General Practice Observed

Survey of General Practice Records

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Summary

A study of a sample of records from eight general practices showed that 10% of patients' ages were not recorded, that 99% of males had no indication of their marital state, and 60% did not have an occupation recorded. In recording of disease episodes a diagnosis was recorded in a little over half of the episodes and was the only recorded item in 10% of records. The recording of the therapeutic agent used was the most frequently recorded item, occurring in 70% of episodes, but the amount prescribed was recorded in only one-quarter of the episodes and the dosage in less than one-fifth. Less than half of the episodes had any symptoms recorded and only one-third had a physical sign recorded.

Introduction

The keeping of good clinical records has been suggested as necessary to maintain standards of medical care.¹⁻⁴ With the formation of more group practices and partnerships and the increasing use of health visitors, nurses, and social workers the keeping of detailed records of patients becomes essential. Where more than one person is involved in the care of a patient, whether as a routine or as an "out of hours" emergency, communication of information is of major importance, the records of the patients forming an indispensable part of such communication.

For the individual doctor the keeping of records serves as an aide-memoire, more effective if the clinical details are recorded at the time of observation and basic information is updated whenever possible. If only one person is involved in the care of a patient the design of the recorded details can be of a purely personal nature, but when more than one person is involved the records must be clearly defined, mutually acceptable, and mutually understandable for, as Walford stated,⁵ "If a word means one thing to one doctor and something quite different to another, then the sum of their observations means nothing to anyone."

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The legal obligations of the practitioner, both in connexion with his practice and with individual patients, are other important reasons for maintaining detailed records. The secretary of the Medical Defence Union in his report for 1971 stated that reliance on memory was a dangerous attitude which was strongly to be deprecated, and a defence to an action may be severely prejudiced by the absence of written records.

In the field of research accurate and detailed records are essential, and general practitioners with an interest in this aspect of their work soon realize the importance of well-designed, scrupulously-kept practice records. It is unfortunate that the data emanating from these practices are often met by the criticism that the practices are atypical; the practices may be atypical but the bias may not apply to the patients of the practice.

Currently there is much discussion⁶⁻⁹ concerning the possible application of computers to general practice records, though the anticipated benefit to doctor and patient has been as yet ill defined. Certainly if any benefit is to accrue accurate data must be fed into the computer, or as has been succinctly described in computer language, "rubbish in garbage out." If computer systems of recording facts of domiciliary care are to be extended to national coverage their value will rely on the information which is available in most if not all general practice files and not from those doctors who, by their interest in research, have developed careful systems of record keeping.

Methodology

Previous studies of general practice records have used questionnaire techniques¹⁰ or examination of records of patients attending at a doctor's surgery.¹¹ The present study examined the records in a sample of practices.

All practices on the medical lists of the executive councils for the County of Northumberland and the County Boroughs of Tynemouth and South Shields were stratified by partnership size and each practice was given a code number. A random sample was then drawn from these coded lists to obtain 13 practices. The sample structure is compared with the figures for England and Wales and with the total lists of the relevant executive councils in Table I. The selected practices were then asked by telephone or letter to give me access to their records. (I had recently been a general practitioner in the area.) Two of the practices did not agree to co-operate in spite of clarification of my role; a fear of Governmental interference and possible

TABLE I—Distribution of Practices by Partnership Size

	Northumberland, Tynemouth and, South Shields	England* and Wales	Sample	Practices Used in Survey	Declined to Participate	Not Approached
Single-handed	28 (45.2%)	4,131 (45.2%)	5	2	1	2
2-Man partnerships .. .	18 (29.0%)	2,414 (26.4%)	4	3	1	
3-Man partnerships .. .	12 (19.4%)	1,626 (17.8%)	3	3		
4-Man + partnerships ..	4 (6.4%)	977 (10.7%)	1			1
Total	62 (100%)	9,148 (100%)	13	8	2	3

*Figures obtained from *Annual Report*, D.H.S.S., 1968.

TABLE II—*Details of Practices*

Practice No.	Age of Partners (Years)		Higher Degrees & Diplomas Obtained	No. of Consulting Rooms	Receptionist/Secretary (Full-time Equivalents)	Age/Sex Register of Patients	High-risk Register of Patients
	<50	≥50					
1	{ 1 0	0	{ Yes No	2	$\frac{1}{2}$	No	No
2	{ 1 0	0	{ No Yes	2	1	No	Yes
3	{ 3 1	0	{ No Yes	2	1	No	No
4	{ 1 0	0	{ Yes No	2	1	No	Yes
5	{ 0 0	1	{ No No	1	1	No	No
6	{ 0 0	1	{ No No	1	$\frac{1}{2}$	No	No
7	{ 2 0	1	{ No No	3	1 $\frac{1}{2}$	No	No
8	{ 1 1	0	{ Yes Yes	2	1 $\frac{1}{2}$	Yes	Yes

castigation being strongly expressed by the doctors concerned. Because of lack of time available a further three practices were not studied. Details of the practices are given in Table II.

In view of the considerable overlap in care of patients of partnership practices it was felt that an examination of individual practitioner's recording habits would be impossible, thus a "practice orientated" study was carried out. The practices were visited at week-ends during May, June, and July 1970 when no consulting sessions were being held so that all the record envelopes were available in the files. Every 30th record was scrutinized, information being recorded on a specially-designed form listing 18 items of data per record envelope. These items were: sex, age, address, marital state, occupation, dates of consultations, attendance at surgery, visit to patient's home, other items of service, diagnosis, therapeutic agent, amount prescribed, dosage, symptoms, signs, issue of certificate, referral to outpatient department, and admission to hospital. For each item of information three values were possible—(1) recorded, (2) not recorded, and (3) not applicable. The information was transferred to punch cards and then to magnetic tape on the university's I.C.L. 4130 computer.

Scrutiny of all records contained in a patient's record envelope was thought to be too time-consuming as well as making analysis unnecessarily difficult. Examination of the last item of service recorded in each record was apt to provide only minimal information if that item of service was merely a follow-up attendance. It was decided therefore to collect the information recorded for the last episode of disease, an episode of disease being defined as one or more closely time-linked items of service for a collection of related symptoms and signs. In cases of prolonged chronic illness the notes relevant to an identifiable exacerbation of illness were scrutinized, or in the absence of such events an assessment of the total medical notes for the illness was made. In view of the largely haphazard presentation of problems to the general practitioner patients' records inevitably present complications for systematic analysis. Only I collected data, and I took all decisions concerning the necessity for recording certain items of information. The criterion for such decisions was whether another doctor with experience in general practice would understand and be able to act on the data available.

Sources of Information for Patient Record

Four groups of people are concerned with giving or recording the information contained in the medical records of National Health Service patients—namely, the patients or, in the case of children, the patients' parents, the executive councils, general practitioners, and hospital doctors. The present study considers the first three groups, records supplied by hospital doctors being beyond the scope of the present investigation.

PATIENTS

Initial responsibility for registration as a patient in the National Health Service rests with the patient or the patient's parents in

the case of children, and what may be termed the portal of entry is the medical card (E.C.4) which is supplied by the executive council at or about the time of the registration of birth. The parents supply to the executive council the following information about the child: surname, forenames, sex, address, date of birth, and name of the general practitioner with whom the parents wish to register the child in order to receive medical care under the National Health Service. People entering the country and intending to remain for longer than three months register in a similar manner, also supplying information concerning marital state where necessary. The accuracy of this information is therefore entirely dependent on the information supplied to the executive council. Furthermore, any updating of this information is also the responsibility of the patient or his representative, who, as requested on the medical record card, should notify the executive council of any changes. Severe inaccuracies are apt to occur, therefore, in the records of the executive council when patients change their address or marital state, often without a change of general practitioner, and do not notify the executive council of these changes.

If a patient leaves the area without notifying the general practitioner or executive council the records may remain with the general practitioner for years, for he has no method whereby he can assess whether the records he holds represent a true picture of his practice. In many respects the background information about a patient is accurately recorded only when the doctor and patient are in contact, and then only if the patient volunteers information about change of circumstances or the doctor specifically asks for it.

EXECUTIVE COUNCIL

The executive council, on receipt of a patient's registration form, issues a medical record envelope (E.C.5 or E.C.6) to the general practitioner concerned, thereby supplying the following information: sex, surname, forenames, date of birth, address, and marital state. The information has been obtained from the patient and no method of verification is used. When the patient has transferred from another general practitioner the record envelope should also contain the previous medical records of the patient.

GENERAL PRACTITIONER

No statutory obligations exist in respect of record keeping by general practitioners treating patients under the National Health Service. No inspection of medical records by the Department of Health and Social Security is carried out, neither has any attempt been made to define optimum or even minimum standards.

Analysis of Records

In the present survey a total of 1,628 medical records were examined out of a population of 48,000, and of this sample

763 (46.9%) referred to males and 865 (53.1%) to females; the sex distribution by practice is shown in Table III. Except for two practices the sex distribution of the sample appears compatible with the Tyneside population statistics,¹² which indicates a percentage of 48.5% males to 51.5% females. The samples of the two practices showing a small preponderance of females may indicate, apart from sampling variation, inaccurate recording of the sex of the patient (as in the case of a "bisexual" forename), non-registration of males in the practice due to their absence from home (for example, armed Forces or working elsewhere and thus registered with a general practitioner other than the family practitioner), or possibly a preference by female patients in their choice of doctor.

TABLE III—Sex of Patients in Sample*

Practice No.	Male	Female	Total
1	126 (50%)	124 (50%)	250
2	102 (46%)	120 (54%)	222
3	154 (47%)	175 (53%)	329
4	85 (44%)	110 (56%)	195
5	49 (43%)	64 (57%)	113
6	66 (48%)	71 (52%)	137
7	95 (46%)	112 (54%)	207
8	86 (49%)	89 (51%)	175
All practices	763 (47%)	865 (53%)	1,628

*Blue ink is used in printing record envelopes for female patients and red ink for record envelopes of male patients, thus the sex of all patients is recorded.

AGE

In the present survey the age of the patient was recorded in 1,475 (90.6%) instances, the variation between individual practices being shown in Table IV. The ages of the patients are usually recorded in one of two ways—either by recording date of birth or, in patients who were originally registered with a general practitioner in the National Health Insurance Scheme, by the ill-defined statement that they were or would be 16 years old on a certain date. Table IV shows that age is not always recorded and that wide variation exists between practices.

TABLE IV—Age of Patients

Practice No.	No. of Patients	Age Recorded	
		No.	%
1	250	216	86.4
2	222	216	97.3
3	329	286	86.9
4	195	176	90.2
5	113	95	84.1
6	137	122	89.1
7	207	200	96.6
8	175	164	93.7
Total	1,628	1,475	90.6

ADDRESS

An address was almost invariably recorded, only 5 (0.3%) of the record envelopes out of a total of 1,628 were found to have no address recorded. As already pointed out, the recorded address may not be accurate, inaccuracies occurring when the patient fails to notify change of address to the general practitioner or executive council. In a recent survey carried out by the health services research unit at the University of Kent at Canterbury, during which a postal questionnaire was delivered to 432 patients receiving care from general practitioners working from a group centre in Wallsend-on-Tyne, 54 (12.5%) were returned by the Post Office marked "gone away" or "not known at this address." This measure of the inaccuracy of the addresses which had been obtained from the general practitioners' records is probably an under-statement as it excludes those questionnaires which were not returned or were forwarded to the correct

address by the Post Office or by the present occupier. The accuracy of the address on a patient's record is almost entirely dependent on the patient informing the doctor or his staff of any changes, and therefore depends on contact with the patients as well as the obvious corollary that the address must be recorded on receipt of the information.

MARITAL STATE

Marital state was poorly recorded in respect of males; of those aged 16 years and over only 7 (1.3%) of the records indicated the marital state. The position was better in the case of females, as 537 (78.5%) women aged 16 years or over had recorded information on marital state, though it must be emphasized once again that the accuracy of the records was not tested, and it may well be that many of the "unmarried" women were, in fact, married, the event not being recorded on the medical record envelope. The variations in recording between the practices is shown in Table V.

TABLE V—Marital State of Women Aged 16 and Over

Practice No.	No. of Patients	Marital State Recorded	
		No.	%
1	95	85	89.5
2	92	85	92.4
3	138	107	77.5
4	82	42	51.2
5	47	29	61.7
6	57	51	89.5
7	93	84	90.3
8	79	54	68.4
Total	683	537	78.5

OCCUPATION

Occupation was recorded for 220 (39.5%) men and 153 (22.4%) women aged 16 years or over. In the case of women, "housewife" was accepted as a recording of occupation. The recording of occupation of the men is shown in Table VI.

TABLE VI—Occupations of Men Aged 16 and Over

Practice No.	No. of Patients	Occupation Recorded	
		No.	%
1	85	34	40.0
2	79	34	43.0
3	115	43	37.4
4	59	12	20.3
5	40	8	20.0
6	47	12	25.5
7	76	55	72.4
8	56	22	39.3
Total	557	220	39.5

Analysis of Clinical Records

In practice 5 only nine record envelopes out of a total of 113 records examined contained any data recorded by the current general practitioner, and this practice is therefore excluded from subsequent tables.

It was considered that six separately identifiable items relating to an episode of disease could be recorded, although not all disease episodes would require the recording of all six items. An illustration of a disease episode regarded as fully recorded is shown below:

19/3/70 A TAB. OXYTET (2) BRONCHITIS (1)
 48 T.I.D. (5) PRODUCTIVE COUGH
 (3) (4) (6) RHALES IN CHEST

(1) Diagnosis, (2) name of therapeutic agent, (3) amount prescribed, (4) dosage, (5) symptoms, (6) signs.

The number of items recorded in the different practices is shown in Table VII, indicating that over half of the records of episodes examined contained two or fewer items of information per disease episode, and only 4.4% contained all six items. A more detailed analysis of the recording of the six items was undertaken in order to attempt a classification of information recorded by the general practitioner.

DISEASE-INDICATIVE ITEMS

It was accepted that diagnosis in general practice would often be ill defined and subject to observer bias. A recorded diagnosis was taken to be a word or word complex which would, in the opinion of the observer, communicate sufficient information to enable him as an experienced general practitioner to continue the care of the disease episode efficiently. Obviously, using this criterion one could include the recording of symptoms and signs as acceptable, and Table VIII is constructed to show the permutations in the recording of the three items indicative of a disease episode. Apart from practice 6, which recorded only minimal information, the diagnosis was recorded either alone or in combination with symptoms or signs in from one-half to three-quarters of the episodes in different practices. The recording of symptoms, either alone or in combination with other items, showed wide variation between practices, and it is

interesting to note that in practice 2 symptoms were recorded more frequently than the diagnosis. Signs were recorded in fewer than half of the episodes in all practices except practice 2. A broad view was taken of acceptable recording of symptoms—"cough," "backache," "pain in chest" were each regarded as adequate. Similarly, any record of a physical sign of disease was accepted—for example, "pulse rate," "temperature," or "blood pressure." Although a wide variation was seen to exist between the practices the general pattern was one of recording the diagnosis more often than symptoms and symptoms more often than signs.

THERAPY-DESCRIPTIVE ITEMS

The name of the therapeutic agent was recorded in 1,034 (75.2%) of all episodes and was, in almost all practices, the most frequently recorded item. Only in practice 1 was the diagnosis recorded more frequently (Table IX). The recording of the amount prescribed was less frequently recorded (24.9%), and dosage was recorded in only 241 (17.8%) instances. At best, the amount and dosage were recorded in only 39.6% of episodes in one practice and in less than 8% in most of the practices. It appears from this sample that the recording of the amount and dosage of treatment is not considered of great importance by the general practitioners.

TABLE VII—Number of Diagnostic and Therapeutic Items Recorded per Episode. Percentages are given in Parentheses

Practice No.	No. of Items per Episode							Total
	0	1	2	3	4	5	6	
1	7 (3.1)	86 (38.2)	60 (26.7)	31 (13.8)	27 (12.0)	9 (4.0)	5 (2.2)	225 (100)
2	7 (3.3)	13 (6.1)	17 (8.0)	34 (16.0)	60 (28.3)	48 (22.6)	33 (15.6)	212 (100)
3	2 (0.7)	35 (12.4)	115 (40.6)	89 (31.4)	32 (11.3)	8 (2.8)	2 (0.7)	283 (100)
4	0	23 (12.4)	39 (21.1)	30 (16.2)	49 (26.5)	27 (14.6)	17 (9.2)	185 (100)
6	62 (48.4)	33 (25.8)	28 (21.9)	5 (3.9)	0	0	0	128 (100)
7	8 (4.3)	37 (19.9)	74 (39.8)	50 (26.9)	12 (6.5)	3 (1.6)	2 (1.1)	186 (100)
8	2 (1.3)	22 (14.1)	62 (39.7)	46 (29.5)	17 (10.9)	6 (3.8)	1 (0.7)	156 (100)
Total	88 (6.4)	249 (18.1)	395 (28.7)	285 (20.7)	197 (14.3)	101 (7.3)	60 (4.4)	1,375 (100)

TABLE VIII—Diagnosis, Symptoms, and Signs

	All Practices		Practice No.						
			1	2	3	4	6	7	8
	No.	%	Percentage of Episodes						
Diagnosis recorded	823	59.9	74.2	67.5	54.4	60.0	9.4	64.0	75.0
With symptoms and signs	215	15.6	12.0	39.6	14.8	18.4		9.7	6.4
With symptoms but not signs ..	89	6.5	4.4	12.7	4.6	6.5	0.8	4.8	10.9
With signs but not symptoms ..	59	4.3	4.0	4.3	3.5	1.6		7.0	9.6
Without symptoms or signs ..	460	33.5	53.8	10.9	31.5	33.5	8.6	42.5	48.1
No diagnosis recorded	552	40.1	25.8	32.5	45.6	40.0	90.6	36.0	25.0
Symptoms and signs recorded ..	195	14.2	5.3	21.7	23.7	20.5		9.1	9.6
Symptoms but not signs recorded ..	117	8.5	6.2	6.1	13.4	10.8	3.1	9.1	7.1
Signs but not symptoms recorded ..	18	1.3	1.8	0.5	0.7			4.3	1.9
Neither symptoms nor signs recorded	222*	16.1	12.5	4.2	7.8	8.7	87.5	13.5	6.4
All episodes	1,375		225	212	283	185	128	186	156

*Items other than diagnosis, symptoms, and signs were recorded in 134 of these episodes.

TABLE IX—Therapeutic Agent, Amount Prescribed, and Dosage

	All Practices		Practice No.							
			1	2	3	4	6	7	8	
	No.	%	Percentage of Episodes							
Therapeutic agent recorded	1,034	75.2	56.9	84.4	85.5	92.4	46.1	67.7	82.7	
With amount and dosage	190	13.8	7.6	39.6	2.8	35.1	2.3	2.1	5.8	
With amount but not dosage	152	11.1	15.1	11.8	3.9	16.8	9.4	17.2	4.5	
With dosage but not amount	55	4.0	1.8	0.9	2.8	1.1	7.8	4.3	13.4	
Without amount or dosage	637	46.3	32.4	32.1	76.0	39.4	26.6	44.1	59.0	
No therapeutic agent recorded	341*	24.8	43.1	15.6	14.5	7.6	53.9	32.3	17.3	
All episodes	1,375		225	212	283	185	128	186	156	

*Items other than therapeutic agent, dosage, or amount were mentioned in 253 of these episodes.

TABLE X—Apparent Choice of Recording. Figures in Parentheses Represent Ranking Order

Choice of Recording In Overall Ranking Order	All Practices	Practice No.						
		1	2	3	4	6	7	8
Diagnosis and therapeutic agent	234 (1)	39 (2)	10 (2)	71 (1)	30 (1)	4 (4)	35 (1)	45 (1)
Diagnosis only	152 (2)	69 (1)	9 (3=)	14 (5)	11 (4=)	5 (3)	26 (2)	18 (2)
Diagnosis, therapeutic agent, symptoms, and signs ..	95 (3)	10 (4)	32 (1)	25 (3)	12 (2=)	(5=)	10 (3)	6 (4)
Therapeutic agent, symptoms, and signs	88 (4=)	3 (6)	9 (3=)	50 (2)	11 (4=)	(5=)	8 (4=)	7 (3)
No recording of any of six items	88 (4=)	7 (5)	7 (5)	2 (6)	(6)	62 (1)	8 (4=)	2 (6)
Therapeutic agent only	81 (6)	13 (3)	2 (6)	18 (4)	12 (2=)	27 (2)	6 (6)	3 (5)
Other combination of items	637	84	143	103	109	30	93	75
Total ..	1,375	225	212	283	185	128	186	156

MOST FREQUENT COMBINATIONS RECORDED

The detailed analysis of the recording of disease episodes produced 38 different combinations, and the wide variation between the practices in recording episodes of disease made a definition of a typical combination of recorded items impossible. Table X shows those combinations occurring most frequently in overall ranking order. Of all other combinations none occurred in more than 5% of total episodes in a practice.

Discussion

The proliferation of group practices, the increase in rota systems, and the involvement of paramedical workers in general practice, with subsequent sharing of the care of a patient, appear to accentuate the need for maintaining accurate and comprehensive records. The suggestion that general practice records could and should be integrated in the computerized intelligence systems of area health boards has given rise to attempts to convert the records into a form suitable for computer use and much discussion of the problems of processing and rapid recall of data and of confidentiality. These efforts have in many respects preceded solution of the problems of assessing the requirements and the recording habits of general practitioners and of the benefit to doctor and patient, and indeed of defining the desirability of keeping general practice records.

Wide variation in methods of recording was observed in different practices, one single-handed practitioner recording details on only nine out of 111 medical records studied, while in another practice two-thirds of all episodes had at least four items recorded per episode. Although this study attempted a quantitative assessment of general practice records, two aspects must be stressed. Firstly, that no attempt was made to verify the accuracy of the items recorded and, secondly, that no assessment was made of the usefulness of the records in assisting the doctor in his care of the patient. One of the doctors stated that it was "pointless to record every attack of sore throat," while another felt that "hospital letters and x-ray or laboratory investigations were the only records worth keeping."

It is perhaps unfortunate that the most obvious reason for accurate and comprehensive record keeping is the carrying out of research, a field which does not attract or even interest a high proportion of general practitioners, and the argument that good record keeping, if one can define "good" records, improves the care of the patient is difficult to substantiate objectively. The trend in medical education will, one hopes, increase the contact of both undergraduates and postgraduates with general practice, necessitating an involvement by a large number of general practitioners in teaching. The resultant imposed discipline on the general practitioner, who must inevitably structure his thinking and attempt to differentiate the largely undifferentiated work of general practice in order to teach this subject, may provide a stronger motivation for good record keeping than exists at present.

The attitudes of the doctors concerned were of interest in that a general air of guiltless acceptance of the inadequacy of the records was apparent among those who co-operated. Variations of the expression "You are welcome to look at the records for what they are worth" were heard in most practices, and little belief in the importance of careful record keeping was expressed by any of the doctors. One of the single-handed doctors was able to describe in great detail the natural history of a disease extending over a period of several months, starting with a casual encounter with the patient while visiting another member of the household, suspecting and clinically diagnosing a parietal brain tumour, and referring the patient for consultant advice. The records of this patient when examined by the observer were found to contain only a letter from the consultant as evidence of this course of events, yet not only had the diagnosis and treatment been completed expeditiously but the general practitioner's ability to recall the details appeared to be excellent. Could scrupulous record keeping be directly proportional to poor memory? Although there are obvious dangers in generalizing from this small survey it appears that there are wide variations in the records kept by general practitioners and that severe deficiencies exist in the information about patients, their diseases, and their treatments contained in general practice records.

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