquiry; namely "to examine the constraints upon, and opportunities for, spreading workload more effectively and efficiently amongst members of the PHCT."

In the first instance, the issue of reliable documentation of the workload activity of core members of PHCTs needs to be addressed. Current knowledge of GP activity is based upon self-reporting by GPs themselves (such as the DDRB diaries); there is no such equivalent for

recording community nurse activity. Secondly, underlying the contentious issue of delegation or referral to other members of the PHCT and its measurement, are a number of factors which are linked to the concept of delegation - these include the influence of teamworking on the acceptability of referral/delegation and the impact that delegation, both current and potential, might have on patients.

The five objectives of the project can be grouped under the familiar headings of inputs/structure, process and outputs/outcomes. Under the first heading of practice profiles, staff characteristics and patient case-mix information is sought, and under the second heading of process, GP and nursing workload activity is recorded. For each GP, in addition to completing workload diaries, consultations were observed in detail in order to identify current and potential delegation. For community nurse diaries, in addition to recording workload activity and delegation, information was also sought on patterns and sources of referral to nurses both from GPs and other PAMS (and each other) working in the practices. Thirdly, staff and patient outcomes data were collected; the former in terms of practice collaboration (teamworking) and the latter in terms of general and specific outcomes. This latter is a complex area, and obtaining information directly from patients themselves combined with data from medical records is the ideal combination.

Of the instruments employed at each site, some were designed for this project (such as staff delegation diaries, consultation matrices and patient satisfaction questionnaires) and others have been used elsewhere (such as DDRB diaries and teamworking questionnaires). The difficulty in designing the staff delegation diaries was the identification of the element(s) which were already being delegated or which might be delegatable. The design of the consultation matrices was considered at the first workshop (December 1994) and was based, at least in part, on the kinds of issues considered in training GPs. The so-called "patient satisfaction" questionnaires focused on the issue of continuity of care as well as on the more traditional satisfaction assessments of explanation, skills and time. The instruments which were designed *ab initio* were, not surprisingly, the ones most likely to have been altered between the pilot sites and the remaining sites. The conceptual framework and development of the study objectives are described more fully in Jenkins-Clarke & Carr-Hill (1996).

A copy of each of the instruments described below is available in Appendix No. III.

1.4.1 GP workload diaries

The GPs' workload was measured by using the workload diaries employed in the General Medical Practitioners Workload Survey (Doctor and Dentists' Review Body, 1991).They were completed by each GP on a daily basis over a two week period, including nights and weekends. GPs were asked to complete diaries one week prior to the site visit and for the first week of the observation period.

1.4.2 Nurse workload diaries

The nurses' diaries were an adapted form of the GP diaries, utilizing items from the Treatment Room Nurse Study (Scottish Home and Health Department, 1993). In addition, there was an extra item which elicited information about the source of referral for each of the nurse's patients. This had been included in order to assess patterns of delegation to the nurses. The nurses completed the diaries daily for the first week of the observation period.

Guidance notes for diary completion accompanied workload diaries distributed to both GPs and community nurses. With regards to the latter group, these notes offered specific guidance as to inclusion into column 6 (Health Education) and column 14 (Teaching). Column 6 refers to health education given to patients, either singly or in groups, and column 14 refers to teaching professional groups and specifically clarifies that patient teaching is excluded. In addition to guidance notes, research nurses were available throughout the data collection periods at each site to offer immediate guidance/clarification on diary completion for doctors and nurses.

1.4.3 GP delegation diaries

This instrument has been designed by the research team at CHE. It was completed daily during the second week of the site visit, except on days when the GP was being observed. The information it aimed to elicit was;

a) the number of consultations per day
b) the context of each consultation (e.g. surgery/ home visit/clinic)
c) the approximate time taken by each consultation
d) the content of each consultation *(this item was adopted after feedback from the pilot practice)*
e) any tasks which could be delegated from each consultation
f) the approximate time taken by the referred task
g) the designation of the health professional to whom the task could be delegated (this person is not necessarily a current member of the PHCT)
h) whether the health professional specified in (g) is currently in the PHCT
i) reasons for not delegating a particular task

1.4.4 Nurse delegation diaries

These were the same format and employed the same methodology as the GP delegation diaries.

1.4.5 Administration diaries

These were designed to assess the potential for delegation for administrative tasks. All administrative tasks which were not related to a patient consultation were entered here, and the staff member indicated whether part or all of that task could be delegated. The format was a simplified form of the delegation diaries and these instruments were completed in conjunction with the delegation diaries in the second week of the site visit.

1.4.6 The consultation matrix

The consultation matrix was designed by the team at CHE. It was used to record observation sessions in the GP surgeries. It had two sections and two (related) functions.

Section 1

This section comprised a work analysis grid which records activity for every 30 second period for each individual consultation.

Section 2

In this section, the topic(s) which made up the consultation and any tasks which could be delegated from the consultation were recorded. The time each delegatable task took and the person to whom the task could be delegated were also recorded. These items were decided upon by the GP, in collaboration with the research nurse. While time was set aside after every third consultation in order to talk about these issues, each GP could arrange this discussion period at any time s/he felt was suitable during the surgery.

1.4.7 Teamwork questionnaire

The teamwork questionnaire (Poulton & West, 1993), was developed jointly by The Social and Applied Psychology Unit, University of Sheffield and the Royal College of Nursing, who gave permission for it to be used in this study. It assesses the attitudes and perceptions of each team member regarding the dynamics and effectiveness of the PHCT. Some demographic items (regarding qualifications and place of training) were added by the research team.

1.4.8 Focus group discussions

These discussions were held on two occasions at the start of the data collection period (usually the first day) and then again at the end of data collection (usually on the Monday following the conclusion of data collection on the previous Friday).

The strategy of holding two group discussions ensured that there was a representation of views both uncontaminated by the research process and also stimulated by the various issues that had come to light while participants took part in the fieldwork. At the beginning of each discussion, participants were given a brief outline of the objectives of the study and verbal consent was

obtained to audiotape the conversation. In order to ensure compatibility between practices, a standardised open-ended guide was used for all groups [at end of Appendix III]. The probes used to elicit further information on specific areas within the topics were modified in the light of previous transcripts. This allowed researchers to pursue important themes between practices, whilst keeping the framework constant. Two moderators conducted the discussions.

All members of the PHCT were invited to take part in the group discussions. Groups varied in size from 7-14 participants, the mean number of participants being 13 per discussion.

1.4.9 Practice manager's questionnaire

This was developed by the team at CHE. It measured the current workload of the practice manager, and his/her views on;

a) any tasks which s/he now undertakes which could be delegated to other members of the PHCT
b) any tasks which are currently undertaken by other members of the PHCT which could be delegated to the practice manager.
c) His/her views on changes in the post over the last two years
d) His/her views on any future changes in the practice as it pertains to the role of the practice manager.

1.4.10 Patient satisfaction questionnaire

This questionnaire was developed by the research team. It was distributed to all patients who visit the surgery for an appointment during the observation period. It measured patients' attitudes about the working patterns of the practice, their satisfaction with issues such as accessibility of team members and their opinions regarding their current visit to the surgery.

1.4.11 Outcome forms

In order to assess the effectiveness of chronic disease management in practices with different configurations and working patterns, outcomes for two specific patient groups with chronic disease, asthmatics and diabetics, were measured. There were two forms of measurement. The first was a form which recorded details of the patient's medical history and the second was a postal questionnaire which measured perceived health status and satisfaction with care. Both of these instruments were designed by the team at CHE.

(1) ***Record data***

The necessary information was collected from patient casenotes or computerised records. Information was collected for each patient for the previous two years. For the diabetics, the last three measurements of RBS (random blood sugars) and HbAc1 (glycosylated Hb) were recorded if available, with the last three peak flow readings and the target peak flow being recorded for each asthmatic patient, again if available. For both groups, information was gathered about;

a) the number of visits to the surgery and the number of home visits.
b) the number of surgery /home visits for their particular chronic condition
c) the context of each patients' last review for their diabetes or asthma, along with the designation of the health professional/s who carried out that review i.e. whether the review was regular, carried out opportunistically or occuring because of an exacerbation of the relevant condition.
d) whether the patient has been hospitalised because of asthma or diabetes in the previous twelve months
e) whether the patient is cared for jointly by another agency (e.g. a specialist clinic at a hospital).

(2) ***The postal questionnaire***

This questionnaire is sent to all of the asthmatic and diabetic patients for whom outcome forms have been completed. As mentioned above, it measures the patients' own perceptions of their health status and satisfaction with the care they receive for their asthma/diabetes.

1.5 SUMMARY OF METHODOLOGIES

In summary, five methodologies were employed to answer our five objectives. These methods were:

- diary completion - self completed by GPs and community nurses relating to:
  workload
  delegation
  administration

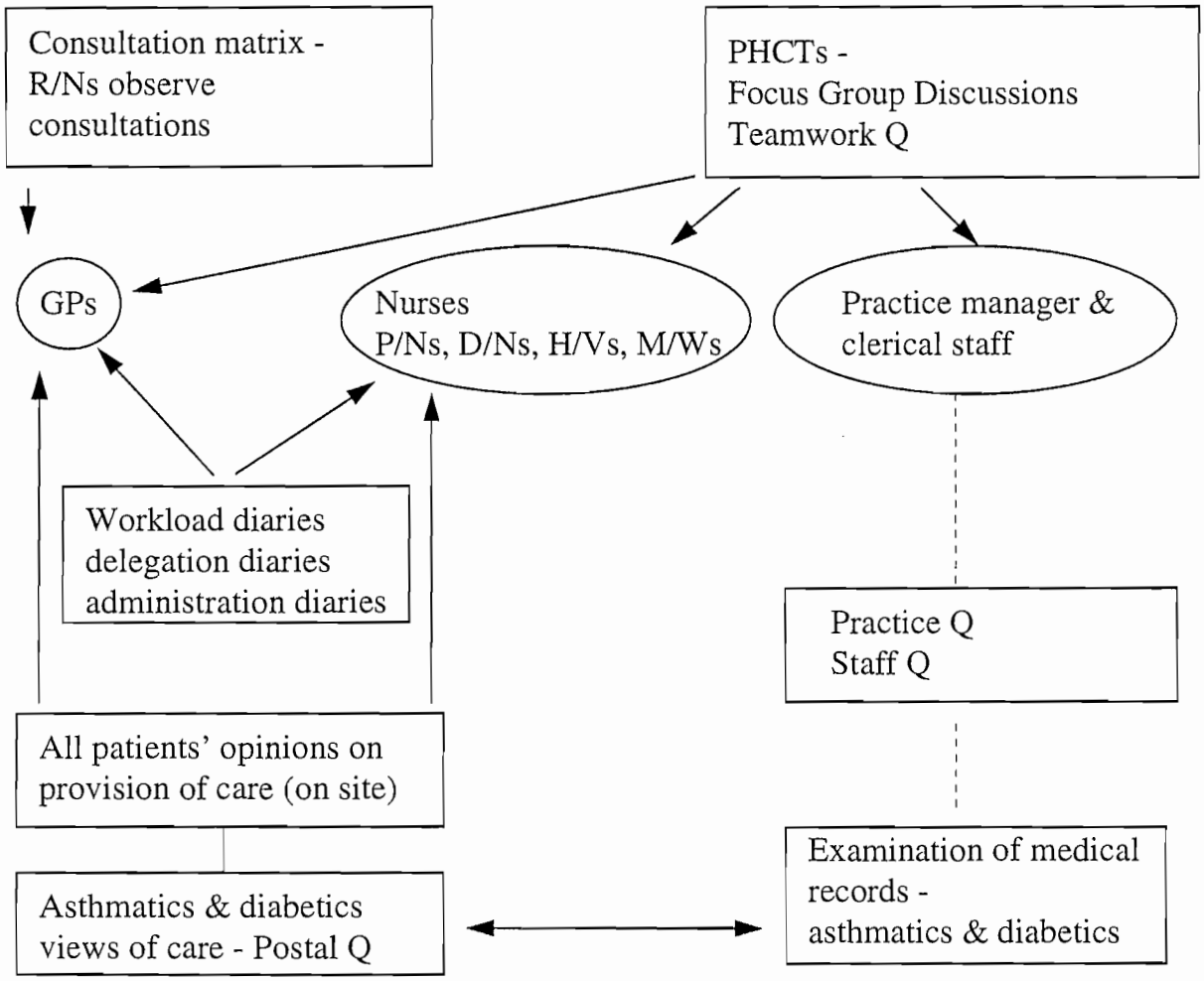
- direct obervation - GPs' surgery sessions observed by R/Ns using the consultation matrix

- questionnaires - teamwork - completed by members of the PHCT
  satisfaction - completed by patients
  care management - postal - sent to asthmatics and diabetics

- focus group discussions - for members of the PHCT

- extraction of practice administrative data - on asthmatics and diabetics from GP medical records.

The flow of data and instruments is shown diagramatically below:



1.6 THE PROCESS OF DATA COLLECTION

Prior to the fieldwork, each staff member was sent an information pack containing the instruments that they were to complete and a brief description of the project. The practice manager was also contacted to ascertain the appropriate time and method for initially approaching staff on the research team's arrival at the surgery. Once at the site, every effort was made to approach staff individually. Staff were reassured that the research nurses would be available at all times during the working day for help and advice with completing the instruments.

Three full time research nurses were assigned to most of the practices, with the exception of one small practice which only required two full time personnel. For every day of the fieldwork, each research nurse was allocated specific responsibilities for data collection. In each site, one research nurse assumed responsibility for the overall coordination of collecting data and liaising with practice personnel. Completing consultation matrices, obtaining patient consent and administering patient questionnaires was carried out on a rota basis. Lists of names of patients with asthma and/or diabetes were obtained from the practice manager. Outcome forms were completed and postal questionnaires sent during gaps between surgeries. This was carried out by any of the researchers who were available. Some practices provided the case notes for this task whilst others preferred the researchers to retrieve the notes they required and file them again when they had been used.

Prior to the field work, it was requested that slots were made available in the appointment list for discussion of the content of the consultation matrices. It was not always possible for this to be done; however, this had no adverse affect on the data collection. GPs were able, at their request, to discuss the consultations in an *ad hoc* manner if this was more appropriate. Some surgeries allocated the observation sessions for the nurses, whereas others allowed the researchers to organise appropriate sessions themselves.

A critical factor in facilitating the smooth running of the fieldwork was the establishment of a good working relationship between the research team and all members of the primary health care teams. While the time taken to achieve this is unquantifiable, it was certainly perceived by the research nurses to be an important and time consuming part of their job. Most staff responded positively to the research team, adjusting to any disruption and giving freely of their time.

CHAPTER 2 : GP DIARIES & CONSULTATION MATRICES

2.1 PATTERNS OF GP ACTIVITY

These descriptions of the activities of GPs within each of the practices are based on the diary sheets completed by the GPs over the 21 days of research in their practice. For the first week (before our fieldworkers were on site) the GPs were asked to complete the diaries in exactly the same way as the diaries completed for the Doctors and Dentists Review Board (DDRB) - that is with only the written notes for guidance (the 'blind' week); in the second week they were asked to complete an identical diary - this time with the research nurses on hand to clarify any problems in completing the diary[1]. [In the third week, they kept the 'delegation diary' which is dealt with in a subsequent section.]

The 51 GPs were asked to complete the diaries for the entire week, excluding any holidays, other time-off and those sessions when their consultations were being observed. They completed separate diary sheets for day and for night time activity; each sheet covering a 12-hour period. The pattern of completed sheets is given in Appendix GPD (Table GPD1 & GPD2).

The GPs were asked to record the type of activity in these half hour slots according to the classifications used in the surveys for the DDRB. Only those categories where there has been a substantial amount of recorded activity are separately identified in Table 2.1

[1] There was no such preliminary 'blind' week in the first practice; and, because of holidays, the week after the visit of our fieldworkers was chosen as the 'blind' week in practice 5.

Table 2.1 Diary records of activity (n=51 GPs)

PRACTICES	Proportion of half-hour slots where some activity was noted which includes the following activities* (all diaries)				
	Surgery	Home Visits	Patient Admin	Practice Admin	Clinical Non-GMS
1	31.6	15.9	19.9	14.8	1.2
2	45.0	17.2	16.7	6.7	5.4
3	30.7	6.8	12.1	1.8	46.7
4	40.7	12.2	16.2	8.3	0.3
5	42.2	20.7	9.7	5.8	1.9
6	40.9	17.8	11.7	11.3	17.2
7	49.5	17.3	23.9	7.5	5.8
8	39.7	8.4	12.6	9.4	22.8
9	39.6	13.6	20.2	9.1	2.2
10	50.0	18.9	16.2	2.7	9.3
	41.1	14.7	16.9	7.9	11.3

* Row totals may exceed 100% because more than one activity can be recorded in each slot.

Comparing the percentage distributions, it can be seen that there are substantial variations between the practices: with, for example, the proportion of slots where surgery is recorded ranging from just under a third in Practice 1 to half in Practice 10; home visits ranging from under 7% of slots in Practice 3 to over 20% of slots in Practice 5; and so on. Moreover, clinical non-GMS varied substantially with high levels in Practices 3, 6 and 8: this was accounted for by the level of hospice work (Practices 3 and 8) and work in a local community hospital (practice 6).

When the data are restricted to weekday daytime diaries (see Appendix GPD, Table GPD3) there is a noticeable effect on the pattern of activity especially for Practices 3 and 8 - as one

would expect given that much of the hospice work is in the evening. Conversely, in the overall diaries (Table 2.1 above), practice administration varies between around 2% and 3% in Practices 3 and 10, compared to over 11% in Practices 1 and 6 overall, whilst in the weekday daytime diaries, practice administration is over 10% in four practices.

Two kinds of comparison could be made with the results from the most recent survey for the Doctors and Dentists Review Board (1993): estimates from the weekday daytime diaries in the two surveys can be compared directly; and the diaries completed in the "blind" and "observed" weeks can be compared. The details of the comparisons are included in Appendix GPD (Tables GPD4, 5 and 6): overall there is little difference in the estimated patterns for either comparison. This means that the practices we have chosen are fairly typical of those reporting to DDRB; and that the self-completion diary procedure, although, disliked by the respondents, appears to produce reasonably good data.

There are obviously wide variations between practices in the pattern of activities, partly determined by the context in which they are working. It is obviously crucial to assess the extent to which these kinds of variations are purely idiosyncratic or can be accounted for by other variations between practices (or between GPs); and the next sub-sections focus on a detailed examination of the consultations observed by the research nurses with the objective of identifying the source of inter-practice and inter-GP variation.

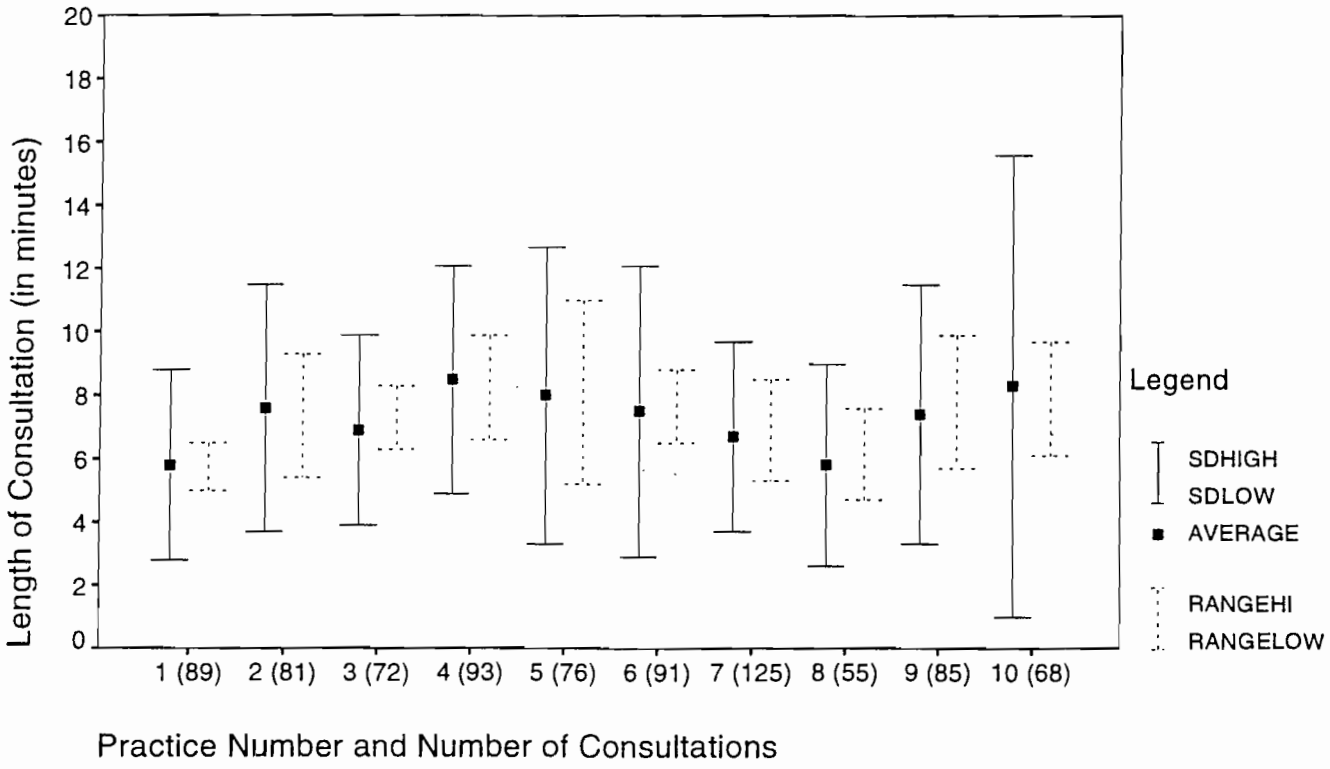
2.2 LENGTH OF CONSULTATIONS

This section is based on data collected by "sitting in" on a number of consultations in each practice. There are two aspects considered in this sub-section: variations in the length of consultations; and the pattern of time use in the consultations in terms of the content of the consultation.

The numbers of consultations observed, their average length and range are given in Figure 1. There is a lot of variation - from 5.2 minutes in Practice 1 to 8.2 minutes in Practice 10; and

even greater variation between GPs - from the 4.4 minute consultations of a GP in practice 5 to 11 minutes of a GP consultation in practice 5. Moreover, although there are some practices where there is a 'relatively' narrow range between GPs (for example, practices 1 and 3 and 6), in most practices the average for the GP with the longest average consultation time is more than half as much again as the GP with the shortest consultation time.

Figure 1 : Average Length and Range of Consultations



The question arises whether the observed variation between practices arises because GPs are different or because there is a 'practice style', or because of variation between the patient mix seen by each GP. To examine this, the difference between the average time spent by each GP and the overall practice average was also calculated and is referred to in subsequent text and tables as the deviation.

2.2.1 Characteristics of consulting patients

We know that there are likely to be variations between the lengths of consultations for young and old patients and perhaps between men and women. The data in Table 2.2 suggest that there are indeed variations although the only systematic pattern appears to be that late middle-aged (between 55 and 64) men and women receive the longest consultations and children the shortest.

Table 2.2 Average Length of Consultation by Age and Sex of Patients

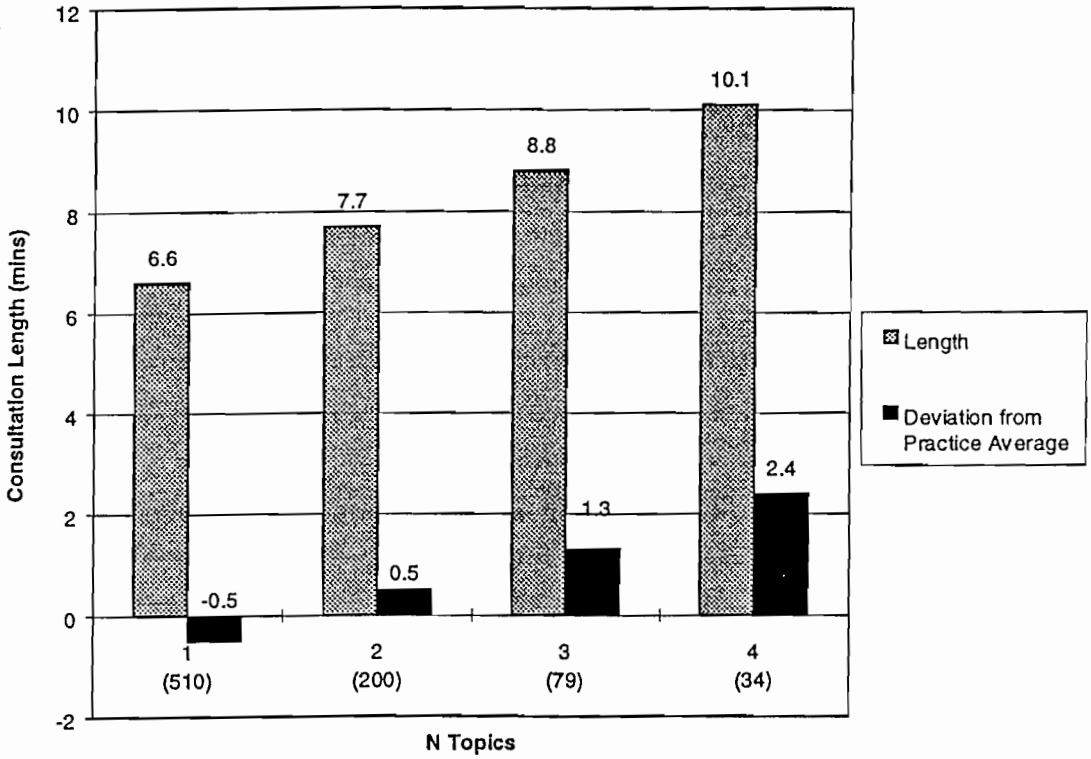
Age	M		F		Both	
	mins	N	mins	N	mins	N
0-4	5.0	19	5.2	21	5.4	40
5-15	6.8	26	6.1	28	6.5	54
16-24	7.8	21	6.9	53	7.1	74
25-39	7.3	51	7.9	86	7.7	137
40-54	7.4	44	7.4	93	7.4	137
55-64	7.2	35	9.2	47	8.4	82
65-74	7.0	43	7.9	47	7.5	90
75-98	7.7	16	8.0	28	7.9	44
All Ages	7.1	255	7.5	403	7.4	658

Notes: 1. These data were only collected systematically from practice 3 onwards.

2. Whilst the age was always recorded, gender was omitted in three cases.

The more complex the consultation (as measured by the number of topics considered) the longer the consultation is : average length raises from 6.6 minutes when only one topic is recorded to 10.1 minutes when 4 or 5 topics are recorded (Figure 2). The differences are attenuated when variations between practices are taken into account.

Figure 2 : Length and Deviation by Number of Topics in Consultation



2.2.2 Characteristics of GPs

A number of characteristics of the GP have been examined. There are small differences between those with an MRCGP qualification or not (7.3 minutes versus 6.9 minutes); but the factors of most interest are the variations in the length of consultation and deviation from practice average according to the number of topics in the consultation (see above), the age and

There is some variation by age of GP but no systematic trend: women GPs tend, overall, to give slightly longer consultations, although this results from the average for 30-39 female GPs which is the highest of all groups (Table 2.3). Detailed analysis shows that women GPs tend to give particularly long consultations to older female patients. Equally, there is some variation by the number of years that the GP has been with the practice with those who have been there less than a year (the shortest) and those who have been there more than 10 years (the longest) (Table 2.4). However, when the deviations from the practice average were calculated for partners who had been with their practice for a similar number of years, there was a large difference for the two GPs who had been with the practice for less than one year, but only small differences otherwise.

Table 2.3 Length of Observed GP Consultations by Age and Gender of GP, and Average Deviation from Practice Average by Age of GP (number of consultations observed in brackets) (number of consultations observed in brackets)

	20-29	30-39	40-49	50+	All
M	7.9 (30)	6.9 (142)	7.5 (195)	6.1 (177)	6.9
F	5.9 (49)	8.1(113)	7.1 (52)	-	7.3
Average	6.7	7.4	7.4	6.1	7.0
Deviation	-0.5	0.1	0.2	-0.3	-0.1

Table 2.4 Length and Average Deviation from Practice Average by Years with Practice (numbers of consultations observed in final row) (number of consultations observed in final row)

	0	1-5	6-10	11-15	16+
Length	6.4	7.3	6.9	7.6	7.5
Deviation	-1.0	0.2	-0.4	0.4	0.0
N	66	138	146	129	143

2.3 PATTERN OF TIME USE WITHIN CONSULTATIONS

The research nurses recorded the type of activity each half minute according to a classification scheme which evolved through the piloting process. It is for this reason that some of the categories are not used in Practice 1 for example. For the purposes of the tables in this text, the categories have been combined[2]. The recoded tables include the following combinations:

- all the categories including diagnosis and information gathering - (combining diagnosis made, changed and excluded);
- the categories examination and procedure;
- the two management categories - (combining management plan started and continued);
- the two prescription categories - (combining new prescription and prescription reissued);
- the categories of explanation and advice and reassurance.

Consultation activity was recorded in the first part of the matrix followed by topics/themes discussed during the doctor-patient exchange which have been coded to ICD Chapter headings. In addition any tasks deemed "delegatable" from the consultation were also recorded as was the time these identified activities would take and to whom the activity could be delegated. Time was allocated during every surgery session for the research nurse and GP to discuss the content and recording of the consultation and to discuss and confirm any "delegatable" elements. The latter aspect is reported in the next section.

[2] The detailed tables are in the Appendix to this chapter (Table GPCS7). These reveal some effects that are obscured by these amalgamations. For example, there is a relatively large value for 'excluding diagnosis' in practice 10: this was at the height of the meningitis scare in 1995 and so GPs were indeed in the business of excluding the diagnosis of meningitis for the parents who brought their children along with common colds and flu.

The overall percentage of time spent in all consultations recorded as being spent on different aspects of the consultation are presented in Table 2.5. [Detailed tables of the proportion of consultations in which the activity took place and the mean length of time in minutes when the activity was recorded are shown in Appendix GPDCS, Table GPDCS8]. The most common activities across all practices were collecting information for the purposes of diagnosis and explanation, advice and reassurance (about 42% on the former and 34% on the latter). There are wide variations between practices with, for example, the proportion of time spent on examination and procedures varying from 13% in Practice 4 which was the only non-fundholder among the large practices, to 26% in Practice 7 (a fundholder and the largest practice), although both are 'weak' skill mix practices. On the whole non-fundholders (practices 1, 3, 4 and 9) spend less time on management plans and administration; but otherwise there are no significant differences; 'rich' skill mix practices also spend less time on management plans.

Table 2.5 Breakdown of Consultations into Different Categories: Proportion of Overall Consultation Time Observed in that Practice Spent on Different Activities (number of consultations = 746; for administration n=665)

Practice	Proportion of all time on collecting information or diagnosis	Proportion of all time on examination and procedures	Proportion of all time on management plans	Proportion of all time on prescribing	Proportion of all time on administration	Proportion of all time on explaining and advice and reassurance
2	42.4	19.0	8.9	9.7	-	30.4
3	39.6	22.0	8.8	12.5	9.8	43.0
4	44.1	13.3	7.7	12.8	7.8	34.1
5	43.2	22.7	11.9	10.0	13.3	25.7
6	43.2	18.0	9.6	12.7	13.8	44.6
7	30.3	26.1	2.9	7.3	7.7	
8	40.7	24.4	21.2	14.8	28.2	45.0
9	45.6	21.6	9.7	11.0	11.7	17.0
10	53.2	21.2	20.5	14.2	14.2	34.3
						19.3
ALL	41.7	21.6	10.1	11.5	12.3	34.0
F value	9.6**	5.4**	18.4**	2.4*	13.7**	16.1**

* $P < 0.05$
** $P < 0.01$

2.3.1 Characteristics of consultations

There are even greater differences in the proportions of time spent by GPs (see Table GPD9 in Appendix GPDCS) - for example the balance between the overall proportions of time spent on collecting information for the purposes of diagnosis and for examination and procedures varied from 3:1 to equality.

We have already shown that one of the most important determinants of the length of consultations is the number of topics dealt with; and one would have thought that this would also affect the pattern of consultation. However, although one might have expected that there would be 'economies of scale' in terms of diagnosis management, and administration; in fact there are only significant effects on the categories of diagnosis and prescribing (Figure 3).

Clearly, many of the differences may be due to the nature of the presenting problem (Howie, personal communication reported in Carr-Hill, Rice and Roland, 1996). However, the breakdown by principal diagnosis (shown in Table GPDCS10 Appendix GPDCS) yields rather small numbers and it is difficult to discern any systematic overall pattern. However the two chapters with the largest proportions of examination and procedures are neoplasms, circulatory, genito-urinary and perinatal; and time spent on prescribing are endocrine and skin. Time spent on the chapters with the largest proportions of examination and procedures are circulatory, genito-urinary, pregnancy and neoplasms. Mental health problems have the largest proportion of time on explanation and advice.

There are some differences between men and women - more administrative time is spent with males on diagnosis and information gathering - and between patients of different ages - for example 30-49 year olds occupy more administrative time (Table 2.6). However, these differences are nowhere near as large as the differences between practices shown in Table 2.5 (and certainly not as large as the differences between GPs, suggesting that there is a "style" of consultation independent of the nature of the problem and of the type of patient.

Figure 3 : **Amount of Time Spent in Different Aspects of the Consultation According to Number of Presenting Problems.**

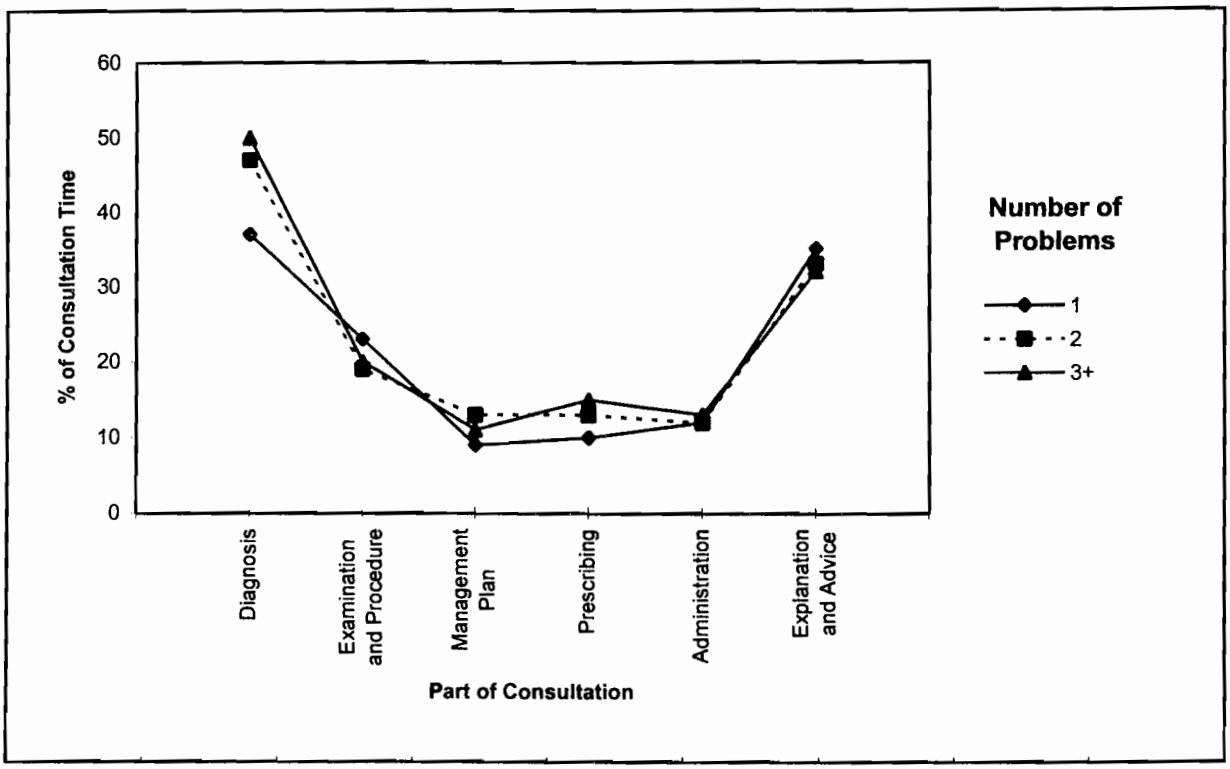


Table 2.6 Mean Amounts of Time Spent by GPs on Patients of Different Gender and Age Groups on Different Parts of the Consultation (When This Kind of Activity Took Place)

Patient group	Overall Length of Consultation N		Diagnosis and information gathering	Examination and procedures	Management Plans	Prescriptions	Administration	Explanation/ Advice and reassurance
Female	404	7.5	2.9	2.0	1.1	1.1	1.6	2.9
Male	256	7.1	3.3	1.8	1.3	1.4	1.5	3.2
F test		NS	4.2*	NS	NS	NS	NS	NS
0-4	42	5.4	2.5	1.7	1.0	1.0	1.2	2.7
5-15	54	6.5	2.7	2.0	1.2	1.1	1.3	3.4
16-24	74	7.1	2.8	1.9	1.1	1.0	1.4	2.5
25-39	138	7.7	3.4	2.1	1.3	1.1	1.7	2.8
40-54	138	7.4	3.3	2.0	1.3	1.5	1.6	3.4
55-64	82	8.4	3.6	1.9	1.3	1.1	1.5	3.6
65-74	90	7.5	3.1	1.9	1.2	1.4	1.4	3.2
75 and over	44	7.9	3.3	1.4	1.5	1.9	1.5	3.3
F test		2.5 *	NS	NS	NS	NS	NS	NS

* $P < 0.05$

2.3.2 Characteristics of GPs

The differences according to age and gender of GP are shown in Table 2.7. Women doctors tend to spend more time on each of the different aspects *except* administration, advice and reassurance; although the difference is only once significant. Whilst this may seem counter-intuitive according to common stereotypes (the female being the more caring of the two genders), there are two possible explanations: those women who become GPs are more professional than the men; or that women GPs are providing explanation, advice and reassurance throughout the consultation, possibly through the use of tone and vocabulary rather than making a special point of it. Finally, a breakdown according to the number of years with the practice suggest that there are no straightforward differences although there is a suggestion that GPs who have been with the practice longer spend less time on examination and procedures. In terms of the age of the GP, there is no obvious relationship explanation with the patterns of time spent on the different aspects of the consultation: the one significant difference is in administration where 50-59 year old GPs apparently spend more time (although less on advice and reassurance).

GPs who have been with the practice longer (Table 2.8) spend less time on examination and procedures but otherwise there are no systematic trends.

Table 2.7 **Mean Amounts of Time Spent by GPs of Different Gender and Age Group on Different Parts of the Consultaton (When This Kind of Activity Took Place).**

GP type	Overall Length of Consultation	Diagnosis and information gathering	Examination and procedures	Management Plans	Prescriptions	Administration	Advice and reassurance
Female	7.4	3.6	1.4	0.9	0.9	0.8	2.4
Male	7.0	3.0	1.4	0.7	0.6	0.9	2.9
F test	NS	3.0*	NS	NS	5.8*	NS	NS
20-29	6.9	2.9	1.5	0.6	0.5	0.4	2.2
30-39	7.3	3.4	1.4	0.7	0.8	0.8	2.8
40-49	7.5	3.1	1.2	0.8	0.8	0.8	3.1
50-59	6.3	3.3	1.5	0.8	2.3	2.3	1.3
60 and over	6.5	2.8	1.5	0.7	0.9	0.9	2.5
F test	NS	NS	NS	NS	NS	6.4**	NS

* $P < 0.05$
** $P < 0.01$

Table 2.8 **Percentage of Consultation Time on Different Parts of the Consultation According to Years with Practice (Number of Consultations = 604)**

Years in Practice	Diagnosis	Examination and Procedure	Management Plan	Prescribing	Administration	Explanation and Advice
0	45	24	9	10	6	32
1-5	40	21	10	12	11	39
6-10	43	21	14	11	18	22
11-19	44	19	11	13	9	37
20+	41	19	8	10	17	37

2.4 IS THERE A PRACTICE STYLE TO THE LENGTH AND PATTERN OF CONSULTATION?

In an attempt to answer this question, with respect to the lengths of consultation and given the known relationship with age of the patient, we have carried out an analysis of variance of the lengths of consultation searching for the significant variables. This is reported in Table 2.9. It can be seen that there is significant effects for practice and for number of topics and for the GP's gender and length of time with them. The fact that this latter remains significant strongly reinforces the view that there is indeed 'a practice effect'.

Table 2.9 Analysis of Variance

		Patient		No. of Problems	GP		
	Practice	Age	Gender		Age	Gender	Years
Length	2.34*	2.43*	2.65	8.36**	1.81	4.01*	5.01**

Notes:
1. The analyses were run with both an 'orthogonal' and 'within' design. The 'orthogonal' design assumes that the practice and GP effects are acting independently and so there might be some overlapping effects. The 'within' design reflects the nesting of GPs within practices, that is the effect due to GPs once all inter-practice variation has been taken into account. The results were very similar. F values significant at the 5% level are given one asterisks; those at the 1% level two asterisks.

Because the data are hierarchically structured (consultations within GPs), the analysis has been conducted within a multi-level framework. The starting 'variance components' model which simply separates the variance between the patient level (level 1) and the GP level (level 2) shows that nearly 15% of the unexplained variation between all the consultations can be attributed to variations between GPs. An initial model including age and gender of patient as predictive factors does little to reduce the variation between the GPs; and whilst there are two consultation level variables - the number of topics and the interaction between the gender of the

GP and the gender of the patient - which are separately significant, there is still little reduction in the variation between GPs when both are included (see Model I, Table 2.10 column 1).

However, the inclusion of a set of variables reflecting the number of years that the GP has been with the practice is significant and reduces the variation between the GPs substantially (see Model II, Table 2.10, column 2). Finally, if dummy variables for the practices are included, even though their coefficients are not significant and they make no difference to the models, the variation between GPs now accounts for only 8% of the unexplained variation. The RESET test (Gujerati 1988) suggests that the model is reasonably well specified.

There are therefore the following interpretations:

- the number of topics in a consultation is an important factor in affecting the length of consultation with approximately an extra minute for each additional topic;

- whilst neither the gender of the patient nor of the GP independently influence the length of the consultation, there is an interaction between female patients and female GPs which has an important impact adding approximately a minute to the average consultation;

- whilst there is indeed a large practice signature and a GP style in the raw data, a substantial proportion of this between-practices and between-GPs variation can be explained by other characteristics.

Table 2.10 Multi-Level Modelling of Length of Consultations (N = 537)

	Model 1	Model 2	Model 3
Level 2	1.91(0.67)	1.31(0.52)	0.99(0.44)
Level 1	11.79(0.75)	11.74(0.75)	11.79(0.75)
Constant	5.47(0.45)	3.16(0.94)	2.42(1.26)
Number of topics	0.87(0.17)	0.96(0.19)	0.96(0.19)
Gender interaction*	0.43(0.29)	0.92(0.33)	0.80(0.34)
Years 1-4	-	2.20(0.99)	2.50(0.01)
with 5-9		0.99(0.91)	1.20(0.94)
Practice 10-14		2.73(1.03)	3.08(1.05)
15+		2.79(1.12)	2.76(1.26)
Practice 4	-	-	0.36(1.10)
Dummies 5			1.43(1.03)
6			0.70(1.18)
7			0.20(1.04)
8			-0.39(1.09)
9			1.04(1.06)
10			1.53(1.15)
RESET Test	0.87(p=>.05)	0.71 (p=>0.05)	0.65 (p=>.05)

* between gender of GP and gender of patient

There is a parallel question as to whether a style of conducting a consultation can be identified after taking account of these differences in the composition of the consultation between practices, between GPs within practices and between age and gender groups.

Results are shown in Tables 2.11A and 2.11B. In terms of the variability in the way consultations are conducted, there are two main observations:

A variance component model, in which the variance is divided between inter-GP variance and inter-consultation only, shows that there is some variance between GPs. However, this variance is reduced to zero for all aspects of the consultation except management plan and administration, when inter-practice variation is introduced as a potential source of variation (by including practice dummies).

When a series of fixed effects (number of topics, patient age and gender, GP age and gender and time in practice, and total time on consultation) are introduced as possible explanatory variables, all the unexplained inter-GP variance is eliminated.

Although each of these variables enters the equations at least once, the pattern of influence on the different parts of the consultations is important:

a. a multiplicity of problems increases the proportion of time spent on examination and procedures.

b. the older the patient the lower the proportion of time spent on examination and procedures.

c. GPs spend a lesser proportion of time on management plans and prescribing with female patients.

d older GPs spend a greater proportion of time on administration.

e female GPs spend significantly more time on management plans but less on explanation and administration.

f GPs who have been with the practice a longer time, spend a greater proportion of time on management plans but less on explanation and advice.

g. finally longer consultations are inversely related to the proportion of time spent on management plans and prescribing.

Some of these results make intuitive sense: examination and procedures will be more intensive with a multiplicity of problems, and are likely to be less onerous with older patients; and because prescribing takes only a fixed amount of time, the proportion is likely to be smaller with longer consultations and with female patients who are more likely to be consulting for ill-defined conditions. But many of the other associations are not easily explained and prompt the query as to whether or not it would be useful to promote harmonisation.

Table 2.11A Multi-Level Modelling of Percentages of Time : Random Effects and Practice Constants (N = 537)

		DEPENDENTS Percentage of consultation time spent on											
		Diagnosis		Examination and procedures		Management plans		Prescribing		Administration		Explanation and advice	
		Est	Se	Est	Se	Est	Se	Est	Se	Est	Se	Est	Se
I	Variance Components												
	GP variation	36.1	(14.6)	26.3	(10.6)	47.9	(13.9)	8.1	(5.2)	47.8	(15.1)	145.1	(44.1)
	Consultation level	340.7	(21.8)	249.2	(16.0)	117.6	(7.6)	196.5	(12.6)	187.6	(12.1)	472.9	(30.3)
II	Practice Dummies												
	GP variation	1.08	(5.4)	7.5	(5.8)	8.6	(4.1)	3.2	(3.9)	21.2	(8.4)	19.6	(12.6)
	Consultation	340.3	(21.8)	249.7	(10.9)	118.0	(7.6)	196.5	(12.6)	187.7	(12.0)	479.4	(30.7)
III	'Best' Model												
	GP variation	2.8	(5.4)	3.5	(4.7)	1.8	(2.2)	0.3	(2.8)	0		1.6	(7.7)
	Consultation	306.7	(19.7)	249.8	(16.0)	110.3	(7.1)	177.5	(11.4)	186.4	(11.7)	481.1	(30.8)

Note: This part of the table shows how the unexplained variance is reallocated between inter-GP and inter-consultation as we move from the 'variance' components model (Model I), to the introduction of 'practice dummies' (Model II) to the final 'Best' model when a series of fixed effects are introduced (Model III).

Table 2.11B Multi-Level Modelling of Percentages of Time : Fixed Effects

	DEPENDENTS Percentage of consultation time spent on					
	Diagnosis	Examination and procedures	Management plans	Prescribing	Administration	Explanation and advice
Number of Probs.						
2	8.5 (1.8)		3.5 (1.1)	3.9 (1.4)		
3	12.3 (2.8)		0.4 (1.7)	6.6 (2.1)		
4	20.4 (3.9)		2.5 (2.4)	10.6 (3.0)		
Patient Age						
5-15		-8.7 (3.8)				
16-24		-9.2 (3.4)				
25-39		-11.0 (3.2)				
40-54		-12.0 (3.2)				
55-64		-15.0 (3.9)				
65-74		-9.0 (3.4)				
75+		-15.0 (3.9)				
Patient Gender	- -	- -	-3.6 (1.0)	-2.8 (1.2)	- -	- -
GP Gender	- -	- -	6.7 (1.8)	- -	- -	-6.9 (3.3)
GP age 1					2.2 (2.1)	
2					4.9 (2.2)	
3					24.2 (3.3)	
4					9.8 (4.8)	
GP in 1-5 yrs			11.1 (2.5)			-2.7 (4.8)
practice 6-10			6.4 (2.2)			-9.5 (4.2)
11-19			7.2 (2.6)			1.8 (4.8)
20+			7.9 (3.2)			-5.7 (6.0)
Total Time on Consultation			-0.4 (0.1)	-1.1 (0.2)		
CONSTANT	35.4	26.8	3.2	19.4	6.4	

2.5 FOCUS ON GROUP DISCUSSION ABOUT WORKLOAD

Successful skill mix in primary care will depend not only on identifying the appropriate staff group to carry out tasks, but on the availability and willingness of these groups to take on new and/or different responsibilities. Attitudes and perceptions of PHCT staff to their present workload may have a crucial impact on their perceived ability to take on new roles and new responsibilities. The changing nature of the workload was a common theme among participants in the focus groups.

All groups agreed that their workload had increased in the past few years;

"When we look back fifteen years the workload in the practice was about a quarter of what it is now and the practice list.....[has] only gone up by a sixth, but the workload has increased fourfold in fifteen years" **GP, Practice 7**[3]

"We feel much busier than we did three or four years ago....I think if you talk to GPs anywhere they will say we are much busier than we were five years ago" **GP, Practice 4**

One reason for this increase in workload disproportionate to the increase in list size was the changing nature of that workload i.e. primary care's increased involvement in preventative care and chronic illness;

"Don't forget that one reason why our work rate increased five years ago was that we were doing a lot more case finding, a lot more preventative care, a lot more continued monitoring of illness than was done ten years previously" **GP, Practice 6**

While many of the health promotion clinics, for example, "Well Man" and "Well Woman" clinics, were run by practice nurses, they had also increased GP workload, by generating referrals from these clinics back to the GPs.

[3] For the purposes of anonymity, practice numbers have been randomly rearranged.

"Although we do a lot of preventative work, like Well Man's, Well Woman's and Elderly's of course we do refer back to you, we refer quite a few. So even though we've taken a lot of your easy work, we still passed a lot back to you" **Practice Nurse, Practice 6**

Concurrent with this change was the increased amount of paperwork that was required to run the practice and audit the services. This was especially true for the fundholding practices in the study and the relative contributions of NHS changes and the demands of fundholding to the paperwork "problem" is unclear. What was apparent, however, was that, regardless of fundholding status, the majority of GPs and other PHCT staff resented the time they had to spend on "forests" of paperwork.

'I mean it, it's part of the changes in the Health Service, that there's so much paper goes round that you really wonder whether it's all worthwhile, or whether Her Majesty's Ministers of State have shares in Bowater Scott..... there are all sorts of circulating bits of paper, most of which are written in management jargon and you're supposed to grind your way through these things. I must say my hands go up in horror occasionally." **GP, Practice 1**

" ...you get swallowed up in paperwork. It's just a sort of huge bureaucracy and you can quite easily forget that we're all about seeing patients and helping them with their illnesses" **Practice Manager, Practice 4**

One GP had a possible solution to the problem;

"You could actually cut huge amounts of the clerical work.....enormous amounts, 80% of clerical work could be completely cut out including the Family Health Services Authority and the National Health Executive and all the rest of it. With all this claim stuff. You put everybody down on a decent capitation fee. You cut out all the claim forms and the doctor's responsible for doing all the, well, the practice team is responsible for doing all the work. ....you've got to claim for this and claim for that and claim for the other. It just makes a total nonsense of it. All it's doing is employing minions, minions and minions and minions higher up and further and further and further removed from the patient. It's jobs for the boys stuff. Double the capitation fee and cut out all the administration papers and the whole lot would get covered. You'd lose 60% of the work in the Family Health Services Authority and the National Health Services Executive. And, thousands of trees would be saved." **GP, Practice 2**

The majority of GPs talked about the changing nature of the consultation as a major contribution to increasing workload. Consultations had, in general, become more complex and

demanding and much of the reason for this was attributed to the changing expectations of patients.;

"I think therefore that the workload has become more complex .....And I just get the feeling that now consultations...those really nice ones where somebody comes in very quickly, or two or three Pill checks in a row, just don't seem to happen like they used to. And I think it's because our work mix has changed. And I think that the patients are becoming much more demanding, not in the sense of sort of the nasty part of the word demanding, but actually they've raised their expectations of what we can do. And therefore they're coming with much more complex problems" **GP, Practice 6**

Another aspect which increased workload was the increasing "medicalization" of patients;

"But it seems that an awful lot of people now are becoming medicalized. Things like lipids or whatever weren't round ten years ago. And we're constantly finding new ways of medicalizing people and making them come back regularly." **GP, Practice 6**

Not only are patients bringing more complex problems to the GPs, their demands on the service itself have increased;

'There is a different way in which the patients appear to be using the practice....and the pressure on us, we feel, has increased.....The number of consultations in total hasn't really seemed to change, I think patients do expect to be seen faster, they don't expect to have to wait a day or two for appointments, they do expect us to treat everything trivial, regardless of whether or not it would be treatable at a chemist" **GP, Practice 1**

These demands did not however, take into account the available resources;

"Certainly the demand to be seen and to be seen when they want to be seen has increased over the last few years. Patients' expectations are enormous now, really....they're unrealistic....they would do for a private health service but not when we've got 7,000 patients and two and two thirds doctors" **GP, Practice 7**

Most participants in the discussions shared this view that patients' expectations were unrealistic. The teams were also consistent in their perception of the causative factors of these expectations; the Patients' Charter, media interest in medical issues and societal changes - the

breakdown of the extended family and fear of unemployment. One practice nurse talked about being *"a surrogate mum...and grandma."* Fear of unemployment also increased demand because patients were reluctant to self certificate and wanted to see their GP for even minor episodes of sickness;

"....people are scared stiff of losing their jobs. All we're really seeing over the last ten years is basically job insecurity" **GP, Practice 3**

2.6 SUMMARY AND DISCUSSION

There is a wide variety in the pattern of activity between different practices. The proportion of GP time taken on surgeries varies from under a third to over a half; there is a three-fold variation in the time spent on home visits; some of the practices are involved in a lot of clinical non-GMS work, others very little. However, they all claim to be spending a substantial amount of time on administration (whether for a particular patient or for the practice). We did in fact ask the GP's to complete dedicated 'administrative' diaries; and the results are reported in Appendix AD.

For each GP, a number of consultations were observed. The average length ranged from under 5 minutes to 11 minutes. A multivariate analysis showed that whilst some of this variation could be accounted for by the age and gender of the patient and practice membership, and by the number of topics identified as being dealt with in the consultation, there were a number of GP characteristics which affected the length of consultation.

Of the patient characteristics, the most important is the length of consultation. However, the effect of gender on the length of consultation is interesting: whilst previous analyses have mostly been uni-dimensional, the main analysis of the effect of gender on the length of consultation has therefore usually been uni-dimensional. In fact, the main effect observed here is that women patients, when consulting female GPs, have longer consultations. A crude

division of consultations into those which are only relevant to women and others show that 65% of the former were with female GPs compared to 28% of all other consultations.

One of the most important of these 'other characteristics' is the number of years which the GP has worked with the practice which itself suggests that there is a strong practice signature operating via the structure and organisation of the practice (for example, the appointments system). Thus, it appears that trainees or recent arrivals spend on average about a minute less per consultation than the practice average. One can hypothesise that this is because they believe that they will require more time than others to complete their notes on each consultation and they know how long the consultation is 'meant' to be - given the appointment system in force. Equally, those who have been there longer intuitively 'know' how long they have for a consultation and regulate their consultations accordingly. The findings reported here have shown that whilst there is some residual variation between GPs and practices, much of the variability can be explained by the difference between new recruits and those who have been practising for a number of years.

Perhaps more seriously, doctors define a consultation differently in that they spend different proportions of their time on different aspects of the consultation. Thus, there is at least a twofold variation in the proportion of time spent on examination and procedures, on management plans, on prescribing, on administration and on advice and reassurance. Once again, a multivariate analysis showed that, whilst some of the variation can be explained in terms of the age and gender of the patient, there remains a large proportion of the variation attributable to the practice and, within the practice, to the GP.

Thus, there is indeed a GP signature to the way in which consultations are carried out but it is not idiosyncratic: it can be accounted for partly by differences in the proportion of complex consultations (those with more than one problem) and the mix of patients in terms of age and gender, and partly by GPs' age and gender and the length of time they have been with the practice. To the extent that these variations in the conduct of the consultation are seen as important then these results provide a way of approaching a strategy of change.

It is already clear from this analysis that our initial categorisation into 'rich' and 'weak' skill mix practices is not sufficient to distinguish between the practices: indeed none of the structural characteristics tabulated in Table 1.5. seem to be associated with these variations in patterns. However, the most important message from these tables and analyses is that, whilst there are large variations between practices which are not obviously associated with any structural characteristics of the practices, these variations are not idiosyncratic. GPs behave differently partly because they are dealing with different types of patients, and partly because of the length of time they have worked with their practice team. The first two sets of influence (the environment and the kinds of patient) are as one might have expected: but the importance of the latter suggests that there are "working styles" which develop in practice teams which are important to identify and monitor.

CHAPTER 3 : NURSE ACTIVITY

PATTERNS OF COMMUNITY NURSING ACTIVITY

The purpose of this chapter is to document the activities of the various nurses employed by or attached to each of the practices; and to assess whether there are any overlaps between the different categories of nurses or any systematic variations. This analysis is based upon diary sheets completed by 71 nurses in the practices or with the PHCT (28 practice nurses, 30 district nurses and 13 health visitors). Descriptions of the activities of the various nurses employed by, or attached to, each of the practices are based on the diary sheets completed by the nurses, normally[4] over 7 days of data collection at each of the sites.

The nurses were asked to complete the diaries for the entire weeks, excluding any holidays and other time-off, but including activities on and off the practice premises (such as home visits) and distinguishing between treatment, immunisation, diagnostic tests, screening, health education, hygiene, advice and reassurance, teaching, discussion and paperwork. Although all nurses attached to the practice team were asked to complete the diaries, the results presented here focus only on those completed by the practice nurses, and the attached district nurses and health visitors. They completed separate diary sheets for day and for evening activity; each sheet covering a 14 hour period with 28 'slots' in a day (the form contained 24 'slots' in practice 1 and 30 'slots' in practice 2). The pattern of completed sheets and the pattern of half-hour slots where there was some activity is given in Appendix ND, Table ND1.

Overall, therefore, there were 342 diary sheets completed and over 5000 diary entries, the majority by practice nurses, district nurses and health visitors; note that in practices 4, 8 and 9 none of the health visitors recorded their activity. The number of potential 'slots' to which these completed diary sheets correspond is given in the second half of the same tables in the Appendix (these numbers are multiples of 28 for most practices - see above).

[4] A small number of nurses completed workload diaries over a 2 week period.

In just over a third of the 'slots' some activity was recorded (Table ND2, Appendix ND). Because of the differential rate of completion between practices, it is difficult to make comparisons between the overall amounts of time spent on professional activity, but it is quite possible to compare the patterns of activity.

The extent of multiple activity (whether there was more than one type of activity or whether the same activity was repeated for different patients) in the half hour slots is reported in the Appendix ND (Table ND3) : whilst in most cases (half-hour slots) only one activity was recorded, there is a significant proportion where there was multiple activity. This proportion varies between around 40% for diagnostic tests and 6% for hygiene); however, there is much less variation between practices (41% in practice 3 and 24% in practice 4).

Table 3.1 Pattern of Activities for Practice Nurses

Practice Number	Treatment	Immuni-sation	Diagnostic Tests	Screening	Health Education	Hygiene	Advice Reassurance	Teaching	Discussion/ Paperwork	N of cases	N of responses
1	34	28	82	31	73	0	0	0	74	159	322
	10.6	8.7	25.5	9.6	22.7	0.0	0.0	0.0	23.0		
2	39	11	60	27	18	2	58	0	22	142	237
	16.5	4.6	25.3	11.4	7.6	0.8	24.5	0.0	9.3		
3	32	13	55	28	41	1	29	0	24	100	223
	14.3	5.8	24.7	12.6	18.4	0.4	13.0	0	10.8		
4	18	7	28	14	25	0	8	5	38	81	143
	12.6	4.9	19.6	9.8	17.5	0.0	5.6	3.5	26.6		
5	45	15	33	12	12	5	24	0	96	102	242
	18.0	6.2	13.6	5.0	5.0	2.1	9.9	0.0	39.7		
6	43	14	48	4	20	0	10	0	28	94	167
	25.7	8.4	28.7	2.4	12.0	0.0	6.0	0	16.8		
7	59	27	42	23	28	2	29	2	20	127	232
	25.4	11.6	18.1	9.9	12.1	0.9	12.5	2.1	8.6		
8	20	12	27	9	6	0	8	2	12	53	96
	20.8	12.5	28.1	9.4	6.3	0.0	8.3	2.1	12.5		
9	43	30	42	12	15	3	21	0	73	115	239
	18.0	12.6	17.6	5.0	6.3	1.3	8.8	0.0	30.5		
10	38	18	29	6	34	4	49	2	44	74	224
	17.0	8.04	13.0	2.7	15.2	1.8	21.9	0.9	19.6		
N of resp	371	175	446	166	672	17	236	11	431		2125
% of resp	17.5	8.2	21.0	7.8	12.8	0.8	11.1	0.5	20.3		

Notes: 1 'N of cases' is the number of half hour slots containing these activities; 'N of responses' is the total number of recorded activities in these slots. These are the bases for the percentages in the table.

2 The categories used in practice 1 were different: for example, advice and reassurance was excluded as a separate category and probably has been included in either health education (probably) or discussion/paperwork (possibly).

Table 3.2 Pattern of Activities for District Nurses

Practice Number	Treatment	Immunisation	Diagnostic tests	Screening	Health education	Hygiene	Advice/ reassurance	Teaching	Discussion/Paperwork	N of cases	N of responses
1	134	0	7	6	10	60	0	1	28	212	246
	54.5	0.0	2.8	2.4	4.6	24.4	0.0	0.4	11.4		
2	135	0	10.0	2	7	124	102	37	72	298	489
	27.6	0.0	2.0	0.4	1.4	25.4	20.9	7.6	14.7		
3	84	1	6	13	4	67	84	0	183	201	442
	19.0	0.2	1.4	2.9	0.9	15.2	19.0	0.0	41.4		
4	85	1	2	5	22	33	43	4	10	105	205
	41.5	0.5	1.0	2.4	10.7	16.1	21.0	2.0	4.9		
5	62	0	0	8	0	11	11	0	55	119	147
	42.2	0.0	0.0	5.4	0.0	7.5	7.5	0.0	37.4		
6	33	0	5	5	1	16	18	8	30	86	116
	28.5	0.0	4.3	4.3	0.9	13.8	15.5	6.9	25.9		
7	54	2	17	26	10	1	15	0	82	184	207
	26.1	1.0	8.2	12.6	4.8	0.5	7.3	0.0	39.6		
8	14	0	4	1	3	7	15	0	20	43	64
	21.9	0.0	6.3	1.6	4.7	10.9	23.4	0.0	31.3		
9	47	0	0	1	2	7	27	0	45	98	129
	36.4	0.0	0.0	0.8	1.6	5.4	20.9	0.0	34.9		
10	50	1	0	5	2	14	18	0	35	91	125
	40.0	0.8	0.0	4.0	1.6	11.2	14.4	0.0	28.0		
N of resp	698	5	51	72	61	340	333	50	560	1437	2170
% of resp	32.2	0.2	2.4	3.3	2.8	15.7	15.3	2.3	25.8		

Notes: Same as for Table 3.1

Table 3.3 Pattern of Activities for Health Visitors

Practice Number	Treatment	Immunis -ation	Diagnostic Tests	Screening	Health Education	Hygiene	Advice Reassur- ance	Teaching	Discussion/ Paperwork	N of cases	N of responses
1	0	0	0	44	68	0	0	0	61	**136**	**173**
	0.0	0.0	0.0	25.4	35.8	0.0	0.0	0.0	31.8		
2	0	0	3	25	10	4	13	0	38	**86**	**93**
	0.0	0.0	3.2	26.9	10.8	4.3	14.0	0.0	40.9		
3	4	5	31	32	35	1	26	1	43	**89**	**178**
	2.3	2.8	17.5	18.1	19.8	0.6	14.7	0.6	24.3		
5	0	0	2	27	18	5	54	0	43	**79**	**149**
	0.0	0.0	1.3	18.1	12.1	3.4	36.2	0.0	28.9		
6	0	12	1	25	27	6	58	0	61	**118**	**190**
	0.0	6.3	0.5	13.2	14.2	3.2	30.5	0.0	32.1		
7	0	0	1	26	10	1	46	0	65	**123**	**149**
	0.0	0.0	0.7	17.5	6.7	0.7	30.9	0.0	43.6		
10	0	0	0	12	10	0	15	0	32	**48**	**69**
	0.0	0.0	0.0	17.4	14.5	0.0	21.7	0.0	46.4		
N of resp	4	17	38	191	178	17	212	1	343	679	1000
% of resp	0.4	1.7	3.8	19.1	17.8	1.7	21.2	0.01	34.3		

Notes: Same as for Table 3.1

3.1 PATTERNS OF NURSE ACTIVITY

The pattern of different types of activity is analysed in the set of three tables for practice nurses (Table 3.1), district nurses (Table 3.2) and health visitors (Table 3.3) respectively. The percentages are percentages of all activities reported or responses given: the number of half-hour slots is also given. Neither of the bases provides a precise estimate of the proportion of time spent by nurses on each kind of activity. However, given that multiple entries in any one slot were not nearly as frequent as had originally been supposed (see Appendix Table ND3), it is a fair approximation to interpret the distribution of activities mentioned as reflecting the distribution of time spent on the different kinds of activity.

Practice nurses (Table 3.1)

The two main activities for practice nurses are diagnostic testing and treatment, and for these two categories, there is about a two-fold variation between the practices (with diagnostic testing varying between 13% and 29% and treatment varying between 11% and 26%). There is a little complementarity in that practice nurses in practice 1 report the smallest proportion of time on treatment but the second largest on diagnostic testing (this may have resulted from trial and experimentation with the recording form as this was our first practice), but there are also practices like 6 and 8 where the practice nurses report large proportions of activities on diagnostic testing and on treatment. Otherwise, overall, about an eighth of the activities reported by practice nurses involve health education, varying between 6% and 23%, and they all mention significant amounts of time being spent on paperwork (varying between 9% in practice 3 and 40% in practice 9).

District nurses (Table 3.2)

Overall, district nurses predominantly report spending their time on treatment, varying between 19% of responses in practice 3 and 55% in practice 1. Otherwise, a quarter of their responses are concerned with paperwork (varying between 5% in practice 4 and 41% in practice 3), and a sixth with advice and reassurance (varying between 7% in practice 7 and 23% in practice 8).

Health visitors (Table 3.3)

Overall, health visitors predominantly report spending time on paperwork rather than anything else varying between 24% in practice 3 and 46% in practice 10): approximately equal proportions of overall activities are reported on screening (varying between 13% in practice 6 and 27% in practice 2), health education (varying between 7% in practice 7 and 35% in practice 1), and advice/reassurance (varying between 0% in practice 1 and 36% in practice 5).

There are some activities which are clearly carried out by one group of nurses and not by another - for example, immunisation and diagnostic tests mainly by practice nurses, hygiene mainly by district nurses and screening mainly by health visitors - and there are other activities such as advice and reassurance which one would expect all three types of nurses to do.

It is also evident from these Tables that health visitors record more 'focused' activities than either of the other two groups. Whilst, in many areas, this is expected, it is perhaps surprising that health visitors report spending only one sixth of their time on health education activities whilst practice nurses spend over an eighth (although the former records proportionately greater time on screening than the latter - 19% compared to 8% - which might compensate for this). That both district nurses and health visitors report spending greater proportions of their time on paperwork and related activities may be a reflection of their 'attached' status and the necessity of recording workload and other information for Health Authority purposes. For health visitors the amount of the time spent on discussions and paperwork may be accounted for by participation in case conferences and other multi-agency working.

3.2 VARIATIONS BETWEEN TYPES OF PRACTICE

At first sight it appears that there is a potential for duplication between groups of nurses in terms of some activities - such as treatment and health education. Indeed, there are substantial variations in activity patterns between the practices which may suggest that nurses working in different practices carry out different tasks. Considering only those activities which take more than 20% of the time of one type of nurse - leaving aside advice and reassurance and discussion/ paperwork - we can see that (Table 3.4) there are three practices (6, 7, and 8) where the PNs do almost as much treatment as DNs and three others (1, 3 and 4) where they do relatively little. In contrast, there are only two practices (1 and 5) where health visitors do substantially more health education than PNs. However, detailed tabulations in the Appendix ND (Table ND4) show that there is no real overlap in that practice nurses do all their treatment and health education in the surgery, whilst district nurses do most of their treatment on home visits (about an eighth is in the surgery) and health visitors record all their health education on home visits.

Table 3.4 Proportions of Time Spent by Practice Nurses and District Nurses on Treatment, and by Practice Nurses and Health Visitors on Health Education

Practice Number	Numbers Reporting			Treatment		Health Education	
	PN	DN	HV	PN	DN	PN	HV
1	2	3	2	10.6	14.5	22.7	35.8
2	2	1	1	16.5	28.0	7.6	10.8
3	3	3	2	14.7	19.0	18.8	19.8
4	3	3	0	12.6	41.5	17.5	-
5	3	3	2	18.0	42.2	5.0	12.1
6	3	2	2	25.8	28.5	12.0	14.2
7	5	2	3	25.4	26.1	12.1	6.7
8	2	1	1	20.8	21.9	6.3	-
9	4	1	0	18.0	36.4	6.3	-
10	2	2	2	17.0	40.0	15.2	14.5
	29	23	15	17.4	32.3	12.8	17.8

Source: District Nurse Diaries

Reported activities divide approximately equally between 'urban' and 'rural' practices (Table 3.5). Whilst the distribution of activities for district nurses is approximately similar between urban and rural practices (with the exception of treatment and discussion and paperwork), practice nurses in urban areas appear to be much more likely to engage in diagnostic testing and health education than in rural areas and both practice nurses and health visitors in urban areas record considerably more health education that those working in rural areas.

There is little significant variation in terms of 'skill mix' although, for both practice nurses and district nurses, there appears to be a gradient in terms of advice and reassurance and a tendency for the 'weaker' skill mix practices to carry out less screening (see Table ND5 in Appendix ND). Also district nurses in 'rich' skill mix practices were more likely to report time being spent on discussion and paperwork whilst those in weak skill mix practices spent more time on treatment. The breakdown between fundholding and non-fundholding practices (see Table ND5 in Appendix ND) shows a number of interesting differences. First, practice nurses and health visitors in fundholding practices report substantially less time spent on health education, slightly less on screening and much more advice and reassurance. The pattern seems slightly odd, but probably results from more clinics being held in fundholding practices (which would only count as one activity in any half hour slot, irrespective of the number of patients involved). Secondly, in fund-holding practices there appears to have been a shift of treatment from district nurses to practice nurses as one might expect.

Table 3.5 Pattern of Activity by Whether or Not 'Urban' or 'Rural' Practice (Percentage of half-hour slots in which these activities occurred)

	N	Treatment	Immunis-ation	Disgnostic Tests	Screening	Health Education	Hygiene	Advice Reass.	Discuss Paper	Total N of Slots
Practice Nurse										
Urban	12	30.4	16.7	47.3	18.8	38.3	1.1	20.1	41.1	467
Rural	17	39.5	16.7	38.8	13.4	16.0	2.1	24.5	41.2	580
District Nurse										
Urban	7	56.3	0.5	2.9	4.6	6.3	27.8	24.5	42.3	652
Rural	8	42.2	0.3	4.1	5.4	2.5	20.3	22.0	35.3	785
Health Visitor										
Urban	12	1.5	1.8	11.4	32.2	41.4	0.4	15.0	49.8	273
Rural	9	0.0	3.0	1.7	25.4	16.0	3.9	42.1	51.0	406

3.3 FOCUS GROUP DISCUSSION ABOUT WORKLOAD

Successful skill mix in primary care will depend not only on identifying the appropriate staff group to carry out tasks, but on the availability of these groups to take on new and/or different responsibilities. Attitudes and perceptions of PHCT staff to their present workload may have a crucial impact on their perceived ability to take on new roles and new responsibilities. The changing nature of the workload was a common theme among participants in the focus groups.

While the extracts in the previous chapter have concentrated almost solely on GP views, the changing nature of the workload had also had a significant impact on the attached staff. On a positive note, some district nurses felt that many of the inappropriate, non nursing tasks (e.g. making patients' breakfasts) had now been removed from them, although a recurrent theme among attached staff was the problems that change, specifically the shift from secondary to primary care, had caused in terms of increased workload. Many of the problems stemmed from the fact that it was perceived that resources (i.e. manpower) failed to keep pace with altered demands;

".....community work has got more involved. I haven't really got enough clinical nurses. They say that 25% of my time should be managerial and 75% of my time should be clinical....it's getting more, I'm afraid the other way round" **District Nurse, Practice 7**

Early discharge from secondary care was identified by many of the district nurses and also the midwives as a source of extra work, which, as far as the district nurses were concerned, was not always appropriate, as illustrated by a conversation between a district nurse and a GP;

"... we're going in and checking on wounds even though they may not need checking on. But the hospital insist on sending us to go and visit on the third day wound check" **District Nurse**

"... its actually generating ... your having to travel 15 miles in total to do very simple work. Well that's stupid isn't it, really? **GP**

"Yes" **District Nurse, Practice 6**

3.4 SUMMARY AND DISCUSSION

As with GPs, there is wide variation in the pattern of nurse activity between practices. According to their own reports, nurses concentrate differentially on different aspects of their general job description; however, in general, a practice nurse does appear to be spending more time on diagnosis than anyone else, a district nurses more time on treatment than anyone else and a health visitor more time on screening than anyone else. We also asked the nurses to complete dedicated 'administrative' diaries; and the results are reported in Appendix AD.

Taken at face value, each type of nurse seems to be involved in similar activities but in different proportions. Thus, if based only on these categories of reporting activity, one could apparently substitute a practice nurse from one practice for a district nurse from another; indeed, in some practices, practice nurses are carrying out as much health education as health visitors. However, detailed tabulations show that these activities are being carried out in different locations - thus practice nurses are carrying out health education on surgery premises and health visitors are undertaking this activity as part of their domiciliary visits. Another possibility, of course, is that they are treating different client groups, but we did not collect detailed data of this kind.

Although the location of the different types of recorded activity is not currently a major issue, the fact that different types of nurses are undertaking similar activities albeit in different locations is indeed likely to become an important issue in an increasingly cost-conscious primary care led NHS.

CHAPTER 4 : TEAMWORKING AND NURSING REFERRAL PATTERNS

4.1 TEAMWORKING IN PRACTICES (GENERAL)

The description of workload of the main professional groups in the core staff of the PHCT prompts the question as to how well the different groups work together. Indeed, part of our enquiry focused on the notion of teamwork; the rationale for this being that - no matter what everyone's attitude is regarding the concept of delegation - spreading workload activity across all members of the PHCT would fail if the team, however defined, failed to work as a team.

The first part of this chapter therefore describes briefly the composition of the teams in the practices we studied and the results of a 'teamworking' questionnaire distributed to all personnel working in or from the surgery premises, in order to assess the extent to which the different members of the Primary Health Care Team thought they worked together as a Team.

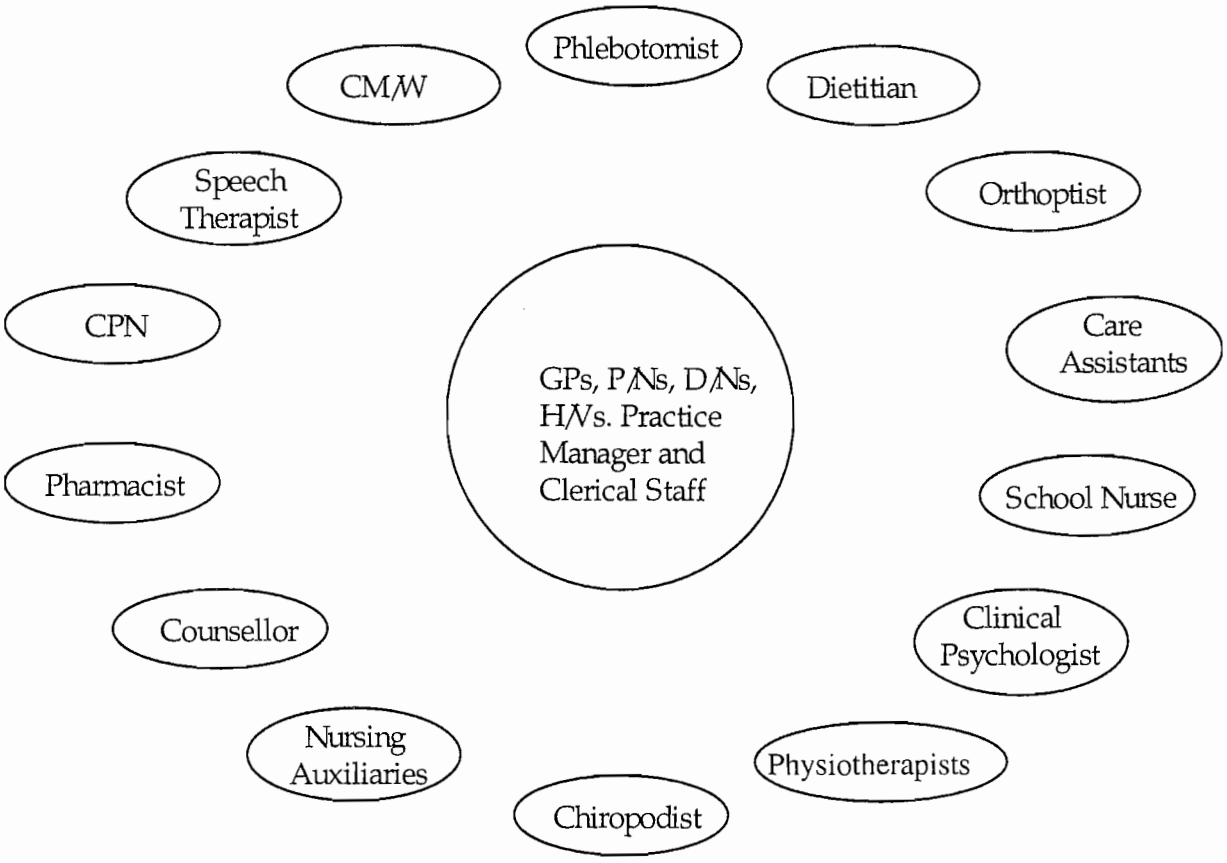
In order to illustrate the power of this questionnaire, we relate the variations in the nurses' responses to the teamwork questionnaire to the pattern of referrals to and from nurses (there were, of course, only referrals from GPs). The second and third part of the chapter therefore report data from the entries in the nurse diaries as to the source of referral of the activities in each of the half hour slots.

We have collected data from 10 sites. In terms of numbers, the teams ranged in size from 23 to 46. However there were wide variations in the composition of the 'team' not wholly related to size: whilst most could call on a community midwife and many on a community psychiatric nurse, this was not true for all. Fundholders could call on a wider variety of professionals but this appeared to be associated with their size rather than their status (see Appendix IV on the composition of each Team).

For the purposes of this presentation, we have divided the staff into three groups: 'core clinical staff' - doctors and practice nurses; non-clinical staff - practice manager, clerical staff and

receptionists; and attached staff - para-medical professional groups such as dietitians, phlebotomists, clinical psychologists and others in addition to district nurses, health visitors. (see Figure 4)]

Figure 4 Composition of Primary Health Care Teams



Since teamworking is only part of our enquiry into skill mix in general practice, an off-the-shelf instrument was chosen rather than developing our own. This instrument, which has been developed and validated by Poulton & West (1993) on approximately 745 individuals working in PHCTs, purports to identify some of the core dimensions of the concept of teamworking - such as interaction between team members, participation of all professionals in the team, communication within the team and the understanding of each other's roles. Respondents'

answers are aggregated to a score on each domain. The average values are: participation - 45.6; innovation - 29.2; shared orientation - 54.5; task orientation - 38.2; skills - 69.3; knowledge - 74.9; valuing - 92.0; pass information - 74.4; receive information - 71.8; discuss information - 64.3.

Brief description of domains:[1]

Participation: information sharing and communication within team

Innovation: the extent to which team facilitates development and implementation of new ideas

Shared objectives: perception of value of team objectives, possibility of their achievement and extent to which they are understood & shared by other team members

Task orientation: ability of team to be reflective, constructively self critical, co-operative & performance orientated

Skills: own skills used appropriately

Knowledge: understanding knowledge required by other types of staff

Valuing: importance of other staff groups for achieving team objectives

Pass information: the amount of information passed on to other team members

Receive information: the amount of information received from other team members

Discuss information: the extent to which work related problems are discussed among team.

[1] Skills, knowledge and valuing are know collectively as "understanding of team roles"; Pass, receive and discuss information are known collectively as "interaction within the team".

All members of the PHCT at each site were approached by a research nurse and asked to complete a questionnaire. Most questionnaires were returned before the end of each site visit and, if this was not possible or was inconvenient, stamped addressed envelopes were provided.

RESULTS

Overall 208 questionnaires (76 from 'core clinical staff, 63 from attached staff, and 59 from clerical staff in addition to the ten from the practice managers) were returned with an overall response rate of 73% (details are in Appendix TWK, Tables TWK1 and TWK2). The responses from each of the dimensions have been analysed according to the size of the practice and the richness or weakness of the practice in terms of skill mix. One would hypothesise that practices with large numbers of patients would be most likely to deploy their staff in different ways to smaller practices and thus would have different ways of teams working and may be more "anonymous". Equally, the mix of skills (as defined in our ratio of P/Ns : GPs) may point to differences in at least some of the domains of teamwork measurement such as participation and communication within the team.

The analysis reported in Table 4.1 is the result of including main effects and interactions where appropriate. It shows that the skill mix and the size of practice variables are significant for the first four domains (and also in respect of the knowledge dimension). For the skill mix variable, the differences are always in the hypothesised direction - that is practices with "richer" skill mix were "teamier" in respect of levels of participation, innovation, shared objectives and task orientation; whilst for the "size" variable, there was more participation and innovation in smaller practices, but more shared objectives and task orientation in larger practices.

Table 4.1 Tests of Differences Between Means of Teamwork Domains in Different Kinds of Practices

	N	Rich/weak skill mix	Large/small practice	Interaction
Participation	205	Sig*	Sig**	NO
Innovation	200	Sig*	Sig**	NO
Shared objectives	195	Sig*	Sig**	Sig**
Task orientation	198	Sig*	Sig*	NO
Skills	167	NS	NS	NO
Knowledge	159	NS	Sig**	NO
Valuing	54	NS	NS	NO
Pass information	170	NS	Sig*	NO
Receive information	174	NS	NS	NO
Discuss information	181	NS	Sig*	NO

Notes 1 ** Significant at 1% level; * Significant at 10% level

2 Practice groupings:
Skill mix: Rich/Weak: Rich - 2,3,5,9; Medium - 4,7,8; Weak - 1,6,10
Size: Large/Small: Large - 6,7,10; medium - 3,5,9; small - 1,2,4,8

3 The 10% value (rather than the 'conventional' 5% level) has been used so as to identify possible patterns.

Thus, PHCT members of smaller practices tend to be more positive about the participative and innovative nature of their practice; whilst members of larger practices tend to be more positive about the extent to which objectives are shared and the team is task oriented. One could interpret these differences as reflecting the relative flexibility of smaller teams contrasted with the inevitably more hierarchical nature of larger teams. It also raises questions about the compatibility of several groups of professionals working together without clear role definition. However, if a variable indicating practice membership was included, these effects were only retained for the first domain "participation", becoming not statistically significant for the other domains.

To conclude only that practices are different requires further scrutiny: we have therefore pursued the analysis for the first four dimensions by looking at the potential effect of other characteristics of the PHCT and have introduced more detailed variables (see Table 4.2):

- in addition to skill mix of the team, we have included a variable for each respondent indicating whether they are a doctor, a nurse, a member of another professional group or one of the administrative staff;

- in addition to the difference between large and small practices, we have included variables for the precise size of list, the list size per partner, and the total number in the PHCT

Table 4.2 Multivariate Analysis of Teamworking Domains (N=172)

	Participation		Innovation		Shared objectives		Task orientation	
	SoS	F	SoS	F	SoS	F	SoS	F
Within and residual	7088	-	3388	-	1789	-	12466	-
Total list size	193	4.34*	16	0.74	247	2.21	128	1.64
List size per GP	36	0.81	3	0.14	601	5.36*	34	0.43
N in PHCT	255	5.73*	23	1.08	331	2.95*	137	1.75
Professional group	418	2.34	78	0.91	392	0.87	51	0.16
Inter-site	605	2.26*	315	2.47*	2368	3.52**	1672	3.56**

* $P < 0.05$
** $P < 0.01$

The variable representing skill mix no longer appears in the analysis; and the respondent's professional attachment appears but, in every case, is not statistically significant.

For two of the four domains (participation and shared objectives), the membership of the PHCT and either list size or list size per GP is significant; but none of these variables is significant for

the other two domains (innovation and task orientation). In all cases, however, the variable reflecting the difference between practices is always significant.

4.1.1 Focus group discussions and general teamworking

In fact, all practices in our sample felt that they worked well as a team, and were consistent across groups in the attributes that were necessary for good team functioning; trust, respect, feedback, communication, openness to change, adaptability and the sharing of goals, which were sometimes formalised in practices which had mission statements.

Two crucial factors in promoting good team working were the accessibility of team members to each other and regular team meetings. In some practices all staff (including attached staff) were based, or at least had an office, in the same building. This allowed staff to freely access and share relevant information;

"I think one of the most beneficial changes for us has been since we started entering our visits and ....accessing the computer here in the surgery.....we find our work more satisfying and [there's] certainly better continuity....being able to access the GPs' computer and see what's already been done, you know, the information that we need about patients" Health Visitor, Practice 1

The value of team members being housed in the same building was also recognised by practices where this was, at the time, not possible;

"The health visitor for example, we already have regular meetings and speak on the phone, leave messages around for....but I suspect if she were on the premises, you'd be much more likely to....I've seen a child across the road today with diarrhoea and vomiting and [mum] is absolutely brainless, really and she needs somebody to go in the next day and make sure that it's getting better. I can't rely on her to come back for herself and I think if we had a health visitor here, I might have said could she go and see her tomorrow....which I don't because I know, for one, she's got enough to do and she's not immediately available". **GP, Practice 5**

While all participants felt that they worked well as a team, it was obvious that there were "teams within teams". One example was that receptionists saw themselves as a separate team. This was

explicitly stated in one group, but access to receptionists' views in the formal setting of groups was difficult, not least because they were often not invited by the practice manager to take part! Another informal team was that of the nurses; practice nurses and attached staff worked together, complementing each others' skills;

"We work as a team, don't we? We want some advice from [the district nurse], we answer hers, don't we?" **Practice Nurse, Practice 8**

Changes in management structure have affected the working relationship between attached staff and their managers. Among district nurses and health visitors in some practices, a climate of uncertainty and some resentment was apparent between nursing staff and their managers e.g.

"Our management wanted us to do as many visits as absolutely possible and they found all sorts of ways and means to provide us with more work to do. That was their criteria for the contract. We would do as many visits as possible each month to show how busy we were. They took no account of the fact that some visits take half an hour and others take five minutes...or ten minutes. And sometimes you can be in a house for an hour and a half."
District Nurse, Practice 6

Fundholding seemed to offer practices an opportunity to resolve some of the problems between attached staff and managers. One practice manager remarked that there had been greatly increased communication between the practice staff and attached staffs' managers since they became fundholding. Another fundholding practice had, in response to their district nurses' frustrations, changed managers. The well-being of the attached staff was seen as important not only for themselves, but for the team as a whole, as discontent in one part of the team had an effect on other members;

".....it's had a knock on effect....really the air of uncertainty and unhappiness, it feeds through"
GP, Practice 2

While all attached staff expressed at least some reservations about some aspect of their management, staff in practices which were not fundholding appeared to be more vociferous about their frustrations with management than their counterparts in fundholding practices. One explanation for this is that staff attached to non fundholders perceived that they had fewer resources available to alter the status quo and improve their situation.

In general, participants felt that there were not enough resources available for present changes in the health care system, which obviously affected their perception of future changes. One GP seemed to speak for many of the participants when he said;

" And secondary services.....It's hard to integrate them and it's hard to divide them. You don't know quite where each bit slots in. And we're going to run short of space and manpower, or person power, to do this sort of work. When we were just running a service for the sick, ...the workload was very much less. Now we're running a service for all sorts of other people other than just those who are acutely ill. And it's beginning to be very, very hard" **(Practice 2)**

4.1.2 Conclusion to general teamwork section

Even after controlling for total list size, list size per partner, numbers in the PHCT and professional type as well as practice skill mix, the level of morale as measured by the four main teamwork domains (participation, innovation, shared objectives, task orientation) varies significantly between practices. It is noticeable that, after allowing for size (whether measured in terms of total list size, list size per GP, or the number in the PHCT), the skill mix variable is no longer significant. Once again, this structural characteristic does not provide good discrimination - this time of teamworking

4.2. NURSING REFERRAL PATTERNS

4.2.1 Who initiates activities?

Each of the 71 nurses (28 practice nurses, 30 district nurses, 13 health visitors) was asked to record, for each of the entries on their diary, who had originally initiated each of the activities

recorded (choosing from among self/patient, practice nurse, general practitioner, district nurse, health visitor, relative, hospital etc.), and whether or not they thought that they would themselves have delegated the activity. Detailed tables on the flow of activities between GPs and nurses and patients and between different types of nurses and patients are shown in Appendix ND, Tables ND6 to ND12.

The main features of the tables in the Appendix are given in Table 4.3, showing the extent to which the activities of practice nurses and district nurses are initiated by their patients, their colleagues or the GP (similar tables have been compiled for the health visitor but, in the vast majority of cases, their activity is self or patient initiated). There are distinctive patterns between practice nurses and district nurses which is probably a reflection of different ways of managing case load:

- ***Treatment***: Approximately the same numbers are available for practice nurses (n=423) and district nurses (n=484) for this analysis with very few others concerned. The majority of the conditions treated by both practice nurses (57%) and district nurses (63%) are self or patient initiated but there is a noticeable difference between the 27% among those conditions treated by practice nurses which were initiated at least in part by the GP compared to one in 14 among those treated by district nurses. Of course this will mostly be associated with the different location of their treatment activity (see previous chapter).

- ***Immunisation and vaccination***: The bulk of cases available for this analysis were those carried out by practice nurses (n=193) with very few by district nurses (n=5) but with 44 cases involving 'others' of which 19 were by health visitors. Two thirds of the immunisations and vaccinations carried out by practice nurses (67%) and all of those carried out by 'others' had been initiated by self or patient; one-sixth of those carried out by practice nurses had been initiated by the GP.

- ***Diagnostic Tests*** : Once again, the bulk of cases available for this analysis were those carried out by practice nurses (n=475) with very few by district nurses (n=35) but with 101

cases involving 'others'; whilst all the diagnostic tests carried out by 'others' had been initiated by themselves or the patients, nearly half (42%) of those carried out by the practice nurse had been initiated by the GP.

- ***Hygiene*** : among the hygiene activities carried out by practice nurses, just over 6% had been initiated by the GP, and an even smaller proportion of the district nurse's activity (1%).

- ***Advice and Reassurance***: whilst a similar proportion (70%) of the instances of advice and reassurance activities reported here had been initiated by self or patient, 16% of those carried out by the practice nurse had been initiated by the GP compared to 7% of those carried out by the district nurse.

By comparing the row percentages for GPs, we can assess the flow of referrals from the GP (some of these percentages refer to the tables in the Appendix).

- ***Treatment*** : among those delegated/referred for treatment by the GP (n = 147), 77% were dealt with by the practice nurse compared to 23% by the district nurse.

- ***Immunisation and Vaccination*** : among those delegated/referred for immunisation and vaccination by the GP (n=31), nearly all were dealt with by the practice nurse.

- ***Diagnostic Tests*** : among those delegated/referred for diagnostic tests by the GP (n=217) over 90% were dealt with by the practice nurse, compared to under 10% by the district nurse.

- ***Screening*** : among those delegated/referred for screening by the GP (n=73), over 60% were dealt with by the practice nurse compared to just over one third by the district nurse.

- ***Health Education*** : among those delegated/referred for health education by the GP to nurses (n=49), nearly all (90%) were dealt with by the practice nurse compared to just 10% by district nurses.

- ***Advice and Reassurance***: among the 63 cases delegated by the GP, nearly two-thirds were dealt with by the practice nurse and just over a quarter by the district nurse.

The point about the ways in which case loads are managed within the Primary Health Care Team referred to above in commenting upon the patterns of caseload of the different types of nurses would probably apply to an even greater extent to activities initiated by the GP.

Table 4.3 Proportion of activities of each type self-initiated or delegated from GP (PNs + DNs only)

		Treatment		Immunisation + Vaccination		Diagnostic Tests		Hygiene		Admin + Reassurance	
		C%	R%	C%	R%	C%	R%	C%	R%	C%	R%
PN	Self	57	43	67	73	45	66	94	12	70	24
	GP	27	77	16	97	42	91	6	20	16	65
		100	x	100	x	100	x	100	x	100	x
DN	Self	63	54	(60)	2	29	3	77	77	70	21
	GP	7	23	20	3	54	9	1	40	7	27
		100	x	100	x	100	x	100	x	100	x
	Self	x	100	x	100	x	100	x	100	x	100
	GP	x	100	x	100	x	100	x	100	x	100

We have already remarked (Chapter 3, section 3.2) that there are substantial variations in the nurse activity patterns between the practices that may suggest that community nurses work in different ways across the practices. The extent to which the different activities have been initiated by the nurse herself (or by the patient) as compared to the proportion delegated from the doctor is shown for the different practices in Table 4.4 and broken down by age of the nurse and number of years (s)he has been in the team in Table 4.5. Overall about a fifth of practice

nurses and about a tenth of district nurses' work is initiated by the doctor whilst for both types of nurse, between three fifths and two thirds is initiated by themselves or by the patient (Table 4.4). However, there are substantial variations between the practices in the extent to which the activities of practice nurses and district nurses are self-initiated or initiated by the doctor.

Table 4.4 Proportion of Activities of Practice Nurse (N=28) and District Nurse (N=30) Initiated by Self or Patient and by Doctor in Each Practice

	PRACTICE NUMBER										All
	1	2	3	4	5	6	7	8	9	10	
PN self initiated	43	67	47	55	68	77	59	88	70	71	63
From Doctor	24	9	40	21	19	19	18	10	20	13	20
DN self initiated	70	29	98	98	54	31	53	56	51	97	65
From Doctor	13	11	1	0	1	19	25	24	0	1	9

Overall older practice nurses tend to initiate more of their own activity but receive less from the doctor but the reverse tends to be true for district nurses (Table 4.5). More detailed tabulations show that this difference between practice and district nurses in terms of the proportion self-initiated or doctor initiated is not a function of the number of years that the nurse has worked in the team. A possible interpretation is that the tendency to initiate is a function both of the different history of the two groups of nurses and of their different structural positions within PHCTs - and therefore their levels of confidence in working with other professionals - rather than their experience with other team members.

Table 4.5 Proportion of Activities of Practice Nurse and District Nurse Initiated by Self or Patient and by Doctor by Age of Nurse and by Number of Years (S)he has Been Within the PHCT

	Practice Nurse			District Nurse		
	N	Self Initiatied	Received from GP	N	Self Initiated	Receives from GP
Age						
20-39	12	58	24	8	76	11
40-49	6	69	20	11	68	7
50+	7	70	14	3	69	18

4.2.2 Nurse referrals to others

The proportion of cases/activities where the nurse reports s/he is able to refer on to other members of the PHCT is shown in Table 4.6. Once again there is significant variation between the practices with between 10% and 15% being currently referred in practices 3, 5 and 7 compared to hardly any in practice 4 and only rare mention of a potential referral except in practice 9 where this was applicable to 1 in 7. However, overall, the percentages are relatively small - and represent only 349 cases out of 2296 where this was reported (about 15%) - perhaps reflecting the extent to which practice nurses, district nurses and health visitors feel that they have distinct and separate roles but perhaps also reflecting the extent to which the process of referral is seen as the prerogative of the GP.

The content of what the nurses thought they could have delegated to someone else is detailed in the Appendix (Table ND14). Of the 142 cases, where the nurse reported that an activity was *currently* being delegated and gave details, a quarter involved advice (see Table ND14 in Appendix ND). Of the 45 cases where the nurse thought that the activity could *potentially* be delegated - either to someone in the current team or to an enhanced team - and gave details of the contents of that activity, over a third fell into the 'Other' category (see description of categories of content of delegatable tasks in next chapter : GPs) and a quarter involved screening: otherwise, there was no particular pattern.

Table 4.6 Proportion of Consultations When The Nurse Reported That They Were Currently Being Referred or That There Was Some Potential For Delegation

Practice	Percent of Consultations (Overall N = 2296)			
	Currently Referred	Potentially Referrable	To Present Team	To Enhanced Team
3	13.7	0.2	0	0
4	2.7	4.1	0	0
5	14.6	2.2	0	1.1
6	-	-	-	-
7	10.2	0.5	0.3	0
8	5.7	0.6	0.3	0
9	4.4	14.2	7.5	6.6
10	5.4	1.2	0	1.2
All	(N = 223) 9.7	(N = 129) 2.2	0.9	0.9

Source: Clinical Delegation Diaries

4.2.3 Teamworking and nursing

The data reported above raise the issue of the extent to which the different groups of nurses felt that they are part of the PHCT, what influences their attitudes and the possibility of a link between the way in which nurses deployed in the practices and their perceptions of the extent to which each practice works as a team. The overall values are given in Table 4.7: there is no clear difference between the three groups of nurses. However nurses' perception of the team does depend on practice organisation in ways which one might expect: thus, when the average teamwork values for different types of nurse in each PHCT are correlated with the proportion of all visits in that practice which are to one of the nurses, nurses tend to have more positive views of the team when they are more involved (Table 4.8) with seeing patients.

Table 4.7 Overall Values of Attitudes to Teamworking

	N	Participation	Innovation	Shared Objective	Task Orientation
Practice Nurses	29	44.3	27.9	52.8	37.0
District Nurses	21	45.4	28.8	50.3	38.0
Health Visitors	15	44.3	27.5	47.4	35.4

Table 4.8 Association Between Proportion of All Visits To The Nurse and Nurses Views of the Team

	N	Participation	Innovation	Shared Objective	Task Orientation
For all Nurses	65	.32**	.26*	.35**	.29*
For P/Ns only	29	.38	.38	.43*	.40*
Controlling for type of nurse	66	.30*	.30**	.38**	.31**

*P < 0.05
** P < 0.01

Obviously these factors - the process of referral from GP to nurse, the process of referral from the nurse to other members of the PHCT, and the proportion of all consultations of the practice that are conducted with the nurse - interact in complex ways on the extent to which nurses feel positively towards the team. The analysis of variance, presented in Table 4.9A and 4.9B aims to identify the most important among these factors and the directions of their influence upon nurses' attitudes towards the team. The independent variables in these analyses are:-

the proportion of the nurse's activity that is self, or patient, initiated;
the proportion of activities referred from the GPs;
the proportion they think might be referred; and
the proportion of all the consultations of the practice that is conducted by nurses.

Both practice nurses and district nurses are more likely to feel that the team has shared objectives in practices that make the most use of nurses for consultations. Otherwise the patterns are very different.

For practice nurses all of the other variables, except the degree of self-initiation of activity, and their perception of the potential for referral are significantly related to at least one of the perceptions of the practice as a team (Table 4.9A). Practice nurses rate the practice **more highly** as a team in terms of participation and task orientation if they are **currently referring** on parts of their workload and **less highly** as a team if a substantial proportion of their workload is **initiated by the doctors**.

Table 4.9A Analysis of Variance for Practice Nurses (N=29)

	Participation	Innovation	Shared Objective	Task Orientation
SS DF	420.2 15	539.2 16	1878.7 16	1317 15
% self initiated % received from doc	- 299.5** (-)	- -	- -	- 516.4* (-)
% currently referred on by nurses	334.7** (+)	31.3 NS	-	531.9* (+)
Proportion of all surgery visits to nurses	-	-	383.8*(+)	-

* $P < 0.05$
** $P < 0.01$

For district nurses all of the five variables have at least one significant association with the perception of the team (Table 4.9B). The direction of these relations is patterned quite differently from those of practice nurses. In contrast to practice nurses, where district nurses **receive** work from GPs they are more likely to view the practice **positively** in terms of participation and innovation; and when they **refer activities on** they are more likely to have **negative** perceptions of the team in terms of participation, innovation and task orientation.

Indeed, the extent to which district nurses' involvement in the team is related to their positive views of the team is illustrated by the negative relation between the proportion of their activities which are self-initiated and their perception of the team as having shared objectives.

Table 4.9B Analysis of Variance for District Nurses (N=21)

	Participation	Innovation	Shared Objective	Task Orientation
SS Dof	164.3 10	162.4 10	534.1 10	336.2 10
% self initiated % received from doc	- 150.2* (+)	- 67.8* (+)	257.3* (-) -	- 321.5* (-)
% currently referred % potentially referrable	106.9** (-) 142.4* (+)	48.0 (NS) (-) 81.4* (+)	- -	220.6* (-) 294.6* (+)
Proportion of all surgery visits to nurses	-	-	394.2* (+)	-

* $P < 0.05$
** $P < 0.01$
(+) and (-) refers to the direction of the association.

4.2.4 Summary and discussion

According to the activity diaries completed by the nurses, which also asked for the source of referral, the majority of activities currently delegated by the GP are to the practice nurse, with the district nurse receiving only about a quarter of the GP referrals for treatment, screening and advice and reassurance; GP referrals for immunisations, diagnostic tests or health education were dealt with almost universally by the practice nurse. This is most likely a reflection of the degree of 'independent' case-load management of P/Ns and D/Ns. It is also noticeable that there is apparently little referral between different types of nurse.

The extent to which district nurses function more independently than practice nurses is illustrated by the relative proportion of their activities which are referred from the doctor, but it

is interesting to note that older P/Ns tend to report more self-initiation and less referral from the GP than their younger colleagues - thereby showing more confidence with their role perhaps? This is re-inforced by the strong correlations between the proportions of all consultations with the practice which are with a nurse and the nurse's positive views of the team.

The different structural positions of practice nurses and district nurses within the PHCT are illustrated by their different perceptions of the extent to which they self-initiate or receive work from their GPs. This is confirmed by the associations between the proportions of their activity which are self-initiated or received from the GPs and their attitudes to working in the team.

CHAPTER 5 : GPs AND DELEGATION

5. DELEGATION BY GPS

The context and opportunities for delegation for GPs have been recorded in several ways:

- in each of the 836 consultations observed, the GP was asked whether or not the consultation (or part of it) could have been delegated/referred to the current PHCT or to an enhanced PHCT;

- GPs were asked to complete for one week a 'delegation diary' about the possibilities for delegation of their activities throughout the day;

- (teamwork; although this topic does not address the issue of delegation *per se*, it provides the context for the patterns of delegation or referral which is why it has already been described in the preceding chapter - Chapter 4).

Each of these data sets provides a different perspective on the opportunities for delegation.

5.1 Opportunities for delegation reported from consultation matrices

Of the 836 consultations that were observed by the research nurses, in 326 (39%) a "delegatable element" was noted by the GP, of which 225 (27% of all consultations observed) could have been delegated to the current team, and 125 (15%) to an enhanced PHCT including 28 possibilities of delegation to either the current or enhanced team (Table 5.1). The proportions where a delegatable element was noted varied substantially between 24% for practice 4 and 57% for practice 5. There were some variation in the balance of preferences as between the current and an enhanced team with equal mentions in practices 1 and 4 and relatively very few mentions of the enhanced team in practices 8 and 9.

Table 5.1 Percent of consultations observed by research nurses when doctors agreed there was a delegatable element

Practice	N of consults.	Percent of Consultations			
		With potential for referral			Capable of being referred in their entirety
		To any source	To Current Team	To Enhanced Team	
1	89	44.9	19.1	22.5	21.4
2	81	50.6	34.6	18.5	17.3
3	72	52.8	34.7	25.0	27.8
4	93	23.7	14.0	15.1	6.4
5	76	56.6	43.4	14.5	23.7
6	92	34.8	27.2	13.0	8.7
7	125	28.0	18.4	12.0	20.8
8	55	49.1	45.5	9.1	18.2
9	85	31.8	25.9	7.1	17.7
10	68	30.9	20.6	13.2	7.4
All	836	39.0	26.9	15.0	17.3

Note also that there were 141 consultations (17%) where the GP claimed that all of the consultation could have been delegated.

When the Gps agreed there was a potential for referral, they were then asked whether that was to a member of the current PHCT or to a professional who could in principle be part of a PCHT but was not currently part of their team.

5.1.1 Time saving through delegation

Because the content of the consultation was being recorded at 30 second intervals, the researchers were usually able to make a crude time estimate of the time involved in delegatable

tasks (whether currently or potentially). Data were recorded in seconds and have been converted to minutes. The attached tables show the estimates of the potential for time saving based on the consultation matrices (N = 836); and how this varies between practices. Overall, it appears that nearly a quarter of consultation time could be potentially delegated (Table 5.2).

Table 5.2 Time Saving Through Delegation

Practice	N (all consultations)	Percentage of time that could be delegated			TIME (in hours)	
		Overall	Current	Enhanced	Overall	Delegated
1	89	30.1	13.5	16.6	8.5	2.6
2	81	26.9	18.8	8.2	10.3	2.2
3	72	35.1	19.3	15.7	8.25	2.9
4	93	12.2	4.7	8.2	13.1	1.6
5	76	35.9	30.4	5.5	10.2	3.7
6	92	20.0	14.5	5.6	11.3	2.3
7	125	22.9	14.4	9.5	14	3.2
8	55	20.6	14.8	5.8	5.3	1.1
9	85	19.3	13.8	5.5	10.6	2.0
10	68	12.3	6.5	5.8	9.4	1.2
All	836	23.0	14.7	8.5	100.9	23.3

There is a three fold variation in the proportion of time that GPs report could have been saved (between practices 4 and 5); and it is noticeable that, of the practices claiming that the highest percentages of time could be saved, (Practices 1, 3 and 5), two of these practices (Practices 1

and 3) are the practices with the highest proportion indicating the possibility of delegating to an enhanced team (Table 5.2). Among these consultations lasting 101 hours, nearly 24 hours could have been delegated/saved.

Because the time saving is per task - rather than per consultation - it is difficult to make a precise estimate of the potential time-saving overall. However, a best guess has been calculated by computing the time eventually delegatable in consultations (from the last two columns in Table 5.2) and then scaling this down according to the proportion of consultations observed where these data had been collected.

Thus, where there is the possibility of delegation, we are talking about a substantial amount of time; of the order of 3.5 minutes for each possible case of delegation (see Table 5.3). This appears to vary from 2.4 minutes (in practice 8) to 5.5 minutes (in practice 7).

Clearly, there are complexities where only part of a consultation can be delegated. The following table (Table 5.4) , therefore, focuses only on these consultations which - after discussions with the research nurses - were thought to be delegatable in their entirety.

Table 5.3 Percentage delegatable time among those consultations where there was some potential for delegation.

Practice	1	2	3	Percentage		
				Overall	Current	Enhanced
1	5.9	40	3.9	65.6	29.4	36.2
2	7.0	41	4.1	58.1	40.5	17.7
3	6.5	38	4.6	70.2	38.7	31.5
4	8.1	22	4.4	53.2	20.7	35.8
5	7.9	43	5.1	64.3	54.5	9.8
6	7.3	32	4.3	58.7	42.3	16.4
7	6.2	35	5.5	88.6	55.4	36.6
8	5.7	27	2.4	41.9	30.1	11.8
9	6.8	27	4.5	68.0	48.5	19.5
10	6.8	21	3.3	48.9	25.8	23.1
Total/ average	7.2	326	3.5	63.0	40.3	23.3

Column 1 = Average consultation time per practice
Column 2 = N consultations with possible delegation potential
Column 3 = Average delegatable time in these consultations

The 141 (or 17%) of all consultations which were thought to be delegatable in their entirety in fact represented less than 12% of all consultation time: thus shorter - and perhaps "easier"? - consultations were more readily delegatable. Moreover, the proportion of consultations thought to be delegatable in their entirety varied from 7% in practice 4 to 28% in practice 3 (see Table

5.4). Of course, these GPs only spent about 40% of their working time on consultations in surgery (see Table 2.1 in Chapter 2). A rough estimate would be that about 5% of their working week could be delegated.

Table 5.4 Percentage of Consultations Thought to be Delegatable in their Entirety

Practice	Total No. of Consultations	Fully delegatable consultations		Time Saving
		N	%	% of all consult time
1	89	19	21.4	15.9
2	81	14	17.3	11.3
3	72	20	27.8	24.6
4	93	6	6.5	4.6
5	76	18	23.7	12.1
6	92	8	8.7	4.9
7	125	26	20.8	18.2
8	55	10	18.2	9.0
9	85	15	17.7	11.5
10	68	5	7.4	3.2
	836	141	16.9	11.4

5.1.2 Description of delegatable tasks

The research team were given a free text field for recording the content of delegatable tasks. Initially, these were coded into the following categories:

RT1. **Depression**

RT2. **Chronic Disease Management**: asthma, diabetes, thyroid problems, hypertension, epilepsy, multiple sclerosis

RT3. **Urinary Tract Problems/Issues**: cystitis, UTI, incontinence, kidneys

RT4. **Skin Conditions**: lumps, bumps, warts, allergic reactions, infestations, eye infection, wounds, mouth, ulcers, stye

RT5. **Respiratory Tract**: colds, flu, tonsillitis, bronchitis, virus, pain

RT6. **Screening**: check-up, smears, BPs, blood tests, weighing, health appraisals

RT7. **Contraception**: Pill checks, IUD, HRT

RT8. **Prescribing Issues**

RT9. **Immunisation and Vaccination**

RT10. **Advice**: reassurance, support, counselling, marital problems, treatment queries, sick notes, sleep disturbance, ante and post natal checks, anxiety

RT11 **Gastro-intestinal problems**: D&V, constipation, indigestion

RT12 **Muscular-skeletal**: mobility, carpel tunnel syndrome, myelitis, aches, pains

RT13. **ENT problems**: ear test, syringing

RT14 **Minor operations**: (including toenails)

RT15. **Gynaecological problems**: menstruation etc.

RT16. **Other**: hernia, removal of stitches, dizziness, headache, behavioural problems, post-op review, assessment and treatment, care of the unwell

RT17. **Non-clinical**: administrative and technical activities not involving patient contact: for example, entering data on the practice computer and cleaning instruments

The data are presented in Table 5.5. There were 269 opportunities for delegation to the current team and 150 to an enhanced team. The main features of the data are presented in Table 5.5 and the full table in Appendix DEL. The greatest proportion of delegatable opportunities fall into giving advice and reassurance; whether to the current team or to an enhanced team. The potential for referral for screening, skin complaints and prescribing is also large, although the mention of the latter may be a reflection of the current interest in the launching of the Nurse Prescribing Initiative. With the enhanced teams, contraception assumes importance and, to a lesser extent, the treatment of muscular and skeletal disorders.

Table 5.5 Contents of Delegation Opportunities for GPs from Observed Consultations (Consultation Matrices)

	Potentially Delegatable to Current Team	Potentially Delegatable to Enhanced Team
	%	%
Skin complaints	12.4	12.1
Screening	16.4	5.2
Contraception	8.4	14.7
Prescribing	12.4	6.9
Advice & reassurance	21.6	25.9
Base N for all	269	150

The delegatable tasks have also been recoded as far as possible to ICD headings: that is where the content of the consultation could be related to an ICD chapter. However, in some cases, the consultation mostly involved a procedure or advice and these have been divided into clinical, social and administration. Of the 836 consultations observed about 85% were for conditions/symptoms and 15% were for procedures/advice (Table 5.6). Eleven per cent of the *consultations* involving conditions/symptoms and 15% of the procedures/advice were delegatable. Of the 1241 *topics* included in these consultations, 77% were related to conditions/symptoms and 23% were related to procedures/advice and whilst under 30% of the conditions/symptoms were delegatable over 35% of those involving procedures/advice were delegatable (this is a statistically significant different : se of diff = 2.2%). In other words, 'social' consultations (procedures and advice not codeable into ICD Chapter headings) are more easily seen as delegatable.

Table 5.6 Proportion of Consultations and Topics Delegatable According to Whether They Related to Conditions/Symptoms or to Procedures/Advice

	CONSULTATIONS			TOPIC		
	N	Col %	Percent Delegatable	N	Col %	Percent Delegatable
Condition/ symptoms	672	84.8	11.4	955	77.0	29.1
Procedure/ advice	120	15.2	14.8	286	23.0	36.4
Missing	44	-	-	-	-	
	836		11.9	1241		30.8

The distribution of the 836 consultations among the ICD Chapters is shown in Table 5.7. Apart from 17.5% of consultations being assigned to the miscellaneous symptoms Chapter (Chapter. XVIII), 12.9% are assigned to the respiratory symptoms Chapter (Chapter X), 9.5% to muscular-skeletal and 9% to clinical procedure/advice. The percent of consultations with a delegatable element varies from 21% of Chapter XI (Digestive System) to 56% of Chapter VII (Eyes). However, there does not appear to be any systematic pattern or association between the percentage distribution of consultations and the proportion of these which are thought to be delegatable.

The same table shows the distribution of the 1286 topics raised in consultation between the Chapters. Apart from the 16.3% of the topics assigned to miscellaneous symptoms (Chapter XVIII), 15.6% are assigned to clinical procedure/advice, 10.3% to respiratory symptoms (Chapter X) and 9.0% to muscular-skeletal. The percentage of topics with a delegatable element varies from 15% of Chapter XI (Digestive System) to 46% of Chapter I (Parasitic Diseases). Once again, there is little connection between the percentage distribution of topics and the percentage of these which are delegatable.

Finally in the same table the distribution of the 424 delegatable tasks is presented. Nearly a third (32.8%) of the clinical procedure/advice are seen as delegatable, 11.3% of miscellaneous symptoms and 11.1% of social procedure/advice, but not more than 8% of any other grouping are seen as delegatable.

5.2. OPPORTUNITIES FOR DELEGATION AS SELF REPORTED BY GP

Although in about three quarters of the 318 consultations where possibilities for delegation were noted, only one delegatable task was recorded; there were 82 consultations where multiple possibilities of delegation were recorded. Because there was sometimes more than one topic per consultation, the number of multiple delegatable tasks per topic was less than the number of multiple delegatable tasks per consultation (see Table DEL2 in Appendix DEL).

In addition to the recording by the research team of specific activities by each professional group - matrices of consultations observed with the doctors and the nurse diaries completed by the different groups of nursing staff - each member of the PHCT was also asked to keep a diary of the potential delegation opportunities which they encountered throughout the day. This took place in the second week of fieldwork. In respect of each activity/consultation, each member was asked to record whether any part of the activity/consultation was currently delegated and, if not, whether any part of it was potentially delegatable. As with the matrices used to record observed consultations above, there could be many tasks specified within an activity or consultation. [Note that these are mostly activities directly relating to the consultation as opposed to administrative components which were entered separately and these have been documented in Appendix AD.]

Table 5.7 Delegatability According to ICD Chapter

		CONSULTATION			TOPIC			Delegatable TASK	
		N	Col %	Percent including Delegatable element	N	Col %	Percent including Delegatable element	N	Col %
I	Infectious and parasitic	21	2.6	38	28	2.2	46	7	1.7
II	Neoplasms	8	1.0	38	11	0.9	36	6	1.4
II	Diseases of the blood	2	0.2	50	6	0.5	33	0	0.0
IV	Endocrine	34	4.2	26	55	4.3	19	9	2.1
V	Mental and behavioural	46	5.6	37	59	4.6	24	11	2.6
VI	Nervous system	20	2.4	40	24	1.9	29	7	1.7
VII	Eyes	16	2.0	56	24	1.9	38	8	1.9
VIII	Ears	36	4.4	50	48	3.7	45	15	3.5
IX	Circulatory system	53	6.5	34	69	5.4	20	7	1.7
X	Respiratory system	106	12.9	42	132	10.3	31	26	6.1
XI	Digestive system	29	3.5	21	45	3.5	15	4	0.9
XII	Skin and subcutaneous	57	7.0	54	96	7.5	41	34	8.0
XIII	Muscular skeletal	78	9.5	38	116	9.0	25	24	5.7
XIV	Genito-urinary	56	6.8	27	69	5.4	22	10	2.4
XV	Pregnancy	11	1.3	45	11	0.9	45	5	1.2
XVIII	Miscellaneous symptoms	143	17.5	35	210	16.3	26	48	11.3
XIX	Clinical procedure/advice	74	9.0	50	200	15.6	38	139	32.8
XX	Social procedure advice	17	2.1	41	47	3.7	31	47	11.1
XXI	Administration	12	1.5	58	36	2.8	38	17	4.0
Missing		17	2.0	15	-				
Total		836			1286			424	31.0

If there was a potentially delegatable task which was not currently being delegated or referred, each respondent was also asked to record whether or not it could be delegated to the current team or to an enhanced team (including for example, a nurse practitioner or a physiotherapist). Respondents were also asked to record the potential delegatee - that is the person who would carry out the task. This query was deliberately left open-ended - the intention being to allow GPs a free field to give examples of the types of personnel to whom they might refer. There are therefore two basic ways of assessing delegatability: whether or not the respondent thought a task was delegatable and whether or not a potential person was nominated. For the purposes of these tables, we have focused on the activities (or consultations) as the basic unit, and searched for the maximum possible number of delegation opportunities. (This means, of course, that there might have been some consultations in which there were some tasks that were currently delegatable, and some tasks that were considered to be not at all delegatable.)

Of those activities/consultations recorded by GPs, just over 10% were currently being referred and slightly less than a quarter (22%) contained a potentially delegatable element (Table 5.8). There is a wide variation between practices with:

- the proportion of consultations where an activity was currently being delegated (or referred) varied from 8% in practices 4, 8, 9 and 10 to 21% in practice 3.

- the proportion of consultations where GPs in the practice thought there was a potential for delegation/referral to the current and enhanced team varied from 12% in practice 9 to 35% in practices 2 and 6.

The opportunities for delegation reported by the GP are therefore divided; approximately one third currently being delegated and two thirds that could be delegated: also when compared with direct observation and interrogation of consultations, GPs overall seemed to be less aware of delegation possibilities when completing a diary (but see section 5.3 below).

5.2.1 Description of delegation opportunities

According to these diaries, there were 144 consultations containing an element which was currently being delegated, 195 which were potentially delegateable to the current team and 150 to the enhanced team. The main features of the data are presented in Table 5.9 and the full table in Appendix DEL. Of those currently delegated, over a third involved screening and over a sixth advice; of those potentially delegatable (whether to the existing or to an enhanced team), about a quarter involved advice and about 15% each screening and skin complaints.

Table 5.8 Whether or Not Delegatable Element in Consultation Reported by GP

Practice	No. of consults	No mention of delegation		Currently referred	With potential for referral to:		
		N	%		To any agent	Current Team	Enhanced Team
2	244	159	65	-	34.8	23.0	5.7
3	342	177	52	20.5	30.7	9.1	0.3
4	195	156	80	7.7	13.9	4.1	0.5
5	382	154	66	12.0	25.1	19.1	3.9
6	319	165	52	15.1	35.4	27.9	3.8
7	649	483	74	10.0	16.6	12.3	3.4
8	234	177	76	8.1	18.0	12.4	2.1
9	385	312	81	7.5	12.0	8.6	0.0
10	262	201	77	8.0	16.0	6.1	5.0
Total/ average	3012	1984	65.9	10.4	22.1	13.8	2.8

Note: Clinical delegation diaries were not used in practice 1; the clinical delegation diaries for practice 2 only dealt with potential, not current, delegation.

Table 5.9 Contents of Delegation Opportunities from Clinical Delegation Diaries for GPs : Main Features.

	Currently Delegated	Potentially Delegatable to Current Team	Potentially Delegatable to Enhanced Team
	%	%	%
Skin Complaints	6.9	13.8	12.0
Screening	37.5	16.3	6.0
Contraception	0.0	7.7	4.0
Prescribing	1.4	6.2	4.0
Advice	18.8	20.5	42.0
Base N	144	195	150

Note: These delegation opportunities were derived from the clinical delegation diaries.

These findings can be compared with those presented in Table 5.5 based on the consultations observed. Whilst similar topics tend to be mentioned frequently, there are some differences: thus, among those currently delegated, screening was mentioned twice as often in the clinical delegation diaries as compared to the observed consultations and both prescribing and skin complaints were mentioned much less in the clinical delegation diaries. This may be a phenomenon of selective recall or a real difference between consultation activity in the surgery and other clinical activity.

It is noticeable that apart from chronic disease management, immunisation and vaccination and screening which have "traditionally" been part of practice nurses' role - GPs point to many more opportunities for delegation than they admit to referring currently. This is especially noticeable in terms of "advice and reassurance" although it is unclear whether this is the whole consultation or part of a consultation.

Another comparison between what is currently or potentially referable can be made in terms of ICD headings. Whilst over a third of their reported consultations could not be assigned to a specific chapter other than as a clinical procedure or advice, among those allocated to a specific chapter, the most frequent were Chapter X (Respiratory System) and Chapter XII (Skin and Subcutaneous). Based on the diaries' about 9% (272/3095) of consultations were said to be currently delegated and 21% (639/3095) were thought to potentially include delegatable elements (Table 5.10). But the patterns were different. The majority of current referrals were for clinical procedures/advice (59%): of the remainder 9% were social procedure/advice, nearly 7% in Chapter XII (Skin and Subcutaneous), and 3% in Chapter IV (Endocrine), V (Mental and Behavioural), IX (Circulatory) and XVIIII (Miscellaneous symptoms). Among potential referrals' clinical procedures/advice again dominated (39%) followed by social procedures/advice, (11%), but the next most likely candidates were 9% in Chapter X (Respiratory), 7% in Chapter XII (Skin and Subcutaneous) and Chapter XVIIII (Miscellaneous) and 4% in each of Chapters IV (Endocrine) and XIV (Genito-urinary).

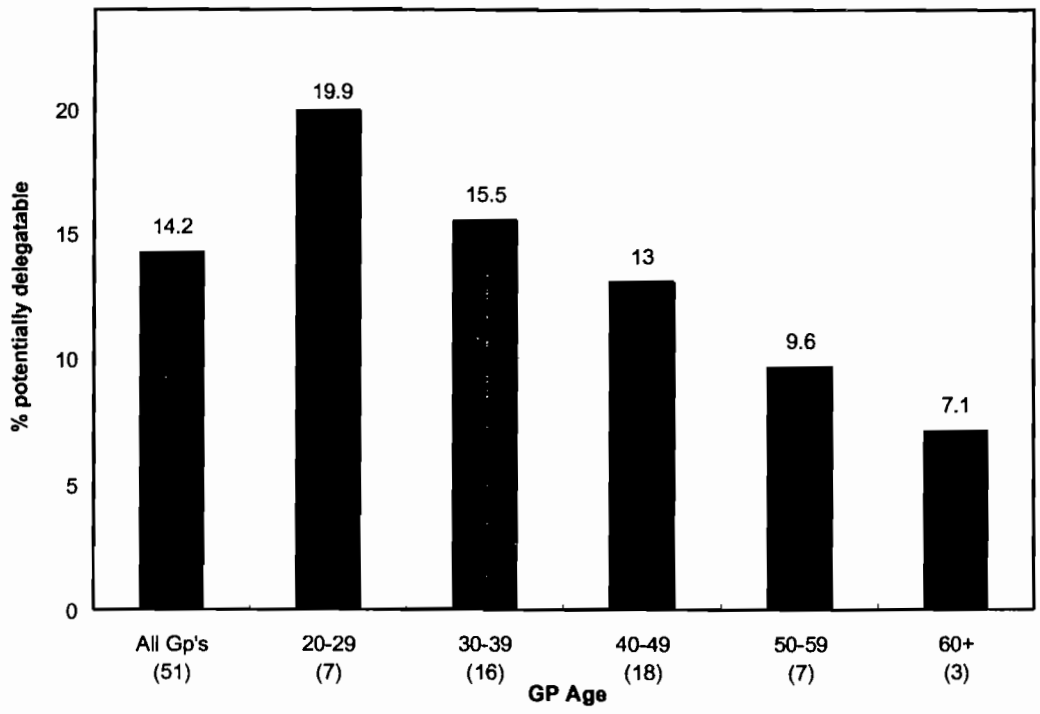
Table 5.10 Proportion Currently Referred or Potentially Delegatable from Clinical Diaries

		% Content of Consultations	% Currently Referred	Potentially Referrable
I	Infectious and parasitic	2.2	0.0	2.0
II	Neoplasms	0.4	0.0	0
III	Diseases of the blood	0.4	0.0	0
IV	Endocrine	3.1	2.6	3.9
V	Mental and behavioural	5.5	3.3	2.5
VI	Nervous system	1.4	0.0	0.6
VII	Eyes	1.9	0.0	2.0
VIII	Ears	3.1	1.8	1.6
IX	Circulatory system	3.8	2.6	0.8
X	Respiratory system	14.2	0.0	8.9
XI	Digestive system	3.3	0.4	1.6
XII	Skin and subcutaneous	6.5	6.6	6.7
XIII	Muscular skeletal	6.2	1.5	3.4
XIV	Genito-urinary	4.2	1.5	3.8
XV	Pregnancy	3.0	1.1	2.8
XVIIII	Miscellaneous symptoms	17.6	2.6	6.6
XIX	Clinical procedure/advice	16.0	58.8	38.8
XX	Social procedure/advice	4.9	9.2	11.1
XXI	Administration	2.4	1.8	2.8
		100 (N = 3095)	100 (N = 272)	100 (N = 639)

5.3 EXISTING DELEGATION AND POTENTIAL DELEGATION

Although the estimates based on the clinical diaries and on the observed consultations record different levels of potential delegation, they are highly intercorrelated (r=0.61, significant at less than 1%). The method of collecting the information is likely to provide one explanation for the differences in levels; for example, characteristics of GPs, such as their experience of knowing what is delegatable, may mean that their assessment, whether positive/negative of their own and others' skills, may interact with the method of data collection. Whatever the explanation, the strength of the association is remarkable, (between the age of the GP and the difference between their "prompted" (observed consultations) and "unprompted" (delegation diaries) perception of what is delegatable - see Figure 5: $r = 0.61$, $p < 0.01$) and suggests that experience might play a role in identifying the possibilities for delegation.

Figure 5 : Difference Between Percentage of Consultations Thought to Contain a Delegatable Element Obtained from Observed Consultations and Clinical Diaries.



However, in the delegation diaries, there is no significant correlation, at the GP level, between the perceived potential for delegation and the level of existing delegation. Consequently, it cannot be assumed that the greatest potential for delegation will be in either those practices where there are already high levels of delegation, fostered by an awareness of delegation issues; or in those practices where a very low level of current delegation gives the greatest theoretical potential.

Moreover despite the wide variations observed between practices in the tables presented above, in an analysis of variance, the practice effect does not account for a sufficient proportion of the variance to be significant for either currently referred or potentially referrable consultations however measured (Table 5.11). In other words the variation between GPs is 'sui generis' and cannot be attributed to a practice style.

Table 5.11 Analysis of Variance to Detect any Practice Effect on GPs Delegation Behaviours and Perceptions (N=42)

	Current Referred		Potentially Referred			
			from Diaries		from Observation	
	S.S	D.F	S.S.	D.F.	S.S	D.F
Within + Residual	.04	4	.14	4	.17	4
Practice	.06	7	.33	7	.36	7

Prima facie this is puzzling: one would have expected a general attitude towards delegation to inform both current practice and views about potential practice. The remainder of this section concentrates on this theme.

5.3.1 Possible determinants of delegation

Whilst the correlation between current and potential referrals is not significant, the pattern of associations between both these variables and the gender of the GP and the number of years with the practice are broadly similar (Table 5.12). Both female and male GPs are more optimistic about the potential for delegation than their actual current practice - with males especially being more optimistic. Newcomers (with the practice for one year or less) currently refer very little whilst "old hands" (with the practice more than 15 years) currently refer nearly a sixth of their consultations; and "old hands" are also more optimistic than newcomers about the potential for delegation. There is a strong positive correlation ($r = 0.55$, significant at less than 1%) between the number of years the GP has been with the practice and his/her judgement about the potential for delegation as recorded from the observed consultations. However there is no equivalent association with the delegation potential recorded by the delegation diaries; the difference between the two measures of potential delegation has already been shown to be highly correlated with GP age (Figure 5 above) which itself is highly correlated with the number of years in the team ($r = .79$).

Table 5.12 GP Characteristics and Delegation Behaviours and Perceptions (from both Clinical Delegation Diaries and Observed Consultations)

GP Characteristics	Female GPs (N=13)			Male GPs (N=25)		
	Currently Referred	Potentially delegatable		Currently Referred		
		Source - diaries	Source - observed consults		Source - diaries	Source - observed consults
GP age:					21	32
1 (20-29)	4	9	35	5	25	45
2 (30-39)	19	19	33	13	32	44
3 (40-49)	7	21	42	9	27	44
4 (50-59)	-	-	-	2	29	42
5 (60 and over)	-	-	-	11		
All	13	17	36	9	28	42
New-comers	4	11	35	0	31	44
Old hands	15	20	40	14	38	46

5.3.2 Perceptions of delegation and perceptions of teamworking

A priori it might be expected that those GPs who most actively delegate their current work, and perhaps those who see most potential for delegation, will be those with the most positive views on the practice as a team. The extent to which the pattern of referrals is related to the GPs' attitudes about the PHCT is shown in Table 5.13. The correlations between the perceptions of teamworking and the potential for delegation recorded from the observed consultations are effectively zero (see row 3). However, although mostly not statistically significant, the pattern of correlations between the perceptions of team-working and the percent of consultations which is currently referred is negative, whilst there are weak positive correlations with the percent which is reported in the delegation diaries as having a potentially referrable element.

Table 5.13 Correlations Between Delegation Behaviours and Perceptions and Views on the Practice as a Team (N of GPs = 43)

	Participation	Innovation	Shared Objective	Task Orientation	Years with Practice
Percent currently referred	-.22	-.11	-.39**	-.19	.10
Percent with potentially referrable element (diaries)	-0.05	.13	.13	.23	.55**
Percent with potentially referrable element (obs consults)	-.03	-.02	-.01	-.08	.17
Years GP in practice	-.12	-.06	-.17	-.04	1

** Significant at 0.01 level

5.4 FOCUS GROUP DISCUSSIONS ON DELEGATION

As would be expected, given the nature of the research, this topic generated the largest amount of data of any topic in the discussions. As the research focused mainly (although not exclusively) on the delegation of activities from GPs to nurses, usually practice nurses, much of the discussion focused around this area. The issues raised in the discussion can be divided roughly into three areas; activities which are or could be delegated to present or future members of the PHCT, the contribution of the extended role of the nurse to this process and perceived barriers to delegating all or part of GP consultations to other team members. The discussion about the activities that are currently being delegated is included here: the discussion under the other two headings - because they are concerned with the potential future of delegation - has been included in the last chapter.

Activities which could be delegated

Many of the GPs in the groups identified activities which could be delegated to other health care professionals. However, as we have shown in the analyses in this chapter of the completed diaries, there were individual differences between GPs and indeed all staff in their willingness to delegate some of their activities or take on new responsibilities. Some GPs felt that they were already delegating all that they could and were unhappy with many of the ideas which will be described below. Nurses also varied in their attitudes to possible extension of their roles, as we have shown in the analyses of their responses to the teamwork questionnaire.

One of the most recurrent themes in discussion of possible delegation was the perceived need for a suitably trained counsellor to be attached to the PHCT. While many surgeries in the study already had some counsellor provision, staff felt that there would be increasing emphasis on mental issues in primary care. In most of the practices involved in the study, existing mental health workers attached to the practices were a welcome addition to the team. However, most were working at full capacity, usually with waiting lists.

Some practice nurses suggested that the employment of a phlebotomist would be advantageous, while GPs in some groups felt that acute muscular injuries could be seen initially by an experienced physiotherapist. One GP suggested that s/he might possibly have some limited prescribing power. Health visitors across groups were consistent in identifying the need for clerical support which is unsurprising given the amount of time they report being spent on paperwork (see Table 3.3 in Chapter 3); and, in some cases, health visitors also suggested that nursery nurses should undertake some of their activities. Nearly all the participants felt that filling in forms was an activity which they could easily delegate; the problem was who would take over that task, especially as there seemed to be only minimal opportunities for increasing administrative delegation. Suggestions such as having labels to stick on the forms or printing the forms on a computer were suggested. The standardisation of laboratory forms was seen as a necessary prerequisite for the latter suggestion. Finally, many of the GPs felt that signing

sickness certificates, particularly repeat certificates was not a good use of their time and could be easily done by another team member.

5.5 SUMMARY AND DISCUSSION

These tabulations have identified a number of provisional results in relation to patterns of potential and existing delegation:-

1. Estimates of the potential for delegation are sensitive to the methods of data collection. In this case, prompted enquiries referring to previously observed consultations elicited significantly more suggestions for delegation than diaries completed "cold". The two estimates are highly correlated and the difference between the two decreases with the age of the GP.

2. The perceived potential for delegation measured by both methods was greater than existing levels of delegation. In some practices more than two-thirds of GP consultations would involve some delegation if all the potential was realised. But the level of potential and existing delegation were not associated.

3. Although there were major variations between the practices, there was no statistically significant practice effect to explain differences in the perceptions and behaviours of GPs in relation to delegation. On the basis of these data, delegation is not significantly related to "practice style".

4. The strongest determinant (of delegation) was the time a GP had been with the practice. Most other factors were not statistically significant, though there is some evidence of a gender effect. Women are less likely to suggest that there are opportunities for referral, but report higher levels of current referrals.

There are a significant number of opportunities for delegation both in respect of clinical activities (essentially consultations) and administration. On the basis of the consultations observed by our research fieldworkers and discussed with the GPs, around 39% included a 'delegatable element'; and a very crude estimate - not taking into account indivisibilities etc. - was that on average a third of the time involved in consultations was potentially delegatable. Reports of delegation possibilities vary widely between the practices with at least half of the consultations observed in practices 2, 3, 5 and 8 including a delegatable element compared to under a third in practices 7, 9 and 10; the estimate of time-saving varied from 12% to 36%.

If only consultations which are delegatable in their entirety are considered, the variability is even greater: under 7% of consultations in one practice to 28% of consultations in another. Of course these GPs only spent about 40% of their working time on consultations in surgery (see Table 2.1 in Chapter 2). A rough estimate would be that about 5% of their working week could be delegated.

In terms of their clinical work throughout the day (i.e. not only consultations), the GPs reported that just over 10% of their clinical activities were currently being delegated and a further 22% included a potentially delegatable element; and once again this latter varied widely with practices 2 and 6 reporting around a third, and practices 4, 7, 9 and 10 less than 20%.

Both from the consultation matrices and from the clinical delegation diaries, there is general agreement that the possibilities for the delegation of clinical activity are concentrated on 'advice and reassurance', screening and skin complaints.

Finally, whilst there are clearly a large number of possible influences on GPs' behaviour and perceptions in relation to delegation (see FGD in previous section), and, although some of the pertinent associations have been identified above, there remain unexplained variations.

The general conclusion from the analyses thus far concerns the relative independence of what GPs currently do and their perceptions of the potential scope for delegation. Not only are current

delegation and perceived potential not significantly correlated, they have different patterns of associations with the various factors that could be their determinants and correlates. These differences are important because they mean that one cannot simply infer the potential for increasing delegation/referral by simply asking GPs and, clearly, observing or recording current practice is onerous. However, the fact that GPs are prepared to consider substantially more delegation/referral than is currently taking place in PHCTs, and that this consideration increases the longer the GP works with the practice, suggests that there are both opportunities for facilitating change at the practice level and questions to address in relation to the education and training of GPs in skill mix issues.

CHAPTER 6 : PATIENT SATISFACTION

6. WHAT DO THE PATIENTS THINK?

The purpose of the analysis of patient outcomes was two fold:

- to examine how patient preferences are related to differences in the organisation of the PHCT.

- to examine whether there were any ways in which an enhanced skill mix (however measured) changes the management of asthmatics and diabetics.

This chapter focusses on the responses obtained from patients during the fieldwork periods at the practices. The questionnaire had two main sections: an enquiry as to how often patients had visited the practice and what they thought about the issue of continuity of care in general; and, with reference to that specific visit, who they wanted to see, who they actually saw, and their evaluation of their consultation at the surgery. The total number of questionnaires received was just under 2,300; but the actual total is 2,268 because of some invalid or missing answers. Obviously, there is no suggestion that this sample is representative of all patients on the lists of these practices: however, it can be considered as reasonably representative; firstly of patients who are seen during an average week in general practice (because data collection was spread throughout the year), and secondly of patients who - simply because they are more frequent attenders than most - are likely to have views about the organisation of care from the patients' point of view.

In the first section, we examine the issue of whether or not patients prefer continuity with the same member of the team or whether they would prefer to see another member of the team if that were to be sooner. In the second section, we are concerned with their assessment of this specific visit: did they see who they wanted to see? what did they think of the consultation and

how does that vary? Finally, in the third section, we ask whether there is any relationship between their views about continuity, their assessment of the current visit and the nature of the presenting problem.

6.1 FREQUENCY OF VISITS AND CONTINUITY

6.1.1 Overall pattern of frequency of visits and concern with continuity

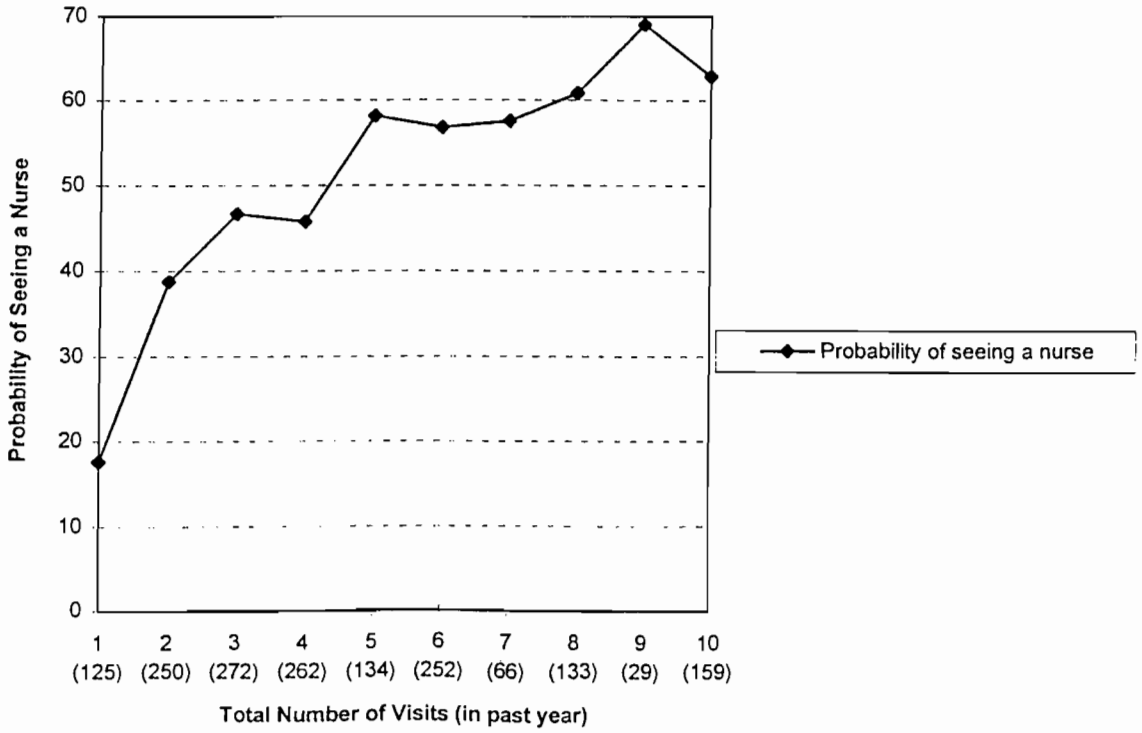
The number of reported visits in the past year to the doctor at the surgery varies from 4.6 to 7.1, around an average of 5.7 (Table 6.1); the number of visits to see a nurse is much less. Detailed tables for each practice (in Appendix PS1) show little difference for the number of visits to GPs, but large variation in the number of visits to the nurse (varying from 1.5 times in practices 4 and 10 to over 3 times in practices 2 and 7). The frequency of visiting a GP is of course larger than that reported in the Fourth National Morbidity Survey of General Practices (MSGP4, RCGP, 1995) because all the patients responding to this questionnaire had, *ipso facto*, visited at least once. The average number of visits in MSGP4, for those who had visited at least once, was 4.5 for males and 5.8 for females.

Many of the consultations with a nurse are during the same surgery visit as a consultation with a GP: however, the more a patient visits the surgery, the more likely it is that the patient has seen a nurse (or another member of staff) without seeing a GP (see Figure 6). Indeed all those reporting 10 or more visits during the last year have seen someone other than a GP on at least one visit.

Table 6.1 Visits to Surgery and Structured Characteristics of Practices

	N	Average no. of visits in past year	Range	Correlations with:		
				Team size	List size	List size per partner
Doctor	2268	5.7	4.7-7.1	.00	.00	-.04
Nurse	1998	2.5	1.5-3.7	.03	.02	-.06*
Total Visits	2156	7.1	6.4-8.2	.02	-.01	-.03*

Figure 6 : Probability of Visit to a Nurse or Another Member of Staff



The next table (Table 6.2) shows the characteristics of respondents by the fundholding status of the practice to which they belong. There are not many differences although it does appear that:

- patients are likely to have been registered longer (6+ years) in these fundholding practices (74% vs 65%);
- fewer fundholding patients have seen the doctor 10+ times and - to a lesser extent - fewer have seen the nurse 6+ times.

Table 6.2 Characteristics of Patients by Fundholding Status

Characteristics of Patients by Fundholding Status				
	FH (%)	No FH (%)	All	(N)
Time Registered <1 yrs	3.9	6.6	4.9	94
Time Register 6+ years	74.1	65.0	70.8	1353
0,1 or 2 visits to surgery	21.7	20.4	21.2	457
6-9 visits to surgery	23.0	23.5	23.2	500
10+ visits to surgery	23.3	24.6	23.7	511
0, 1 or 2 times seen doctor	23.0	29.3	30.5	689
6 - 9 times seen doctor	21.8	19.9	21.1	478
10+ times seen doctor	13.2	17.1	14.6	322
Not seen nurse	27.2	30.9	28.6	572
1 or 2 times seen nurse	50.7	45.9	48.9	976
6+ times seen nurse	7.2	8.3	7.9	158

Several questions were asked of the patient concerning their preferences in general - i.e. independently of the current visit - for different types of staff and for continuity (defined as seeing the same member of staff at each visit). The responses are summarised in Table 6.3. More detailed tables are given in Appendix PS, Table PS2. It demonstrates that whilst there is not much variation between practices in expressed preference for continuity of care (from 56%-

69%, with a maximum relative deviation from the mean of 13%), there are substantial differences in the preference for seeing another doctor if this would be quicker than seeing one's own GP (33%-53%, with a maximum relative deviation from the mean of 23%) and in the preference for seeing a nurse if this would be quicker than seeing a GP (38%-60% with a maximum relative deviation from the mean of 27%).

Table 6.3 Prefer Continuity or Seeing Another Professional by Practice

Percentages who prefer:	PRACTICE NUMBER										All
	1	2	3	4	5	6	7	8	9	10	
Continuity	48	68	59	61	66	68	69	56	66	56	64
to see other Doctor if sooner	71	34	50	48	49	34	40	44	41	53	43
to see nurse if sooner	57	53	60	47	41	44	42	53	38	50	47
Minimum N*	126	198	212	188	205	220	415	203	259	257	2293

* [There were a few people who answered one of these questions but not the others: the maximum discrepancy on the row total was 5].

The purpose of the following analysis is to examine whether these differences are related to characteristics of the patient or of the GP.

6.1.2 Characteristics of patients

The proportions of patients preferring continuity, seeing another doctor, or seeing a nurse are reported by gender, age and years of full-time education in Tables 6.4 and 6.5 and Figure 7. Female patients express a greater preference for continuity especially if they can see their own

doctor, but are equally prepared to see a nurse if that would be quicker (Table 6.4). The data in Figure 7 suggest that older patients prefer continuity, with a steep downward gradient by age in terms of those who would prefer to see another doctor or a nurse if that would be quicker (Figure 7). There is a U shaped relationship with number of years of education : both those who left school early and those with education beyond compulsory schooling preferring continuity and who are reluctant to see another doctor if sooner or a nurse if sooner; whilst the reverse is true for those reporting between 5 and 10 years of education (Figure 8). The former is a reflection of the fact that nearly all those who left school early are 65+; but the latter suggests that it is middle-class patients who express a preference for continuity. Finally, patients who are more frequent visitors to the surgery tend to prefer continuity (with any professional group) but those who have seen the nurse several times tend to prefer to continue to see the nurse (see Table in Appendix PS3). Overall, therefore, apart from the preferences of older patients - which might be a cohort effect rather than age-related - there is no sub-group with strong views about continuity.

Table 6.4 Prefer Continuity or Seeing Another Professional by Gender of Patient, Gender of GP Seen at Current Visit and Jointly

		Patient Gender		GP Gender		Female Patient - Female GP	All
Prefer:		Male	Female	Male	Female		
Continuity	%	57	66	63	65	67	64
	N	805	1463	1122	382	286	1487
To Doctor, if sooner other than own GP	%	49	43	41	43	42	42
	N	809	1478	1129	389	292	1502
To see Nurse if sooner	%	47	48	46	42	44	45
	N	813	1470	1126	391	294	1503

Figure 7 : Prefer Continuity or Seeing Another Professional by Age of Patient

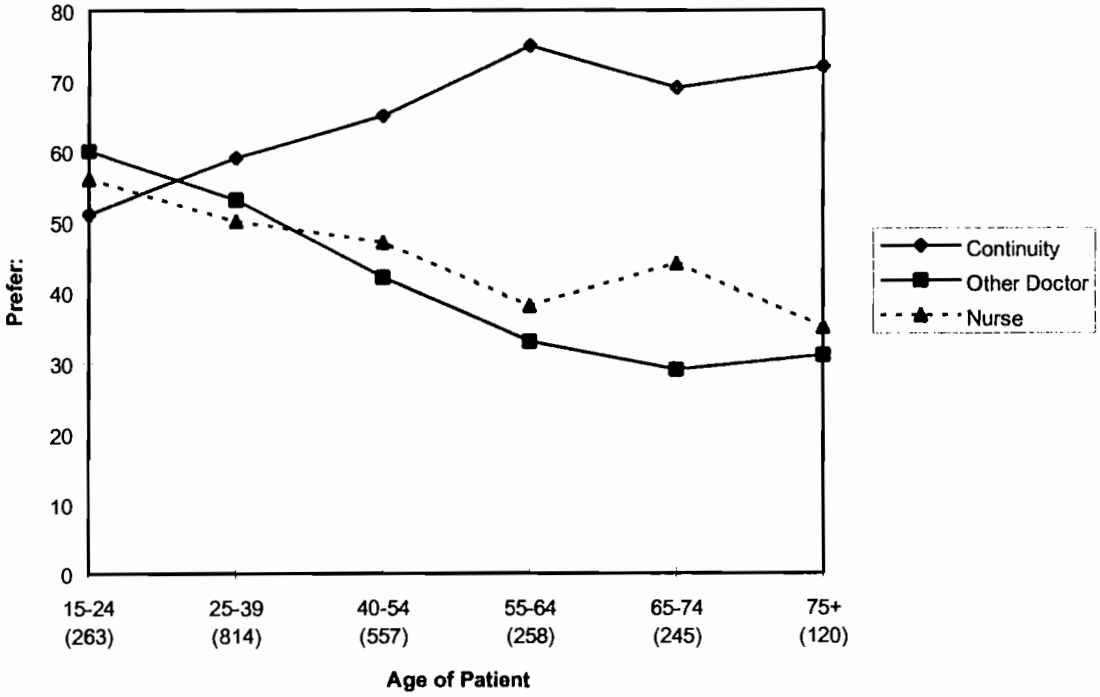
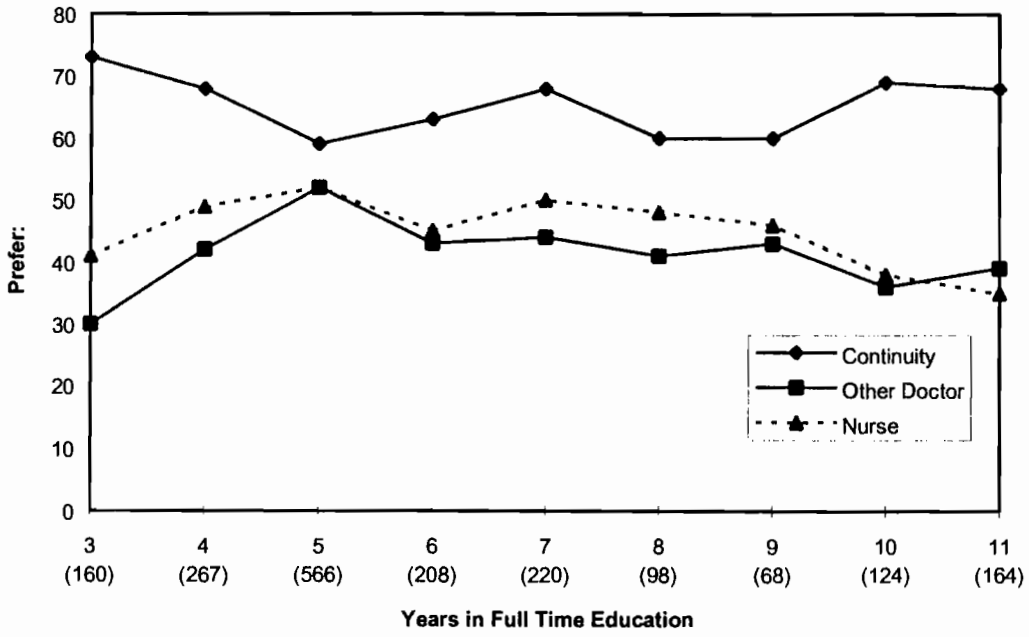


Figure 8 : Prefer Continuity or Seeing Another Professional by Years Patient in Full Time Education



6.1.3 Characteristics of GPs

Apart from a lowered preference for continuity in respect of young GPs (age 20-29) or those who have only just joined the practice, there is no clear association between either the age of the general practitioner or the number of years that they have been with the practice (see Figures PS4 and PS5 in Appendix PS).. The analyses in this subsection have shown that:

- the gender of the patient affects both preference for continuity and whether or not they would like to see another doctor if sooner.
- whether the GP has recently joined the practice or not is associated with whether patients would like to see another doctor sooner.
- preference for continuity is associated with the doctor's age.
- whether or not they would see a nurse sooner is associated with patients' education.

Given there are a large number of variables referring to different units of analysis (patient, GP, practice), we need to assess the independent effects of each of these variables within a multivariate and multilevel context (Goldstein 1987).

6.1.4 Multivariate analysis

The dependent variables of interest (preference for continuity, for seeing another doctor if sooner, for seeing a nurse if sooner) are 'binary' variables: that is the patient has either expressed a (strong) preference or not. In this situation, the analysis has to be framed to take account of the particular distribution of the dependent variable (it obviously cannot be treated as 'normal'). The correct model is:

$$\log\left(\frac{y}{1-y}\right) = \alpha$$

Three types of independent variable are included corresponding to the influencing factors considered above:

differences between practices
characteristics of patients
characteristics of GPs

These different sets of variables are introduced into the model in stages and define four potential models:

the "variance" model (Model I)
a model including patient dummies (Model II)
a model with GP data (Model IIIa)
and a final model with individual patients data (Model IIIB)

But, because only one GP characteristic is ever significant and with only one of the dependent variables, the last two models are combined as Model III in Table 6.5.

Patterns of variability

The 'variance components' model shows how the unexplained variation is distributed between the doctor and the patient. As these are logistic models, the variance of the constant is set to 1 so that the initial variance at GP level for the dependent variable "preference-for-continuity" is only 3.4% (0.034/1). This is reduced to less than 1% when practice 'dummies' are introduced. However, the initial variance at the GP level is considerably larger (and statistically significant) for the other two dependent variables and although the introduction of practice dummies reduce the GP level effect to under 5% for the "see-nurse-if-sooner" dependent, there remains a substantial and statistically significant effect for "see-other-doctor if-sooner", which is only eliminated by the introduction of individual level variables and characteristics of the GP.

Table 6.5 Factors Influencing Patients Preference for Continuity, Other Doctor or Nurse if Sooner

		Continuity		Other Doctor if sooner		Nurse if sooner	
	N	1564		1016		1564	
		Coeff	SE	Coeff	SE	Coeff	SE
I	Variance Components Model GP (level 2)	0.034	(0.037)	0.25	(0.10)	0.15	(0.06)
	Constant	0.58	(0.07)	-0.37	(0.11)	-0.11	(0.07)
II	Including Practice Dummies GP (level 2)	0.0095	(0.032)	0.15	(0.07)	0.046	(0.038)
	Constant	0.69	(0.21)	-0.65	(0.29)	0.22	(0.20)
	Practice Dummies	-0.37 to	0.18	-0.22 to	(0.73)	-0.78 to	0.18
III	With Individual and GP data GP (level 2)	0.0095	(0.032)	0.062	(0.051)	0.043	(0.038)
	Constant	-0.24	(0.31)	0.75	(0.42)	1.24	(0.31)
	Practice D Dummies	-0.29 to	0.26	-0.06 to	0.81	-0.083 to	0.13
	Gender	-0.39	(0.12)	0.41	(0.15)	-	-
	Age 2	0.11	(0.18)	-0.21	(0.22)	-0.35	(0.18)
	3	0.45	(0.19)	-0.60	(0.24)	-0.37	(0.19)
	4	1.04	(0.24)	-0.85	(0.28)	-0.88	(0.23)
	5	0.88	(0.24)	-1.44	(0.31)	-0.75	(0.23)
	6	0.61	(0.30)	-1.24	(0.41)	-0.92	(0.30)
	Education	0.052	(0.024)	-0.052	(0.030)	-0.066	(0.023)
	Number of Visits to Doc	0.072	(0.018)	-0.058	(0.022)	-0.067	(0.018)
	Number of Visits to Nurse	-	-	-	-	0.083	(0.024)
	Years GP with the practice	-	-	-0.53	(0.23)		
	RESET Test	2.58**	(p<0.05)	-0.67	(p>>0.05)	0.32	(p>>0.05)

Practice effects

Most of the remaining unexplained variation is at the individual patient level, but, even after controlling for other variables, there remains some variation between practices, although it is not statistically significant. The pattern of effects is given in Table 6.6. There is some relationship in that, in practice 9, patients are most likely to prefer continuity and least likely to want to see another doctor if sooner or a nurse if sooner. In Practice 3, where patients are most likely to want to see another doctor if sooner or a nurse if sooner, these patients are among the least likely to prefer continuity.

Table 6.6 Residual Variation Between Practices after taking into account other variables.

with Practice	2*	3	4	5	6	7	8	9	10	N
CONTINUE	0	-.24	-.14	.06	-.19	.09	-.36	.26	-.29	1564
OTHER DOCTOR	0	.81	.78	.66	.01	.11	.32	-.06	.68	1016
NURSE	0	.13	-.48	-.41	-.27	-.54	-.20	-.83	-.33	1564

* The value of zero for Practice 2 is simply a conventional way of displaying the relative effects.

Individual patient effects

Individual patient effects are reported in the lower half of Table 6.5. There are three main conclusions:

a. the age of the patients was usually statistically significant with older patients more concerned with continuity and very reluctant to see another doctor or a nurse if sooner. Similarly, women were more likely to prefer continuity and less likely to want to see another doctor if sooner.

b. where there were more frequent visits to a doctor then it was more likely that the patient preferred continuity rather than seeing another doctor if sooner. Similarly, where there were more frequent visits to a nurse, the patient preferred to see the nurse if sooner.

c. those who had been in full time education longer than the compulsory length were less likely to prefer continuity and more likely to want to see another doctor if sooner or a nurse if sooner.

6.2 ASSESSMENT OF SPECIFIC VISITS

In addition to recording the type of staff seen during the present visit, patients were also asked if they were able to see who they would have liked to see at the surgery.

6.2.1 Personal preferences

When we compare patients' choices with who they actually saw (Table 6.7), we see that a substantial minority did not see whom they wanted to see, with a quarter seeing another GP when they wanted to see their own and a third seeing their own when they wanted to see another; whilst less than 11% saw a nurse or another member of staff when they wanted to see a doctor, over 20% saw a doctor when they wanted to see the nurse and over 50% saw a doctor when they wanted to see other staff.

Table 6.7 Did Patients See Who They Wanted To At This Visit? (Included people who may have seen more than one member of staff)

Wanted to see	Actually saw (row %)				N
	Own GP	Other GP	Nurse	Other Staff	
Own GP	**72.8**	24.6	6.6	0.7	1151
Other GP	35.5	**61.6**	7.2	1.0	307
Nurse	20.8	10.0	**80.3**	0.8	361
Other Staff	37.8	43.8	6.3	**37.5**	16
					1523

Note: the row and column totals do not add up to the overall totals because respondents were allo wed to indicate more than one person who they wanted to see (and may have seen more than one person).

There may be confusion in these tables because, not only might someone want to see more than one person, they may actually see more than one person. We have therefore recomputed the table to examine only those who only saw one person. These data, in Appendix PS, Table PS6, are almost exactly the same, although the proportion of those who wanted to see a nurse that actually saw a nurse has increased by 10%.

6.2.2 Variations by age and gender of patient

Of the 1360 patients who expressed a strong preference for whom to see at this visit, 1210 wanted to see their own GP, 124 another GP, 305 a nurse and 11 another member of staff. The percentages are very similar for men and women; (see Figure PS7 in Appendix PS); but there is a clear gradient with age in that older people are much more likely to express a strong preference for seeing a specific member of the team (see Table PS8 in Appendix PS).

6.2.3 Patient assessment of consultation

In general patients were more satisfied with the skills displayed in the consultation than they were with the explanation or the length of the consultation (Table 6.8); moreover, whether in terms of the amount of time, the explanation given or assessment of skills, the ratings given to the nurse encounters are always higher than the ratings given to the encounters with the GP (although, of course, the content of the consultations may be different).

Table 6.8 Patients Opinions About Encounters with GP and Nurse (Percent saying very good)

	Percentage saying very good	
	GP	Nurse
Approx N	1800	500
Enough time	65.5	76.7
Adequate Explanation	68.4	77.5
Sufficient Skills	71.5	82.4

The detailed breakdown of ratings of the encounters with GPs and nurses for each practice are given in Appendix PS Table PS9. There is some variation:

- in practice 4, where only half the patients who saw who they wanted, the ratings of doctor's skills are second lowest and the ratings of nurse's explanation and skills is the lowest;
- the ratings for doctors are highest in practice 1, whilst the ratings of nurses are amongst the lowest;
- the ratings for nurses are highest in practice 8, whilst the ratings for doctors are about average;
- there is no systematic variation with skillmix (as originally defined).

However, there were some systematic variations according to age and gender of the patient and their years of full time education. For each of the three aspects of the consultation (explanation, skills and length) and for both males and females and for encounters with both the GP and with the nurse, the percent saying "very good" increases with age (Table 6.9A and Table 6.10A). On the whole, women are more critical about the length of their consultations with both GPs and nurses, but otherwise there is little difference in respect of their opinions about the adequacy of the explanation or whether or not sufficient skills were demonstrated. A cell-by-cell comparison of these breakdowns by age and gender also shows that, in most cases the observation that patients have higher opinions of nurses remains true in each age-sex group (for males 12 out of 15; for females 11 out of 15).

There is, however, a substantial difference in the association between the number of years of full-time education of the patient and their opinions of their consultations with GPs and with nurses (Table 6.9B and Table 6.10B). Patient education is not at all associated with their opinions about the nurse but very strongly associated with their assessment of the amount of time spent with the GP : those with more education were dissatisfied with the amount of time, adequacy of the explanation and skills.

Table 6.9A Patient's Opinions about Encounters with GP (Percent saying very good) by Age and Gender of Patient.

Males	Age of Patient				
	15-24	25-39	40-54	55-64	65-74
Enough Time	48	63	76	78	86
Adequate Explanation	50	66	76	70	85
Sufficient Skills	61	65	82	76	92
Min N	64	223	160	79	123
Females					
Enough Time	47	56	67	81	79
Adequate Explanation	60	61	69	76	82
Sufficient Skills	59	63	71	84	88
Min N	152	467	266	110	129

Table 6.9b Patient's Opinions about Encounters with GP (Percent saying very good) by Years of Full Time Education

	Years Full Time Education		
	Up to 3 years	4 years	5 or more
Enough Time	82	69	62
Adequate Explanation	83	67	66
Sufficient Skills	87	74	68
Min N	138	202	1157

Table 6.10A Patient's Opinions about Encounters with Nurse (Percent saying very good) by Age and Gender of Patient

Males	Age of Patient				
	15-24	25-39	40-54	55-64	65-74
Enough Time	70	66	81	77	89
Adequate Explanation	73	80	85	79	88
Sufficient Skills	73	88	88	76	88
Min N	64	223	160	79	123
Females					
Enough Time	59	66	86	76	85
Adequate Explanation	61	66	82	77	85
Sufficient Skills	76	75	85	79	89
Min N	152	467	266	110	129

Table 6.10B Patient's Opinions about Encounters with Nurse (Percent saying very good) by Years in Full Time Education

	Years of Full Time Education		
	Up to 3 years	4 years	5 or more
Enough Time	76	77	79
Adequate Explanation	81	74	78
Sufficient Skills	85	81	83
Min N	138	202	1157

6.2.4 Variations by GP characteristics

The feedback questionnaire also noted which doctor was seen. Although those patients whose consultations were observed by the research nurses did not complete the feedback questionnaire, the responses of other patients to this questionnaire for the doctor in question could be aggregated and linked to the characteristics of that GP.

Table 6.11 Satisfaction with GP according to Gender of GP and Age and Gender of Patients.

		Female Patients			Male Patients			All Patients	
% Very satisfied with	GP gender	All	Aged 15-29	40+	All	Aged 15-39	40+	%	N
Time	F	51	43	64	74	66	80	56	372
	M	71	60	75	68	53	81	69	1068
Explanation	F	57	50	71	71	65	76	61	356
	M	71	67	75	70	55	78	70	1016
Skills	F	59	52	71	74	70	77	63	354
	M	74	68	80	75	57	85	74	1017

Thus in Table 6.11, we see that male GPs in this sample received higher satisfaction ratings (on all three aspects of the consultation) than their female colleagues (Table 6.11). Patient's age and gender both influence these ratings. For both male and female patients, and GPs of either gender, satisfaction increases with age. Female patients regardless of age, always give male doctors higher average satisfaction ratings than female doctors. Younger male patients give higher ratings to female doctors whereas older male patients give higher ratings to male doctors. Although the differences are not large, because of the large sample size, they are significant at the 1% level even after controlling for patient age and gender (see Table in Appendix PS).

Finally, there were a few instances where the patient saw both the GP and the nurse. There are reasonably high correlations between satisfaction with doctors and with nurses for individuals who have seen both doctors and nurses on the index visit (only a small number). This is more

or less as expected; the patient in question will be generally satisfied or generally dissatisfied on any particular occasion (Table 6.12). But when the data are aggregated to practice level (N=10) or to the GP level (N = 51) the overall pattern is that there is no relation - and even a weak inverse relation - between the expressed satisfaction with GPs and expressed satisfaction with nurses (Table PS11 in Appendix PS).

Table 6.12 Correlations at Individual level

Satisfied with Doctors	Satisfied with Nurses		
	Time	Explanation	Skill
Time	.60	.558	.53
Explanation	.58	.69	.61
Skill	.60	.68	.68

Min N - 91 Max N = 113; all correlations significant at 1% at least.

6.2.5 Comparing subjective and objective assessments

When the patient saw the GP, some of whose other consultations had been observed, it was possible to correlate patient responses from the feedback questionnaire with the observed characteristics of the GP consultations. These are presented in Table 6.13. It can be seen that, whilst the overall correlation between the length of the consultation and the percent who are dissatisfied with the amount of time is not significant, there is a significant correlation between the proportion of patients reporting dissatisfaction with the explanation and the average amount of time observed to be spent on explanation in the consultations we observed.[1]

[1] Note that these were not the same patients: those whose consultations were observed were not given the patient assessment questionnaire.

Table 6.13 Correlations Between Average Amount of Time spent by GP on Different Parts of the Consultation and Patient Ratings of their own Consultation

	% dissatisfied with length of consultation	% dissatisfied with time spent on explanation	% dissatisfied with skills
Mean length of consultation	-.15	-.26	-.05
Amount of time spent on information gathering	.01	-.11	.17
Amount of time spent on explanation	-.27	-.35*	-.32*
Amount of time spent on advice/reassurance	-.29*	-.31*	-.16

N = 41 (number of GPs) reduced number because the GP seen was only identified after the first two pilot practices.
* $P < 0.05$

6.3 SATISFACTION, CONTINUITY AND PRESENTING PROBLEMS

During data collection, details on presenting problems and diagnosis were only collected for those patients whose consultations were observed; and there is no method of relating these to any patient feedback questionnaires. However, all feedback questionnaires invited patients to describe their presenting problems either in words, or by ticking a checklist of common symptoms and other problems. One thousand seven hundred and twenty three (1723) patients reported a single problem, 350 reported 2 problems and 143 reported 3 problems - 2852 problems in all.

In fact the number of problems was unrelated to the age and gender of the patients. It was also unrelated to satisfaction with the length of consultation and the quality of any explanation, and to the preference for continuity of care (Appendix PS, Tables PS12). There was a slight positive association between the number of self-perceived presenting problems and satisfaction with the GP's skills. The analysis therefore is based on each problem presented.

The most frequently mentioned problems and reasons for visiting the surgery are listed in Table 6.14 together with the proportion of patients who were 55 or over, proportion of patients who

were female, average number of visits in the past year, proportions preferring continuity, and the proportions very satisfied with time, explanation and skill. Hypertension/blood pressure was predominantly presented by patients 55 or older; eye trouble and skin complaints mostly by females; and presenting problems of asthma, blood tests and sickness/diarrhoea were associated with more visits during the previous year. Those with faintness or dizziness most wanted continuity; those given injections were least satisfied with the time; those with ear problems least satisfied with the explanation; and those with ear problems and faints/dizziness least satisfied with the skills displayed.

In a crude attempt to link these to satisfaction and preference for continuity, these reasons/problems were classified as chronic or acute (see last column of Table 6.14); this is only an estimate since several of the reasons are symptoms or procedures that are equally relevant to chronic and acute conditions. In general, there appears to be a slight tendency for those reporting chronic conditions to be more satisfied than those presenting with acute symptoms (Table 6.15).

However, associations between type of condition and both satisfaction and continuity are likely to be confounded by effects due to patient age and gender. In this case, all but one of the significant associations between the type of condition and satisfaction disappear when patient age and gender are controlled for.

If there are links between type of presenting problem and either satisfaction or preference for continuity, they are likely to be obscured by the crudeness of the classification into "acute" and "chronic". More detailed inspection of the data which is the basis for Table 6.16 shows that, for example, the outliers in ear problems, palpitations and breathlessness, headaches, and hypertension, suggests that levels of satisfaction can generally be related to age, but that differences in the nature of conditions are partly responsible for variations in preferences for continuity.

Table 6.14 Most Frequent Presenting Problems - Characteristics of Patient Groups, Preferences for Continuity and Satisfaction with Care.

Presenting Problems	No of Reports	% 55+	% Female	Average No of visits in Past year	% wanting continuity	% very satisfied with: Time	Explanation	Skills	Designated "acute" or "chronic"
Sickness/diarrhoea	40	10	57	10	63	55	60	70	A
Repeat Prescription	41	20	70	6	70	75	70	65	C
Asthma	42	32	50	10	44	69	62	62	C
Affective disorders	57	12	66	9	66	73	73	79	C
Faints and Dizziness	59	30	65	6	81	58	67	63	A
Kidney or Bladder	62	36	69	7	69	58	68	70	C
Palpitations/ Breathlessness	62	45	53	7	61	86	70	81	C
Blood Test	68	45	63	10	66	67	67	89	A
Sinus/Catarrh	69	21	64	6	59	64	72	76	A
Check-up	71	44	57	6	73	86	80	80	A
Injections	88	29	64	7	60	50	67	89	A
Eye Trouble	91	36	77	7	61	63	63	67	C
Feet Problems	94	29	54	6	52	66	62	70	C

Table 6.14 Continued

Hypertension / Blood Pressure	101	66	47	6	69	80	73	74	C
Bad Back	103	21	59	5	57	65	76	78	C
Indigestion/Stomach	120	28	54	5	51	60	64	68	A
Persistent Cough	134	20	65	6	62	62	65	70	A
Headaches	135	14	64	6	65	57	61	68	A
Skin Complaint	138	14	73	6	62	67	75	73	A
Ear Problems	169	20	61	6	51	57	57	63	A
Colds and Flu	199	16	62	6	59	57	64	64	A
Painful Joints	256	43	56	6	67	75	76	76	C

Table 6.15 Preference for Continuity and Satisfaction According to Type of Presenting Problem.

	Acute	N	Chronic	N
% very satisfied				
Time	62	495	71	408
Explanation	66	508	72	387
Skills	70	530	74	401
% wanting continuity	60	1007	63	675
% wanting continuity:				
Who were very satisfied with time	60	484	64	401
Who were not very satisfied with time	60	299	60	161
Who were very satisfied with explanation	61	495	64	379
Who were not very satisfied with explanation	60	258	60	151
Who were very satisfied with skills	61	517	64	391
Who were not very satisfied with skills	57	229	61	140

Table 6.16 Correlation Between Type of Presenting Problem and Preference for Continuity and Satisfaction with Specific Visit

	Correlations of acute vs chronic with:			
	Preference for Continuity	Satisfaction with: Time	Explanation	Skills
r	.026	.099	.060	.050
p	ns	.000	.031	.069
After controlling for age and gender (df=1249)	1682	1373	1312	1306
r	.006	.056	.023	.006
p	ns	.05	ns	ns

6.4 SUMMARY AND DISCUSSION

Although preference for continuity is not affected by list size, the size of the PHCT and other variables, it does depend on some - as yet unmeasured - characteristics of the practices.

Patient preference for continuity, or for seeing a nurse if this was quicker than seeing a GP, apparently varies between GPs and between nurses, but when account is taken of variation between practices the variation disappears. Although these preferences for seeing another doctor apparently varied substantially according to the doctor concerned, this could mostly be accounted for by the years the GP had been in the practice.

At the practice level, the study found relatively few factors associated with preferences for continuity, for seeing GPs other than one's own doctor, and for seeing nurses rather than GPs if this involved less of a wait. The substantially significant associations are reported in Table 6.17. Of the three variables, preference for continuity is the most easily explained. It is linked to patients' age and gender, to the availability of practice nurses and negatively to the age of the GPs. Preference for seeing a doctor other than one's own GP was only significantly associated with one of the many practice level variables - the proportion of the practice consultations conducted by nurses. This association was negative. Preference for seeing a nurse rather than a doctor, if this would be quicker, was negatively associated to both the time the nurses spent on administration and the nurse's age. As reported elsewhere, older nurses tend to be the more heavily involved in administration.

Table 6.17 Summary of Correlations Between Patient Preferences and Practice and Staff Variables (N=10)

	Continuity	Other doctor	Nurse if sooner
Numbers of practice nurses	.71*	-	-
Patient's age	.72*	-	-
gender	.84*	-	-
Proportion of nurse consultations in practice	-	-.70*	-
Staff perceptions of shared objectives	.71*	-	-
Nurse time on admin work	-	-	-.66*
Nurse age	-	-	-.79*
GP age	-.67*	-	-

* $P < 0.05$

The way in which preferences vary according to age and gender of the patient is unsurprising and those who visit frequently seem to prefer continuity whether to the doctor or to the nurse. Perhaps more important is the observation that the patient's education level (in terms of number of years of schooling) has an effect even after controlling for other variables. It suggests that more 'educated' patients believe that continuity matters as a marker of quality and are even prepared to forgo speed of service for that continuity.

Overall therefore, continuity is important to patients, especially older ones, and is more important if the doctor has been longer with the practice. Otherwise, there are only small variations between practices; and perhaps the most important observation is that patients with more years of schooling prefer continuity.

CHAPTER 7 : CHRONIC DISEASE MANAGEMENT

7. CARE MANAGEMENT OF ASTHMA AND DIABETES

The purpose of this chapter is to examine patient care with regards to two chronic conditions - asthma and diabetes. These conditions are known to have been exposed to shared care arrangements over the last few years. In each case, data were collected both from the patients' records held by the practice and from the patients' views of their care and their condition in response to a postal self-completion questionnaire. Thus care delivered to patients under different arrangements can be assessed in both administrative (audit) terms and in terms of the perceptions of the patients themselves.

7.1 Asthmatics

The recognition of asthma is contentious and so it is not surprising that the choice of treatment varies. Nevertheless, it was thought worth examining the care of asthmatics, with reference to any potential differences which may be related to skill mix. Data were collected from the records held at the surgery and, in addition to examination of the records, a postal survey of patients registered at the practice as asthmatics provided information on both patients' experiences of their condition and views on the care they received. Results from this postal survey can therefore be linked at an individual patient's level to the information retrieved from the records.

Overall, about a quarter of asthmatics did not see their GP in the previous year compared to a sixth who saw her or him 4 or more times; nearly three quarters did not see the nurse and only a very small proportion (5%) saw her or him 4 or more times (Table AST1 in Appendix AST/DB). These overall figures include wide variations: in particular, in practice 3, nearly a third saw the nurse 4+ times and they were also more likely to have seen the nurse in practice 7; in practice 8, they were much more likely to have seen the GP 4+ times and to a lesser extent in practices 3 & 4.

7.1.1 Frequency of contact and periodicity of review

Of the 1098 asthmatic patients on registers, about half did not have a regular review or none was recorded on the notes (Table AST2A in Appendix). Of the remainder (N = 453), nearly half (43.9%) were annual and over a quarter (28.3%) were 2 monthly. The breakdown according to skill mix and fundholding status are given in Table AST2B. There was considerable variation between the practices with over half of the asthmatics in four of the practices - and 92% in practice 3 - being reviewed 'As Required', compared to less than one in six in the other six practices. There is no systematic difference between the 'rich' and 'weak' skill mix practices, between fundholders and non-fundholders, or any other dimension.

However, interpreting the data of review period in terms of care received is problematic because:

- it cannot be assumed that more frequent review means better care;
- the lack of fixed review period is ambiguous since it could imply either the ability to respond flexibly to patient need or a lack of systematic review process.
- patient compliance

7.1.2 Asthma control: clinical measurement

Peak flow readings are the most widely used clinical measurements in asthma management in general practice. Patient records were consulted to establish the dates of most the recent peak flow measurements and the recorded levels. Both give some indication of care received.

There are agreed established protocols for collecting and interpreting peak flow readings in the management and control of asthma: thus, in principle, we ought to have collected data on height as well as age and gender of asthmatic patients in order to standardise the peak flow readings according to the known variations; but, realistically, the extent to which peak flow readings can be monitored depends upon the accuracy of the recording instruments (and whether or not the

same ones are used), and the conscientiousness with which they are read. Instead, we have adopted a more pragmatic approach:

- for those with more than one reading during the year, we can calculate the size of the deviation (shortfall) from the normal (maximum) reading; and
- for all those with any readings, we can calculate the number of readings below 200.

The extent to which peak flow was 'controlled' in these terms can be seen from Table 7.1: readings varied by 20% or more on average in practices 2, 7 and 8; and 10% of asthmatics in Practices 3 and 8 had readings below 200. Once again, there is no systematic difference between the 'rich' and 'weak' skill mix practices, between fundholders and non-fundholders, or any other dimension. At the same time, it does appear that the more severe cases were likely to have seen the nurse more often (Table 7.2). When compared with the number of times that they reported seeing the nurse, it seems that the more severe cases were likely to have seen the nurses more often (Table 7.2).

Table 7.1 Variation in Peak Flow by Practices

Practice	Variation in peak flow by practices			
	Max-Min / Max	N	Percentage of(with) readings < 200	N
1			0(0)	72
2	20	38	2(2)	171
3	15	48	12(7)	68
4	19	87	9(6)	123
5	19	52	3(3)	116
6	16	63	10(6)	87
7	23	60	14(9)	117
8	25	40	7(7)	72
9	17	79	5(4)	130
10	16	74	4(4)	142
	19	540	6(5)	1098

Note:

1. Percentage of all readings recorded which are less than 200; in parentheses are the percentages of people with one or more readings less than 200
2. Variations between any readings in past year

Source: Records

Table 7.2 Variability of peak flow readings and percentage of low readings according to how often seen nurse

How often seen nurse	Variation in peak flow	N of cases	Percentage of (with) readings < 200	N of cases
None	19	204	9(6)	361
Once	16	50	4(1)	67
2 or 3 times	18	45	20(13)	55
4 to 6 times	18	17	6(6)	18

Source: Records and Questionnaire

Note:

1. Percentage of all readings recorded which are less than 200; in parentheses are the percentages of people with one or more readings less than 200

7.1.3 Satisfaction with visits

As is typical (Carr-Hill, 1992), high levels of satisfaction were recorded overall (between 75% and 80%) although rather low levels were reported in practice 9 (see Table AST3 in Appendix AST/DB). About two thirds of asthmatics find visits to the GP helpful although there are substantial variations with fewer in practices 7 and 9 and more in practices 4 and 8 finding the visits to the GP helpful. A greater proportion (69%) find visits to the nurse are helpful with fewer in practice 7 and more in practice 8 finding the visit to the nurse helpful. There is no clear conclusion.

The detailed assessments of satisfaction have been compared with the physiological readings (see Table AST4 in Appendix AST/DB). There is a relation between patient satisfaction with their visits to the surgery and their physiological control (Table 7.3), in that those reporting some dissatisfaction (or that the visits are not at all helpful) are always more likely to have more variation between their readings and, with one exception, to have had readings below 200 during the previous year.

7.2 A SURFEIT OF OUTCOMES

Information from patients' questionnaires and their reco rds is of four kinds:

- their contacts with the surgery.

  their pulmonary function (both reported on below).

- self-reports of disturbances and disruption.
- self-reports of the extent to which these are bothersome.

Table 7.3 Variations in Peak Flow Readings and Proportion with Low Readings according to levels of satisfaction : Differences between those reporting dissatisfaction and those very satisfied

	Satisfied with			Helpfulness of Visits	
	Time	Contin -uity	Info. Received	To GP	To Nurse
% Variation in Peak flow readings	11	5	7	4	18
Proportion with readings below 200	12.6	10.2	3.3	-3.6	16.0

Notes : definitions as in previous tables

Entries in first row of table are % variation in peak flow for those reporting dissatisfaction - % variation in peak flow for those reporting that they were very satisfied; entries in second row of table are % with readings below 200 for those reporting dissatisfaction - % with readings below 200 for those reporting that they were very satisfied.

From the point of view of the patient, the quality and regularity of contact with the surgery and the control of peak flows are important; but equally and perhaps sometimes more relevant are their day-to-day experiences of living with asthma. This subsection is therefore concerned with asthmatic control from the point of view of the patient, looking first at inhaler use, then breathlessness, disturbed nights, anxiety levels and reported interference with ordinary activities

7.2.1 Living with asthma

Responses did not distinguish between the two types of inhaler and so we have taken the conservative view that up to 4 times a day can be regarded as 'normal' usage. Nineteen percent of those replying to the question reported a higher relatively heavy (5+ per day) use of inhaler varying from 11% in practice 7 to 51% in practice 8 (see Table AST5A in Appendix AST/DB). The breakdown by skill mix and by fundholding is given in the Appendix AST, and there is no obvious difference by either skill mix or fundholding (Table AST5B).

In terms of disturbed nights and anxiety, patients in practice 4 complain the most and those in practice 10 the least (see Table AST6A in Appendix AST/DB). The pattern is slightly different in respect of interference where patients in practice 8 complain the most and those in practices 5, 9 and 10 the least. [There is no systematic difference according to skillmix or fundholding status (Table AST6B in Appendix AST/DB).] In terms of breathlessness, it is patients in practices 5 and 7 who complain the most and patients in practice 8 who complain the least: those in practice 10 are least bothered (Table AST7A in Appendix AST7DB). There is, once again, no systematic difference between different types of practice (Table AST7B).

Moreover, whilst there are statistically significant associations ($p < .01$) between self reports of disturbed days and nights and pulmonary function measures (Table 7.4A), the association for being bothered due to disturbed nights is weaker. This is confirmed by the overall lack of association between either self-report or pulmonary function measures and patients' satisfaction with the care that they have received (Table 7.4B)

Table 7.4A Correlation Between Self-Reports of Disturbed Nights and Pulmonary Function Measures

	Variation in peak flow	No. of low pf readings
No. of Disturbed Nights	.12**	.13**
No. of Disturbed Days	.18**	.15**
Bother Due to Disturbed Nights	.08	.08*
	MIN N = 337	MIN N = 638

* P < 0.05
** P < 0.01

Table 7.4B Correlation Between Satisfaction Measures and Reports of Disturbed Nights

	Satisfaction with (high values = dissatisfaction)			
	Time	Explanation	Continuity	MIN N
No. of disturbed days	.10*	.09	.13**	472
No. of disturbed nights	.09*	.06	.06	462
Variation in peak flow	.02	.07	.10	313
Low peak flow	-.06	-.00	-.10	484

* $P < 0.05$
** $P < 0.01$

Asthma Outcomes

There are several significant correlations at the level of individual patients (Table 7.5) but most appear to reflect that more severe cases will be treated as more severe! There is one major obstacle to the interpretation of these data : the problem of finding a variable to use as a casemix control that is not also an outcomes indicator.

For example, the levels of nightly and daily disturbance are significantly positively correlated with the frequency of visiting GPs and daily disturbance is correlated with the number of visits to nurses. These remain significant after controlling for the number of recent records of low peak flow - a possible indicator of severity/casemix. As it is unlikely that more care produces worse outcomes, these results will have two causes. Firstly the need for those with more severe symptoms to be seen more frequently and secondly, the impossibility of even good management completely suppressing symptoms and disturbance in the more severe cases. Again it is impossible to take these further without better casemix controls.

Table 7.5 Correlations of Individual Patient Data

	No. of visits to GP	No. of visits to nurse	Is care mostly done by nurse or GP (high = nurse)
Interference with daily activities (high = most interference)	.40 **	.15 **	.02
No. of disturbed nights (high = most)	.31 **	.08	.01
Satisfaction with:			
time	-.05	-.10*	-.05
continuity	.01	-.09*	-.04
information	.0	-.14 **	-.11 **
(high = dissatisfaction)			
variations in peak flow	.24**	-.05	-.11*
low peak flow	.20**	.01	-.02
Min N for vars in peak flow = 325 for other vars = 480			

* $P < 0.05$
** $P < 0.01$

There is an indication in Table 7.5 that GPs tend to see the more severe asthmatics (the correlation between variation in peak flow and the GP being the person predominantly seen), though this result could be explained by casemix factors rather than differences in the management of care.

7.3 DIABETICS : CLINICAL RECORDS: NON-INSULIN DEPENDENT

Among those diabetics for whom we had data from both the records and the questionnaires, there were 96 insulin dependent and 232 non-insulin dependent. In some of the research practices, all the insulin dependent diabetics were treated at hospital out-patient clinics, whilst in other practices, the majority of the care was at the surgery. Because of this variation, it seemed inappropriate to compare the care of insulin dependent diabetics between practices; and so the comparisons here are restricted to non-insulin dependent diabetics.

The feedback from non-insulin dependent diabetics is contained in Table 7.6. There is wide variation in the extent to which nurses are involved in the care of non-insulin dependent diabetics with no or very little nurse involvement in practices 4, 5, 9 and 10, significant nurse involvement in practices 3 and 8, and nearly all nurse care in practice 7.

There are relatively wide variations in terms of satisfaction, probably because this is a knowledgeable group of patients (relative to those responding to satisfaction questionnaires). Patients in practice 6 seem most dissatisfied and patients in practice 7 least dissatisfied on these questions[1]. Moreover, there are striking variations in the extent to which patients report that the visits to the GP or nurse are 'not very helpful': here patients' reactions to the GPs are the reverse of their assessment of satisfaction, with those in practice 7 finding the GPs unhelpful and those in practice 6 finding the GP relatively helpful. Patients' assessments of the nurses have to be interpreted in the light of the frequency with which the nurses are seen: thus, three of the four higher satisfaction ratings (in practices 3, 7 and 8) occur in the practices where the nurse is seen often, whilst the three lowest satisfaction ratings (in practices 5, 6 and 10) occur in the practices where nurses are rarely seen. Which is cause and effect is not at all obvious.

[1] The approximate correspondence between the responses to the three satisfaction questions illustrates the thesis that there tends to be a general 'feel-good' factor or malaise without there necessarily being a clear definition of overall satisfaction.

There is less variation in terms of reported physiological symptoms:

- there appear to be high rates of hypoglycaemic attacks in practices 1, 3, 9 and 10 in the latter case, this coexists with low rates of reported thirst and a relatively low proportion worrying about coma.
- patients worry most about coma in practice 8 and least in practices 5.
- about half report thirst, although this varies between a third in practice 10 and two thirds in practice 9;
- a universally high proportion (between 80% and 90%) of patients worry about eating too much.

Diabetes Correlations

As for the asthma outcomes measurements, there are several significant correlations between individual outcomes and practice characteristics, notably the average perceived potential for GP delegation (Table DB8 in Appendix AST/DB). Because there are correlations between data at two levels of aggregation, the significance testing based on the higher disaggregated number of cases is likely to over represent the number of significant associations. Indeed, when the correlations are repeated at the practice level, using average values for individual outcomes, none of previous 17 significant correlations is retained.

Table 7.7 shows correlations at the individual patient level between care providers (GP or nurse), satisfaction and self-reports of symptoms. Two correlations suggest that either GPs achieve better results in relation to patients feeling thirsty, or GPs care for patients with more severe symptoms. From the remaining 3 significant correlations it seems that patients are more satisfied when nurses provide the majority of their care.

Table 7.6 Patient Feedback From Non-Insulin Diabetics

Practice No.	1	3	4	5	6	7	8	9	10
N of cases	*43*	*44*	*29*	*20*	*43*	*47*	*15*	*19*	*20*
Percentages reporting									
Most care at surgery rather than clinic	*	91	97	94	100	91	100	89	70
More or mostly nurse	*	30	3	0	15	82	27	5	0
Not very satisfied with time	*	25	14	15	31	2	23	18	30
Not very satisfied with continuity	*	26	12	20	33	5	8	12	28
Not very satisfied with information	*	35	21	15	48	2	23	24	28
Visits to clinic or GP not very helpful	55	32	31	32	60	34	38	53	70
Visits to nurse not helpful	*	36	29	60	66	35	23	41	68
No. of patients with hypos	4	2		0	1	0	0	2	2
No. of hypos.	9	6	0	0	3	0	0	5	5
Ever thirsty in last week	47	54	0	40	52	49	67	32	30
Bothered by thirst	21	39	46	17	29	24	13	16	28
Sometimes eat too much	79	79	93	90	81	87	89	89	80
Worry about coma	28	32	28	10	36	23	43	23	32

Note: Information not collected for practice 1. No questionnaires were distributed to diabetic patients in practice 2.

Table 7.7 Correlations of Individual Diabetic Patient Data

(High values = more symptoms and disturbance)	No. of visits to:		Is care mostly done by GP or nurse (nurse = high)
	GP	Nurse	
No. of hypos	-.01	.02	-.03
Frequency of feeling thirsty	-.11*	-.03	.09
Bothered by thirst	-.09	-.06	.11*
Frequency of exhaustion	.05	.02	.02
Satisfaction with:			
Time	-.003	-.07	-.13*
Continuity	-.1	-.13*	-.08
Information	-.09	-.03	-.13*
(High = dissatis)	N between 202 and 225		

7.4 CONCLUSION

In terms of the management of chronic conditions, it is clear that, although there are wide variations between patients, these cannot be related simplistically to the relative balance of nurses and doctors (nor indeed to fundholding status). Sometimes the care provided by doctors is seen as better; sometimes the care provided by nurses; and there are no characteristics of the practices which clearly distinguish between outcomes. Overall, we can conclude that - at least for these ten practices - there are no clearly demonstrable negative outcomes with different patterns of the management of the chronic conditions of asthma and diabetes.

CHAPTER 8 : THE RELATIONSHIP BETWEEN OBJECTIVES AND MAIN FINDINGS AND THE WAY AHEAD

8. OVERVIEW OF THE FINDINGS

It was never intended that this study would provide definitive answers about the potential for changing skill mix in primary care. However, we believe that this series of case studies - of practices that were purposefully chosen to represent differences in current skill mix and therefore to avoid a bias from over-representation of rich skill mix practices (as might be expected if non-stratified recruitment were used) - does offer a wide range of insights into the operation of skill mix in primary care and its implications.

In the remainder of this chapter, we draw attention to the key findings in relation to each of the objectives of this project and some of their policy implications. Whilst the introduction of new material relating to the focus group discussions may at first sight seem inappropriate here, these excerpts relate specifically to the implications of potential for skill mixing and delegation - firstly with regards to enhanced roles for nurses and secondly to perceived barriers to delegation by the PHCTs. For the former, reference is made to the role of nurse practitioners and for the latter, the impracticality of delegating complex consultations, fragmentation of care and de-skilling.

8.1 OUR FINDINGS IN RELATION TO THE OBJECTIVES

Objective 1

to document the current patterns of activities and interactions between the GP and other members of the PHCT.

GPs and community nurses were asked to complete workload diaries. For GPs, we found that diary filling similar to the Doctors & Dentists Review Body (DDRB) diaries seems to be reliable (p.35 and Appendix), in that we found little difference between diaries completed with and without guidance from the research nurses.

The fact that the distributions of activity, when the diaries were completed without guidance from the research nurses (in order to compare with the postal self-completion method adopted in the DDRB surveys) were very similar to the latest DDRB results endorsed the 'typicality' of the sample. Moreover, where there were variations from the typical pattern, this could be explained by the particular circumstances of the GPs and the practices within which they were working.

Research nurses observed 836 consultations by 51 GPs, recording the type of activity every 30 seconds, using a matrix of categories defined following the first workshop held in December 1994 prior to the start of data collection. The average lengths of consultations varied between 5 and 11 minutes (Table 2.2); but each GP in a practice tended to have quite a small range, probably because of common appointment intervals. There were also substantial variations in the internal structure of the consultation between GPs and between practices (Table 2.7). For example, the proportion of all time on explaining and advice and reassurance varies between 17% in practice 8 and 45% in practice 7.

However, variations in length and patterns are not idiosyncratic (Chapter 2). We found systematic variation according to the number of topics considered in the consultation, age of GP

and/or length of time they have been in general practice, and that female GPs tended to spend on average one minute longer with female patients.

Different nurses worked in different practices in different ways (Tables 3.1 to 3.3): for example, there were three practices where practice nurses undertook almost as much treatment as district nurses, and three other practices where practice nurses did relatively little treatment. Similarly, in practice 10, only 13% of reported activity of practice nurses was attributable to diagnostic testing compared to 29% in practice 6. In contrast, there were only two practices where health visitors did substantially more health education than practice nurses. Whilst there may have been possibilities of different interpretations of the various workload activities recorded by the three main groups of community nurses (district nurses, practice nurses and health visitors), it was clear that, however defined, there was a potential for duplication - for example in the activities of treatment and health education. Detailed tabulations however reveal that there was a clear contextual distinction in these two examples; between activities carried out in the patient's home or on surgery premises (Appendix ND, Table 3.3 and 4.8).

Nurses were also asked to record the source of the referral of the current consultation distinguishing between self or patient, GP, another nurse, or other. According to their own reports, for practice nurses about a fifth, and for district nurses about a tenth, of their work is initiated by GPs (Tables 4.4 to 4.6). However, it should be noted that these were self-reported and that there was no distinction between initial and repeat visits. Nevertheless, these self-reports may reflect quite accurately nurses' perceptions of their roles within the PHCT.

According to the delegation diaries completed by GPs themselves without consultation/discussion with research nurses, they already delegate about a tenth of their consultations (Table 5.9 and Appendix). What counted as current delegation of course varied and almost certainly depended on the way in which the practice was operating: whilst, for all GPs, it referred to those parts of the current presenting problem which were being 'passed on'; if entire episodes were already being delegated, then these would be excluded and, of course, exactly what was already being delegated would vary from practice to practice. Nevertheless, it

is also worth noting that, however much they were currently delegating, GPs could always identify more potential for delegation.

Objective 2

to assess potential for some of the GPs activities to be performed by other members of the staff in terms of the mix of skills required;

During the early stages of project development, the term delegation was adopted, partly because the project was conceived around the activities of the GP, and partly because this term appeared to have a clear definition (see para 1.4). In the focus group discussions, it was apparent that participants preferred terms like 'shared responsibility' without any clear definition of what these terms meant.

Perhaps the most important finding is that there is no simple relation between levels of current and potential delegation. This may in part be due to the point noted above that reported 'current' delegation is 'at the margin of current activity', where all previously delegated topics are taken for granted and therefore not included in the count of delegatable elements.

The findings in terms of the potential for delegation are complex. When prompted by research nurses, GPs identify more potential delegation than when completing the delegation diaries themselves (Table 5.11 and Fig. 5); however, unprompted, older GPs identified more potential for delegation and their estimates were closer to the prompted estimates (Table 5.14); there were no other systematic associations. Clearly, age and experience are important factors in influencing decisions regarding delegation.

Thirty nine per cent of consultations were reported to have a delegatable element - defined as a task (up to three delegatable elements per topic) within any of the topics (up to four for each consultation) - and 17% were delegatable in their entirety (Table 5.1). However, these estimates should be treated with caution. They do not take account of:

- the time which would need to be allocated by all the professional staff to devise protocols for managing the delegated consultations or part-consultation and the availability of nurses to take on extra work.

- the danger of duplication if other members of the Primary Health Care Team saw the same patient - even if only in terms of introducing each other, and the potential difficulties of scheduling members of staff so that the patient moves 'seamlessly' between different members of the practice.

- the triage function of the GP almost certainly has to be carried out by someone.

About two-thirds of the potential for delegation is reported to be to members of the existing team and one third to an enhanced team (Table 5.1 and Appendix). GPs were given an open option as to who they would like to see in an enhanced team: not surprisingly, this 'wish list' often made reference to a nurse practitioner. This list was however deliberately left open-ended - the intention being to allow GPs a free field to give examples of the types of personnel to whom they might refer. None of the participating practices had a nurse practitioner in post in the team and this therefore gave rise to some confusion of roles - relating to both nurse practitioners and also to the role of the practice nurse. This issue is discussed further in the following Section 8.2: Focus Group Discussions about Change.

The topics that were most likely to be currently delegated were: advice (22%), screening (16%), prescribing and skin complaints (both at 12%). Although every effort was made to assign the consultations to a main diagnosis and thence to an ICD Chapter, several of the consultations had to be assigned to other codes. In particular, we found that many of the consultations could be better categorised as procedures and advice-giving; and we found that they were more likely to be delegated (Table 5.6). The ICD chapters with most potential for delegation were infectious and parasitic diseases and ear problems and those with least were digestive disorders (Table 5.7). However, it should be noted that these classifications were post-hoc and could not necessarily have been pre-assigned in any putative triage system.

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 attitudes towards team management

Attitudes were examined in two ways: through the attitudinal components of the teamwork questionnaire and the focus group discussions. In the focus group discussions, GPs identified three possible objections to delegation:

- the complexity of the consultation,
- willingness of patients, and
- impact on other team members
-

Moreover, GPs who were most positive about some aspects of the practice as a team saw the least potential for delegation (and vice versa); belonging to a "happy" team and delegation might be contradictory.

Nurses had similar reservations about complexity of the consultations and the attitudes of the patient and whilst district nurses tended to feel more part of the 'team' if they received more referrals from GPs, conversely practice nurses tended to evaluate the team negatively if they received more referrals from the GP.

Team members in smaller practices were more likely to respond positively about the participative (information sharing and communication) and innovative (new ideas developed and implemented) nature of the practice than those in larger practices; conversely team members in larger practices were more likely to respond positively about the extent to which the team shared objectives (meaning the extent to which these were achieved, understood and shared) and was task oriented (reflective and self-critical) (Tables 4.2 and 4.3). This has been

interpreted in terms of smaller practices having more flexible and possibly less hierarchical management styles.

Furthermore, the concept and reality of a 'typical' PHCT differed from practice to practice because GPs and community nursing staff work together in different ways - as demonstrated by the focus group discussion and responses to the teamwork questionnaire.

Objective 4

to document the outcomes for patients and their views of the different working arrangements of the PHCT

Assessing outcomes in primary care is, of course, very complex, and has not been 'solved' in this study. Instead the aim was much less ambitious: to show - on a range of marker indicators - that there were no negative outcomes associated with different skill mix combinations. Starting from this perspective, we chose to examine symptom and management control for asthmatics and diabetics, and patients' views on continuity of care and being seen by different professional groups.

On this limited basis:

- for both asthmatic and diabetic sub-samples, variations in working arrangements and responsibilities for care had no demonstrable difference in patient outcomes (Table 7.5, and Table 7.7);

- for all patients, there was no clear relationship between characteristics of practices and patients' views of continuity or being seen by different professional groups (Table 6.12).

Nevertheless, the variations are not idiosyncratic. For example, those asthmatics reporting some dissatisfaction (or that visits to the surgery were not helpful) were always more likely to have

greater variations between their peak flow measurements and, with one exception, to have had readings below 200 during the previous year; and these were correlated between self-reports of disturbed nights and pulmonary function measures. For diabetics there were correlations between the care being carried out by the practice nurse and being bothered by thirst, and expressed satisfaction with time spent on explanation and continuity of care.

Two issues are raised in the overall findings for patients which are perhaps more interesting; these relate to continuity and to assessment of care providers. Thus, overall nearly two thirds of patients preferred continuity[1] (Table 6.4) and this varied with age, education and gender of patient, and about 45% would have preferred to have seen a doctor other than their GP if sooner, or a nurse rather than any GP if sooner (Table 6.4). At the same time, a substantial minority did not see who they wanted to see on that particular visit (Table 6.13), and, if we consider only those who wanted to see a nurse, the proportion is 32%.

Finally, whilst between 65% and 70% were very satisfied with three major aspects of their visit to the GP (time, skills, explanation), comparative figures for nurses were 77% and 82% respectively (Table 6.16). Not surprisingly, these values increased according to age of the patients and, whilst there was a clear gradient for males (greater satisfaction associated with fewer years of full-time education) which probably reflected the same factors, there was no such gradient for females. Also of interest was that male GPs in this sample received higher satisfaction ratings than their female colleagues, even from female patients. Moreover, despite the low validity attributed to patient satisfaction questionnaires, it was note-worthy that patient satisfaction with these three aspects of care (skills, explanation and time spent) was positively correlated with the recorded percentage of time spent by GPs on these aspects (Table 6.20).

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

[1] Note that these were separate questions.

It is clear that estimates in cost-saving in this context are fraught with difficulty. Firstly, there is an element of indivisibility associated with consultations so that, for example, if two different staff see the same patient, they would both need introduction and 'signing-off' time; at the same time, there are the adverse consequences of splitting the consultation from the point of view of the patient leading to an increase in time spent on the visit to the surgery because they have to see two members of the PHCT rather than one and associated with this may be an increase in the complexity of making appointments.

Secondly, it would be essential to take into account other costs. Some of these additional costs - which could not be considered within the framework of this study - are:

- the costs of setting up and running a triage system or some other pre-selection process and an effective delegation system;

- there is no information about how GPs would organise and use the time thus 'saved'.

Most importantly, of course, we have not been able - in any precise form - to demonstrate the impact upon outcomes, so that any preliminary assessment of cost-effectiveness would have to be based upon one finding that, at least in this small sample, there appears to be no detriment associated with different patterns of care provision in primary care.

Other dimensions contributing to the overall reservations of estimating cost-effectiveness are that the estimates reported here refer to the percentage of GP consultation time and not the total of all GP working time. On the other hand, given that this study concentrated on GPs' views of what was delegatable, this may be a relatively conservative estimate. Finally, any assessment of cost-effectiveness takes as given the current structure of the GP contract and the present status of secondary care - both of which are likely to change.

Taking account of all these caveats, if the potential for time-saving from GPs includes part and full consultations, then 23% of GPs' consultation time could be saved (Table 5.2); however,

estimates of time saved if whole consultations could be delegated are 11% of GPs' consultation time (Table 5.4).

8.2 FOCUS GROUP DISCUSSIONS ABOUT CHANGE

These discussions provided valuable qualitative insights into the working relationships of the ten PHCTs, with particular reference to the roles of community nurses within the teams and the potential barriers to further delegation. The remainder of this Chapter focuses on these insights.

The Extended Role of the Nurse

One of the main topics of conversation in this area was the extension of nurse (usually practice nurse) roles into such activities as diagnosis of minor, self-limiting illness and the ability to prescribe. While many participants felt that this would be a positive step forward, there were again individual differences among the nurses as to the desirability of such a move. Some nurses felt strongly that they did not have the necessary training to undertake these roles, whilst others felt that, with suitable training, they would welcome the opportunity. The scant data we collected on use of skills in the teamwork questionnaire supported the latter view. Thus, when GP and nurse scores on the 'use of skills' domain in the teamwork questionnaire are compared, GPs scored an average of 73.5 and nurses an average of 64.4; given the numbers involved , this is highly significant, implying that nurses see their potential skills as being less well-utilised. One obvious use of a suitably qualified nurse would be to carry out a triage service in the practice, assessing and treating patients with minor, self limiting illnesses. Some GPs felt that practice nurses were also well suited to an extended role of chronic disease management, although there were some reservations on this point, as illustrated by the pronounced variation between practices (Chapter 7) and specifically that something of clinical significance might be missed;

"My chronic disease patients don't stand still... they do alter, sometimes imperceptibly with their symptoms. And I was thinking, you know, once a diabetic, doesn't mean that their diabetes stays stationary and I'm not particularly happy, I'm not saying that [nurse

practitioners]....they'd probably be better than us at doing it. I was just thinking of that side....whether it would be wise in those situations. You know, you can't say who's your safe diabetic and who's your unsafe diabetic, things like that." **GP, Practice 6**

These issues often led to discussion about the future role of the "nurse practitioner"; there was some confusion among the participants about this role. While one health visitor commented that she would need extensive training before considering taking on that role, some GPs and practice nurses felt that the line between practice nursing and the role of the "nurse practitioner" was somewhat blurred;

"I wouldn't perceive them [nurse practitioners] to have particularly different skills to the practice nurse....extended a bit, perhaps,.... I would find it frustrating to wait for a doctor to write a prescription for an antibiotic that they clearly know how to manage the problem, they've written the script out for you and they're waiting for you to put an illegible scribble at the bottom....that must be quite irritating....wait for a doctor to come and say that's a cellulitis or something, something they know perfectly well" **GP, Practice 7**

Asked to define a nurse practitioner, two practice nurses commented;

"Somebody that has responsibility and can prescribe...extend nurse roles. Although I would say we're doing quite a bit of it.

Yes" **(Practice 8)**

It was clear from conversations with practice nurses that they already ran a type of informal triage service, with patients often using them as a "screening service" if they were unsure whether or not to consult their GP;

"They often say we've come to see you before they come to see the doctor, to see if it's appropriate to come and see the doctor or not" **Practice Nurse, Practice 8**

And this role was acknowledged in some groups;

"I mean, to a certain extent it's happening now, isn't it, because people will self refer to the nurse 'cos they don't want to bother the doctor because of course, you know, nurses have all the time in the world.....so to some extent you're already trusting your nurses **Practice Manager**

Oh, yes. **GP**

To a considerable degree **GP**

To actually say, right, this needs referral to a doctor" **Practice Manager (Practice 1)**

Some of the GPs felt that a nurse practitioner would be of little use if s/he was unable to prescribe items such as some types of antibiotics. The nurses in the groups welcomed the advent of nurse prescribing, although some felt the present formulary was too limited. In their conceptions of an extended formulary, nurses most often saw prescribing power in the context of wound care, for example. It was unclear from the discussions exactly how far nurses felt that any prescribing role could, in reality, be extended.

One perceived barrier to the wider use of nurse practitioners was its relative rarity. While practice nurses could be trained within the practice to do a variety of activities, having a formal qualification was seen as potentially problematic to a practice which had invested considerably in its nurses;

".... [if], nurses in the practice get to a point where they are accomplishing everything a nurse practitioner would do but then, in order to continue to do that job, or because the definitions or qualification are changing, they've got to go off and do a three year course in order to continue to do the job we have encouraged them to do, now that would be one disadvantage of going down that sort of [road]" **GP, Practice 6**

Another potential disadvantage in the role of nurse practitioner was their acceptability to patients. Some GPs did express doubts that patients would accept nurses in this extended role, suggesting that the role of doctor carried a special authority because of their extensive training and experience;

"It's not that they're [nurses] trained to do simple cases, we see them as well, it's the authority of having dealt with the complicated cases" **GP, Practice 7**

Some GPs were also wary of the ability of nurses in the role of diagnostician;

" I think, for example, if [I] look at my own ten years in general practice....it's having the confidence in the negative....I am confident in my own diagnosis and that's just something that comes with experience, isn't it? And I think it's a misconception that suddenly a nurse that's not trained as much can suddenly take over that very difficult to quantify thing, that experience" **GP, Practice 9**

While delegation to practice nurses dominated this part of the discussions, some attached nursing staff also expressed interest in extending their roles. In one practice, extension of district nurse roles was already being implemented, such as conducting assessments of elderly people and performing venepuncture. While the nurses appeared to be happy with this extension to their role, they did express reservations about the ability to consistently be able to meet both the demands of the new role and their obligations to the Health Authority. They described it as having *"one leg on each side of the fence"* . One district nurse had already found that the obligations of her newly extended role had had negative consequences;

" I welcome the changes.....[but]....I do feel frustrated that at the other end of the role we are..... handing over [things] that we don't want to hand over a lot of the time and that you're pressurised into handing things over because of the workload" **District Nurse, Practice 10**

Central to most of the discussions on this topic was the issue of responsibility. At present, the GPs felt that the responsibility for the treatment of patients, whether delegated or not, was ultimately theirs. Some GPs felt that extended nurses' roles would only be effective if nurses were themselves responsible for their own practice, for example in the area of prescribing and diagnosing of minor illness. If ultimate responsibility remained with the medical staff, then there was a danger that extending roles would increase rather than decrease workload;

"[the nurses'] indemnity at the moment doesn't cover this type of work, so you have actually knock on effects of people taking responsibilities and I suppose at the end of the day the buck stops here and it's very difficult... people want to protect themselves and I suppose one way of staff protecting themselves is passing things higher up the line, which I can understand." **GP, Practice 3**

It was readily apparent from the transcripts that nurses had less to say about their role as independent practitioners than did the GPs. It was unclear whether the opinions of the GPs actually matched those of the nurses. In the context of the discussion groups, nurses may have felt relatively disadvantaged and wary of talking about these issues. Further research among the nurses themselves without other staff groups present would be necessary before any conclusions could be drawn about nurses' attitudes to this important topic.

Perceived barriers to delegation

As we have shown in Chapter 5 Table 5.2, many of the GPs felt that, in the majority of their consultations, there was some element or elements that could be delegated to other members of the PHCT, or to other health related professionals. Other members of the team, such as practice nurses and health visitors, also felt that parts of many of their consultations could be carried out by somebody else, although to a lesser degree (Table 4.7). However, this assertion was usually qualified by discussion on the actual practicality of any delegation. Three reasons emerged which were perceived as possible barriers to future delegation; the complexity of the consultation process, the willingness of patients to change their consulting behaviour and the perceived desirability of such delegation for the team members themselves.

Consultations were perceived by GPs as "quite complex creatures". This view is neatly summarised by one GP;

"I think that the problem that I see.....is that consultations are quite complex creatures as it were, there's a lot going on. And it's very difficult to take, to extract that chunk and give it to somebody else. I'm not saying that it's impossible but I think where I have the difficulty....here I am, I'm examining the chest or whatever, we're having a conversation about smoking and health promotion at the same time as asking about what the colour the phlegm is or how long the cough's been going on. It's all part of the same process and to take it out -.perhaps I'm overstating the case - but just to take it out and say, I can cut that piece off, well, it isn't like that". (**Practice 5**)

Many of the GPs shared this view, also making the point that consultations were rarely about one, single problem (although in nearly two-thirds of the observed consultations, only one problem was recorded (Table 2.9)). Patients often came with multiple problems, or within the context of a consultation, mentioned a different problem than that for which they ostensibly came. This resulted in the opinion that many of the "simple" consultations contained potentially complex problems which may not be aired if the patient was seen by another member of the team, as illustrated by this conversation;

"And there's always the problem of the while I'm here, isn't there? I mean, you bring something simple to the doctor, and then they come up with something else, which perhaps is far more important **GP**

I've got this lump sort of thing **Health Visitor**

Yeah, that's it. **Practice Nurse**

Because it is a small minority of patients that are genuinely straightforward and simple" **GP** (**Practice 7**)

Apart from the complexity issue, doubts were expressed about the practical difficulties inherent in delegating activities from consultations. One of the most frequently cited potential problems was that delegation would create, rather than reduce workload. Participants felt that, by the time they asked someone else to carry out an activity, they could have done it themselves and avoided the extra administration that was involved when they passed something over to somebody else. For example;

"You could have done it by the time you've explained it to somebody else. So, really, it's a poor use of somebody else's time" **Health Visitor, Practice 2**

".....you can be doing their blood pressure anyway. You're talking, you're rolling the sleeve up, it's done and, it takes you twenty seconds whereas if you say make an appointment to see the nurse they're going to have to come back for that. And frequently they have other bits and pieces" **GP, Practice 9**

Another significant barrier to delegation was the consultation behaviour of patients. Many GPs felt that they still represented the route into primary care; patients expected, initially at least, to see a doctor (even though many of these choices were, in the opinion of some GPs, inappropriate). Note however that significant proportions of patients were in fact prepared to see a nurse if sooner. Indeed, the fundamental problem with future delegation seemed to be that, ultimately, the choice of which member of the PHCT to consult lay with the patient ;

"....if somebody comes to see you for something that you do [and] it's more appropriate for me to do [it], that message hasn't got through to the patient....Once again, you know, it's who the patient wants to see....So, who they're referred to really, is starting with the patient." **Practice Nurse, Practice 6**

Another concern was fragmentation of care, both from the patient's point of view and from the health professional's perspective of providing "holistic care";

"It would be very disjointed, I think, your consultation time. And I think patients...they want treatment then...they don't want it Monday, Tuesday, Wednesday, Thursday and Friday. I think

their expectations would have to change a lot before we could do something like that" **Practice Nurse, Practice 8**

"That's the danger, isn't it?....You sort of subdivide and package care into little bits so that you actually don't do the caring. you go in and somebody takes the blood and somebody else does the dressing and somebody else goes in and, and reviews the tablets and no one's actually caring.....that's the potential problem" **GP, Practice 6**

However, some GPs did suggest that patients are both willing and able to respond to change;

"So the practice nurses are a new breed and yet in five years patients accept and fairly well know within the practice what you do- refer appropriately to you....patients do learn and change" **GP, Practice 8**

"They [will] get to know what they feel comfortable talking to a nurse about, as nurses are more and more open to them for a whole range of things, they will come to have a feel about what you can talk to a nurse about. 'Course, there's nothing written down that says what you can talk to a nurse about. 'Course there's nothing written down that says what you can talk to a doctor about either, is there?" **GP, Practice 6**

The third barrier to delegation was its perceived disadvantages. These can be divided into three areas; increased stress for the GPs, an erosion of traditional roles and the problem of "deskilling".

From the GPs' point of view, delegation of much of their " simpler work", such as diagnosis of self- limiting illnesses and regular reviews, of Pill checks for example, would leave them with a workload almost entirely made up of complex, difficult consultations. Reservations were driven by the fear of increased stress and also erosion of what some GPs saw as their traditional role in "family medicine" a view neatly summarised by one GP;

"I think a lot depends on how you are going to put this. If you were going to say to me tomorrow that all I was going to see was problems and that they were each going to be half

hour appointments, I think that would drive me....despairing. I think that the amount of effort and concentration that you would have to put in to some problems over a long period of time would be quite, quite dreadful. I would hate not to see an occasional quick and easy diagnostic problem that came through surgery as well. And I must admit that there are some old friends that I would miss if I didn't periodically see them and say hello to them. Because I mean, that's what family medicine is to me in, in a lot of respects." **(Practice 2)**

Being satisfied with their role seemed important for team members (See Section 4.1). In making decisions about which activities to delegate, actively choosing to keep activities which assured quality of care for patients and which were personally rewarding was seen as important;

"...it's not the standard that we practice. And so there are a lot of things that could be done in a different way or by someone else that we choose not to do that because of our standards." **GP, Practice 5**

" '.....first antenatals .....I like them. I also think that it's good continuity of caring...' **GP1**

'Yeah. But is liking something a good use of practice time?' **GP2**

'If it actually means that you are more satisfied with your job, I think it is actually a good use.' **GP3 (Practice 1)**

Finally, some team members felt that delegating activities such as venepuncture and antenatal examinations would lead to loss of skills. This was seen as a particular problem for GPs, who were expected to perform these activities in an emergency. Losing experience in the "normal" type of procedures would, they felt, make their performance in the "abnormal" or emergency cases difficult and even dangerous because lack of practice had, in effect, left them de-skilled.

8.3 THE WAY AHEAD

This analysis and report offers some insight into skill mix in primary care and its implications. In all of the practices, delegation and teamworking represent an acceptable mode for delivering primary medical care today. This acceptability was reinforced by the study's failure to find any evidence that skill mix affected outcomes of care in patients with chronic conditions.

At the beginning of this project, a pragmatic view was taken of 'skill mix' for the purposes of sampling. In the absence of other information we hypothesed that there might be structural characteristics of the PHCT which would be associated with the pattern of delegation/referrals within the practice and the extent to which the Primary Health Care Team would work together. Given the rapid growth in numbers of practice nurses, the presumption was that the ratio of practice nurses to GPs would be a powerful marker of the potential for activities to be devolved from the GP to other members of the PHCT. Indeed the practices were purposefully chosen to represent differences in current skill mix and therefore to avoid a bias from over-representation of rich skill mix practices (as might be expected if non-stratified recruitment were used).

It was already clear in our preliminary analyses that our initial categorisation into 'rich' and 'weak' skill mix practices was not sufficient to distinguish between the practices: indeed, none of the 'structural' characteristics seem to be associated with variations in the patterns of activity or of delegation. However, the most important message from these analyses is that, whilst there are large variations between practices which are not obviously associated with any structural characteristics of the practices, these variations are not idiosyncratic. The variations between and within practices can be variously attributed to different behaviour patterns by GPs because they are dealing with different kinds of patients and also partly because of the length of time they have worked with the practice team; nurses behave differently because they carry out their activities in different contexts. The influence of the environment and casemix are as one might have expected: but the importance of features of the practice organisation suggests that there are 'working styles' which develop in practice teams which are important to identify and monitor.

A considerable amount and range of data about the patterns of activities and the process of delegation/referral between members of the PHCT has been collected in this project. There is no straightforward association between structural characteristics of the practices and either the pattern of activities or the process of delegation/referral between members of thePHCT. In fact in this sample of practices, there was substantial variation in the extent to which clinical and administrative tasks were distributed among team members; and the extent to which current work was thought to be amenable to delegation. At a crude level of analysis, of course, this does suggest that there may be considerable potential for those not currently delegating many activities to re-distribute workload from doctors.

However, the analysis throughout this project has shown that there is no simple relation between this ratio - or other 'objective' characteristics of the PHCT - and the patterns of delegation and referral within the practice. Moreover, attitude measures only play a small part in the explanation; it has proved necessary to assess the whole balance of attitudes and practices of individual members in the light of their own socio-biography in order to identify the organisational characteristics of a high delegating/referral practice, both currently, and potentially and one which is less likely to delegate or refer. But the crucial message from these analyses is that the variations are not idiosyncratic: they are related in sensible ways to characteristics of the personnel (such as the time they have spent in the practice) and of the practices (such as the proportion of consultations carried out by nurses). These are potentially amenable to changes.

Indeed, it seems clear that the methodologies employed in this enquiry, if adopted by PHCTs, would contribute to understanding the issues involved in changing the culture of primary care delivery. Thus it is clear from the analyses that some of the instruments used in this enquiry - such as the consultation matrix, the delegation diary completed by the GP, and the patient preference questionnaire - provide invaluable data. But it is also clear that in order to characterise the kinds of practices which are more open to delegation, we need to collect more precise data on the flow of activities in the practice - perhaps by following the progress of patients through the surgery - and to find ways of monitoring the barriers to delegation which

have been mentioned in the focus group discussions. It should be possible to collect a limited data set of this kind on a much larger number of practices which would overcome one of the major difficulties in the analyses reported here.

Nevertheless, the data collected in this series of case studies does suggest that there is some scope for safely and acceptably transferring some work away from (expensive) GPs towards (less expensive) nurses and other clinical workers. Indeed it appears that effective team working, as well as co-operation and collaboration with other team members does help to address the quality of patient care, patient satisfaction and meeting performance targets set by health authorities.

Future research

With hindsight, the implications of workload management and delegation to other members of the PHCT - with particular reference to community nurses - were insufficiently explored, thus leaving a number of questions unanswered. For example, the roles of nurse practitioners and clinical specialists working in PHCTs were not addressed. However, the crucial element of this piece of work was GP workload and the potential delegation of identified aspects of GP activity; hence the title of the enquiry which focused upon the GP in relation to other members of the PHCT. The prime rationale for commissioning this work lay in informing the manpower debate surrounding recruitment into general practice.

We believe that, using the methods employed in this study, we have developed a number of valuable insights about the patterns of activity in PHCTsand the possibilities for delegation and have demonstrated the importance of collecting data on all components of the project: inputs/structure; process; and outputs/outcomes. However, it is clear that, with such a small sample of practices, it is impossible to make secure generalisations across all practices. At the same time, it is clearly impractical to propose that there should be a study of a substantial number, say 100, or representative practices with material being collected in the same depth as we have been able to do in ten practices; but with this experience, we can now recommend more

limited sets of data that can usefully be collected to examine the issues raised as a result of our enquiry.

Inputs/structure

Practice and staff: apart from core data on structure, staff type, number and hours, and in order to understand the patterns of delegation, more data needs to be collected on key aspects of practice organisation such as what appointment system is used, whether patients have direct access to nurses, and how far patients have a choice of which GP they see. The information could be collected by self-completion questionnaire or interview. Equally, basic data on individual staff characteristics, such as age, qualification and length of time in the practice are likely to contribute to explaining observed variations.

Casemix: the data collected on presenting problems whether from patient questionnaires, from medical or nursing staff diaries or from medical records could be refined in several ways. Responses from patients could be coded so as to be more compatible with standard classifications; more detail could be included in the diaries. But information on casemix and severity from records is hampered by disagreement over the appropriate criteria.

Process

Activities: The present study focused on the GP: a more comprehensive study might record what happens to every patient entering the surgery, whoever they see. In this project, there was a heavy burden of data collection placed on the research nurse which is difficult to reduce without focusing on either the details of their activity or its sources.

Delegation: Self-completion diaries for both clinical consultation and administrative tasks were found to be useful although they need to be contextualised in terms of activity patterns (less detailed than in the current study) and the forms need redesigning.

Outputs/outcomes

Staff outcomes: Changes in casemix and workload probably reflect the main outcome of delegation. In principle, data on these could be collected with a new instrument. Views on teamworking are useful, although the domains considered in these analyses are not necessarily the most appropriate.

Patient Outcomes: Because of disagreements over definitions of an outcome, information retrieved from records for the tracer groups was not very reliable and it may be appropriate to focus on patient self-reports plus data on re-presenting. The general feedback questionnaire could be simplified in respect of preferences for continuity and who the patient wanted to see; but could be extended to obtain a more complete picture of the patients' interaction with all members of the team. It might also be possible to organise distribution of the questionnaire via receptionists.

There are therefore a variety of ways of developing these instruments. If the aim is to record levels of GP-nurse delegation, its content and effects, the following could be considered.

Table 8.1 : Summary of Data Types and Instruments

Data items	Instruments
Staff profiles (useful for interpreting factors both impeding and promoting delegation)	Modified cover sheets of teamwork questionnaire
Practice characteristics	Self completion questionnaire to practice managers and staff
Existing and potential delegation	Modified (and abbreviated) versions of the nurse activity diaries and GP and nurse delegation diaries.
Outcomes (for staff)	First four sections of teamwork questionnaire
Outcomes (for patients)	Modified patient feedback questionnaire, with more attention on patient response to aspects of practice processes likely to be influenced by increased delegation.

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