
PRACTICE ACTIVITY ANALYSIS

Workload review

BIRMINGHAM RESEARCH UNIT, ROYAL COLLEGE OF GENERAL PRACTITIONERS

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SUMMARY. Consultation rates, visiting rates and a selection of miscellaneous services were recorded over two weeks in February 1981 by 82 doctors in Bedfordshire and Hertfordshire. The findings are reported here with an emphasis on the variation between individual doctors. Consultations (including visits) were at the rate of 3.27 per patient per year. Undertaking a selection of miscellaneous services for patients is estimated to be equivalent to one third of the doctor's consultation workload. In addition, participating doctors spent an average of 9½ hours in the two weeks undertaking tasks connected with education and health service administration. Time spent in the administration and management of the practice was not included in this study.

The home visiting rate reported in this study was 14 per cent of all consultations and, although a little lower than that reported in the General Household Survey, it is similar to the results from the National Morbidity Survey for 1970 and 71 and also similar to other PAA results.

The material is presented in such a way that it provides an analysis of workload in a large number of practices, and describes a method which doctors can use to measure their own performance and compare it with the overall results.

Introduction

FIGURE 1 shows a general practitioner's hypothetical workload. The various portions are separated by a dotted line since many of these items merge. 'Patient Services' include the repeat prescriptions, telephone calls and so on which are part of a doctor's everyday activity but which are so easily forgotten when considering total workload, seen by many people simply as a collection of consultations, some of which involve home visits.

The consultation itself has been widely studied, nota-

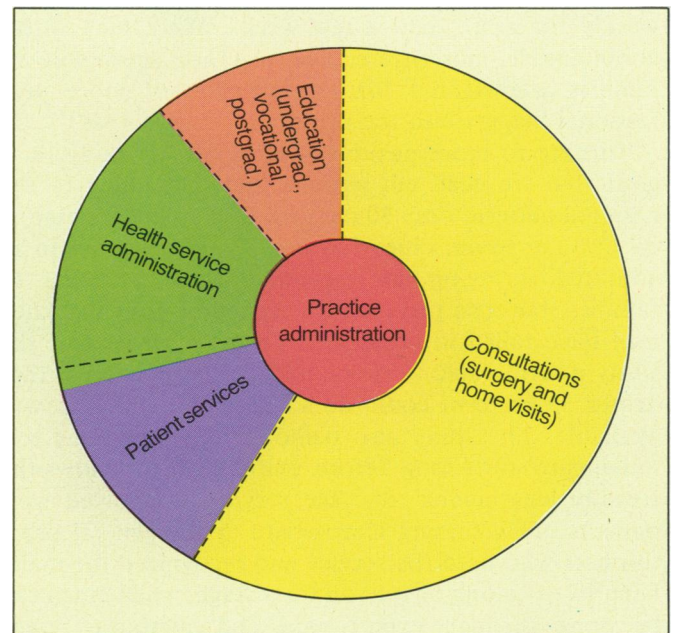


Figure 1. Pie chart showing a hypothetical model of a general practitioner's workload.

bly by Logan and Cushion (1958), by Williams (1970), in the General Household Survey (OPCS, 1973) and in the National Morbidity Surveys (RCGP, OPCS and DHSS, 1974, 1979), all of which provide background data from several practices. A profile of visiting by 190 general practitioners (Marsh *et al*, 1972) drew attention to the wide variation between doctors and indicated scope for reduced visiting. Individual doctors and practices have analysed their consultations in considerable detail, looking at both the patients consulting and the morbidity for which they consult. These studies stem largely from the development of the Diagnostic Index (Eimerl, 1960). Smith and O'Donovan (1970) were concerned with the distinction between medical need and patient demand, and urged doctors to appraise their working patterns regularly and to distinguish between these two categories. This theme

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has been further explored by Morrell and colleagues (1970).

The way doctors apportion and use their time has also been studied (Crombie and Cross, 1964; Eimerl and Pearson, 1966; Macdonald and McLean, 1971; Fry, 1972) and has led to the use of district nurses in various capacities (Crombie and Cross, 1957; Smith and Mottram, 1967; Marsh, 1969). The use of time and the scope for delegation is partly dependent on the way practices are organized (Drury and Kuenssberg, 1970). Considering the efficient use of time led Fry (1969) to challenge the need for ever-increasing numbers of general practitioners. Much of the available literature on this subject has been consolidated by the Royal College of General Practitioners (1973).

With the exception of the General Household Survey (GHS) all the above studies were based on recording by volunteer doctors. Results obtained from volunteers can never be relied upon to be representative and, bearing in mind the wide variation that is evident in so many of these studies, we must be very cautious about using them to draw conclusions about the state of general practice in the country at large. Even if a satisfactory study could be designed and funded to gather reliable and detailed information from representative practices, there would remain the difficulty of relating measured workload to remuneration (Ball, 1978).

Aims

The study reported here had two aims: firstly, to describe the work pattern of a group of doctors during two weeks, and secondly to introduce an instrument for measuring workload factors which other doctors could use and obtain on request.

Methods

The study was based on one of the Birmingham Research Unit's Practice Activity Analysis data sheets (No.11—Workload Review). The sheet (Figure 2) includes a series of score grids related to such items as telephone calls, letters written or dictated, reports prepared and so on, plus information about numbers of consultations and a schedule of the time taken in miscellaneous activities.

The study was organized by the Bedfordshire and Hertfordshire Faculty of the Royal College of General Practitioners working in co-operation with the Family Practitioner Committees (FPCs) for those Areas. All the general practitioners were sent a copy of the data collection sheet by the FPCs and invited to complete the form in the first two weeks of February 1981. Approximately 900 sheets were distributed, to be returned on completion to the Faculty Secretary and thence to the PAA Unit in Birmingham for analysis. A meeting had been convened at which the results of the study were to be discussed.

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INSTRUCTIONS SERVICES PROVIDED INDEPENDENT OF CONSULTATION

A score is made every time one of the services listed below is provided for a N.H.S. registered patient whether or not the patient was actually consulting during the study period. This analysis is concerned only with the activities of the G.P. personally and not with those undertaken exclusively by the ancillary staff. All his activities even if trivial should be scored whereas tasks completely delegated should not. The writing of a prescription or issue of a sickness certificate are not scored where these form part of the consultation and are absorbed within the Consultation Table (Page 3). The dictation or writing of a referral letter is always scored.

The consultations table is completed during the study and a time schedule for miscellaneous activities is also kept. Results should be summarised appropriately at the end of the study.

LETTERS - written or dictated																				ENTER FINAL No.	
To Specialists or Hospitals	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		20
To Social Workers Housing Depts. etc.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		20
Others	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
REPORTS COMPLETED																					
For D.H.S.S.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Others	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
REPEAT PRESCRIPTIONS ISSUED																					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	
	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	
	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	
INTERVIEWS WITH RELATIVES																					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
TELEPHONE CALLS (received or made by Doctor)																					
With Patients or Relative	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Hospital	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Doctors	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Other Staff	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Other	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Doctors	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
H V SW	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Midwife etc	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Others	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

Figure 2. Section of the PAA data sheet used in the study.

Results

Of the doctors receiving data sheets, 82 chose to measure their workload and submit it for analysis. On average, each doctor undertook 301 consultations in the two-week period (Table 1). Expressed another way, this was equivalent to 327 consultations per 100 patients per annum, accepting that, after making allowance for Bank Holidays, 25 fortnights make up one year. The doctors reported an average list size of 2,302. The list size defined by the doctors was based on an estimate of their responsibility within the practice during the two study weeks.

Of the 1,865 letters reported in the study, 78 per cent were to specialists and comparatively few (4 per cent) to social workers, housing departments and so on. Nineteen per cent of the total 480 reports were prepared for the DHSS.

The average number of repeat prescriptions issued was 92, and the average number of telephone calls involving the doctor was 35. We did not include calls dealt with entirely by the ancillary staff. Just over half of the calls (53 per cent) were between the doctor and patients or their relatives.

Table 1. Consultations and services provided for patients. (Services expressed as consultation-equivalents in parentheses; all values presented to nearest whole number.)

	Per doctor in two weeks	Per 100 patients per annum
<i>Consultations</i>		
Surgery	260	283
Home visits	41	44
Total	301	327
<i>Services</i>		
Letters to		
Specialists	18	19
Social workers, etc.	1	1
Others	4	4
Total	23(17)	25(19)
Reports for		
DHSS	1	1
Others	5	5
Total	6(4)	6(5)
Repeat prescriptions		
Forms issued	92(23)	99(25)
Interviews		
With relatives	2(2)	2(2)
Telephone calls with		
Patients	19	20
Other hospital staff	3	3
Hospital doctors	5	5
Other doctors	3	3
Health visitors and social workers	2	2
Others	4	4
Total	35(18)	38(19)
Travelling		
To make visits	(41)	(44)
Total consultation equivalents for services provided	(105)	(114)

We tried to interpret the results for the various service items as consultation equivalents. In order to do this we asked for opinions on the time relationship between these various tasks. The consensus of opinion is shown in Table 2. By applying these weightings to the various services provided and listed in Table 1, I calculated that the average number of service units (consultation equivalents provided) was 105 per doctor.

Table 3 shows the average time spent by the doctor on the selection of activities. The overall result was 560 minutes for the two weeks. The 48-minute average time spent in tutorials was misleading, since only 20 doctors returned any entry under this heading. If the total time spent is divided amongst these 20, the figure is 198 minutes each. If the first four items on this list are considered educational and the latter four administrative, the division in time is almost exactly half each.

In this report thus far we have been concerned with average results, which are summarized in chart form in Figure 3. The central philosophy of the PAA Unit is the

Table 2. Time equivalence to one consultation to carry out miscellaneous tasks.

Task	Equivalence to one consultation
Preparing, dictating and checking a letter	0.75
Preparing, dictating and checking a report	0.75
Issuing a repeat prescription	0.25
Interview with relative	1.00
Making or receiving a telephone call	0.50
Travelling to visits*	1.00

*This figure was arrived at bearing in mind that some home visits might be included as a round and be economical, whereas others are undertaken specifically.

Table 3. Average time (in minutes) spent on miscellaneous activities during two weeks.

	Activity	Travelling	Total
Undergraduate education	22	1	23
Postgraduate education (Section 63)	102	30	132
Postgraduate education (Non-Section 63)	70	11	81
Tutorials with trainees, etc.	46	2	48
LMC, DMT, etc.	40	8	48
Partnership meetings	76	3	79
Hospital visiting	23	5	28
Other medical meetings	100	21	121
Total	479	82	560

Figure 3. Pie chart showing a model of a general practitioner's workload based on collected data and on estimated time commitment.

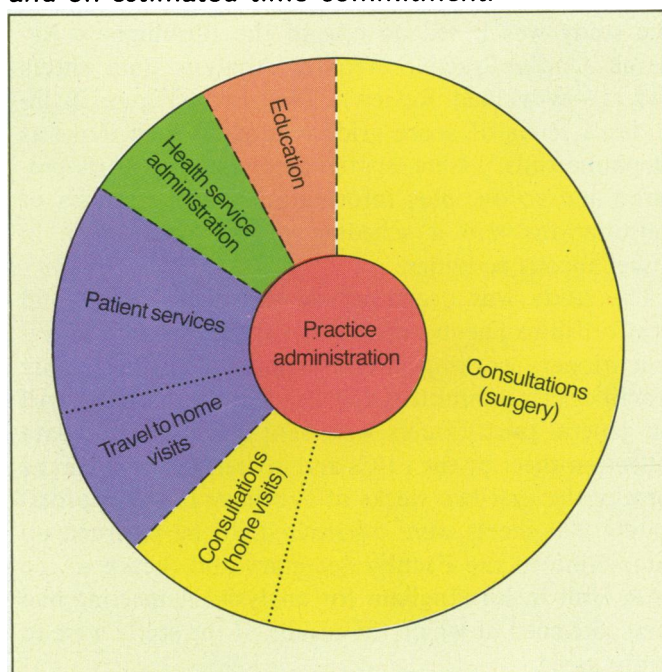


Table 4. Consultations per 1,000 list per two weeks. Range of results expressed as percentage of mean for each study. Minimum, maximum and intervening rates divide the total recorders into five groups of approximately equal size (A, B, C, D, E).

	Intervening rates					E Max
	Min A	B	C	D		
Present study (mean = 131)	44	85	98	107	121	173
NMS II (1970-1971) (mean = 120)	63	86	100	110	120	162
NMS II (1971-1972) (mean = 126)	54	87	97	108	120	199

Table 5. Home visits as a percentage of consultations. Range of results expressed as percentage of means for each study. Minimum, maximum and intervening rates divide the total recorders into five groups of approximately equal size (A, B, C, D, E).

	Intervening rates					E Max
	Min A	B	C	D		
Present study (mean = 13.6)	10	62	89	104	135	257
NMS II (1970-1971) (mean = 16.2)	10	66	92	106	130	202
NMS II (1971-1972) (mean = 13.9)	10	58	91	113	131	236

exploitation of variation for its educational value. The variation between doctors is shown in Tables 4 (consultations per 1,000 list), 5 (home visits per 1,000 consultations) and 6 (service units per 1,000 consultations). For each of these results the 82 recorders were divided into five groups (A, C and E, each containing 16 recorders, and B and D containing 17). The boundaries of each group are presented as a percentage of the mean for each parameter. For consultations and home visits, additional data from the Second NMS are provided in a similar form for comparison.

Discussion

The estimated rate of consultations per patient per annum was 3.27. The equivalent figures from the second National Morbidity Survey (NMS 11) were 3.01 (1970-1971) and 3.16 (1971-1972), and the figure from the GHS of 1971 was 3.8. All these values are in general lower than those based on recording before 1970. The figure obtained here is very similar to that obtained in other recent PAA studies. However when comparing

Table 6. Service units per 1,000 consultations. Range of results as percentage of mean. Minimum, maximum and intervening rates divide the total recorders into five groups of approximately equal size (A, B, C, D, E).

	Intervening rates					E Max
	Min A	B	C	D		
Present study (mean = 349)	35	79	90	101	128	228

PAA, NMS and individual practice results, which are all based on volunteers, with GHS material, which is independent of the doctor, it is important to bear in mind the element of self-selection.

The limitation of using data concerned with mean values without giving due consideration to the distribution is well illustrated in this report. The overall variation between doctors in consultation and home visiting rates (Tables 4 and 5) is very similar to the overall variation apparent in the NMS material, although the latter is based on a full year's recording. The similarity of range validates the PAA method of collecting data.

In this study 14 per cent of consultations took place in the patient's home. This value is very similar to that obtained from several other PAA studies, in which results were as follows: RCGP *Journal* survey series 1978, 15.7 per cent (RCGP, Birmingham Research Unit, 1978); S.E. Thames 1980, 16.3 per cent (unpublished data); Oxford 1981, 15.7 per cent (unpublished data). It is also similar to the rates reported in the NMS for the years 1970-1971 (16.2 per cent) and 1971-1972 (13.9 per cent). However, it is less than the figures from the GHS (22 per cent for 1971 and 19 per cent for 1978) and less than individual practice results from the 1960s, where home visits accounted for more than 20 per cent of all consultations. Marsh and colleagues (1972) found that the average number of visits undertaken by doctors was 90 in the 10 days of the study, more than double that obtained here. There is considerable controversy as to the value of home visits; some would like to see the development of an American-style practice, where there is virtually no home visiting, whereas others would prefer the system operating in a country like Belgium, where 40 per cent of consultations take place in the patient's home. There is a widely held view amongst general practitioners that visiting rates have been falling over recent years. In the PAA data we have no previous material with which to make comparisons and therefore can reach no conclusion on this matter.

The weightings applied to the various service items listed here have not been tested and therefore the analyses based on them should be treated with caution. Nevertheless, it is apparent that substantial work goes into providing these various services. Accepting the weighting applied here, it is about one third the amount

of work which is done in consultations. The average of 92 repeat prescriptions per doctor is a little below the 120 we have encountered in previous PAA studies.

Group discussions were held about the significance of our results. The recorders were provided with some individual information which could be compared with the group results. They knew, for example, if they provided a large number of consultations for their list or undertook comparatively few visits, or dealt with large numbers of telephone calls and so on. The discussions were mainly about the possible explanations that might account for differences and about delegation of work. There was, as always, an element of surprise amongst the recorders at the extent of the variations.

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Note

Doctors wishing to carry out the analysis can obtain data sheets from the PAA Unit, Lordswood House, 54 Lordswood Road, Harborne, Birmingham B17 9DB. They will be provided with a personal analysis.

Address for reprints

Dr D. M. Fleming, PAA Unit, Lordswood House, 54 Lordswood Road, Harborne, Birmingham B17 9DB.

Anticoagulation therapy and bleeding risk in the treatment of myocardial infarction

The 32 intracranial events and 116 extracranial bleeding complications observed during a double-blind trial to assess long-term oral anticoagulant therapy in 878 elderly patients after myocardial infarction were studied in detail. Of the intracranial events, 12 occurred in the anticoagulant (AC) group and 20 in the placebo group, the number of definite haemorrhages being eight and one respectively ($p=0.04$). The accumulated periods of neurological disablement amounted to 120 days in the AC group and 1,204 days in the placebo group ($p<0.01$). Of the 106 extracranial bleeding episodes observed in the AC group, 28 were referred to as major; none of the patients with major bleeds died but 10 required treatment in hospital. In the four placebo patients with a major extracranial haemorrhage no treatment was needed specific for bleeding. Minor episodes were noted 78 times in 56 AC patients and six times in five placebo patients. It is concluded that the bleeding risk associated with long-term oral anticoagulation as applied in the Sixty Plus Reinfarction Study does not materially detract from its beneficial effects with respect to the prevention of recurrent myocardial infarction.

Source: Second Report of the Sixty Plus Reinfarction Study Research Group (1982). Risks of long-term oral anticoagulant therapy in elderly patients after myocardial infarction. *Lancet*, 1, 64-68.