

THE NUMBER OF ITEMS OF GENERAL MEDICAL SERVICE PROVIDED BY A GENERAL PRACTITIONER IN ONE YEAR (1964)

E. M. MARGARET PAYNE, M.B., B.Ch., B.Sc.

Cardiff

THE number of 'Items of General Medical Service' provided by a general practitioner in the National Health Service is one of the factors to be taken into account in the future planning of general medical services.

A number of surveys have been performed by individual practitioners on the various aspects of general practice. These include the future of general practice, (Pinsent 1950), morbidity in general practice, (Fry 1952, Barnes 1958, and Hardman 1965) and the average hours of work per week (Watts 1952). Backett *et al.* (1953) investigated the problems of general practice, Crombie and Cross (1956 and 1964) considered the use of a general practitioner's time; Brotherston and Chave (1956) analysed the proportion of the practice (Fry 1952, Barnes 1958, and Hardman 1965), and the practice seen and Brotherston *et al.* (1959) the frequency and nature of night calls. Mair and Mair (1959) studied remuneration per item of service, Fieldsend (1960) studied weather and work and Handfield-Jones (1964) considered doctor's skills and ancillary help.

In previous surveys on work load in general practice there is considerable variation in the number of items of service provided per patient per year. Pinsent (1950) in his one-year study in a midland industrial city found 3.5 surgery consultations and 0.6 home visits for panel patients. Studies over one year, a five-year and 15-year period have shown an attendance rate per patient between 3.5 and 3.8 (Fry 1952, Fry 1957, Fry and Dillane 1964). Davie (1952) in Chesterfield, found an average attendance of 6.13; Crawford (1954) in a two-year study in a Northern Ireland general practice found 3.19 home visits and/or surgery attendances. Brotherston and Chave (1956) in a general practice in a new housing estate near London found a consultation rate of 4.1 per patient per annum. Barnes (1958) in an industrial practice found 4.6 items of service per patient per year 'excluding hospital visits, telephone

calls, etc.' He found an attendance to visit ratio of 1.8 to 1. Mair and Mair (1959) in a five-year study found the average consultation rate of 5.45; Scott *et al.* (1960) in a one-year study in the Edinburgh general practitioner unit found a consultation rate of 6.6 per patient per year. Scott and McVie (1962) quoted a figure of 7.2 items of service per patient per year (4.8 surgery attendances and 2.4 home visits). A survey in a country practice (Weller 1963) showed little variation in consultation rate over ten years—in 1953 it was 3.27, in 1962 it was 3.1.

The current assessment of the work load in general practice is based upon the statistical inquiries made by Sir Bradford Hill for the British Medical Association published in 1951. In 1937 a court of inquiry was set up to assess the insurance capitation fee under the old N.H.I. Act; evidence submitted by the British Medical Association indicated that in 1936 a practitioner had provided an average of 1.33 home visits per patient and an average of 3.80 attendances at the surgery; this gave an overall figure of 5.13 items of service per patient per annum. These figures were disputed by the Ministry of Health who quoted figures of 0.76 for visits and 2.90 for surgery attendances, giving a total of 3.66 items of service per patient per annum. Bradford Hill (1951) was called upon to make a statistical survey of work load; he conducted an extensive inquiry involving more than 5,000 general practitioners. His final assessment showed a range of 1.12 to 1.26 home attendances and 3.69 to 4.13 surgery visits, giving a total of 4.81 to 5.39 items of service per patient per annum. These figures have formed the basis for estimation of the work load in general practice up to the present day.

Method

The author conducted a survey to obtain information about the number of general medical services provided by a national health service practitioner in a small, urban general practice. During 1964 from 1 January to 31 December inclusive a record was kept of services provided to all national health service patients in the practice, registered under the Cardiff Executive Council, excluding maternity medical services.

The duration of the survey was for 339 days. Records were not kept for 27 days whilst the practice was under the care of a locum tenens. The 27 days during which no records were kept were as follows:

- | | |
|---------------------------------|---------|
| 1. 9–12 April (inclusive) | 4 days |
| 2. 19–24 May (inclusive) | 6 days |
| 3. 18 July–3 August (inclusive) | 17 days |

As patients presented themselves, a note was made of their name

and the service provided as follows:

Home calls		C
Surgery attendances		S
Telephone advice from doctor	}	T
or		
Prescription by post		

Estimation of the number of items of service per patient per annum

Two lists of patients, one for males and one for females were compiled from the medical records, EC(5) and EC(6) in my possession; names were added or deleted as patients joined or left the practice. The number of items of service, i.e. represented as C—home calls, S—surgery attendances or T—telephone advice or prescription by post were recorded for each patient as monthly figures throughout the year. The totals in each alphabetical group are represented in table I for males and table II for females.

From table I

Total male patients	263
Total items of service for one year for males	1754

This represents a crude average of 6.669 items of service per patient, per annum, for males.

From table II

Total female patients	465
Total items of service for one year for females	3466

This represents a crude average of 7.454 items of service per patient per annum for females.

Figure 1 shows graphically the number of items of service provided per month, separately for males and females. Table III shows the distribution of the number of items of service for male and female patients.

Calculation of the number of patients considered as being at risk

Inquiries in connection with an independent survey on the general health of my patients (to be published later) revealed that a number of medical records held by me were of patients who had left my practice before this survey started. Eighteen patients—seven male and 11 female came into this group. A follow-up check with the executive council lists showed that there was no trace of three male patients, one had transferred to another doctor in the same executive council area and three were still on my executive council list but to my knowledge had left the district or the country. There were 11 females in this group, eight of whom no trace was found in the executive council lists; one had transferred to another doctor in the same executive council area; two who were still on my list were known by me to have left the district or the country. It became apparent that the initial list of patients compiled did not represent a true figure for the number of patients at risk throughout the year. In addition, patients who joined my list at some time during the year

TABLE III
 THE DISTRIBUTION OF THE NUMBER OF "ITEMS OF SERVICE" FOR MALE
 AND FEMALE PATIENTS

<i>Number of items of service</i>	<i>Number of patients</i>		<i>Number of items of service</i>	<i>Number of patients</i>	
	<i>Male</i>	<i>Female</i>		<i>Male</i>	<i>Female</i>
0	56	89	24	2	1
1	19	30	25	0	2
2	22	35	26	0	1
3	12	25	27	2	2
4	16	34	28	1	1
5	21	28	29	2	1
6	15	27	30	3	2
7	11	20	31	0	2
8	11	20	32	0	1
9	10	24	33	1	1
10	7	9	34	0	0
11	16	13	35	1	1
12	5	12	36		0
13	6	9	37		2
14	4	10	38		0
15	2	11	39		0
16	6	10	40		1
17	4	5	41		0
18	3	8	42		0
19	0	10	43		0
20	1	6	44		0
21	2	2	45		0
22	1	4	46		0
23	1	5	47		1

or left before the end of the year and temporary residents, could not be considered as being 'at risk' for the total period of one year. It was decided to use a calendar month as the basis for estimating the patients at risk per annum. The number of calendar months that each patient who was at risk was found and the totals, in alphabetical groups, are shown in table IV.

Whilst there were apparently 263 male patients on my N.H.S. list, the calendar month estimation revealed that male patients were at risk for 2834 months. This is equivalent to a male population at risk for the year of

$$\frac{2834}{12} = 236.166 \text{ patients}$$

A similar calculation for females was:

Apparent number of females on my N.H.S. list	465
Number of calendar months at risk in females	5025

The number of female patients at risk for the year is

$$\frac{5025}{12} = 418.750 \text{ patients}$$

The corrected average number of items of service per patient per annum is thus represented as follows:

Males

$$\begin{aligned} &\text{Corrected average of items of service per patient per annum} \\ &= \frac{\text{Total number of items of service}}{\text{Corrected number of patients at risk}} = \frac{1754}{236.166} = 7.427 \end{aligned}$$

Females

$$\begin{aligned} &\text{Corrected average number of items of service per patient per annum} \\ &= \frac{\text{Total number of items of service}}{\text{Corrected number of patients at risk}} = \frac{3466}{418.75} = 8.277 \end{aligned}$$

The figures presented by Bradford Hill were expressed as home attendances and surgery visits. In my survey, disregarding the item of service 'T' (telephone advice or script by post), the comparable figures are as follows:

Male patients

$$\begin{aligned} &\text{Corrected calls (home attendances) for male patients, where T = 49 is excluded} \\ &= \frac{\text{Total number of calls for males}}{\text{Corrected number of males at risk}} = \frac{468}{236.166} = 1.982 \\ &\text{Corrected surgery visits for male patients} \\ &= \frac{\text{Total number of surgery visits for males}}{\text{Corrected number of male patients at risk}} = \frac{1237}{236.166} = 5.238 \end{aligned}$$

TABLE IV
THE NUMBER OF CALENDAR MONTHS THAT PATIENTS WERE
" AT RISK " DURING THE YEAR 1964

	<i>Male</i>		<i>Female</i>	
	<i>Number of patients</i>	<i>Number of months on N.H.S. list</i>	<i>Number of patients</i>	<i>Number of months on N.H.S. list</i>
A	5	51	8	81
B	26	269	42	446
C	15	147	38	379
D	20	207	41	460
E	18	196	19	175
F	4	48	9	99
G	4	48	18	204
H	17	204	37	402
I	—	—	—	—
J	28	297	36	430
K	4	36	5	51
L	10	100	13	136
M	17	182	28	289
N	1	12	2	15
O	—	—	1	12
P	18	201	27	290
Q	—	—	—	—
R	17	185	37	426
S	28	284	35	382
T	11	132	18	165
U	—	—	—	—
V	3	36	6	64
W	17	199	44	507
X	—	—	—	—
Y	—	—	1	12
Z	—	—	—	—
Total	263	2834	465	5025

The number of patients on the N.H.S. list during the year and the number of calendar months in which these patients were " at risk ", shown in alphabetical groups.

Female patients

Corrected calls (home attendances) for female patients, where T = 148 is excluded

$$\begin{aligned}
 & \text{Total number of calls for females} && 1037 \\
 = & \frac{\text{Corrected number of female patients at risk}}{\text{Total number of surgery visits for females}} && = \frac{418.75}{2281} = 2.476 \\
 & \text{Corrected surgery visits for female patients} && 418.75 \\
 = & \frac{\text{Total number of surgery visits for females}}{\text{Corrected number of female patients at risk}} && = \frac{2281}{418.75} = 5.447
 \end{aligned}$$

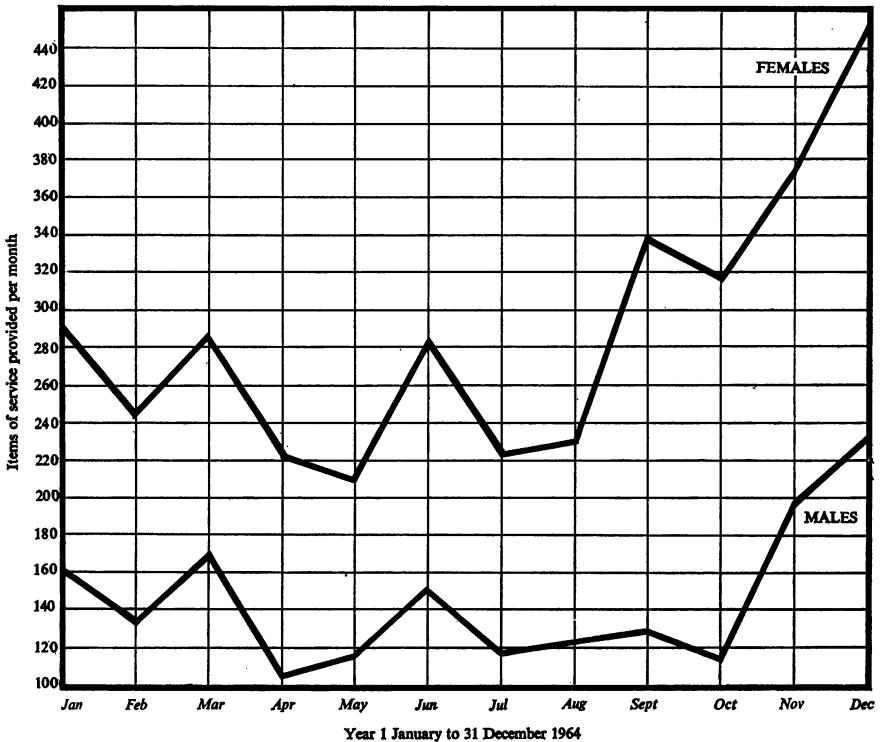


Figure 1. The number of 'items of service' provided per month for males and females.

Discussion

The average work load of a general practitioner has recently been a much discussed topic. Over the past 16 years surveys by individual practitioners have shown wide variation in the number of items of service per patient per year. The surveys have varied in duration from 14 days Wood (1962), a time and motion study and 30 days

Wilson (1964) to 15 years Fry and Dillane (1964). Scott and McVie (1962) commented on the wide variation in the ratio of surgery attendances to home visits (S/V ratio) from one practice to another and concluded that part of the variation was due to the doctor. Some portion of the variation in the consultation rate per patient per year appears to be due to the different criteria used in assessing the work load. Fry (1952) used the mid-year figure to calculate the size of his practice, Watts (1952) found estimation of the number of patients at risk difficult. Brotherston and Chave (1956) based their patient estimation on the registered population. In their comprehensive study of the work load of the general practitioner Lees and Cooper (1963) stated "a primary requirement of an inquiry into general practice is a definition of the population at risk". Backett *et al.* (1953) investigated the population at risk in their practice. They showed that the number of patients on their executive council list was 15 per cent greater than the number of "individuals registered and found to be present" in the practice. An estimation of the population at risk from their record cards showed 19 per cent more than the number of "individuals registered and found to be present" in the practice. They commented "much of this inflation, which was large enough to distort seriously any analysis of practice records, was due to the disruption of the population in the area during the war". They went on to state that since 1950 new procedures have been introduced to reduce this kind of inflation of practice lists. The figures the author obtained in her study show there is an inflation of approximately 10 per cent in her practice list.

A joint letter from the chairman of council of the British Medical Association and chairman of the General Medical Services Committee states ". . . the only *full scale* statistical surveys into work load in general practice were carried out for the British Medical Association by Sir Austin Bradford Hill, first in the year July 1938 to June 1939 and secondly in the year October 1949 to September 1950. They were scientifically designed to show the general practitioners' work over the whole year. Each survey embraced more than 3,500 doctors stratified to include all forms of practice and to eliminate seasonal fluctuations. The average consultation rate even 15 years ago was 5.22 per patient per annum. The survey did not attempt to calculate the average time per consultation".

The well-known cyclic variation of work load in general practice suggests that surveys conducted over short periods in large practices, if not statistically designed, may produce erroneous results. Industry, commerce and recently the political parties have made use of 'Gallup Polls' which in general have been shown to be reliable, with occasional notable exceptions. The principle of using 'samples' to predict a true picture of the 'whole' is valid provided the former is

sufficiently representative. It would appear that the information derived from the *total* population of a *small* general practice may provide a more adequate 'sample' than a small sample from a large practice.

The author's practice is in a residential area of a semi-industrial city; while the number of patients on the N.H.S. list is small compared with the national average, it should be noted that in the Bradford Hill survey half of the practitioners who undertook to provide information had lists of less than 1,000 patients, although the average list was 1,148 patients.

This survey has been conducted over a whole year which eliminates discrepancies that may occur because of the seasonal variations in work load. The monthly variation in the items of service provided follows the same general pattern in male and female patients, as shown in the graph (figure 1).

The total time of the survey is considered as being for 12 full months although no record was kept of the number of patients seen during the 27 days when the practice was in charge of a locum tenens. If the total time of the survey was considered as 12 months minus 27 days, i.e. almost one calendar month, this fact would alter the result in the calculation of the number of patients at risk.

It seemed reasonable to include prescriptions sent by post and telephone advice given to patients as items of service: on these occasions advice was always given by the doctor and obviated the necessity for a surgery visit by the patient.

The average number of items of service per patient per annum and the number of patients considered as being at risk were calculated separately for males and females because of the high proportion of female patients in the practice. Figures for the maternity medical services provided during the year have not been included in this survey.

The calendar month is used as a basis for calculating the correct number of patients at risk per annum as this seems a more accurate method of assessing the average number of items of service. The corrected average of items of service per patient per annum was higher than the crude average, in males and in females. The difference in each case was males 0.758, females 0.823; while this difference appears small it must be remembered that it refers to each patient and when multiplied by the total number of patients in a practice it represents a large increase in the total volume of work load per annum.

Summary

A survey was performed in a small, urban N.H.S. practice, for

one year, to obtain the number of items of general medical service provided per patient per annum. A crude and corrected figure was obtained separately for males and females. The significance of the difference between the crude and corrected figures, in each case, is discussed.

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THE CASTOR-OIL SPOON

Whenever I was out of sorts, it was always pronounced to be "stomach", whereupon a great quart bottle of castor oil was produced, also a leaden or pewter spoon with hollow stem, and a lid that moved on hinges, and closed the spoon. Into this a sufficiency of castor oil was poured, then my grandmother applied her thumb to the end of the hollow handle, and this effectually retained the objectionable oil in the spoon, till this article of torture had been rammed between my teeth and was lodged on my tongue. Thereupon the thumb was removed, and the oil shot down my throat.

The old English home, P. 259
 S. BARING-GOULD 1889