MEDICAL PRACTICE

General Practice Observed

B.M.A. Deputizing Service in Sheffield, 1970

B. T. WILLIAMS, R. A. DIXON, J. KNOWELDEN

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Summary

Seventy-four per cent. of Sheffield general practitioners and 78% of those in Nottingham used a deputizing service in 1970. In each city the deputizing service was used by about 80% of single-handed general practitioners, 90% of doctors in two-doctor practices, and 60% of those in partnerships of three or more.

The Sheffield deputizing service handled 15,988 new calls in the year, an average of 106 per subscribing doctor, and in addition made 339 revisits. The median number of calls handled for single-handed doctors was 98, for those in two-doctor practices 95, and for those in partnerships of three or more 75. The growth of group practice has not eliminated the demand for deputizing services.

Sixty-six per cent. of consultations were with deputies who were primarily hospital doctors, 20% with a full-time deputy, 11% with deputies who were primarily general practitioners, and 3% with the switchboard staff, who were also trained nurses. The deputies had been qualified, on average, for eight years. Seventy-two per cent. of patients attended were seen within one hour of receipt of the call.

Calls handled by the deputizing service represented approximately 1% of all the subscribers' consultations, 5% of their home visits, and half their calls between midnight and 07.00 hours. At this level of activity the concept of "personal doctoring" was not threatened.

Introduction

General-practitioner deputizing services now function in many of the larger towns and cities in the United Kingdom (see Appendix). The services are operated by companies independently of the National Health Service. They recruit doctors ("deputies") from various sources to answer the calls of general practitioners who subscribe for the service.

It has been doubted whether deputizing services are in the best interests of the patients since the deputizing doctors can know little of the background and previous history of the patients they treat.¹ Against this it has been suggested that in some environmentally unattractive areas where patient-doctor ratios are high the provision of general medical services has been maintained at acceptable levels only through the availability of deputizing services which have afforded relief to overworked doctors and made life tolerable for them and their families.²

Little has been written to date, however, about the nature of the work a deputizing service undertakes and of the deputies who perform it. In this paper a description is given of the operation of the B.M.A. Deputizing Service in Sheffield in 1970. The report is based on an analysis of the records of calls received by the service during the year.

Description of Service

A deputizing service was established in Sheffield in 1963. The Sheffield service was the first to be sponsored by the British Medical Association. The operating company employed the deputies and provided the telecommunications and transport systems necessary.

General practitioners contracted on a monthly or yearly basis with the company. They subscribed either on the basis of fixed premiums, with additional charges for visits made to their patients, or through higher premiums which entitled them to a quota of visits free of charge. (In some other deputizing services subscribers can obtain cover on a casual

Medical Care Research Unit, Department of Community Medicine, University of Sheffield, Sheffield S10 2TN

B. T. WILLIAMS, M.B., D.P.H., Assistant Senior Medical Officer, Sheffield Regional Hospital Board

R. A. DIXON, B.SC., PH.D., Lecturer in Community Medicine

J. KNOWELDEN, M.D., F.R.C.P., Professor of Community Medicine

basis—for example, for a single night or weekend at a time.) The subscribing doctors could arrange for all their calls during an off-duty period to be rerouted to the deputizing service or they might elect to receive the calls themselves and pass on to the deputizing service a selection of those received. The service was available to doctors for patients registered with the Sheffield Executive Council. Visits for maternity calls were not undertaken. The deputizing service was available from 18.00 hours to 07.00 hours every week night, and from 12.00 hours on Saturday to 07.00 hours on Monday. It also operated on bank holidays.

As with all B.M.A.-sponsored deputizing services a medical advisory committee consisting of subscribers and representatives of other relevant professional bodies in the area gave guidance to the operating company and assessed all prospective deputies for their experience and suitability for employment.

The level of activity of the Sheffield deputizing service can be compared with those in 16 other deputizing services from information received from the directors of these services in a separate inquiry in 1971 (table I). The average number of calls handled per subscriber in Sheffield (100) was slightly below the average number for all the deputizing services together (112). The activity in Sheffield was only half as great as in the busiest service (196).

At the end of 1971 over 4,000 general practitioners were using deputizing services (table I). Assuming each had an average list size of 2,500 patients, nearly 11 million patients of these doctors were liable to consult a deputizing service. Even this underestimates the true total, since no information was received from five other deputizing services.

TABLE I—Deputizing Services: Subscribers and Calls 1971

Deputizing Service	Subscribers			Calls	
	31/12/70	31/12/71	Mean 1971	No.	Average per Sub-scriber
1	—	140	140*	27,400	196*
2	91	103	97	15,700	162
3	116	124	120	17,600	147
4	375	392	383	51,538	135
5	—	74	74*	9,550	129*
6	274	379	327	40,035	122
7	143	148	146	16,679	114
8	274	331	303	33,650	111
9	250	180†	215†	22,000†	103†
B.M.A. Sheffield	151	158	155	15,516	100
11	—	300	300*	30,000†	100†
12	108	117	113	11,267	100
13	77	107	92	7,807	85
14	504‡	544‡	524‡	43,228	82‡
15	952	967	960	77,224	80
16	90	97	94	7,180	76
17	110	125	118	6,600	56
All services	—	—	—	—	112

*Based on no. of subscribers at 31 December 1971 only.

†Approximate numbers only.

‡Based on figures at 31 August.

SUBSCRIBERS

On 31 December 1970, 151 (74%) of the 203 Sheffield general practitioners with lists made up entirely or mainly of Sheffield residents subscribed to the service. By comparison, at the same date in Nottingham, where a B.M.A. Deputizing Service had operated since 1965, 98 (78%) of the 126 general practitioners in the city were subscribers.

In both Sheffield and Nottingham the proportion of subscribers varied in the same way with partnership size—that is, maximum for partnerships of two (about 90% subscribing), intermediate (80%) for single-handed, and least for partnerships of three or more, 60% of whose doctors subscribed (table II). The precise extent to which doctors used the deputizing services could not be determined, since records of the calls received could give no information on those occasions

TABLE II—Partnership Size and Use of Deputizing Services, 31 December 1970

Partnership Size	Sheffield			Nottingham		
	Total G.P.s*	G.P.s using Service		Total G.P.s	G.P.s using Service	
		No.	%		No.	%
1	76	59	78	39	32	82
2	60	52	87	41	38	93
3 or more	67	40	60	46	28	61
Total	203	151	74	126	98	78

*Excludes 40 doctors with majority of patients living outside Sheffield.

ions when practices were covered but no calls arose. We could, however, give an estimate of the minimum, since the number of calls handled for each Sheffield subscriber in 1970 was known.

Altogether 142 doctors subscribed for the whole year. The number of calls received (whether a visit resulted or not) per subscriber ranged from none to 404. The wide range of calls is probably explained by the different ways in which subscribers used the service. Some may have taken all incoming calls themselves and filtered only a small proportion through to the deputizing service. Others may have had all incoming calls intercepted and redirected to the deputizing service when they were off duty.

The mean number of calls received each year for doctors in partnerships of three or more (108) was similar to that for doctors practising alone (101) or with one partner (119). The median yearly number of calls per doctor, however, was lower for doctors in the larger partnerships (75) than for the single-handed doctors (98) or those in partnerships of two (95). The conclusion, tentatively made, therefore, is that where a deputizing service is available most doctors in group practice eventually use it, although they do so to a smaller extent than users who are not in group practice.

STAFF

The deputizing service employed 20 doctors as deputies during 1970. Of these, one was employed wholly by the service and the other 19 were employed primarily in other spheres, 13 in the hospital service and 6 in general practice in Sheffield. All 20 deputies were men: 184 (91%) of the 203 Sheffield general practitioners were men. The average time since qualifying was 8.3 years for the deputies (range 4–29 years) and 23.0 years for the Sheffield general practitioners (range 3–54 years). The six "G.P. deputies" had been qualified 11.8 years on average (range 5–29 years) and the 14 other deputies for 6.5 years (range 4–10 years). Seventeen of the 20 deputies (85%) qualified in medical schools in the United Kingdom or Eire, as did a similar proportion, 189 out of 203 (93%), of the Sheffield general practitioners. One "hospital deputy" was a consultant and the other 12 were doctors in training grades.

The switchboard operators were all State-registered or State-enrolled nurses. The company employed 21 such women during the year. None of these were employed in nursing at the same time.

OPERATION

The switchboard operators relayed all the relevant information about the incoming calls to deputies on mobile duty in the city. The deputies recorded details of their consultations. In cases where the deputies considered that the patients required further visits from their own doctors the general practitioners were contacted in time for their next visiting rounds and copies of the consultation records were sent to them.

The items of information recorded by the deputizing service for each call were as follows: time call received, time passed to deputy, time of arrival with patient (from 1 July 1970),

name of general practitioner, name of deputy, name and address of caller, name and address of patient, age of patient, complaint and history, deputy's diagnosis, treatment, and whether further visit required.

Sampling of Records

The records for each month's calls in 1970 were filed separately, having subdivisions for each subscribing doctor. Within the subdivisions they were filed in strict chronological order. Every record of a call to the deputizing service which resulted in the referral of the patient to hospital was identified. All such records were included in this study. A one-in-four sample of all the remaining records was drawn by selecting at random one record from each chronologically ordered sequence of four records. The information from each record in the sample was coded and transferred to punch cards. Analysis was carried out on an Atlas computer using the multiple variate counter programming system for survey analysis.

In the statistical tabulations the sampled records have been weighted by a factor of four, while records resulting in hospital referrals have been left unweighted. The results reported here therefore relate to the total records of the deputizing service in 1970 but are subject to the usual errors of sampling variation. Caution must be exercised, however, not to apply standard statistical tests of significance without dealing with the weighting factor.

Results

The deputizing service received 15,988 calls in 1970, an average 106 calls yearly per subscriber.

SEASON, DAY, AND TIME

The load on the deputizing service varied little from season to season; 25% of the calls were received in each of the four quarter-years. The date and time of receipt of the calls were recorded in 15,936 (99.7%) cases (table III). There were 11,847 (74%) calls in the period 18.00-06.59 hours, and 4,089 (26%) between 07.00 and 17.59 hours, the latter almost all at weekends. The number of calls was higher on Saturday and Sunday evenings than on other evenings with the exception of Thursdays, half-day off duty for many Sheffield doctors.

TABLE III—Distribution of Calls by Day and Time

Time (Hours)	Mon.*	Tue.*	Wed.*	Thur*	Fri.*	Sat.†	Sun.‡	Total
24.00—	171	123	90	76	131	119	116	826
01.00—	49	86	71	55	77	106	61	505
02.00—	38	35	41	42	57	31	50	294
03.00—	36	37	22	49	33	34	60	271
04.00—	41	60	12	28	45	35	48	269
05.00—	45	42	33	30	48	58	60	316
06.00—	43	18	35	29	42	44	35	246
07.00—	0	0	0	1	0	0	50	51
08.00—	1	0	4	0	1	4	151	161
09.00—	21	4	0	0	0	0	270	295
10.00—	33	0	0	10	1	8	327	379
11.00—	13	0	0	8	0	1	289	311
12.00—	4	0	0	1	1	154	274	434
13.00—	9	0	4	8	0	227	270	518
14.00—	1	4	1	5	8	204	258	481
15.00—	4	0	4	9	9	215	221	462
16.00—	4	0	1	10	9	203	253	480
17.00—	4	1	8	10	0	270	224	517
18.00—	207	163	167	334	134	348	282	1,635
19.00—	222	217	168	230	196	332	322	1,687
20.00—	212	172	257	277	241	247	230	1,636
21.00—	180	267	216	234	214	232	259	1,602
22.00—	251	237	187	232	169	223	234	1,533
23.00—	149	147	120	170	118	144	179	1,027
Total	1,738	1,613	1,441	1,848	1,534	3,239	4,523	15,936

*Deputizing service operating midnight to 07.00 and 18.00 to midnight.

†Deputizing service operating midnight to 07.00 and 12.00 to midnight.

‡Deputizing service operating midnight to midnight (also on bank holidays).

Note: Additionally a small number of calls are shown which were received outside the hours of operation and held till service became operative.

Each evening the load was constant till 23.00 hours, then it decreased progressively through the night. In the period 18.00-06.59 hours four out of five calls came in before midnight.

REVISITS

In addition to the 15,988 consultations mentioned above deputies revisited patients on 339 occasions. Of these, 274 (81%) were made on Sundays and represented follow-up calls to patients seen the previous day for subscribers who were off duty for the weekend.

AGE AND SEX OF PATIENTS

Forty-seven per cent. of calls were for male patients, a similar proportion to that of males in the population of Sheffield County Borough at the 1966 Sample Census.³ Among children and the middle-aged calls for males outnumbered those for females; the converse was true at the child-bearing ages and among the elderly.

The age distribution of patients consulting the deputizing service was similar to that of patients seen by general practitioners on home visits in the only study involving a number of practices for which this information is reported.⁴ (Although this nine-practice study is nearly 20 years old the findings on home visits may still be appropriate, since the age distribution for all consultations matches that for the more recent South Wales study (table IV)).⁵ It differed, considerably so for males, from that of patients seeing general practitioners at all consultations,^{4,5} in that larger proportions of the deputizing service's patients were made up of young and old people. The proportion of males among deputizing service patients (47%) was greater than among those seen at all consultations (44%)⁵ and greater still than among those seen on home visits (39%).³ This was due largely to the high proportion of males under the age of 15 years, numerically the largest group of deputizing service patients. Compared with patients seen on home visits the preponderance of males was evident in each age group, and compared with all consultations it was evident in each group except that aged 15-44 years.

The sex distribution of patients varied little with the time of day the calls were received. The age distribution differed, however (table V). At night relatively fewer calls were for children.

TABLE IV—Percentage Distribution of General Practice Patients by Age

	Survey	Age (Years)				Total
		<15	15—	45—	≥65	
All consultations	68 general practices, S. Wales (1965-6) ⁵	18	39	25	17	100
Home visits	9 general practices, England (1953-4) ⁴	22	38	25	15	100
Home visits	9 general practices, England (1953-4) ⁴	32	24	21	23	100
Calls to deputizing service	B.M.A. Deputizing Service, Sheffield, 1970	37	24	18	21	100

TABLE V—Age Distribution of Patients by Time of Day. Results are given in Percentages

Age (Years)	Time (Hours)				All Periods
	24.00-06.59	07.00-11.59	12.00-17.59	18.00-23.59	
<15	23	36	40	38	37
15-44	30	22	20	25	24
45-64	24	19	16	17	18
≥65	23	23	24	20	21
Total	100%	100%	100%	100%	100%
No. of calls:	2,590	1,156	2,760	8,812	15,318

ORIGINS OF CALLS

Fifty-three per cent. of the calls came direct from the caller in the community and 47% via the general practitioner or his staff (table VI). In the mornings and afternoons—that is, at weekends—an even smaller proportion (40%) came via the doctors, presumably because they were more likely to be away from their practices at these times.

TABLE VI—Origin of Calls by Time of Day

	Time (Hours)				All Times	No. of Calls
	24.00—	07.00—	12.00—	18.00—		
Community	51%	63%	59%	52%	53%	7,714
G.P.	49%	37%	41%	48%	47%	6,704

PATIENT'S CONDITIONS

Deputies visited patients on 15,446 occasions (97% of all consultations). The switchboard staff handled the other 542 (3%) consultations. The deputies recorded diagnoses in 15,010 (97%) of their consultations. In a further 88 cases (0.6%) the patient was not contacted owing either to the address being untraceable or the patient not being at home when the deputy called. In another 348 cases (2%) the patient was pronounced dead by the deputy.

The largest grouping of diagnoses was in diseases of the respiratory system (27%) (table VII). In patients aged under 15 years, numerically the largest group, the proportion with respiratory disease, mainly upper respiratory tract infections, was even higher (42%). The proportion with infective or parasitic diseases in this age group was 24%. Thus nearly two-thirds of the children seen by deputies were diagnosed as having some form of infectious disease.

TABLE VII—Deputies' Diagnoses by Age of Patients. Results are given in Percentages

Diagnostic group*	Age (Years)				All Ages
	<15	15—	45—	≥65	
No abnormality	3	2	2	3	2
Infective and parasitic	24	8	4	3	12
Neoplasms	0	0	5	4	2
Allergic/metabolic	3	4	3	1	3
Mental	1	8	6	4	4
Nervous	6	4	7	12	7
Circulatory	—	4	18	20	8
Respiratory	42	15	20	16	27
Digestive	14	17	16	13	15
Genitourinary	1	12	6	4	6
Pregnancy	—	15	—	—	4
Musculoskeletal	—	3	5	2	2
Accidents	3	4	3	6	3
Other	2	3	1	3	2
Death	—	—	3	8	2
Not contacted	—	1	1	—	1
Total	100%	100%	100%	100%	100%
No. of calls:	5,242	3,670	2,727	3,139	14,778†

*Royal College of General Practitioners' classification developed from the International Classification of Diseases and Causes of Death (8th revision).^a

†Excludes 668 cases with age or diagnosis not specified.

The records of 482 of the 542 cases dealt with entirely by the switchboard operators gave sufficient information to permit presumptive diagnoses to be made, and these were coded. Accidents were commonest (30%), followed by infective and parasitic disease (19%) and diseases of the respiratory system (12%); 11% were to report the death of a patient. Fifty-one per cent. of the calls handled by switchboard operators alone related to children under the age of 15 years.

RESPONSE TO CALLS

Where patients were seen by deputies 72% were seen within one hour of receipt of the call (table VIII). Two-thirds of the consultations were with deputies who were primarily hospital doctors, a fifth of the cases were seen by the full-time deputy, and the remaining 11% were seen by deputies who were primarily general practitioners (table IX). Hospital doctors dealt with three-quarters of all the evening calls, nearly as many on Sunday mornings, but fewer than half of the calls after midnight. At the period when the load on the deputizing service was heaviest—namely, between 18.00 hours and midnight—there were three deputies on duty. Only 5% of the calls in this period were covered by the six general-practitioner deputies. The load on the service did not vary widely from evening to evening but was heaviest at weekends and on Thursdays, a traditional half-day for many Sheffield general practitioners. Thus out of 1,095 (365 × 3) evening doctor-sessions only 55 (5%) were manned by general-practitioner deputies, each of whom covered on average nine evening sessions in the year. These sessions were obviously easily accommodated within the general-practitioner deputies' time off duty from their practices.

TABLE VIII—Interval between Receipt of Call and Patient Receiving Attention (July–December only)

	Time in Hours						Total
	<½	½—	1—	2—	3—	≥4	
No. of calls	3,110	2,749	1,779	339	87	14	8,078
% of calls	38	34	22	4	1	<1	100

TABLE IX—Type of Deputy attending by Time of Day. Results are given in Percentages

Deputy	Time (Hours)				All
	24.00—	07.00—	12.00—	18.00—	
Hospital doctor	44	70	58	74	66
G.P.	15	13	25	5	11
Full-time deputy	38	13	14	18	20
No doctor	2	4	4	3	3
Total	100%	100%	100%	100%	100%
No. of calls:	2,522	1,169	2,820	8,823	15,334

OUTCOME OF CONSULTATIONS

In most consultations with deputies the main outcome was the prescription or supply of a drug for the patient (70%), 15% ended with the deputy giving only advice to the patient or his relatives, and 14% ended with referral of the patient to hospital. Four out of five referrals to hospital were for admission and the fifth was to an accident and emergency department.

The proportion of patients referred to hospital was greatest in the 45–64 age group and lowest in the patients aged under 15 years (table X). This pattern was seen in both sexes. Treat-

TABLE X—Outcome of Consultations by Age. Results are given in Percentages

Outcome of Consultation	Age (Years)				All Ages
	<15	15—	45—	≥65	
Advice	15	13	11	17	15
Referral to hospital	8	16	22	19	14
Drug therapy	77	70	66	61	70
Other	—	1	1	3	1
Total	100%	100%	100%	100%	100%
No. of calls:	5,197	3,625	2,585	2,896	14,303

TABLE XI—Outcome of Consultations by Time of Day. Results are given in Percentages

Outcome	Time (Hours)				All Times
	24.00-06.59	07.00-11.59	12.00-17.59	18.00-23.59	
Advice	10	11	13	16	15
Referral to hospital ..	23	12	11	14	14
Drug therapy	66	76	74	69	70
Other	1	1	1	1	1
Total	100%	100%	100%	100%	100%
No. of calls:	2,540	1,173	2,821	8,826	15,360

ment with drugs was progressively less common with increasing age. The rate of referral to hospital was greater during the night (table XI), in part, presumably, because the patients seen at night were an older group. The increase in the referral rate at night was noted, however, in both sexes and in all age groups.

General-practitioner deputies treated a greater proportion of the patients they saw with drugs than did other deputies. Conversely, they gave advice alone to a smaller proportion (table XII). These differences were noted in every age group and at all times. General-practitioner deputies referred to hospital a slightly smaller proportion of the patients they saw than did other deputies. The small difference was present in every age group and most marked among the elderly, general-practitioner deputies referring 13% of patients in this age group and other deputies 18%.

TABLE XII—Outcome of Consultations by Type of Deputy

	Advice	Referral to Hospital	Drug Therapy	Other	Total	No. of Calls
G.P.	8%	12%	79%	1%	100%	1,566
Other	15%	14%	70%	1%	100%	12,219

Forty per cent. of consultations with the switchboard operators ended with referral to hospital, in nearly every case to an accident and emergency department. The other 60% of switchboard consultations ended with the caller receiving advice.

RECOMMENDATIONS FOR FURTHER VISITS

Excluding the patients referred to hospital, those who died, and those who were not traced, the deputies or switchboard operators considered that 4,708 (36%) of the 13,200 patients should be seen subsequently by their own general practitioners. The proportion for whom this was recommended increased with increasing age, ranging from 21% of patients aged under 15 years to 59% of those aged 65 or over. The trend was present in both sexes. General-practitioner deputies recommended further visits in a smaller proportion of cases (31%) than did other deputies (37%).

Discussion

Several recent reports have recommended that primary medical care should remain the responsibility of personal physicians.¹⁻⁹ It is argued that this permits greater depth of diagnosis and better care than does episodic contact between doctors and patients previously unknown to each other.

"Deputizing" implies a departure from personal doctoring. Clearly, however, no personal physician can make himself

available to his patients at all times. The Standing Medical Advisory Committee's working party on group practice believe that doctors prefer to arrange off-duty cover among themselves.¹ In this way their patients can be attended by colleagues who have their confidence and, if necessary, access to their records.

Most general practitioners in Sheffield and Nottingham clearly thought otherwise. For some of the time, at least, they subcontracted their availability to a variety of deputizing-service doctors in preference to known general-practitioner colleagues. This suggests that the doctors themselves did not feel that their relationships with their patients would be adversely affected.

How much primary medical care did the deputizing service handle for general practitioners in Sheffield in 1970? An accurate assessment of the extent to which primary medical care has been transferred from general practitioners to the deputizing service would require knowledge of the work loads at various times of the day in a representative sample of general practices in the same area. The work load on the deputizing service could then be expressed as a proportion. The requisite data do not exist for general practice in Sheffield, so the assessment has to be obtained indirectly.

The Royal College of General Practitioners, in its second review of the present state and future needs of general practice,¹⁰ summarized the work load of the "average" general practitioner by using published survey data. The average general practitioner in 1970 had a list size of 2,500 and a yearly consultation rate of 4.0 per patient. Twenty per cent. of his consultations were as home visits.

If these figures are applied to Sheffield the 539,483 patients registered with doctors on the executive council list on 1 October would have generated 2,157,932 consultations in the year, of which 431,586 would have been home visits. The deputizing service was responsible for 16,327 consultations made up of 15,380 first home visits, 339 revisits, and 608 telephone consultations. These represent 0.75%, 1 in 133, of the total estimated consultations in the year, or 1.02%, 1 in 98, of the consultations of the 74% of doctors subscribing to the deputizing service, assuming that the mean list size and consultation rates of subscribers and non-subscribers were similar.

The scale of these hypothetical proportions is not changed appreciably if, instead of applying a yearly consultation rate of 4.0 per patient, the lowest (1.997) and highest (9.985) consultation rates for individual practices of the 136 doctors in two recent studies of general practice are used.^{5,11} It is very unlikely that all Sheffield practices had consultation rates as low or as high as these, but they serve to set the extreme limits within which the true mean consultation rate is likely to have lain.

The lowest rate would have yielded 1,077,348 consultations from 539,483 patients and the highest rate 5,386,738 consultations. The 16,327 consultations with the deputizing service represent 1.5 and 0.3% of these totals respectively, or 2.0 and 0.4% of consultations of the 74% of doctors who subscribed.

The 539,483 Sheffield patients include a few Sheffield residents on the lists of 40 doctors whose practices consisted mainly of patients living outside Sheffield. Adjustment for this factor would still not alter materially the scale on which medical care was transferred to the deputizing service.

The calls handled by the deputizing service may be related more appropriately to the home visits carried out by Sheffield doctors. Twenty per cent. of the hypothetically "average" doctor's consultations were as home visits. Applied to Sheffield this yielded 431,586 home visits. The deputizing service made 15,719 home visits, representing 3.6% of the total or 4.9% of the home visits of the 74% of doctors who subscribed to the deputizing service.

In one of the studies mentioned above the proportion of consultations which were home visits ranged, for individual doctors, from 11.3% to 53.6%.⁵ Applying these figures to the Sheffield population as the limits within which the true mean

proportion for Sheffield doctors lay, the "expected" number of home visits to the 539,483 patients lay between 121,740 (11.3% of 1,077,348) and 2,887,292 (53.6% of 5,386,738). The deputizing service's 15,719 home visits represent 12.9% and 0.5% respectively of these figures, or 17.4% and 0.7% of the home visits of the 74% of doctors who subscribed to the service. In other words, it is very unlikely that any doctors using the Sheffield service handed over more than 17% or less than 1% of his home visits to the service.

These estimates apply to consultations at all times, but the deputizing service operates within limited periods only. A proper contrast would be between deputizing service consultations and all consultations in the period during which the service was available—namely, from 18.00 hours to 07.00 hours during the week and from noon Saturday till 07.00 hours Monday. Lack of information about work loads in various time periods again prevents an accurate assessment, and the approach has to be indirect.

In 1970 17% of calls to the deputizing service in Sheffield were received between midnight and 07.00 hours (table III), the period for which general practitioners were entitled to "night-visiting fees." A doctor from the deputizing service visiting a patient between these hours obtained the patient's signature to authenticate the visit, and the general practitioner countersigned the form and claimed the night visit fee from the executive council.

The executive council received 2,881 claims for payment for night visits made in 1970, including those initiated on behalf of general practitioners by the deputizing service. The deputizing service received 2,745 calls between midnight and 07.00 hours (2,739 plus an estimated 17% of the 35 calls for which the time of receipt was not recorded). Ninety-one of these calls were answered with advice over the telephone, so that 2,654 visits were made which were eligible for night visit fees—that is, 92% of the total of 2,881 claims received by the executive council. This method of calculating the proportion of primary medical care handled by the deputizing service at night is likely to overestimate the true figure. Some doctors do not claim the night visit fees to which they are entitled, and the extent to which they do so is unknown. They are more likely to claim the fees for visits made by the deputizing service, however, to offset the cost of them of using the deputizing service. In addition the night visits which the general practitioners actually made represent an unknown proportion of *all* the calls they received at night.

Because of the uncertainties of estimating the deputizing service's contribution to night work from records of night-visiting fees a different and less direct approach was used. Information is available on the frequency of night calls in several individual practices.¹²⁻¹⁵ Call rates for the period midnight to 07.00 hours have been calculated for these practices, three in urban areas and one in a semirural area. They ranged from 9.9 to 19.2 calls per 1,000 patients a year.

The 2,745 calls to the Sheffield deputizing service between midnight and 07.00 hours from 539,483 patients represent a call rate of 5.1 per 1,000 patients yearly, far lower than in the four practices. The expected number of calls in Sheffield using the night call rates from these practices would have ranged from 5,341 to 10,358, and the 2,745 calls to the deputizing service would have represented between 27 and 51% of these calls, or between 36 and 69% of the calls of the 74% of general practitioners who were subscribers, assuming that the mean list size and consultation rates of subscribers and non-subscribers were roughly similar.

Whereas the figure of 92% derived from night-visiting fees was an overestimate, the estimates derived here are too low because account has not been taken of obstetric calls. The "expected" number of calls were derived from rates which included contributions from obstetric calls. The Sheffield deputizing service did not deal with obstetric calls and consequently dealt with a higher proportion of non-obstetric night calls than the above figures suggest.

The patients of subscribing doctors had an approximately even chance of having their calls directed to the deputizing service at night. The patients of non-subscribing doctors may also have had an appreciable chance of having their calls directed to someone other than their own doctor, such as one of their partners or a doctor in an off-duty rota; how often this occurred cannot be estimated. Thus the minute proportion of consultations that were transferred to the deputizing service in Sheffield was hardly enough to make any impact on the doctor-patient relationship.

One fact is concealed in the results reported, however. The consultations recorded by the deputizing service related to an unknown number of individual patients, and it is possible that for a few a high proportion of their primary medical care was received from the deputizing service. On the other hand, these may be the patients who also make heavy demands on their own general practitioners at other times. Currently there is no information on the way in which patients respond to seeing a doctor other than their own in an emergency, but as far back as 1964 over half of a national random sample of patients considered the idea of an emergency treatment service operating from 18.00 hours to 09.00 hours acceptable.¹⁶

It has been suggested that the growth of group practice would obviate the need for deputizing services, which would be seen as only a temporary phenomenon in the history of general practice.⁸ There are two reasons why deputizing services may not be so temporary. The first is that doctors who do not wish to associate with their colleagues in group practice and who might otherwise find it difficult to arrange off-duty cover are helped to remain outside by the availability of these services. This may explain the situation in both Sheffield and Nottingham, where the proportions of doctors in partnerships of three or more, 33% and 36% respectively, were considerably smaller than in urban areas of the country as a whole (52%).¹⁷ The Sheffield and Nottingham proportions were also much smaller than those for the regions in which they were situated—namely, Yorkshire and Humberside (50%) and East Midlands (60%) respectively. Partnerships of three or more are not synonymous with group practices. They are closely related, however. For example, in Sheffield in 1970 four out of every five doctors in such partnerships received group practice allowances, compared with one in seven in smaller partnerships.

The other reason is that group practices make a considerable use of deputizing services, so that even if the growth of group practice were not retarded the demand for these services would remain.

It is sometimes assumed that it is to the patient's advantage to be seen by his doctor's partners rather than by doctors previously unknown to him. The doctor's partners as well as being familiar to the patient would, most likely, have access to the patient's records if required. If, however, group practices of a dozen doctors envisaged in the Todd Report⁷ materialize, many patients are likely to be no more familiar with some of their doctors' partners than they are now with the doctors of the deputizing services. Furthermore, little is known of the extent to which records are used in these circumstances and of how far the theoretical advantages are realized.

The fact that an increasing proportion of the population receives some of its primary medical care from deputizing services raises questions about the quality of care that patients can expect from them and how this standard of care compares with what is received from their own general practitioners. Comparisons are difficult to make, however, because of the lack of available information on some aspects of care in general practice as hitherto organized. For example, is the fact that 72% of cases were attended to by deputies within one hour a better level of performance than that achieved in the same periods of the day and night in general practice? With regard to the quality of care given by the deputizing

service, how appropriate were the actions deputies took as a result of the consultations? Questions like these in relation to deputizing services are as timely as they are overdue for answering in relation to general practice as a whole.

Some ideas about how deputizing services are being staffed were not borne out in relation to the B.M.A. Deputizing Service in Sheffield. The deputies were *not* recently qualified doctors, nor were they doctors from overseas temporizing till they could settle in regular medical employment.² Most of the work *was* undertaken by junior hospital doctors, however. They had been qualified on average for six years and were, in the main, registrars or senior registrars established on training ladders. It is likely, therefore, that they were motivated to work for a deputizing service by financial reasons rather than a desire to acquaint themselves with one aspect of general practice. Although the hospital doctors dealt with nearly a half of the calls attended to after midnight, in the absence of information about the off-duty time available to them in their hospital posts no comment can be offered about the possibility of conflict between their work for the deputizing service and their hospital responsibilities.

The deputizing undertaken by the general-practitioner deputies, however, clearly made few inroads into their off-duty time and was unlikely to have affected their availability to their own patients. Very little is known about how primary medical care is being delivered "out of hours." There is no information at present about the proportion of "out-of-hours" calls being handled by patients' own general practitioners, by their doctors' partners, by doctors in an off-duty rota, or by deputizing service doctors. Until we have this information we are in no position to measure the real impact deputizing services are making.

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APPENDIX—Large Towns with Deputizing Services

Accrington	Dewsbury	Newcastle	South Shields
Belfast	Dudley	Nottingham	Stockport
Birkenhead	Edinburgh	Oldham	Stoke-on-Trent
Birmingham	Gateshead	Paisley	Sunderland
Blackburn	Glasgow	Preston	Teesside
Bolton	Huddersfield	Rochdale	Tynemouth
Bootle	Kingston-upon-Hull	Rotherham	Wallasey
Bradford	Leeds	St. Helens	Walsall
Bristol	Leicester	Salford	Warley
Bury	Liverpool	Sheffield	Warrington
Burnley	London	Solihull	West Bromwich
Cardiff	Manchester	Southend	Wigan
Coventry		Southampton	Wolverhampton

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Hospital Topics

Fallopian Tube Surgery for Reversal of Sterilization

GEOFFREY F. J. WILLIAMS

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Summary

Of 16 consecutive cases of previous sterilization treated by tubal surgery fifteen women tested had patent Fallopian tubes. Over 18 months since operation there were four full-term pregnancies and two abortions among 11 patients. At interview with the patient it is important to emphasize that reconstruction of the tubes is a major

operation and carries an increased subsequent hazard of ectopic pregnancy.

Introduction

The number of sterilizations performed on women has been steadily increasing over the years and has been boosted by the number done as an adjunct to abortion. The Registrar General's figures for 1968 showed 23,641 legal abortions, 5,128 of which were accompanied by sterilization, whereas in 1970 the figures had risen to 86,565 abortions, 13,946 accompanied by sterilization.¹ Follow-up reviews of patients sterilized have varied in their findings but all have agreed that most are pleased to have had the operation.

Bronglais General Hospital, Aberystwyth, Cardiganshire
GEOFFREY F. J. WILLIAMS, M.B., F.R.C.O.G., Consultant Obstetrician and Gynaecologist