

no such challenge to face. Unlike those of us who have lived to retirement he did not have to face the possibility of a useless and decrepit old age. He died metaphorically with his boots on, in the full flood of activity, in so far as his cardiac state would allow. He died having unearthed a multitude of problems, some of which he solved and some of which have outlived him but his work lives on to this day and the honour which is his due is not forgotten.

He became progressively more devout with the years in the best Presbyterian sense of the word, and his spiritual development appears to have been enhanced, rather than embittered, by the tragic early deaths of several of his children to whom he was devoted.

Man goeth to his long home.²⁰ So far as this world is concerned, only the greatest creative artists and only the greatest religious leaders can hope to live on to posterity. Simpson was not only a great man, he was a good man. He loved his neighbour as himself, rich and poor alike, although he kept some healthy hate for his adversaries. He also loved God and may well have found the answer to that famous question: "Master, what shall I do to inherit eternal life?"²¹

I thank Dr R J Pepperell for figure 1 and Mr J Devlin of the department of medical illustration, Queen Mother's Hospital, for his help.

References

- ¹ Keats, J, *When I have fears*.
- ² Brown, J, *Rab and His Friends. Horae Subsecivae*. London, A and C Black, 1900.
- ³ Keats, J, *Ode on a Grecian Urn*.
- ⁴ Simpson, M, *Simpson the Obstetrician*. p 43. London, Gollancz, 1972.
- ⁵ Shakespeare, W, *Julius Caesar*, Act IV, Sc 3.
- ⁶ Miller, D J, *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 1961, **68**, 142.
- ⁷ Psalms CXVI, 3.
- ⁸ Genesis III, 16.
- ⁹ Gunn, A L, *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 1968, **75**, 249.
- ¹⁰ Matthew XIII, 25.
- ¹¹ Bone, M R, *Studies on Medical and Population Subjects*, No 28. London, HMSO, 1975.
- ¹² Pope Paul VI, encyclical letter, *Humanae Vitae*. 1968.
- ¹³ Luke X, 32.
- ¹⁴ Proverbs XXX, 12.
- ¹⁵ Malthus, T R, *Principle of Population*, 1798.
- ¹⁶ Matthew V, 5.
- ¹⁷ Simpson, M, *Simpson the Obstetrician*, p 174. London, Gollancz, 1972.
- ¹⁸ Carroll, L, *Alice's Adventures in Wonderland*. Edinburgh, R and R Clark, 1898.
- ¹⁹ Paul, Epistle to Romans, III, 8.
- ²⁰ Ecclesiastes XII, 5.
- ²¹ Luke X, 25.

(Accepted 22 December 1976)

General Practice Observed

Twelve months of deputising: 100 000 patient contacts with eighteen services*

R A DIXON, B T WILLIAMS

British Medical Journal, 1977, **1**, 560-563

Summary

An analysis of a 1-in-5 sample of nearly 500 000 patient contacts with 18 deputising services showed considerable variation in the way calls were handled. Telephonists, usually working on shifts including at least one operator who was a trained nurse, handled, without sending a deputy, between 3% of new calls at one service and 19% at another. In one service, 19% of visits were made by deputies who were general practitioners; in another, 78%. At least 42% of patients visited by one service were apparently seen within one hour; 74% by another service.

*With the co-operation of Air Call Ltd, through Dr M J Ognall, Deputising Service Director, BMA Deputising Services, Tavistock Square, London.

Department of Community Medicine, University of Sheffield Medical School, Sheffield S10 2RX

ROBERT A DIXON, BSC, PHD, senior lecturer in medical statistics

Trent Regional Health Authority, Fulwood House, Old Fulwood Road, Sheffield S10 3TH

BRIAN T WILLIAMS, MD, MFCM, specialist in community medicine (information and research)

The proportions referred to hospital varied from 9% to 16%.

The use of deputising services continues to grow; there is as yet no substantiated evidence of shortcomings in the care they provide. The possibility of reviewing the activity of the services, with the use of such indices as those described, might enable present limitations on their use to be lifted.

Introduction

General practitioner deputising services now operate widely in Great Britain. By 1970 it was estimated that they handled about half the general practitioners' night calls in one English city,¹ and in 1972 28% of all general practitioners in England and Wales were using them.²

It is not known whether deputising services differ appreciably from one another in the ways they are manned and how they respond to calls. From April 1974 to March 1975 some of these differences were explored through an analysis of a one-in-five sample of all 500 000 records of patient contacts with 18 deputising services. Thirteen of the services studied were supervised by the British Medical Association, but the management arrangements of the remaining five were similar.

Method

The routine records of contacts with the 18 services were adapted for automatic data processing (fig 1) using a three-part set of forms.

FIG 1—Middle copy of three-part "call form" adapted for data processing (numbered boxes; masked name and address panel for confidentiality).

The top copy was sent to the general practitioner; the second, which for reasons of confidentiality did not show the patient's name and address, was used for data-processing; and the third was retained by the service for accounting and reference. The copies for data-processing were sent to Sheffield where they were arranged into daily batches for each service throughout the one-year period, and a one-in-five sample of each such batch was drawn. Within the batch the forms were left in the order in which they arrived, and one of the first five records was selected by means of random number tables, and thereafter every fifth record in the batch. This yielded a sample of 98 489 records. The data were coded, transferred to magnetic files, and analysed by computer. The resulting frequencies were multiplied by five to adjust for the sampling procedure.

Results

The number of calls received by each of the 18 deputising services during the year is shown in table I. The largest service handled over eleven times the number of calls of the smallest. For 14 services, information was available on the number of calls received in 1971.¹ For 12 of these the level of activity had increased, in most appreciably so, largely because of the extension of the services to additional general practitioner subscribers. Basing the estimates on the annual average patient consultation rate and home-visit rate reported in the *National Morbidity Survey, 1970-71*,³ the 417 260 contacts with the

TABLE I—Deputising services: total No of contacts, 1971 and 1974-5

Deputising service	No of calls		% change
	1971	1974-5	
Blackpool		12 715	
Bristol	27 400	24 930	- 9
Cardiff/Newport*	9 550	35 215	+ 269
Coventry	15 700	22 455	+ 43
Edinburgh	7 807	12 810	+ 64
Glasgow	40 035	62 375	+ 56
Leicester	17 600	24 085	+ 37
Newcastle	33 650	46 490	+ 38
Plymouth		12 080	
Sheffield/Rotherham*	15 516	32 970	+ 112
Southampton		5 915	
Nottingham	16 679	25 340	+ 52
Teesside	6 600	15 290	+ 132
Huddersfield†	7 180	9 685	+ 35
Hull†	11 267	8 945	- 21
Leeds†	51 538	67 435	+ 31
Southend†		14 235	
Central Relief Service (London)†	43 228	59 475	+ 38
All services	303 750	492 445	
Services for which no of calls known in both periods	303 750	447 500	+ 47.3%

*In 1971, only the first of these two urban areas was covered.
†Deputising services which were not supervised by the BMA.

16 deputising services shown in table I that were located in England or Wales represented about 0.3% of all general practitioner consultations or about 2% of all visits made by general practitioners over the same period.

Over the combined 18 services, 96% of contacts with the services were initial calls (range 92-99%); nearly 3% were reminder calls (range <1%-6%); about 1% were calls made to cancel a previous request (<1%-2%); and about 1% were unrequested follow-up visits made by the deputy, mainly on Sundays or Bank Holidays (<1%-2%).

Generally the services operated from 1800 or 1900 to 0700 on week-nights and from 1200 on Saturday to 0700 on Monday. They usually operated on Bank Holidays and a few on Thursday afternoons. Of first contacts 55% were made on Saturdays or Sundays (fig 2), with the peak load falling between 1000 and 1100. The hourly activity at night was, by comparison, much less but between 2300 and 0700, the period for which night visit fees are claimable by general practitioners,⁴ over 103 000 calls were received by these services during the year.

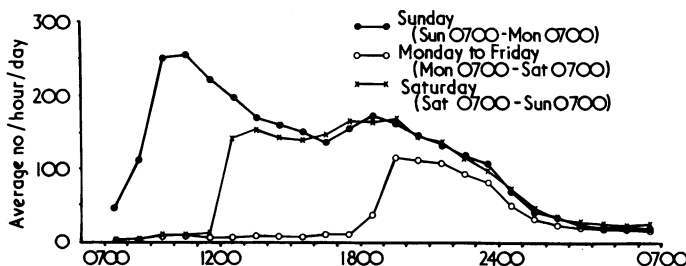


FIG 2—Hourly load of first contacts with 18 services: average No/hour/day.

Two-thirds of the first contacts were calls from the patient's relative and 12% were from a friend or neighbour; 7% were relayed to the service by the general practitioner, his family, receptionist, or caretaker; 1% came from each of the police, ambulance service, and nursing or midwifery staff. In only 4% of cases did the patient himself make the call.

Nine per cent of first contacts were handled by the operator without arranging a deputy visit (table II). In nearly half these cases the operator merely advised the patient without referral to another agency. In another third she referred the patient to an accident and emergency department; two out of three such referrals had the message received classified as "accident, poisoning, or violence." There were considerable variations in these proportions between the various services.

Of patients receiving visits, 55% were seen within one hour of contacting the service (range 42%-74%) while 7% apparently waited four hours or longer (range 3%-10%) (fig 3). Comparable data are not available for contacts made with general practitioners as a whole.

TABLE II—Management and outcome of first contacts

	All 18 services 472 590 "	Range among the services 5655-62 275 "
Number of first contacts (100%)
Handling		
Handled by operator alone (advice or referral, etc)	9	3-19
Deputy sent	91	81-97
Call later cancelled by patient	1	<1-2
Outcome		
Advice without treatment or referral		
by operator	4	1-12
by deputy	12	7-19
by either	16	8-30
Hospital admission arranged		
by operator	0.2	<1-<1
by deputy	7	5-13
by either	7	5-13
Referred to accident and emergency department		
by operator	3	1-7
by deputy	2	<1-3
by either	5	2-10
Hospital admission or referral to accident and emergency arranged by operator or deputy ..		
Drug treatment prescribed by a deputy (no referral)	12	9-16
GP recommended to revisit	67	53-92
	14	4-32

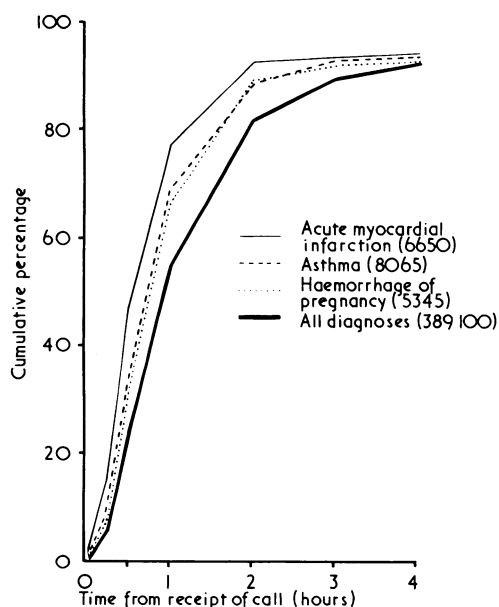


FIG. 3—Interval between receipt of call and patient receiving attention: 389 100 contacts for which patient was seen alive by deputy, and for which time interval was known: 26 570 records (6%) excluded, for instance, because time stamps were illegible.

No direct information is available to determine how often the service might have anticipated the severity of the patient's condition from the information provided by the caller. It was not known, for instance, in what proportion of visits the service was being called soon after the onset of an acute attack or for a follow-up visit a day or two after one made by the patient's own doctor. Allowing for these limitations, it might nevertheless be expected that conditions with fairly specific symptoms would give rise to the most prompt attention, and indeed this appears to be so. For example, over three-quarters of the cases diagnosed by the deputy, on arrival, as having acute myocardial infarction, were reached within one hour of contacting the service (range 64%-92%), and only 5% (range 0%-11%) waited more than four hours. Faster than average performance also resulted for two other diagnoses selected as needing prompt attention—asthma and haemorrhage of pregnancy.

In about half the cases in which deputy visits were made the deputy was himself a general practitioner (range 19%-78%) and, in about a third, a hospital doctor (3%-55%). About 10% of visits were made by doctors working full-time for the deputising service (0%-35%).

For 12% of first contacts with the service a deputy visited and offered advice without any further specific treatment or referral (range 7%-19%) (table II). When the proportion advised by the operator is added it is seen that 16% of first contacts (range 8%-30%)

were handled in this way. The main outcome for 67% of first contacts with the service was some form of drug treatment prescribed by a deputy who visited (range 53%-92%). Twelve per cent of first contacts were referred for hospital admission or to an accident and emergency department (range 9%-16%). For 14% of first contacts the patient's general practitioner was specifically recommended by the service to revisit the patient (range 4%-32%), usually on a Monday, since over half the calls were received on a Saturday or Sunday.

General practitioners receive a supplementary payment for visiting to arrest bleeding related to a dental condition⁴ but not for other dental conditions. A detailed survey of oral and dental conditions presenting for treatment was incorporated in the last four months of the study, which included the Christmas and Easter holiday periods. Of 1115 first contacts so classified at least 855 (0.5% of all first contacts during the period) were clearly dental problems. These included only 90 contacts for bleeding, 240 for toothache, and 360 for non-specific acute infections of the teeth or gums. Over and above these 855 contacts, a further 70 related to other sequelae of dental treatment such as the after-effects of general anaesthesia and sedation.

Discussion

Extensive systems of out-of-hours care by separate groups of doctors are now operating in certain cities on the continent of Europe,⁵ including some in countries where there is a tradition of personal doctoring. By 1970 it was calculated that around half the night calls in the city of Sheffield were being handled by the deputising service¹ and the growth in use since that time, both of that service and others, suggests that the proportion may now be higher. Deputising services, moreover, contribute substantially to what might be regarded as the less urgent type of primary care practised by day at the weekend. One of the services, for instance, received an hourly average of nearly 50 calls on Sunday mornings, yet in the small hours during the week, say between 0400 and 0700, the hourly average was only about two calls.

Despite the increased use of deputising services, those in England and Wales included in this study (and few major deputising services were excluded) handled only about 2% of all home visits in general practice. About 90% of the first contacts with the services came directly from the general public so that an increasing number of people are becoming accustomed to making contact with somebody other than their "own doctor" when calling him out of hours. It has not been possible here to assess either the degree of patients' acceptance of this situation or to compare their level of satisfaction with the attention given by the deputising service with that from their own doctors' practices under comparable circumstances. Such a study, though difficult to mount, is needed.

The amount of data recorded on each contact with a commercial deputising service makes possible a degree of surveillance of its functioning not usual in general practice. This possibility of checking on a service's operations may serve to reassure those who, on ideological grounds, resist the introduction of an alternative system of out-of-hours care. The apparently wide range of practice of the deputising services described here, however, may give rise to a feeling that the services are, as yet, far from achieving consistency or uniformity in the ways in which they cope with the demands made upon them. Some of these differences may be real but some, as we show, are undoubtedly the result of differences in the conditions under which the various services operate.

Previous studies have shown that the accident and emergency departments of hospitals in three cities where deputising services operated were not given additional work to cope with compared with hospitals in other towns and cities in the same region where there were no deputising services⁶; nor did the conditions of cases referred to hospital for admission in one city by a deputising service differ in severity from those of cases referred by practitioners not using the deputising service.⁷ We found that referral to hospital ranged from 9%-16% but it is difficult to determine whether these differences implied inappropriate-

ness in some instances, for in many of the areas there was a financial incentive for a subscribing doctor to screen the calls from his patients, charges being related only to calls visited on his behalf by the service. This may have resulted in the doctor giving advice over the telephone to many of his callers and passing on only the more serious cases for the deputising service to visit.

In 1974-5 it was policy, and still is, for a deputy to visit when specifically requested to do so by the caller. Moreover, in one or two services the subscribers demand that their patients should be visited *whenever* they call the service, no doubt reflecting a heightened sense of awareness that the subscribers are responsible for the actions of their deputies.⁸ This may partly explain the difference in percentages of first contacts for which the operator dealt with the caller without sending a deputy (3%-19%). It may also reflect differences in the proportions of callers who demanded a visit and in the proportions who may have been screened off by the general practitioners, as described above. Another factor may have been the skill and confidence of the operator, although only one service did not ensure that at least one of the operators on each shift was a trained nurse.

The time that patients have to wait for a doctor to come is of considerable interest to those who would set standards. We have no information on the proportions of representative groups of patients in urban areas who wait 4, 12, or even 24 hours for a home visit by their own doctor in various circumstances. Without question, a patient's own doctor is more likely than the deputising service to know the patients for whom it is safe to postpone visiting. There is evidence from this study that, overall, the deputising service reacts more quickly to clinical pictures that demand a quick response.

Moreover, the waiting times used in this study were, in some instances, overestimates. They were calculated as the difference between "time in" (that is, time call received), and "time deputy arrived" (fig 1), as recorded. The latter may not always have meant what it said. Congestion of the radio channels may on occasion have prevented the deputy confirming his arrival at the patient's address. He may have waited until after his visit, five or ten minutes later, in order not to delay visiting the patient or even until the completion of another visit. Where automatic time stamps were in use the recorded times could not be corrected to show the actual time of the deputy's arrival. Conversely, none of the waiting times took account of the additional time the caller may have waited, listening to the ringing or engaged tone, for the service to answer, nor how long he may previously have spent trying to make contact with his own general practitioner and in being re-routed by the GPO operator (automatic inter-exchange transfer of calls is not yet provided by the GPO). These problems are a feature of any deputising arrangements, however, not merely the commercial ones.

The subscribers may wonder why the proportion of cases they were advised to revisit varied from as little as 4% at one branch to 32% at another. The extent of local insistence is, once again, part of the explanation. The extent of prior screening exercised by the subscribers and the confidence and judgement of the deputies may also play a part.

The subscribers to these services collectively paid for about 3000 visits a year for dental problems. They had the right to claim a payment (for the arrest of bleeding) for only 10% of these. To put the problem into perspective, however, 3000 visits a year means about one visit per subscriber a year.

It is expected that by 1980 the accreditation of new general practitioner principals will be more stringent.⁹ In some services, most visits are undertaken by deputies who are not themselves general practitioners. In view of this it may be asked whether the experience and qualifications of deputies should be as stringently controlled. (At present the appointment of deputies is monitored by local medical advisory committees consisting of representatives of general practitioner organisations.)

Clearly a method already exists for reviewing the standards of performance of the deputising services. Care is needed to

ensure that the mode of operation of a particular service is clearly understood before conclusions are drawn about its qualities. More facets than are described in this article are open to review. For example, it could be arranged that periodically the response of the operator or of the deputy to the situation presented might be evaluated.

The present method of controlling deputising services is to limit the proportion of a doctor's out-of-hours commitment that may be transferred to them. The picture of deputising services presented, in this and in previous reports,^{1 6 7} is reassuring, however. The point may now have been reached, therefore, when such limitations on their use could be removed and maintenance of the highest standards of practice encouraged. A system of quality control based on the use of indices such as those described here would contribute to this, and the records systems of the deputising services lend themselves well to such a use. The decision whether to place such control in the hands of the subscribers or whether to include the health authorities is one that would have to be faced.

For encouraging this independent report we are grateful to the central advisory committee of the BMA Deputising Services that commissioned and financed this study through a steering committee under the chairmanship of Dr W P Lambie, and to the staff and directors of Air Call Ltd, without whose co-operation this study would not have been possible.

Requests for reprints should be addressed to RAD.

References

- ¹ Williams, B T, Dixon, R A, and Knowelden, J, *British Medical Journal*, 1973, **1**, 593.
- ² Williams, B T, and Knowelden, J, *British Medical Journal*, 1974, **1**, 9.
- ³ Office of Population Censuses and Surveys, *Morbidity statistics from general practice: second national study, 1970-1*. London, HMSO, 1974.
- ⁴ Department of Health and Social Security, *Statement of fees and remuneration for general medical practitioners in England and Wales*. London, DHSS, 1974.
- ⁵ Hall, D W, *Journal of the Royal College of General Practitioners*, 1975, **26**, 19.
- ⁶ Williams, B T, Dixon, R A, and Knowelden, J, *Journal of the Royal College of General Practitioners*, 1973, **23**, 638.
- ⁷ Williams, B T, Dixon, R A, and Knowelden, J, *British Journal of Preventive and Social Medicine*, 1973, **27**, 126.
- ⁸ Statutory instrument 1974 No 160. *NHS (general medical and pharmaceutical services) regulations*. London, HMSO, 1974.
- ⁹ National Health Service (Vocational Training) Act 1976. London, HMSO, 1976.

(Accepted 30 December 1976)

After what interval does menstrual bleeding become postmenopausal bleeding needing diagnostic dilatation and curettage?

The convention is usually that bleeding around the climacteric is classed as postmenopausal if it has been immediately preceded by six or more months' amenorrhoea. Conventions are for convenience. In practice, any irregular bleeding in the perimenopausal period and any postmenopausal bleeding demand dilatation and curettage. Many such bleeds will have an endocrine basis, but quite a few patients will be shown to have definite local pathology, including carcinoma of the body of the uterus and of the cervix. The results of treatment of these is relatively very good, and nowadays the inconvenience of a dilatation and curettage is so slight that, despite the numbers of normal women who may go through it, the benefit to those whose serious disease is cured is surely worth the trouble. A menopause can be seen to be fully normal only some time after the event.¹ Occasionally menstrual periods just stop. More often the periods become more spaced out and scantier and finally cease. In some there is much more variability. It is these that need investigation, for, although the likely cause is endocrine upset, a local cause is also likely.

¹ Israel, S L, *Diagnosis and Treatment of Menstrual Disorders and Sterility*, 5th edn. New York, Hoeber, 1967.