

# Patterns of work in general practice in the Bromley health district

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**SUMMARY.** *The results of a survey of patterns of work in general practice over five days in one health district were linked to family practitioner committee data on individual general practitioners. Characteristics of doctors and practices were mostly unrelated to various aspects of workload. However, referral rates for pathological tests and to outpatient departments and claims for cervical cytology screening were significantly higher for younger principals than for older doctors, while younger doctors prescribed less frequently. Women general practitioners had significantly lower personal list sizes and claims for night visits and temporary residents than their male colleagues but saw only 10% fewer patients and made significantly more claims for cervical cytology screening. It was also found that UK graduates made more requests for pathological tests than doctors graduating in the Indian sub-continent. A correlation was found between list size and consultation rate, though the list size only explained a relatively small part of the variation in the rates.*

*The results have been fed back to doctors in the area and it is hoped that this will increase awareness of the patterns of work in general practice.*

## Introduction

Over the last few years there has been increasing interest in the patterns of work in general practice. This has been reflected in an initiative by the Royal College of General Practitioners towards self-audit<sup>1</sup> and government concern at the relationship between workload and remuneration.<sup>2</sup> Despite this interest, however, previous research in this area has serious limitations. Butler<sup>3</sup> identified 24 studies carried out between 1959 and 1976 which looked at consultation rates in general practice but noted that most were the work of self-selected general practitioners looking at their own practices. These studies are often able to give an important temporal dimension to changes in general practice but they may not be representative. In an attempt to overcome these problems Wilkin and Metcalfe<sup>4</sup> carried out a large scale study of list size and patient contact in Manchester. Although nearly 200 general practitioners participated the response rate from all the doctors approached in five health districts was only 39%.

Hanson and Harris<sup>5</sup> have recently pointed out that another neglected source of information about general practice workload is family practitioner committee records of items of service claims. In addition family practitioner committees hold data on various practice characteristics such as partnership and list sizes and background data on general practitioners which might usefully be linked to data on consultation patterns.

Thus when Bromley local medical committee established a think-tank to investigate general practice within the district it was decided to explore patterns of work. This involved conducting a district-wide census of surgery consultations over five days

and an examination of family practitioner committee data on general practitioners and practices.

## Method

All general practitioners in the Bromley health district were invited to participate in a survey of workload. A letter from the local medical committee together with recording sheets was sent out by the family practitioner committee who assigned a code number to each general practitioner; completed sheets were then posted to the authors. This ensured complete confidentiality as the family practitioner committee could identify doctors from their code number but did not see the completed questionnaires, whereas the authors had the results but no way of identifying individuals.

Using a new record sheet for each day general practitioners were asked to complete an entry for every patient seen either in surgery or on a home visit, noting the age and sex of the patient together with information on whether a prescription was issued, whether requests for pathology tests or X-rays were made and whether a referral to a hospital outpatient department was made. They were requested to keep these records for a specified five weekday period in March 1982.

The family practitioner committee provided the personal list size, age and sex of the general practitioner, number of partners, where qualified, number of items of service claims during 1982 and whether an appointment system was in operation for each code number. Thus it was possible to collate this background data with the consultation data from the census week. Data were analysed using the statistical package for the social sciences (SPSS(X)).

## Results

Questionnaires on consultations were returned by 122 out of the 146 general practitioners in the family practitioner committee area, a response rate of 84%. The family practitioner committee provided practice and personal data for all the doctors. The non-responders were compared with the responders using the data provided by the family practitioner committee: no statistically significant differences between the two groups were found.

## Workload

The workload of the 122 responding general practitioners over the five day census period is shown in Table 1. There was no significant variation in workload between practices with and without an appointment system, whether full or partial.

**Table 1.** Workload of 122 general practitioners during the survey week.

	Mean number (standard deviation)	Percentage of all patients seen
Home visits	16.2 (13.7)	11.2
Prescriptions	87.6 (34.6)	60.6
Requests for pathology tests	7.6 (5.5)	5.2
Requests for X-rays	3.8 (3.7)	2.6
Referrals to outpatient departments	7.0 (4.4)	4.8
All patients seen	144.5 (42.3)	100.0

**Table 2.** List size, number of consultations and home visits and rates of prescribing, referral for pathology tests and referral to outpatient departments by age of doctor.

Age (years)	Mean personal list size (n = 146)	Mean list size <sup>a</sup> (n = 146)	Mean number of consultations in study week (n = 122)	Mean number of home visits in study week (n = 122)	Mean rate per 100 patients seen		
					Prescribing	Referral for Pathology tests	Referral to outpatient departments
25-34	1202	2063	141	15	60	7.6	4.7
35-44	1744	2000	147	15	57	5.0	5.6
45-54	2078	1991	149	15	59	4.4	5.0
55-64	2799	2179	148	19	63	4.3	4.4
65+	2460	1988	125	17	62	4.6	4.4
Overall mean	2057	2057	145	16	61	5.2	4.8
Significance <sup>b</sup>	P<0.001	NS	NS	NS	P<0.05	P<0.001	P<0.05

NS = not significant. <sup>a</sup>Calculated by summing personal lists in a practice and dividing by the number of patients. <sup>b</sup>Kendall's tau. n = number of doctors.

### Characteristics of general practitioners

**Age.** Personal list size varied significantly with age, younger principals having smaller lists than older principals (Table 2). However, a mean list size, calculated by summing personal lists in a practice and dividing by the number of partners, showed no significant difference between older and younger doctors. The age of the general practitioner also had no significant influence on actual workload as measured by the number of surgery consultations and home visits made during the week, although the mean number of surgery consultations was lower for the oldest group of doctors (Table 2).

Younger general practitioners referred significantly more patients for pathology tests than older ones (Table 2). This was true both for the total number of such referrals during the week and also when standardized for the number of patients seen. The total number of prescriptions written did not differ by age; however, there was a significant difference in the prescribing rate with younger doctors prescribing less frequently than older ones (Table 2). There were also significant differences by age for referrals to outpatient departments (Table 2) and item of service claims for cervical cytology screening ( $P<0.05$ ): younger general practitioners tended to refer more frequently and claim for more cytology screening.

**Sex.** Twenty-nine per cent of the principals in the area were women. Female principals had significantly lower personal list sizes than their male colleagues, although mean list size was more similar (Table 3). Women doctors saw 90% as many patients as their male colleagues and the number of home visits was little different. However, lower personal list size was reflected in significantly lower night visit claims and claims for temporary residents over the year. Female doctors made significantly more claims for cervical cytology screening (Table 3).

**Place of qualification.** List sizes of UK graduates were very similar to those of doctors graduating in the Indian sub-continent. Moreover there were no significant differences in overall numbers of patients seen, home visits or items of service claims (Table 4). The only significant difference between UK and Asian graduates was in their referral rates for pathology tests, with UK graduates requesting more tests (Table 4).

### Relationship between list size and workload

To establish the relationship between list size and workload, the correlation between the number of patients seen in the week and the doctors' personal and mean list size was calculated using the Pearson product-moment correlation. The correlation coef-

ficient  $r$  of workload with personal list size was 0.30 and with mean list size 0.32.

Consultation rates were calculated by multiplying the number of consultations in one week by 50 and dividing by the mean list size. The correlation coefficient of consultation rate with personal list size was  $-0.55$  and with mean list size  $-0.49$ .

**Table 3.** List size and patterns of work by sex of doctor.

	Sex of doctor	
	Male (n)	Female (n)
Mean personal list size	2312 (104)	1426*** (42)
Mean list size <sup>a</sup>	2081 (104)	1993 (42)
Mean number of patients seen in study week	149 (85)	135 (37)
Mean number of home visits in study week	18 (85)	15
Mean number of night visits in one year	20 (104)	13** (42)
Mean number of temporary residents in one year	33 (104)	22** (42)
Mean number of cytology tests in one year	19 (104)	33*** (42)

\*\*\* $P<0.001$ , \*\* $P<0.01$ , Mann Whitney U test.

<sup>a</sup>Calculated by summing personal lists in a practice and dividing by the number of partners. n = number of doctors.

**Table 4.** List size and patterns of work by place of graduation.

	Place of graduation	
	UK (n)	Indian sub-continent (n)
Mean personal list size	2060 (125)	2033 (17)
Mean list size <sup>a</sup>	2083 (125)	1909 (17)
Mean number of patients seen in study week	146 (104)	136 (15)
Mean number of night visits in one year	18 (125)	21 (17)
Mean number of home visits in study week	17 (104)	10 (15)
Mean number of requests for pathology tests in study week	7.7 (104)	5.0* (15)

\* $P<0.05$ , Mann Whitney U test.

<sup>a</sup>Calculated by summing personal lists in a practice and dividing by the number of partners. n = number of doctors.

In addition, to assess whether those general practitioners with the highest prescribing rates were more or less likely to refer patients for investigation or a specialist opinion, correlation coefficients for various activities were calculated — for prescribing rate with rate of home visiting  $r = 0.15$  ( $P < 0.05$ ), with rate of requesting pathology tests  $r = 0.03$ , with rate of requesting X-rays  $r = 0.17$  ( $P < 0.05$ ) and with rate of referral to outpatient departments  $r = 0.09$ .

## Discussion

In a survey of general practitioners in five health districts in Manchester, Wilkin and Metcalfe<sup>4</sup> achieved a response rate of 39% which they described as far from ideal yet a great improvement on previous studies. The response rate of 84% in the study reported here was therefore remarkably high. The Manchester study collected more extensive data over three separate five-day work periods and this extra call on general practitioners' time might explain the lower response in Manchester. There were no major differences between the demographic and practice characteristics of the doctors in Bromley and Manchester but the sponsorship of the Bromley study by the local medical committee may have had an important influence on participation.

The mean list sizes of the doctors in the Bromley study were lower than those in the Manchester study yet the numbers of consultations in the five days of the survey were consistently higher than the comparable Manchester figures for one week across all list sizes. Similarly, the consultation rate in the Bromley study, calculated as in the Manchester study by multiplying one week's consultations by 50 and dividing by the mean list size, was also higher.

Personal list sizes, as might be expected, were lower for younger doctors but this is not indicative of the distribution of work within practices as there were no age differences in consultation workload. The prescribing rate, which has received the attention of vocational training schemes, did tend to be lower among younger general practitioners but referral rates to outpatient departments and for pathology tests were higher, which may reflect the more recent hospital experience of younger principals. Interestingly the only significant difference between doctors trained in the UK and in the Indian sub-continent was seen for pathology referral rates, with the latter referring less than their UK-trained colleagues. In their national study Cartwright and Anderson<sup>6</sup> found that Asian doctors had fewer direct-access hospital facilities available to them than UK graduates. In this study, based on one health district, hospital laboratory access was the same for all general practitioners, so differences in referral patterns may reflect different emphases in training.

Women general practitioners had significantly smaller personal list sizes than their male colleagues, probably because many work part-time or complete fewer hours in the practice. However, while some aspects of workload, particularly the number of night visits, reflected this, women doctors still saw only 10% fewer patients than their male colleagues and the number of home visits was little different. Women doctors made significantly more claims for cervical cytology screening, which no doubt reflects their involvement with this area of a practice's work.

There has been considerable interest in the most appropriate list size in general practice. Butler,<sup>3</sup> in summarizing the results of 80 separate observations relating list size to consultation rates, reported a weak negative correlation ( $r = -0.35$ ) such that patients of doctors with larger lists consulted less frequently. (This statistic assumes a linear relationship between list size and consultation rate such that equal changes in list size are likely to produce a commensurate decline in consultation rate, but it is possible that there are 'thresholds' in the relationship which would invalidate this assumption.) The equivalent statistic from

this study was  $r = -0.55$  using personal list size, and  $r = -0.49$  using mean list size, thus suggesting a stronger relationship than found from the isolated observations summarized by Butler. Even so, only about 30% at most of the variation in consultation rates for different general practitioners can be explained by list size.

A further question often asked about patterns of work in general practice is what the relationship is between different aspects of the consultation. Do high prescribers make more referrals? Do high referrers to outpatient departments also make more referrals for pathology investigations? These questions were explored by comparing the rate of various practice activities with prescribing. There were statistically significant relationships between prescribing and home visiting and requests for X-rays but overall the sizes of the relationships between these different facets of the consultation were remarkably small.

The results of this survey have confirmed the validity of much data hitherto based on rather small or selective samples. The overall impression remains one of considerable variation throughout general practice. The results of the survey have been fed back to general practitioners in the area: all doctors received overall data for the district and those who completed the survey also received data on their own workload for comparison. It is hoped that this will increase awareness of the patterns of work in general practice.

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