

The General Practitioner's Use of Medical Records

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Declaration

I hereby declare, in terms of Regulation 1.3.2
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by myself and that the work reported herein is my own.

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SUMMARY

PREFACE

1. The hypothesis on which this study is based is that the conventional record system used by the majority of general practitioners in the National Health Service in the United Kingdom no longer meets the needs it was designed to serve.

CHAPTER 1

2. The development of the medical record envelope system is traced from the early days of the National Insurance medical service, to its adoption by the National Health Service.

CHAPTER 2

3. The Gillie Committee on the Field of Work of the Family Doctor and other authorities have expressed dissatisfaction with the format of the documents used for general practice records in the National Health Service and have urged that much study and trial should be undertaken so that a change acceptable to doctors can be proposed. The investigations reported here are submitted as a contribution to the studies requested.
4. Information in the records of a sample of 187 patients in the author's practice, representing the recording habits of over 300 different practitioners, is compared with information elicited from these patients by means of a questionnaire.

5. In 60% of the records the civil status of the patients was either not recorded or was recorded incorrectly, partly due to a defect in the design of the document.
6. The occupations of 33% of the male patients and 65% of the employed female patients were not recorded.
7. In general, serious illnesses and operations were well recorded, but immunisation status was extremely poorly recorded.
8. 405 instances of family history of disease were reported by 187 patients. 9% of these were noted in the medical records as family history. It is estimated that at least 57% of the non-recorded instances could be considered to be of value in the management of the patients concerned.
9. 49% of the records studied contained 10 or more documents (other than continuation cards) and 10% contained 25 or more documents. The mean number of documents held in the records of male patients was 8 and of female patients 13, with modal values of 2 and 4 respectively.
10. Summary cards were found in only 1% of the records examined.
11. In 32% of the records of patients who were previously registered with one or more other practices no notes or reports were available referring to incidents prior to the patients joining the author's practice.

12. It is suggested that the generally poor level of recording of family and social history revealed in this survey is related both to lack of training in record-keeping and the unsuitability of the documents used.

CHAPTER 3

13. 167 out of a sample of 201 Scottish general practitioners responded to a questionnaire sent to them on the use of medical records. The sample replying represent 6.4% of the total of Scottish principals and 12.1% of the total of Scottish practices.
14. 98% of the sample use the conventional National Health Service medical record envelope and continuation card system of recording.
15. 29% of the respondents keep some form of special index or register, mostly for administrative purposes; 3% keep special registers for research purposes.
16. 9% of the respondents use the Royal College of General Practitioners' colour-tagging system on the outside of the record envelope to denote especially important conditions; a further 9% use their own systems.
17. 93% of the responding sample routinely record diagnosis, 95% routinely record therapy, 86% routinely record clinical details, 86% routinely record National Insurance certification and 36% routinely record circumstantial narrative.

18. 92% of the sample routinely record drug hypersensitivities, 80% of the sample routinely record immunisations, 8% of the sample routinely record infant developmental milestones.
19. 75% of the doctors responding record the issue of repeat prescriptions (31% always, 26% often and 16% rarely) while 25% do not record the issue of repeat prescriptions. The employment of full-time ancillary staff is conducive to the full recording of repeat prescriptions, at a statistically significant level.
20. 63% of the responding practitioners make notes about all surgery consultations, 27% do so only in selected cases, 3% do so rarely and 3% do not do so. Complete recording of surgery consultations is significantly related to the availability of ancillary help.
21. Of the 47 doctors in the sample who have branch surgeries, 75% have the records available at the branch surgery of some or all of the patients consulting them there, but 25% do not have such records available.
22. 35% of the respondents take the records of their patients with them on home visits (8% always, 7% often and 16% rarely). 41% of the respondents never makes notes about episodes seen on home visits, or do so only rarely.
23. 23% of the sample take the medical record cards on night calls (1% always, 7% often and 13% rarely).

24. 93% of the practitioners in the sample file hospital letters, etc. , in the medical record envelopes; 28% cut them down to fit the envelopes and 47% extract data from correspondence and enter such data on the continuation cards (7% always and 40% sometimes).
25. 56% of the sample destroy obsolete reports (9% routinely, 44% occasionally).
26. 44% of the respondents found the notes written by previous doctors to be usually helpful and 71% found hospital letters and reports passed on when the patient transferred from one doctor to another to be usually helpful.
27. 20% of the practitioners considered the medical record envelope system to be ideal, 40% considered the envelopes to be suitable with minor modifications, 23% considered them to be not very suitable and 17% considered them to be very unsuitable.
28. 49% of the sample would welcome the introduction of a form of larger record folder (such as the quarto folder used in most hospitals) into National Health Service general practice, while 50% would not welcome such an innovation, even if such a scheme could be devised without involving practitioners in extra expense. If such a larger record folder could be introduced, but without extra funds being available to assist in the purchase of new filing equipment, etc. , 26% of the

sample declared that they would wish to introduce such a system in their own practices while 73% would not.

CHAPTER 4

29. Published material relating to the use of the medical record envelope system is reviewed. Experimental developments in the use of individual folders, family files, wallets and records designed to be used in conjunction with computer facilities are also discussed. These systems and experiments represent only a very small fraction of the total recording in general practice in the National Health Service.

CHAPTER 5

30. The uses and potential of the digital computer in the field of medical recording and of record linkage are examined and some of the current work in this area reviewed. The practicability and indeed the desirability of computerising the complete medical records are not yet known and evaluation of the experiments currently being undertaken is awaited.

CHAPTER 6

31. The purpose of the medical record is to provide a link or bridge between the patient within his environment of family, social history and past morbidity experience, and the doctor who is looking after him. The record exists to enable and promote the establishment and re-establishment of the relationship between patient and doctor which is central to the provision of all medical care.

32. The need for adequate and systematic records is emphasised by the current trends of general practitioners coming together to work in groups, of the increasing employment of ancillary staff who may require access to the records, and of the mobility of the population.
33. The two features of the medical record envelope which tend to impede efficient recording are: (1) type of holder - an envelope, the contents of which have to be extracted through one open end renders the data held therein relatively difficult to extract; (2) the size of the envelope - cards of approximately 8" x 5" encourage cramped writing and illegibility, and the majority of letters and reports which are filed in the envelope require to be folded and their contents are thus not easily accessible.
34. Any new type of medical record documents should be (a) of folder type, rather than envelopes, (b) of suitable size, allowing the majority of correspondence to be accommodated without folding (c) should encourage summarising of important data and separation of defined categories of information, (d) should permit flexibility of use, and (e) should be potentially computer compatible.
35. The difficulties of introducing any new system into National Health Service general practice are briefly examined.

36. It is concluded that action is now needed to devise and introduce a more suitable form of medical record for use in general practice in the National Health Service.

PREFACE

"But doctor, what about my diverticulosis?" The question is a good one. The complaint is of abdominal pain, the history of the present episode is unrevealing and clinical examination is essentially negative. The practitioner has in his hands a small buff envelope crammed full of continuation cards and of folded letters and reports, and this is one of his basic tools: the patient's medical record. In this instance the finding of diverticulosis on a barium enema examination had been noted in a hospital report filed for ten years. The patient expects the doctor to know this and he has a right to this expectation. The doctor has been defeated by the system. The vital clue is there, but it is hidden - the information system is imperfect not because the information is not there but because it is not easily accessible. In other instances it is apparent that fundamental background information is not simply inaccessible but missing altogether.

Proverbially the bad workman blames his tools. But tools may need to be refashioned to meet changing requirements and the hypothesis on which this study is based is that the conventional record system used by the majority of general practitioners in the National Health Service in the United Kingdom no longer meets the needs it was designed to serve.

It is known and accepted that deficiencies and difficulties exist, but to date no published studies have been discovered where these have been measured. The information collected here represents an attempt to fill this gap in our knowledge. It is hoped that such information may be accepted as providing a basis for planning and recommending changes.

If standards in general practice are to continue to advance we must look to improving the tools we use in carrying out the day-to-day task of caring for patients. The challenge for the future will be the measurement of the ways in which such improvements can be related to the quality of care provided. However complex such a task may be, any attempt to tackle it must be preceded by the provision of documents and systems designed to ease the collection and display of the information required.

The case is here presented for radical change. The difficulties of effecting such a change within a structure as widespread and diverse as the general medical services component of the National Health Service are not minimised. However, awareness of the difficulties must not be allowed to obscure the need, when fulfilment of that need may well represent an improvement in the delivery of medical care and ultimately in the health of our patients.

CHAPTER 1

THE MEDICAL RECORD ENVELOPE

"...he seems like a foreigner who has become, by request, a clerk of their own records."

J. Berger. "A Fortunate Man."

I. INTRODUCTION

A documentary record of the medical history and family and social status of each individual patient is a fundamentally important tool both for the provision of medical care and the prosecution of research. The potential usefulness of such a record is theoretically enhanced in such a system as the British National Health Service where every citizen has access to a personal doctor and where one continuing record can be maintained from birth to death. This potential fails to be realised because the statutory documents (medical record envelopes and continuation cards) are in many respects inconvenient to use and do not provide the most efficient means for the collection, recording and storage and display of essential data. The evolution of data-processing and record linkage systems and recent reports on the development and standardisation of hospital medical records should prompt an evaluation of the use, content and lay-out of general practice records, with the aim of suggesting a more suitable and useful instrument in the field of primary medical care.

This introductory chapter traces the development of the medical record envelope system in common use in general practice in the United Kingdom from its invention by the Rolleston Committee in the Lloyd George Insurance Medical Service to its adoption by the National Health Service.

II THE POSITION UP TILL 1917

From the very earliest times records have been kept of incidents of illness or "cases". The Hippocratic collection "Epidemics" is largely based on accurately observed case reports. All clinical research has been founded on records of this type, but until the present century there appears to have been little systematic attempt to keep the records of the entire medical history of individual patients.

The general practitioner, in anything like the guise in which we know him today, began to emerge as a distinct entity only in the middle of the last century, following the passage of the Apothecaries Act of 1815 and the Medical Act of 1858 (Poynter 1961). It seems that the commonest form of record-keeping employed by these early practitioners was the use of daybooks - visiting books and surgery case books - and it was from the use of these in the pursuit of his practice in Burnley that Sir James Mackenzie collected his early observations which were to be the basis of some of the first recorded instances of clinical research from general practice (Watson 1967).

In October 1912 the Insurance Act was introduced by Lloyd George, and among the proposed conditions of medical service which he announced at that date was the obligation to keep certain prescribed records. In December 1912 after discussion with the British Medical Association a form was agreed, following the model of an ordinary day book "such as doctors keep in connection with their

private practices" (Inter-Departmental Committee on Insurance Medical Records, 1920). In a very short time it became apparent that this was not satisfactory and discussions were initiated in the spring of 1913 between officers of the Health Departments and representatives of Local Medical Committees.

As a result of these discussions card forms were introduced for records - one card being issued in respect of each insured patient. These cards were in two parts; at the end of each year the part with the name of the patient and details of attendances was sent to the Insurance Committee (forerunner of the present day Executive Council) while the other part, containing particulars of illnesses and summary of attendances was sent to the Insurance Commissioners. There was no identifying mark on the latter and it was thus impossible to bring the two parts of the card together subsequently. This was a device which was adopted deliberately in the light of apprehensions which were expressed "lest certain of the arrangements, including those relating to the transmission of records of patients treated, might lead to disclosure as to the nature of illnesses of insured persons which would be prejudicial to their interests". Thus confidentiality was preserved, but the cards could not fulfil such functions as a continuous record might have served, either for clinical or for statistical purposes.

These old forms remained in use until the beginning of 1917, when because of pressure on practitioners consequent on the with-

drawal of so many of their number on military service, the Insurance Commissioners decided as a temporary measure to suspend the obligation to keep records.

III THE ROLLESTON COMMITTEE

After the War professional opinion was sounded and it was generally agreed that the obligatory keeping of records for insured patients should be resumed. In the light of this, in March 1920 the Minister of Health and the Secretary of State for Scotland appointed an Inter-Departmental Committee under the chairmanship of Sir Humphry Rolleston with the following Terms of Reference :

To consider and advise the Minister of Health and the Scottish Board of Health as to the form of Medical Record to be prescribed under the conditions of service for medical practitioners contained in the new Medical Benefit Regulations, having due regard to the clinical purposes (including the remedial value to the patient of maintaining a suitable record of his case) as well as to the administrative and statistical purposes which such a record may be adopted to serve.

While the Rolleston Committee was deliberating, the Dawson Committee was charged with the broader remit of suggesting the pattern of the future provision of medical and allied services (Ministry of Health, Consultative Council on Medical and Allied Services, 1920). In their report the Dawson Committee stated their opinion that "it would promote efficiency and further knowledge if a uniform system of records of illness based on the card index method were established throughout the service." They further

assumed that "these records could be utilised for purposes of research and for acquiring accurate knowledge of disease and of the after-results of its treatment."

The Rolleston Committee reported in June 1920 (Inter-Departmental Committee on Insurance Medical Records, 1920) and as its findings have fundamental relevance to the form of records used in the National Health Service general practice to this day, these findings are worth examining in some detail.

The Rolleston Committee's first consideration was the question of the purposes the record should subserve, and the priorities which should be allocated. In paragraph 18 they state:

After full consideration of the various purposes which our Terms of Reference state that the records should be adopted to serve, we are strongly of opinion that, in so far as it is necessary to give precedence to any of these purposes, this precedence must be given to the clinical objects - that is to say, the ways in which the keeping of records may contribute to the more efficient treatment of patients, both by the doctor who makes the record, and by other doctors under whose care the same patient may come in subsequent illnesses.

They therefore advised the framing of a form that could afford a continuous record of an insured patient's illnesses, and be

kept ordinarily in the possession of the insurance practitioner who was, for the time being, responsible. It was recognised that with the adoption of such a proposal the records could be used for the purpose of the doctor's Index Register of the insured patients on his list, thus relieving him from the trouble of keeping two sets of cards, which was necessary under the old system.

It is evident that the Committee devoted considerable thought to the question of how much should be recorded, and in particular whether some form of limitation would save work. The types of limitation envisaged included episodes of certain morbidity patterns only, or only those of patients certified as being incapable of work. Such limitations did not find major support in the Committee, who noted in paragraph 29:

In deciding what weight should be given to the consideration of labour-saving, the subject must be regarded from the wider point of the broad (including the indirect) effects of any particular system on the clinical efficiency of the service.

There must be considered, not only the immediate advantage to patients, but also the advantage which may accrue to the practitioner from keeping records of cases treated, through promoting definiteness of ideas, impressing facts on his recollection, and in assisting him in collating

observations on groups of cases, and so developing his scientific knowledge. It is worthy of note that records of the kind, not limited to selected cases, have been voluntarily kept by practitioners having large insurance practices, for their own benefit and in the interests of their patients; and it can hardly be doubted that the majority of practitioners who give serious thought to the subject would concur in recognising this reflected value of systematic notetaking.

The formula which was proposed, and subsequently adopted by the Health Departments, is contained paragraph 31:

We consider, therefore, that on the whole, the most advantageous system will be to require such notes to be kept of every case treated as are likely to be of value to the practitioner himself, or to any other practitioner treating the same patient in subsequent illnesses; and we recommend that the obligation be thus defined.

On the question of making notes the Committee had to consider a memorandum submitted by Sir James Mackenzie. This was, incidentally, the only outside evidence the Committee collected: they felt it unnecessary to look elsewhere as "we had the advantage of including among our number members who in various ways were,

from personal experience, fully conversant with the different aspects of the subject." Mackenzie's memorandum was based on his work at the St. Andrew's Institute for Clinical Research. He did not confine himself solely to the subject of records; it is historically of interest to note his plea for the teaching to medical undergraduates of the opportunities which exist in general practice and of the fact that the phases of disease which they will meet in practice will be different from those which they have seen in the hospitals. He also promotes the idea of central clinics, in many ways analagous to the modern health centre, where the general practitioner can work alongside his colleagues and can make use of immediately available laboratory facilities and X-rays.

On the subject of record-keeping Mackenzie's main point is concerned with the recording of fully established diagnosis:

The incompleteness of medical knowledge at the present time is clearly shown by the fact that a very large number of patients who consult their doctor and who are incapacitated from work do not suffer from any disease referable to the current classification, or one which can be detected by physical signs ...

The tendency has been, in the absence of physical signs of disease, to take the more prominent symptom or sensation and consider it to be the

disease, and the object to which treatment should be directed, as neuralgia, dyspepsia, anemia [sic], palpitation, neurasthenia etc.

The use of terms such as these indicates nothing more than the presence of a symptom.

Recognising this defect in medical knowledge the doctor should not be requested to specify the nature of a patient's illness either in the routine records or when certifying his incapacity for work, unless the doctor recognises with fair certainty the disease from which he suffers.

The Committee was impressed by this argument and they recommended that the form of record should be so devised as to provide separate columns, headed "clinical notes" and "diagnosis" respectively, and that the former column should be used for the recording of symptoms, treatment and provisional diagnoses, while the latter should be retained for "those diagnoses only of which the practitioner feels reasonably certain."

There was division of opinion between the Scottish and English members on the requirement that all attendances and visits and all certificates issued should be recorded (by means of ticks in the appropriate columns of the record card) for administrative purposes. It is evident from the official handbook on Medical Insurance Practice (Harris and Sack 1937) that in the event these

proposals that all attendances, visits and certificates issued should be routinely recorded were adopted in England but not required in Scotland.

Finally the Rolleston Committee considered the form of record and procedure of record keeping. They decided that the record must be of a form suitable for the purposes of a doctor's Index Register; it would originally remain in the possession of the doctor from year to year; when the forms first issued were completed subsequent cards must be associated with them. In paragraph 47 is found the genesis of the form of record which has, with little modification, remained in use in National Insurance, and subsequently National Health Service practice to this day:

After examination of various possible methods of satisfying these requirements, we have come to the conclusion that in respect of every insured patient an envelope should be issued, printed on one face so as to contain spaces for the standing particulars of name and address, occupation etc., and possibly printed also on the other face so as to serve the purpose of an initial current record. For the purpose of the current record (and for the continuance of that record after exhaustion of the space on the back of the envelope, if that be used for this purpose) cards suitably ruled

will be employed and kept in the envelope.

The envelope should be of practically the same form and size as the old record cards, so that the cabinets which have been in use for keeping these may continue to be so utilised ...

It was decided that the envelopes (printed in red for males and blue for females) should be issued by Insurance Committees and should each, before issue, have inserted the person's name, address, society and number, the name of the doctor, the Committee's cipher and the date of issue. In order to preserve the continuity of the record it was recommended that the machinery of Insurance Committees should be used to ensure that the record was transferred from the old to the new doctor when the patient changed his Insurance practitioner.

One of the last paragraphs in this Report, paragraph 52, is of some interest in connection with current research and thinking on the possibilities of medical record linkage:

Suggestions have been brought to our notice that the form of record to be used in the Insurance Medical Service should be linked up with other medical records kept in connection with various branches of public administration, such as school medical records, the medical records of the Pensions Ministry or institutional records. We are of

opinion that this linking-up is eminently desirable, but we have considered it to be outside the terms of our Reference to undertake the examination of these questions. We have, however, not lost sight of their importance, and in framing the forms of record recommended by us have endeavoured to make them such as could conveniently be linked up with such other records.

Unfortunately, at least in the opinion of one of the foremost workers in the field of medical record linkage today (Acheson 1967), this worthy endeavour would not appear to have been attended with any degree of success.

IV THE ENVELOPE

The Rolleston Committee's recommendations were adopted and the pattern established which was to last for half a century. Medicine has changed and advanced at such an astonishing pace over this period that the question inevitably suggests itself as to whether or not this basic clinical tool continues to meet the needs of the present day.

The Medical Record Envelope (M. R. E.) was a buff-coloured cardboard document measuring 8 inches by 5 inches (this was the Scottish form, the English one being shorter in length by one inch). Some at least of these envelopes in National Insurance days were reinforced with linen to give them durability. The front of the envelope was ruled into boxes in which were recorded the patient's surname, forenames, and address, occupation, doctor's name, Insurance Committee's cipher and stamp, name of Society and number, age of patient at first attendance and (as an intimation of mortality of questionable utility) date and cause of death. There was also provision for recording changes in address, occupation and doctor. The back of the envelope (in England) was ruled with lines, $\frac{1}{4}$ inch apart, and divided into columns for date, "A", "V" and "C" (Attendance, Visit or Certificate), Clinical Notes and Diagnosis. On the Scottish form of the envelope the back was left blank. In England the administrative details on the front of the envelope were arranged in vertical columns, whereas in Scotland

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these were horizontal. The continuation cards for insertion into the envelopes were printed in a similar way to the back of the English envelope, with provision at the top of one side for writing the patient's name and membership number. In Scotland in place of the "A", "V" and "C" columns there was one "C" column and another of similar size unheaded.

V NATIONAL HEALTH SERVICE

With the introduction of the National Health Service in 1948 the M. R. E. 's (which were all now of cardboard) retained much the same format, with provision now for date of birth, in place of age at first attendance, and National Health Service number in place of the Society's name and number. The envelopes were designated E. C. 5 (for males) and E. C. 6 (for females). The continuation cards became E. C. 7 and E. C. 8.

The general statutory obligation to keep records, and the rather vague terms of the regulations governing this, were taken over practically without alteration by the National Health Service from the Insurance Medical Service. Thus the terms of E. C. N. 113 (Ministry of Health 1953) :

Under paragraph 7(12)(a) of the Terms of Service a practitioner is "required to keep records of the illnesses of his patients and of his treatment of them in such form as the Minister may from time to time determine after consultation with an organisation which is in his opinion representative of the general body of medical practitioners".

The Minister has consulted the General Medical Services Committee of the British Medical Association and the following indication of the form in which records should be kept is issued with their agreement.

The clinical record should contain all information that would normally be considered by general practitioners as necessary both to the doctor and to other practitioners who may subsequently be responsible for the care of the patient to enable proper and necessary treatment to be given.

This information should be of such a nature as to help in reviewing the progress of a case or likely to be of help on some future occasion. As regards ailments or disturbances of health which may appear trivial, it will generally be agreed that their significance, though not apparent at the time, may be of assistance as a continuous medical history in the early diagnosis of some more serious conditions. The use of abbreviations is convenient and labour-saving. They should, however, be readily intelligible to other practitioners and therefore restricted to those in general usage.

In the Handbook for General Medical Practitioners (Ministry of Health 1955) it is made clear that Executive Councils, as successors to the Insurance Committees, still bore the responsibility of organising the transfer of records when patients changed doctors.

The Handbook outlines (at paragraph A 58) the procedure to be followed with regard to medical records:

Apart from any records which they may keep for their own purposes, doctors should keep notes of the medical histories of patients included in their lists on forms of record specially provided (E.C. 7 and 8). One of these record cards (and the envelope in which it is kept - Form E.C. 5 or 6) is sent to the doctor by the Executive Council when he accepts a patient for the first time. When a patient transfers from one doctor to another the Executive Council recall the record from the first doctor and send it to the second . . .

There have, since the inception of the National Health Service in 1948, only been minor modifications in the format of the printing of the forms E.C. 5, 6, 7 and 8. Since 1961 small supplies of expanding (gusseted) envelopes have been made available (forms E.C. 5B and E.C. 6B) for use "where the ordinary medical record envelopes are not sufficiently capacious" (Scottish Home and Health Department, 1961). From 1967 all new medical record envelopes issued were in the expanding form, and space was provided on the back of the envelopes for the recording of vaccinations and immunisations (Scottish Home and Health Department, 1967). In 1969 the panel for the recording of vaccinations and immunisations was revised (Scottish Home and Health Department, 1969).

Thus, with minor modifications only, the forms of record

introduced as the result of the recommendations of the Rolleston Committee in 1920 have served for 50 years as the documents used in general practice in relation first to National Insurance, and latterly National Health Service patients. After half a century of unprecedented change and advance in the provision of medical care the time is surely ripe to look again at this most important tool of the general practitioner's profession.

CHAPTER 2

THE RECORD'S CONTENTS

"They are the abstracts and brief chronicles of the time."

Shakespeare "Hamlet".

I INTRODUCTION

The importance of medical records as instruments in the delivery of clinical care, in administration and in research, is widely acknowledged. Taylor (1954) observes that the key to good general practice is the keeping of good clinical records, while Fry and Blake (1956) claim that records are the very basis of all good medicine. These opinions have been reiterated, particularly in relation to group practice, by Corbett (1962), Forman (1965), Spencer and Vallbona (1965), Brotherston (1967) Byrne (1968) Kuenssberg (1968a) and Pinsent (1969).

The potential usefulness of the medical record in general practice is theoretically enhanced by the unique opportunity presented by the British National Health Service in the practitioner's clearly defined population (his "list") of patients for whose care he is responsible, and by the provision for the patient's records to pass from doctor to doctor when the patient transfers (Ministry of Health, 1955; Kuenssberg, 1966; Eimerl, 1967; Lancet 1967a).

Geeves (1957) and Staines (1962) comment that surprisingly little has been written on records in general practice, and Slack et al (1966) observe that "in spite of the homage devoted to the importance of the medical history there has been little research on the subject. Neither the method of history taking and recording, nor the reliability and usefulness of the data collected has been studied as rigorously as the other tools in clinical medicine, in large part because neither method nor data lend themselves well to research."

Last (1967) has examined some of the implications of four major studies which include some assessment of general practitioners' medical records: those of Peterson et al (1956) in North Carolina, Clute (1963) in Ontario and Nova Scotia, Querido (1963) in Amsterdam and Jungfer (1965) in Australia, and he is of the opinion that these confirm the observation that the general practitioner often fails to appreciate important details in the patient's domestic background or personality. From the United Kingdom there have been three reports incorporating some appraisal of medical records in general practice. Collings (1950) sombrely reported that on his visits to 55 practices he never saw anything approaching good records and most of them were poor in the extreme. Hadfield (1953) repudiated this in his study of the practices of 188 practitioners where he found that three out of four "paid reasonable attention to record-keeping"; his criterion of "reasonable attention" appearing to be the fact that the doctor had the record card out for

each patient attending the surgery. Taylor (1954) did not comment on the standard of the records kept by the 94 practitioners he studied, but drew some conclusions on aspects of good record-keeping.

Interest in record-keeping in general practice in the U. K. has quickened in recent years. The Gillie Committee in their report on the Field of Work of the Family Doctor (Central Health Services Council 1963) proclaims itself to be far from satisfied with the format of the documents used for general practice records in the National Health Service and feels that much study and trial must be undertaken, urgently, so that a change acceptable to doctors can be proposed. The Tunbridge Committee in their report on the Standardisation of Hospital Medical Records (Central Health Services Council 1965) expresses the hope that general practitioner organisations will continue to give serious study to the purpose and best use of the existing records as well as to their improvement. Forbes (1968) in a paper reporting some of his work in connection with the Oxford Record Linkage Study, is of the opinion that the record envelope used in general practice today is inadequate for the purposes of modern medicine and feels that an investigation into the current record system should perhaps precede, or at least be associated with, any plans for the application of computers in community care.

As a contribution to the studies requested by Gillie, Tunbridge and by Forbes, this chapter examines some of the contents of general practitioners' medical records and some of the deficiencies which emerge.

II OBJECTS

The object of this survey is to quantify some of the data recorded about patients in their records held by general practitioners, to examine the documentation that accrues, and to assess some of the deficiencies in recording that emerge. Such an investigation, carried out single-handed by an individual practitioner, must be limited in its scope, but it is hoped that the findings may indicate certain features which could more fruitfully be explored in depth by better-qualified investigators.

The survey was carried out by means of a questionnaire designed to elicit information from a sample of patients in the author's own practice, and the data obtained was compared with information entered in the patients' medical records.

III MATERIAL

1) THE PRACTICE:

The practice is a partnership of four doctors working in close collaboration in shared accommodation situated centrally in the village-suburb of Corstorphine. A patient, who is of course registered with an individual partner, is at liberty to consult any one of the four doctors, so that any one partner frequently sees many of the patients formally registered with his colleagues.

Geographically, the practice covers a suburban area on the west of Edinburgh, with the vast majority of the practice population concentrated within a two mile radius of the practice premises.

The practice employs two full-time secretary-receptionists and three part-time nurses. As far as the records are concerned, the duties of these ancillary workers are largely confined to the filing of correspondence and the removal of the medical record envelopes from the filing drawers for the use of the doctors, and their subsequent return. With the exception of certain nursing procedures, the entry of data onto the records and the arrangement of documents filed within the records are the sole responsibilities of the doctors.

The conventional medical record envelope system (E. C's 5, 6, 7 & 8) is used. The practice has an age/sex register of the population at risk over the age of 65. One partner keeps a disease index ('E' book). Consultations are entirely by appointment,

although the full appointments system had not come into operation at the time this survey was being conducted.

2) THE PATIENTS:

The practice comprises some 10,000 patients on the combined list of the four partners. The patients represent all social strata, with a preponderance of families of professional, clerical, skilled and semi-skilled workers; there is a high proportion of civil servants and employees at all grades of a major light engineering firm. There is a considerable, and increasing, degree of mobility of patients in and out of the practice area, particularly in the newer housing estates, mainly by reason of work changes and promotion.

The type of housing occupied varies from the old properties of the central village of Corstorphine (now engulfed by Edinburgh suburb, but still considered a village by many of its inhabitants), to bungalow development along the axis of the Edinburgh-Glasgow road, a number of housing estates (both private and local authority), the decaying tenements of the Gorgie-Dalry district, and a few outlying farms and farm cottages.

IV METHOD

A pilot survey was undertaken in July/August 1968. Three questionnaires were constructed, each with slightly different wording, but all designed to elicit information about the patient and his own medical history and the medical history of his family (Appendices A, B & C). Consecutive patients seen at the surgery by the author, provided they were aged between 21 and 75, were handed an explanatory letter and a copy of the questionnaire with a brief verbal explanation of its purpose, and were invited to fill this in at home and return it in the pre-addressed stamped envelope provided.

Only those patients attending the one doctor were approached and home visits were excluded. Apart from the restrictions of the age-range chosen, exceptions were made in the cases of a few patients who were very distressed at the time of consultation, as it was felt that the introduction of a topic not directly related to the reason for consultation might possibly have added to the distress - even when the topic was introduced (as was the routine practice adopted) at the end of the consultation with some such formula as "and now could I ask you to do something for us . . ."

When the questionnaire was handed to the patient the outside of the medical record envelope was marked and the patient's name and the index number of the questionnaire entered separately into a notebook and dated. After the completed questionnaire had been received and the record processed the distinguishing mark on the

medical record envelope was cancelled.

Thirty copies of each of the three slightly differing forms of questionnaire were distributed as above. The differences were such that it was possible to analyse all the results together, but a comparison between the ways in which the replies were entered enabled a basis to be constructed for the "definitive" questionnaire used in the main survey: for instance it was found that more accurate answers could be obtained when asking specifically about siblings or children than when using a general question about relatives.

When the completed questionnaire was received it was examined along with the patient's medical record and the following points were noted and entered up on Cope-Chatterton punch cards for subsequent analysis:

A. Personal data

- 1) Sex
- 2) Age
- 3) Civil status, and whether or not this was accurately recorded.
- 4) Instances of incorrect recording of name, address or date of birth.
- 5) Accuracy of the recording of occupation or employment.

B. Clinical data

- 6) Serious illness recollected by the patient and not entered in the record.

- 7) Operations recollected by the patient and not entered in the record.
- 8) Instances where the patient had consulted a doctor in the past two years and the accuracy of recording these, or the recording of specified symptoms.
- 9) Recording of allergies or hypersensitivity reactions.
- 10) Immunisation status and its recording.
- 11) Handicaps or serious illness of a spouse.
- 12) Family history of specified diseases or disorders of specified systems.

C. Administrative data

- 13) Presence or absence of summary cards.
- 14) Number of continuation cards.
- 15) Number of other documents filed.
- 16) Length of time on list.
- 17) Availability of records relating to the patient previous to his joining list.
- 18) Number of previous doctors with whom the patient was registered.
- 19) The use or non-use of colour-coding.
- 20) The use of gusseted medical record envelopes.
- 21) Instances of records without medical record envelopes.

Following the results of the analysis of the pilot survey a simplified questionnaire was constructed (Appendix D). Two hundred patients, sampled in the same manner as outlined above (although now all patients who had submitted answers to the previous questionnaires were excluded) were invited to complete the revised

questionnaire in January-February 1969. The same methods of analysis were used as have been described with the pilot, with a more detailed investigation of items pertaining to family history and to the documentation collected in the medical record envelope.

The results of the main survey are reported below, with the addition of certain data from the pilot study where these are relevant to items which were omitted from the final questionnaire.

V RESULTS

1) RESPONSE

Of the 200 questionnaires given out, 188 were returned completed, giving a response rate of 94%. In respect of one patient who returned a questionnaire, the record could not subsequently be found; it was assumed that this patient must have moved and the record been recalled between the time that the questionnaire was given to her and the time that the results were analysed. The number of completed questionnaires which were analysed was therefore 187.

2) PERSONAL DATA

a) Sex

Of the sample of 187:

46 (25%) were male

142 (75%) were female

This 3:1 ratio of female to male patients is higher than would be expected for the average consultation patterns in the adult range, which is more nearly 2:1. The explanation may lie in the fact that the sample of patients included those attending special ante-natal clinics.

b) Age

The age range of the sample is shown in Table 1;

TABLE 1

Age range of sample

Ages	Male	Female	Total	Total as % of Sample
21 - 30	6	50	56	30%
31 - 40	11	35	46	25%
41 - 50	12	25	37	20%
51 - 60	7	18	25	13%
61 - 70	8	10	18	10%
71 - 75	2	3	5	2%
All Ages	46	141	187	100%

The preponderance of young female patients can again be explained by the inclusion of patients attending the ante-natal clinics.

c) Length of Time on List

The length of time that each patient in the sample had been on the list of one of the partners in the practice was examined.

(Table 2)

TABLE 2

Length of time on list

Length of time on list	Males	Females	Totals	Total as % of Sample
Under 6 months	5	23	28	15%
6 months - 1 year	2	11	13	7%
1 - 2 years	1	15	16	9%
2 - 5 years	7	30	37	20%
5 - 10 years	11	30	41	22%
More than 10 years	20	32	52	27%
Totals	46	141	187	100%

These figures, showing just over half of the sample as registered with the practice for less than 5 years, reflects in part the mobility of the local population, with the consequent necessity for adequate records to reinforce the doctor's memory.

Matching length of time on the list with patients' ages, tends, not unexpectedly, to confirm that patients in the older age groups (50 and over) are more settled and form a much smaller proportion of the mobile population. (Table 3).

TABLE 3

Length of time on list in relation to age

Length of time on list	21-30	31-40	41-50	51-60	61-70	71-75	Totals
Under 6 months	17	4	4	1	1	1	28
6 months-1 year	8	1	1	1	1	1	13
1 - 2 years	9	3	2	1	1	-	16
2 - 5 years	15	12	5	4	1	-	37
5 - 10 years	2	18	13	6	2	-	41
More than 10 years	5	8	12	12	12	3	52
Totals	56	46	37	25	18	5	187

d) Previous Doctors

An assessment was made of the number of practitioners through whose hands the records of the patients in this sample had passed. This information can only be obtained in approximate form; on some medical record envelopes the information is apparent from the names of doctors and dates on which the patient

had registered with these doctors, but in many cases fresh envelopes had been issued or a label placed over the names of earlier practitioners. In a high proportion of the latter instances, with the kind permission of the Clerk of the Executive Council, the information could be extracted from Executive Council records, but even these are incomplete. Difficulties also arise where National Health Service patients have been removed from Executive Council lists on moving out of the United Kingdom and subsequently returning or when patients join the list after service in the forces. The figures given in Table 4 are thus only approximately accurate, and tend to underestimate the numbers of doctors concerned.

TABLE 4
Previous Doctors

No. of Doctors with whom the patient was Previously Registered			Total	Total as % of Sample
	Male Patients	Female Patients		
None	9	11	20	11%
One	16	39	55	30%
Two	9	31	40	21%
Three	7	23	30	16%
Four or more	3	27	30	16%
Not traced	2	10	12	6%
TOTALS	46	141	187	100%

Matching the number of doctors with whom the patient was previously registered with length of time on the list of one or other of the partners in the practice being examined (Table 5), it is

seen that only 20 patients (11%) had records which had been kept only by the doctors in the practice, while 22 patients (12%) who had been registered with the practice for five years or less had previously been on the list of four or more other practices. This provides some reflection of the mobility of the population within this practice area.

TABLE 5

Length of time on list and Previous doctors

On List	Previous Doctors						Totals
	None	One	Two	Three	Four or More	Not Traced	
0 - 6 months	1	1	6	7	9	4	28
6 months - 1 year	-	2	6	2	2	1	13
1 - 2 years	-	9	4	-	2	1	16
2 - 5 years	-	11	6	7	9	4	37
5 - 10 years	2	14	12	7	5	1	41
More than 10 years	17	18	6	7	3	1	52
Totals	20	55	40	30	30	12	187

In the analysis of the pilot study, a sample of records was taken (those where the Executive Council's cards had to be consulted), and in these cases the names of the individual doctors were noted. Out of a list of 122 doctors, 9 names appeared more than once (that is to say 9 doctors had had two or more of the patients referred to in this sample on their lists prior to the patients joining the author's practice). 7 of these doctors' names appeared on 2 patients' records

each, 1 on three records and 1 on four records. From this it can be roughly calculated that approximately 10% of the names of doctors with whom patients in a given sample were previously registered are likely to be duplicated in that sample.

Taking the 155 patients who had one, two, three or four or more previous doctors (and underestimating by assuming that all these who had had four or more had only four), the names of 345 doctors are represented, and adjusting this figure by subtracting 35 as representing the 10% assumed to be duplicated, it can be calculated that these 155 records between them represent the recording habits of 310 different doctors. This is not an accurate calculation, but it does serve to show that the facts elicited from this survey emerge not simply from the recording (or lack of recording) of the four partners in the practice examined, but from a very wide range of practitioners.

(e) Non-Responders

Of the 200 patients who were invited to fill in questionnaires, 12 (6%) failed to do so. The number of non-responders is too small to hope to derive any significant information about characteristics, but for the sake of completeness such information as could be obtained is noted below.

Two of the twelve patients moved from the district between the time that the questionnaire had been issued and the time the results were analysed (in fact these moves may have been the reasons

for non-response). Of the ten remaining 6 were male and 4 female (a much higher proportion of male to female than among the group responding). All the male patients were married and the fact of marriage was not recorded with any, and the four female patients were likewise all married, the fact of marriage being noted in three.

The age-ranges of this group, related to the length of time on the practice list, are shown in Table 6.

TABLE 6

Ages and length of time on list of
non-responders

Length of time on List	Age Ranges						Totals
	21-30	31-40	41-50	51-60	61-70	71-75	
0 - 6 months	-	1	3	-	-	-	4
6 months - 1 year	-	-	-	-	-	-	-
1 - 2 years	1	-	1	-	-	-	2
2 - 5 years	-	1	-	1	-	-	2
5 - 10 years	-	-	-	-	-	-	-
More than 10 years	-	-	1	1	-	-	2
Totals	1	2	5	2	-	-	10

The number of doctors on whose lists these patients had been registered previous to joining the practice are shown in Table 7.

TABLE 7

Previous doctors of non-response

Number of Previous Doctors	Number of Patients
None	-
One	4
Two	-
Three	2
Four or more	2
Not Traced	2

Four of the ten patients had no records from doctors with whom they had been previously registered.

The reasons for consultation or diagnoses at consultation in respect of these ten patients are noted in the figures in brackets in Appendix F.

(f) Civil Status

The civil status of the sample is shown in Table 8:

TABLE 8

Civil Status

Status	Male	Female	Total	Total as %age of Sample
Married	41	120	161	86%
Separated	1	1	2	1%
Widowed	1	8	9	5%
Single	3	12	15	8%
Total	46	141	187	100%

Of the 161 married patients, the fact of marriage was not noted on the record envelope in 102 cases. This is not quite as serious as it appears at first sight, in that this figure of 102 includes all 41 married men, as up until a time subsequent to the analysis of these records, there was no provision for indicating civil status on male medical record envelopes. This is information which can sometimes be of some importance medically, and the most recent printing of the medical record envelope allows for such recording, which is a small but welcome advance.

Of the 120 women who were married, the fact was not recorded in 62 instances (52%). In some of the older forms of medical record envelope there is in fact no provision for recording the married state for either sex, and in a proportion of the 62 the fact that the patient was married, though not directly recorded, could be deduced from the fact that the previous name had been crossed out and the married surname substituted.

In respect of the 8 widows in only one case was the fact of widowhood recorded on the outside of the medical record envelope, and the one widower was similarly not recorded. In neither of the two cases of the patients who were married but separated was the fact noted in the record.

The simple recording of civil status is itself important, but its importance would be considerably amplified by the entry of date of change in the appropriate place; there is no allowance for this

on the conventional medical record envelope, and this is a small modification which should be introduced.

g) Name, Address, and Date of Birth

In three cases among the 187 records examined there were inaccuracies in the recording of names - all of these were minor. One was an inaccuracy with regard to a forename, one a misspelt surname and in the other case initials were incomplete.

One address was incorrect and one other address was incomplete (a flat number had been omitted). In an area where there is a fairly high degree of local mobility of the population such inaccuracies are probably not very surprising, and are matters of relatively minor administrative importance.

Accurate recording of date of birth is probably of greater importance, in that this is a valuable fixed point for patient identification. In this survey there were 6 instances (4%) where the date of birth was incomplete, 2 cases where the date of birth was not recorded and one instance where the date was incorrect. In some cases only the year of birth was recorded, and on some of the older records (pre-N. H. S. envelopes for National Insurance patients) there was no provision for direct recording of date of birth - the information recorded being "age at first consultation".

The figures in this section compare quite favourably with the findings of the workers who set up a long term epidemiological study of health problems in the city of Exeter, who found in the

course of their registration operation that many of the general practice records were incomplete, and in particular that addresses were often many years out of date and information about the age of the patient was frequently either missing altogether or inaccurate (Ashford & Pearson 1968). It should be noted, however, that the Exeter study involved complete practice populations while the sample studied here was of patients actually consulting, where it would be expected that administrative details would be more likely to be complete than in a sample which included patients who had not recently consulted.

h) Occupation or Employment

Of the 46 male patients questioned, in 15 cases (33%) their occupation was not recorded on the medical record envelope, and in a further 2 cases the occupation recorded was in fact incorrect. The figures in respect of the 142 female patients are shown in Table 9.

TABLE 9

Recording of occupations of female patients

Female Patients	Recorded	Not-recorded	Total	Total as % of Sample (female)
Full-time employment	14	20	34	24%
Part-time employment	7	20	27	19%
Non-employed			81	57%

These are surprising and disturbing findings; there is space on the medical record envelope for the recording of occupation and this is information of potentially considerable importance. The deficiency here probably reflects lack of system and basically lack of training in the keeping of records. It could be argued that a question on occupation should be asked whenever a patient is seen for the first time. Difficulties arise with changes in occupation and in this respect, as with changes in civil status, dating of such changes is useful, and there is provision for this on the outside of the medical record envelope.

In summary, of the 107 patients in the sample who were employed, the fact and nature of the employment was not recorded in 55 instances (51%).

3) CLINICAL DATA

a) Serious Illnesses

The definition of serious illness given on the questionnaire was "requiring hospital admission". This criterion of hospital admission was adopted simply as a convenient indicator for patients whose own interpretation of "serious" might tend to vary. Only nine instances were found of serious illness which the patient remembered, but which had not been recorded. In some cases there were records in the form of hospital reports, but there was no entry on the continuation cards. These instances are shown in Table 10.

TABLE 10

Serious illnesses reported by Patients but not entered
on Continuation Cards

<u>Male patients:</u>	Bronchopneumonia (2 cases) Tuberculosis of the knee
<u>Female patients:</u>	Pulmonary tuberculosis (healed) 2 cases (one recorded in hospital letter) Diverticulitis (recorded in hospital letter) Osteomyelitis of tibia (recorded in hospital letter) Jaundice Polio (in childhood)

In the majority of cases failure to record was due to the episode having occurred before the record was instituted, although of course instances of previously occurring serious illnesses may appear on patients' records as pertinent data recorded retrospectively.

b) Operations

Excluding relatively minor procedures (which for this purpose were defined as tonsillectomy and adenoidectomy, varicose vein ligation, stripping and injection, D's & C's, excisions of simple cysts, etc.) 29 operations were reported by patients which were found not to be recorded in the continuation cards. Four of

these operations (an appendicectomy, herniorrhaphy, laminectomy and cordotomy) were carried out on one patient, so that the total number of patients whose records were involved was 26 (14%).

These operations are recorded in Table 11.

TABLE 11

Operations reported by Patients but not entered
on Continuation Cards

<u>Male patients:</u>	<p>Appendicectomy - 5 cases (1 recorded in hospital letter)</p> <p>Herniorrhaphy (recorded in hospital letter)</p> <p>Excision of submandibular gland (recorded in hospital letter)</p> <p>Excision of osteoma of frontal sinus (recorded in hospital letter)</p> <p>Open reduction of fractured tibia and fibula (recorded in hospital letter)</p> <p>Meniscectomy</p> <p>Laminectomy</p>
<u>Female patients:</u>	<p>Appendicectomy - 10 cases (2 recorded in hospital letters)</p> <p>Pelyic floor repair - 3 cases (all recorded in hospital letters)</p> <p>Herniorrhaphy - 2 cases (one recorded in hospital letter)</p> <p>Laminectomy - 2 cases (both recorded in hospital letters)</p>

Female patients: (contd.)	Hemicolectomy (recorded in hospital letter) Cordotomy (recorded in hospital letter) Ovariectomy (recorded in hospital letter) Median Nerve Decompression (recorded in hospital letter) Eye operation(? correction of squint)
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As with the recording of "serious illnesses" (3a above), these findings have no statistical significance in the absence of data about operations or serious illnesses which are in fact recorded, and any statistical analysis would have to take account of a number of variables which would certainly increase the complexity of the undertaking. Nevertheless, from experience it is fairly clear that quantitatively the deficiencies in recording of serious illnesses (at least as here defined) and of operations are of a relatively insignificant order, especially when it is seen that the majority of instances where there is no record on the continuation cards, the information is obtainable from hospital letters filed in the envelope.

It must be noted, however, that data that is only available in hospital letters is not always easily accessible: these letters usually have to be folded to insert in the envelope and, especially when the total volume of correspondence is large, finding relevant information can be an onerous task. Thus, although information in hospital letters (which is often of considerable importance) is available it is not always easily extracted and may on occasions be missed.

c) Consultation within the past two years and occurrence of defined symptoms

In one set of questionnaires in the pilot studies patients were asked to note any episodes about which they had consulted a doctor in the past two years. There was no instance of patient consultation in the previous two years not apparently being recorded, and in fact in a good proportion of cases patients had not recollected consultations which were noted in the record. The phenomenon of "memory decay" is a factor that must generally be considered in the interpretation of any analysis of surveys conducted by questionnaire on a retrospective basis. In the present study the importance of this factor is minimised as the object of the exercise is to examine what is recorded in comparison with information which can be elicited from the patient and not necessarily the total background history and morbidity experience of the patient.

In another set of questionnaires in the pilot studies a long list of symptoms was given (based on insurance proposal forms) and the patients were asked if they had ever suffered from any of the given symptoms. This question proved to be far too diffuse and considerable difficulties were obviously encountered over definitions so that in the event the analysis of this section was abandoned. It is possible that this type of information could be obtained with greater ease and accuracy by interview techniques; clearly the limitations of a questionnaire as used here precluded useful analysis.

d) Allergies and Hypersensitivities:

In the pilot questionnaires respondents were asked to note if they were allergic to any drugs; this question was not well phrased and it is probably difficult in any case to put unambiguously. Several of the replies indicated merely intolerance to aspirin or other less-potent preparations. The question was also defectively analysed in that no note was made of allergies or hypersensitivities correctly recorded. In the event 6 instances (among 80 questionnaires analysed) were found of allergies known to the patient but not recorded. Because of the apparent difficulty in defining allergy or hypersensitivity, the question was not included in the main survey.

Although it has thus not been possible to examine satisfactorily the recording of allergies and hypersensitivities in this study, the subject is an important one; the pharmacological revolution of the past decade has brought in its trail an increase in the incidence of drug reactions and it is not only useful that these should be recorded, but important that they should be recorded prominently. This point is examined further in a later section.

e) Immunisations:

In the pilot study respondents were asked about immunisations against diptheria, whooping cough, tetanus, poliomyelitis and smallpox, and were given the alternatives "Yes/No/Don't know". The results are summarised in Table 12.

TABLE 12
Record of Immunisation

Immunisation Against (80 patients)	Yes	No	Don't Know	Recorded
Diphtheria	29	31	20	0
Whooping Cough	9	37	34	0
Tetanus	25	36	19	1
Poliomyelitis	28	37	15	2
Smallpox	54	11	15	2

This almost total lack of recording of immunisation procedures can only partially be explained by the fact that no children under 21 were included in the survey.

In the main survey, because of the obviously poor recording of immunisations revealed in the pilot, and also because a substantial proportion of patients were unsure about their immunisation status, the question was not asked, but instances of immunisations being recorded were noted, with the results shown in Table 13.

TABLE 13

Immunisation Recorded (187 patients)

Polio	Diphtheria	A. T. S.	Tet. Tox.	B. C. G.	Smallpox	Pertusis
1	1					
1						
		1				
			1			
				1		
	1				1	
1						
1				1		
				1		
1			1			
				1		
1			1			
				1		
1				1		
1	1				1	1
					1	
				1		
1						
12	3	1	3	8	3	1

Thus, out of 187 records examined, only 24 (12%) contained any record of immunisation procedures, and of these in only 6 cases were the use of more than one antigen noted.

The responsibility for carrying out and supervising immunisations tend to be divided between the local health authority and general practitioners, and in fact the information about many of the immunisations recorded above was extracted from notifications sent to general practitioners by the local health authority.

There is reason to believe that recording of immunisations has improved recently, and this is facilitated by the newer printing of the medical record envelope providing space on the back specifically for such recording. If this supposition (that such recording of immunisations on general practice records is improving) is correct, it would not be likely to show in this survey because of the restriction in age range which excluded children.

The value of recording immunisation procedures rests largely in the means provided for checking that full prophylactic schedules are being carried out. This is a field where the employment of computers, both for recording and for follow-up can be of the greatest practical help, and successful schemes are already in operation (Galloway, 1963 and 1966).

f) Handicap of Spouse:

It was felt that it would be of interest to know when a patient's spouse was unable to carry on his or her normal activities on account of some handicap or chronic illness, as such disability will inevitably have a considerable effect on the other partner in the marriage and will often be a contributory factor in the assessment of that partner's medical and social problems.

In the sample of 187, 8 instances came to light - all referring

to the husbands of female respondents. 5 of these cases were recorded: in three cases the husband suffered from depression (one of these associated with a cerebro-vascular accident), one had severe angina and one was epileptic. The three unrecorded cases comprised one of crippling rheumatoid arthritis, one leg amputee and one husband who was both deaf and depressed.

The number involved is too small to allow of any firm conclusions being drawn, but it may be observed that this sort of information is not only useful to record, but should be recorded in some standard part of the record, separate from the day-to-day continuation data.

g) Family History

A knowledge of the history of a patient's family, in terms of major morbidity suffered, may provide important background material for the understanding of that patient's own illnesses. In this section an analysis is made of the items of family history elicited from patients by means of the questionnaire, compared with the actual recording of such items in the patients' medical records.

In the pilot studies two sets of questionnaires asked simply for history in the family and one set asked in more specific detail about parents, children and siblings. As the response was equally good, the more specific form asking for details of parents, children and siblings was adopted for the main survey.



It is difficult to attribute precise significance to family history, either in terms of pathology or of relationship. An arbitrary decision was therefore made in analysing these results to accept history of illness in parents, children and siblings, but to exclude grandparents, aunts and uncles, cousins and more distant relatives. The findings are appended; in some cases more than one relative is affected per respondent, and such instances are given in detail.

A general discussion of these results follows at the end of this chapter. In Appendix E an estimate is made of the likely importance or otherwise of items of family history which have been reported by patients but not recorded in their records.

1) Respiratory System

Patients were asked "Is there any history in your family, apart from yourself, of chest trouble, (e. g. bronchitis, asthma, or TB)?"

TABLE 14

Patients reporting family history of respiratory disease

	60 patients (32%) reported a family history
with	3 patients (1%) the history was recorded in the patient's record
with	57 patients (31%) the history was not recorded in the patient's record
	13 patients (6%) reported items of respiratory illness in more than one relative.

TABLE 15

Family history of Respiratory Disease entered in patient's records

Condition	Parents	Siblings	Children
Asthma	-	-	3
Tuberculosis	-	1	-

One of these patients had two children who were asthmatic, one of whom died in status asthmaticus; this was clearly a relevant factor in the patient's own medical history (he suffered from chronic asthmatic bronchitis).

TABLE 16

Family History of Respiratory Disease not entered in patient's records

Condition	Parents	Siblings	Children	Total
Asthma	9	3	7	19
Bronchitis	17	7	-	24
Asthmatic Bronchitis	-	-	1	1
Chronic Bronchitis	6	-	-	6
Tuberculosis	7	9	1	17
Pneumonia	2	-	-	2
Pneumoconiosis	1	-	-	1
Pleurisy	-	1	-	1
"Chest Trouble"	1	-	-	1
TOTALS	43	20	9	72

Two of the respondents reported instances where there was more than one respiratory illness in a single relative:

- (1) Father with tuberculosis and bronchitis.
- (2) Father with bronchitis who died of pneumonia.

TABLE 17

Patients reporting instances of respiratory illness in more than one relative such instances not entered in patient's record

- | | |
|------|--|
| (1) | Father with bronchitis, mother died of tuberculosis aged 39. |
| (2) | Brother with bronchitis, mother died of pneumonia aged 79. |
| (3) | Two children both asthmatic. |
| (4) | Both parents with a history of tuberculosis. |
| (5) | Mother died of pulmonary tuberculosis aged 39, child with Asthma. |
| (6) | Bronchitic father, sister died of tuberculosis aged 17. |
| (7) | Sister with bronchitis, brother with history of pleurisy. |
| (8) | Brother died of tuberculosis aged 27, child with asthmatic bronchitis. |
| (9) | Father and brother with history of tuberculosis. |
| (10) | Mother chronic bronchitic, sister with history of tuberculosis. |
| (11) | Mother chronic bronchitic, brother asthmatic. |
| (12) | Two sisters with history of tuberculosis. |

Of the conditions listed in this section, only asthma has a clear hereditary component (although the aetiology of asthma is often, if not indeed usually, multifactorial). Sherman (1963) refers to the "hereditary predisposition" to asthma and Grant & Harris (1967) observe that "there appears to be some basic constitutional defect which renders patients liable to develop asthma. A family history of asthma or some other manifestation of allergy is often obtained..." Beaumont (1966) stresses the nervous element: "the heredity of asthma is not always direct, the nervous instability sometimes being evidenced in other generations by migraine, epilepsy or hysteria". In this respect it is of interest to note that of the 19

patients reporting a family history of asthma, not noted in their own records, one had himself a history of asthma and 6 others either presented with, or had a history of, anxiety or depression. In the 41 patients who had a family history of other respiratory conditions, one presented with asthma and 7 presented with or had a past history of anxiety or depression.

It cannot be assumed without further enquiry that a family history of "asthma" is necessarily always of significance; three respondents in this survey reported asthma in siblings or children, confined to infancy or early childhood, and some authorities would argue that this is a less serious variant of the true asthma of later life: "all that wheezes is not asthma" (Fry, 1961). As the term "asthma" is in fact a description of a symptom complex, it is inevitable that difficulties of definition will arise, especially when this is a second-hand description passed on by a patient about a relative. The important point however, is not the accuracy of the description, but the patient's awareness that there is a family history of a condition which is generally accepted as carrying some sort of familial predisposition, whether directly genetic or not.

The other conditions in this section on respiratory diseases (apart from the cryptic "chest trouble") are largely the results of infection of the respiratory tract and thus tend to form predominantly environmental rather than familial influences. Such examples in this survey as those of patients with a parent dying of pneumonia at the age of 79, or a sibling dying of bronchitis at 65, have probably

got minimal significance. In contrast, knowledge of the death of a mother at the age of 39, or a sister at the age of 22 of pulmonary tuberculosis can help in the understanding and management of a patient who persistently requires reassurance when her own children develop coughs from minor upper respiratory infections.

2) Cardiovascular System:

Patients were asked "Is there any history in your family, apart from yourself, of heart trouble (e. g. angina, coronary thrombosis)?"

TABLE 18

Patients reporting family history of cardiovascular disease

	61 patients (33%) reported a family history
with	4 patients (2%) the history was recorded in the patient's record.
with	57 patients (31%) the history was not recorded in the patient's record.
	5 patients (3%) reported items of cardiovascular illness in more than one relative

TABLE 19

Family history of Cardiovascular Disease entered in patient's record

Condition	Parents	Siblings	Children	Totals
Coronary Thrombosis	2	1	-	3
Rheumatic Heart Disease	-	1	-	1
Angina	1	-	-	1
TOTALS	3	2	-	5

One of these patients had two relatives with cardiovascular complaints: mother had angina and died aged 60 and a brother had had a coronary thrombosis.

TABLE 20

Family history of Cardiovascular Disease not entered in patient's Record

Condition	Parents	Siblings	Children	Totals
Coronary Thrombosis	23	5	2	30
Angina	13	1	-	14
Rheumatic Heart Disease	3	2	-	5
Stokes Adams Attacks	1	-	-	1
Congestive Cardiac Failure	1	-	-	1
Pulmonary Embolism	1	-	-	1
"Heart Attack"	2	-	-	2
"Heart Trouble"	5	2	-	7
Arrhythmia	1	-	-	1
TOTALS	50	10	2	62

TABLE 21

Patients reporting instances of cardiovascular illness in more than one relative, such instances not entered in patient's record

- | | |
|-----|---|
| (1) | Both parents and two brothers died of "heart trouble". |
| (2) | Mother died of a coronary thrombosis, son had history of coronary thrombosis. |
| (3) | Father and sister both died of "heart trouble" |
| (4) | Father died of coronary thrombosis, mother died in congestive failure. |

Ischaemic heart disease is the commonest single cause of death in the British Isles. Wilson (1966) is of the opinion that hereditary factors may be important in the pathogenesis of coronary disease, although other authors in standard textbooks of medicine give no support to this contention (Friedberg, 1963; Turner, 1966). Wilson himself goes on to point out that although there is a relatively high incidence of coronary disease, hypertension and degenerative vascular affections in the close relatives of patients with coronary disease, the relationship is by no means a close one and in general a common disease in the community is more likely to be due to environmental factors than genetic ones.

In this study only two out of the 40 patients who had a family history of coronary heart disease had themselves a history of degenerative vascular disease - one had had a myocardial infarct and the other a cerebro-vascular accident.

In assessing the significance of family history of such common conditions, age at death is a factor which should be considered. Of the 21 relatives who were reported in this survey as having died of coronary thrombosis or angina, 8 died under the age of 60. It is probable that the doctor's knowledge that his patient had a close relative die of coronary artery disease at a relatively early age will be helpful in the management of that patient if he presents with symptoms which have a possible cardiovascular origin even if this factor is considered to be environmental rather than hereditary.

It could well be argued that such knowledge might be more valuable if gained prior to the consultation at which such symptoms are presented, as direct enquiry at such a time could enhance the anxiety inevitably present.

3) Digestive System:

The question asked was "Is there any history in your family, apart from yourself, of Digestive trouble (e. g. ulcer, chronic indigestion, colitis)?"

TABLE 22

Patients reporting family history of digestive illness

	48 patients (26%) reported a family history
with	3 patients (1%) the history was recorded in the patient's record.
with	45 patients (25%) the history was not recorded in the patient's record.
	6 patients (3%) reported items of digestive illness in more than one relative.

Three patients noted disorders of the digestive system in relatives, where such disorders were entered as family history in the respondent's own record. These three all related to history of duodenal ulcer in a parent; in one case a father dying as the result of a pefforated ulcer at the age of 46.

TABLE 23

Family History of Digestive Illness not entered in patient's record

Conditions	Parents	Siblings	Children	Totals
Peptic Ulcer (Unspecified)	22	7	-	29
Duodenal ulcer	3	1	1	5
Gastric ulcer	4	-	-	4
Dyspepsia	-	-	2	2
Chronic Indigestion	3	-	-	3
Hiatus Hernia	1	2	-	3
Colitis	3	2	-	5
Cholecystectomy	-	2	-	2
Hepatic Cirrhosis	1	-	-	1
T. B. Peritonitis	-	-	1	1
TOTALS	37	14	4	55

TABLE 24

Patients reporting instances of gastro-intestinal illness in more than one relative, such instances not entered in patient's record.

- | | |
|-----|---|
| (1) | Mother with gastric ulcer, father with duodenal ulcer and sister with peptic ulcer (site unspecified) |
| (2) | Mother and brother with peptic ulcer. |
| (3) | One brother with peptic ulcer, one brother with colitis. |
| (4) | Mother and one brother with peptic ulcer. |
| (5) | One daughter with duodenal ulcer, one daughter with history of T. B. peritonitis |
| (6) | Two sons with history of dyspepsia. |

Kirsner (1963) is of the opinion that the striking incidence of peptic ulcer in some families, the frequency of ulcers among the living siblings of ulcer patients, and the occasional ulcers in homozygous twins indicate genetic influences. Card (1967) states that there seems no doubt that in peptic ulcer there is a definite hereditary factor and a certain tendency for the disposition to ulcer formation to run true to type, that is, for patients with duodenal ulcer to beget children who develop duodenal ulcer, and likewise for gastric ulcer. Hunt (1966) observes that chronic peptic ulcer frequently occurs in several members of a family in one or more generations - a familial incidence being more common with duodenal than with gastric ulcers. He also notes that in familial cases the symptoms tend to begin at an earlier age than usual, and there is a greater tendency for anastamotic ulcers to form after operation, and in some families there is a special tendency for the ulcers to be complicated by haemorrhage.

In this series only three out of the 38 patients with a family history of peptic ulcer had themselves proven ulcers (two out of the 35 with family history not recorded in their own records, one of the three where the family history of ulcer was recorded in the patient's own records.)

4) Central Nervous System:

Respondents were asked "Is there any history in your family, apart from yourself, of nervous trouble (e. g. epilepsy,

depression, "nerves", anxiety)?" In the analysis the responses were divided out for coding into organic diseases of the central nervous system on the one hand and psychological illnesses on the other.

TABLE 25.

Patients reporting family history of C.N.S. disease

	9 patients (5%) reported a family history
With	4 patients (2%) the history was recorded in the patient's record
With	6 patients (3%)* the history was not recorded in the patient's record
	1 patient reported instances of central nervous system disease in more than one relative.

* The discrepancy between the sum of the number of patients with history recorded and history not recorded and the total of patients reporting history is due to mixed incidence (i. e. a patient having a family history of disease in this category, some instances of the family history being recorded and some not being recorded).

TABLE 26.

Family history of C.N.S. Disease entered in patient's record

Condition	Parents	Siblings	Children	Totals
Huntington's Chorea	1	-	-	1
Hydrocephalus	-	-	1	1
Congenital Deafness	-	-	1	1
Parkinson's Disease	1	-	1	2
Diffuse Cerebral Sclerosis	-	-	2	2
TOTALS	2	-	5	7

One of these patients had a father with Parkinson's disease and two sons (one dead) with diffuse cerebral sclerosis.

The recording of Huntington's chorea in a parent is highly significant, as this is a disorder with a tragically direct hereditary aetiology as an autosomal dominant trait.

TABLE 27.

Family history of C.N.S. Disease not entered in patient's record

Condition	Parents	Siblings	Children	Totals
Multiple Sclerosis	1	-	-	1
Spasticity	-	-	2	2
Congenital Deafness	-	2	3	5
Meningitis	-	1	-	1
Menieres Disease	-	1	-	1
TOTALS	1	4	5	10

In Table 27 above the 2 incidents of spasticity refer in fact to the same child - both of whose parents happened to be in the sample studied. One of the cases of congenital deafness refers to a brother of the congenitally deaf child entered in Table 25 - by curious chance a note was made in the parent's record of the deafness of one, but not the other child. The occurrence of meningitis refers to a brother who died at the age

of 2 and is clearly of minimal significance.

With multiple sclerosis, in the great majority of the cases there is nothing in the family history to which the disease can be attributed, but there is nevertheless a well recognised condition of familial multiple sclerosis, where although the disease is the same as in the others its occurrence in a parent and child, or in two siblings is too frequent to be due to chance (Williams 1966).

5) Psychological Illnesses :

The reported incidence of family history of psychological illness in the close relatives of the respondents is lower than might be expected from the general prevalence of psychological illness in the community. This may reflect difficulties on the part of the respondents either in defining such conditions or accepting them as illnesses.

TABLE 28.

Patients reporting family history of psychological illness

	27 patients (14%) reported a family history
With	3 patients (1%) the history was recorded in the patient's record
With	24 patients (13%) the history was not recorded in the patient's record
	6 patients (3%) reported instances of psychological illness history in more than one relative.

TABLE 29.

Family history of Psychological Illness entered in patient's record.

Conditions	Parents	Siblings	Children	Totals
Personality Disturbance	-	-	1	1
Anxiety State	-	-	1	1
"Nervous Trouble"	-	1	-	1
TOTALS	-	1	2	3

TABLE 30.

Family history of Psychological Illness not entered in patient's record

Conditions	Parents	Siblings	Children	Totals
Mental Deficiency	-	1	-	1
Depression	5	6	-	11
Anxiety	-	1	-	1
"Nerves"	11	9	-	20
TOTALS	16	17	-	33

TABLE 31.

Patients reporting instances of psychological illness in more than one relative, such instances not entered in patient's record.

- | |
|---|
| <p>(1) 3 sisters with depression</p> <p>(2) Mother and sister with depression</p> <p>(3) and (4) Mother and sister suffering from "nerves" - 2 cases</p> <p>(5) Mother and brother suffering from "nerves"</p> <p>(6) Father and sister suffering from "nerves"</p> |
|---|

Lewis (1966) is of the opinion that in the affective disorders heredity is the most constant single cause. Other authors are more cautious; thus Henderson & Gillespie (1956): "though the evidence is as yet very incomplete, multifactor inheritance is thought to play some role in the aetiology of the psycho-neuroses." Stanton & Marshall (1967) state that "the predominant intrinsic factor in psychological illness is the patient's inheritance, which involves not only a general tendency to mental disturbance, but a specific predisposition to certain types of illness."

In psychological medicine, more than perhaps any other discipline, the complexity of the interaction of constitutional and environmental factors defy attempts at aetiological precision. This lack of precision extends to definition and this is reflected in the unsatisfactorily vague classification in the tables above. It is reasonable to assume however, that when a patient describes

a relative as suffering from "nerves" the affliction is likely to be some variant of the chronic anxiety - depressive spectrum. The importance to the patient of a family history of psychological illness lies not so much in the exact nature of the diagnosis but in the severity of the condition and the fact that close relatives are or have been the victims of psychological stress. It is, therefore, important that such family history should be recorded, even in the absence of accurate classification.

In this section, of the 24 patients who had a family history of psychological illness, 5 were themselves suffering from, or had suffered, anxiety states or depressive illnesses.

6) Diseases of the Eye:

Patients were asked "Is there any history in your family, apart from yourself, of eye trouble (e. g. glaucoma, blindness) ?"

15 patients (8%) reported a family history and in no case was this history entered in the patients' own record.

TABLE 32.

Family history of Eye Disease not entered in patient's record

Conditions	Parents	Siblings	Children	Totals
Glaucoma	3	1	-	4
Cataract	6	2	-	8
Blindness (Cause not known)	3	-	-	3
TOTALS	12	3	-	15

Harvard Davis (1968) has pointed out in connection with screening programmes that tonometry surveys have shown that intraocular pressure follows a continuous distribution and that the only discrete population worth screening are those people with a family history of glaucoma. He goes on to observe that the general practitioner is probably the only person who has this information concerning family history in a potentially readily available form. This latter contention is unfortunately not borne out by this study.

7) Malignant Disease:

The question asked was "Is there any history in your family, apart from yourself, of cancer?" Although the question was confined to cancer the one reply under the category of "other" referring to a family history of sarcoma was included in the analysis of this section.

TABLE 33.

Patients reporting family history of malignant disease.

	40 patients (21%) reported a family history.
With	5 patients (3%) the history was recorded in the patient's record.
With	37 patients (20%) [*] the history was not recorded in the patient's record.
	4 patients (2%) reported instances of malignant disease in more than one relative.

* see footnote below Table 25.

TABLE 34.

Family history of Malignant Disease entered in patient's record.

Conditions	Parents	Siblings	Children	Totals
Cancer (Site Unspecified)	-	1	1	2
Cancer of Breast	1	-	-	1
Cancer of Bowel	1	-	-	1
Cancer of Brain	-	1	-	1
TOTALS	2	2	1	5

TABLE 35.

Family history of Malignant Disease not entered in patient's record.

Conditions	Parents	Siblings	Children	Totals
Cancer (Site Unspecified)	12	2	1	15
Cancer of Lung	3	1	-	4
Cancer of Breast	1	-	1	2
Cancer of Cervix	1	-	-	1
Cancer of Uterus	1	-	-	1
Cancer of Brain	-	1	-	1
Cancer of Trachea	1	-	-	1
Cancer of Larynx	3	-	-	3
Cancer of Stomach	3	-	-	3
Cancer of Bowel	4	1	-	5
Cancer of Liver (? Metastatic)	1	-	-	1
Sarcoma	2	1	-	3
TOTALS	32	6	2	40

TABLE 36.

Patients reporting instances of malignant disease in more than one relative, such instances not entered in patient's record.

- (1) Father, sister and son all with cancer (sites unspecified) - the case of the son but not the other relatives was recorded in the patient's record.
- (2) Mother with sarcoma, brother with brain tumour - the case of the brother but not the mother was recorded in the patient's own record.
- (3) Mother with carcinoma of the breast, brother with sarcoma.
- (4) Two brothers, one with cancer of the lung, the other with bowel cancer.

Genetic factors probably play little, if any, part in the pathogenesis of most malignant disease. Montgomery (1965) observes that apart from the classical examples of polyposis coli, xeroderma pigmentosa, retinoblastoma and generalised neurofibromatosis, true genetically induced human tumours are rare. However, there is evidence that in some malignant disease of the gastro-intestinal tract heredity may play a part: a hereditary history can be found in approximately 20% of cases of carcinoma of the stomach (Hunt, 1966) and there is some indication of a familial tendency in patients with precancerous intestinal polyps and established intestinal cancer which suggests that genetic factors may be involved (Morson, 1969).

Whether or not genetic factors play a part in the causation of malignant disease, the occurrence of such conditions in near

relatives frequently constitutes a source of considerable stress, and for this reason the recording of such instances in the patient's family history may often be valuable.

In this series, of the 33 fatal cases of malignant disease reported where the age at death was given, 15 were aged 60 or less, and it is suggested that in these instances especially the effect on the patients whose close relatives are affected is likely to be particularly significant.

8) Strokes:

Patients were asked "is there any history in your family, apart from yourself, of strokes?"

TABLE 37.

Patients reporting family history of strokes.

	28 patients (15%) reported a family history.
With	2 patients (1%) the history was recorded in the patient's record.
With	26 patients (14%) the history was not recorded in the patient's record.
	No patient reported histories of strokes in more than one relative.

In all the cases reported the relative concerned was a parent.

As a stroke is a common cause of death as an end point in degenerative vascular disease, its importance as part of a patient's family history is generally fairly minor.

Of the 24 cases which were reported as fatal and where the age at death was given, the mean age at death was 71 and only 2 cases were reported below the age of 60.

9) Diabetes:

The question asked was "Is there any history in your family, apart from yourself, of diabetes?"

TABLE 38.

Patients reporting family history of diabetes.

9 patients (5%) reported a family history.	
With 1 patient	the history was recorded in the patient's record
With 8 patients (4%)	the history was not recorded in the patient's record
No patient reported instances of diabetes in more than one relative.	

TABLE 39.

Instances of family history of Diabetes

	Parents	Siblings	Children	Totals
Recorded	1	-	-	1
Not Recorded	3	5	-	8
TOTALS	4	5	-	9

A familial tendency to diabetes exists but the precise genetic factor and mode of inheritance have not yet been identified

(Davidson & Strong, 1966), although Bondy (1963) is of the opinion that the predisposition to diabetes is inherited as an autosomal mendelian recessive with incomplete penetrance.

How far diabetes is genetically homogeneous is uncertain but Harvard Davis (1968) observes that a family history of the condition increases the risk to the individual from four to six fold. Clearly, therefore, the recording of a family history of diabetes is of considerable importance.

In this survey, of the 9 patients reporting a family history of diabetes, one himself was a known diabetic, and in his case the family history had not been recorded.

10) High Blood Pressure:

Patients were asked "Is there any history in your family, apart from yourself, of high blood pressure?"

TABLE 40.

Patients reporting family history of high blood pressure.

	31 patients (17%) reported a family history.
With	4 patients (2%) the history was recorded in the patient's record.
With	27 patients (14%) the history was not recorded in the patient's record.
	4 patients (2%) reported instances of high blood pressure in more than one relative.

TABLE 41.

Instances of family history of high blood pressure.

	Parents	Siblings	Children	Totals
Recorded	3	1	-	4
Not Recorded	27	4	-	31
TOTALS	30	5	-	35

TABLE 42.

Patients reporting instances of high blood pressure in more than one relative, such instances not entered in patient's record.

- (1) Both parents and a sister
- (2) and (3) Father and sister - 2 cases
- (4) Both parents.

An analysis was also made of patient's relatives reported as suffering from high blood pressure in association with other manifestations of vascular degenerative disease: 14 instances were reported.

TABLE 43.

Association between HBP & other vascular degenerative disease.

- 3 relatives had high blood pressure in association with both ischaemic heart disease and strokes.
- 8 relatives had high blood pressure associated with ischaemic heart disease (angina or coronary thrombosis).
- 3 relatives had high blood pressure in association with strokes.

Using interview rather than questionnaire techniques, it might be possible to distinguish histories of essential hypertension from histories of other forms of hypertensive disease, and to get a fully accurate picture account would also need to be taken of the criteria involved in each case in reaching the diagnosis of "high blood pressure."

However, essential hypertension is far the commonest type of high blood pressure, and in essential hypertension there is a clearly recognised familial tendency which has been judged to be one of the most important of predisposing factors (Perera, 1963; Wilson, 1966). Turner (1966) has estimated that if both parents have hypertension the incidence of the disease in the children is about 45 per cent. and if one parent has hypertension about 30 per cent. It would seem therefore that the recording of a family history of high blood pressure (especially where more than one member of the family is involved) may have some predictive value, although in view of the difficulties of precise definition such findings require to be interpreted cautiously.

In this survey in only one of the 31 patients giving a family history of high blood pressure was a finding of confirmed hypertension recorded.

11) Other Conditions:

The question asked was "Is there any history in your family, apart from yourself, of any other serious illness?" (i. e. other than

those categories listed in the preceding 9 questions). As no specific guidance was given and the interpretation of the phrase "serious illness" left to the respondents, it may well be that the data which follows under-represents the overall incidence of these conditions in the respondents' families.

TABLE 44

Patients reporting family history of other illnesses

	19 patients (10%) reported a family history
with	2 patients (1%) the history was recorded in the patient's record
with	17 patients (9%) the history was not recorded in the patient's record

The two reported instances of family history of other conditions already recorded in the patients' records were of a parent with rheumatoid arthritis and a sibling with renal failure.

TABLE 45

Instances of family history of other illnesses not recorded in Patients' record

Conditions	Parents	Siblings	Children	Totals
<u>Thyroid Disorders:</u>				
Hyperthyroidism	1	-	-	1
Non-malignant Goitre	-	1	-	1
"Thyroid Trouble"	1	-	-	1
<u>Anaemias:</u>				
Pernicious Anaemia	1	-	-	1
"Anaemia"	1	-	-	1
<u>Renal Disease:</u>				
Chronic Pyelonephritis	1	-	-	1
Nephrotic Syndrome	1	-	-	1
Renal Calculi	1	-	-	1
T. B. Kidney	-	-	1	1
<u>Locomotor Disorder :</u>				
Rheumatoid Arthritis	1	2	1	4
Gout	-	1	-	1
Osteoarthritis	1	-	-	1
"Arthritis"	-	2	-	2
Totals	9	6	2	17

In the aetiology of hyperthyroidism a genetic or constitutional predisposition is suggested by a strong familial incidence in some patients (Stanbury, 1963; Bayliss, 1966). In this survey, of the two patients reporting thyroid disorder in relatives, one had thyrotoxicosis herself.

In the aetiology of pernicious anaemia there is a strong genetic factor which probably involves an inherited disposition to atrophy of the gastric mucosa (Witts, 1966). Moore (1963) states that about one in every five patients with pernicious anaemia gives a family history of the condition. Therefore the recording of a family history of pernicious anaemia may be of considerable importance.

The recording of a family history of iron-deficiency anaemia is probably of relatively little importance - it is a common disorder, with no familial pattern in its aetiology. The fact that only one patient reported a family history of anaemia is probably due to the fact that few patients considered this to be a "serious illness".

Hereditary factors appear to play little part in the pathogenesis of renal disease (with rare exceptions such as congenital cystinuria, congenital oxaluria and Alport's syndrome).

In diseases of the locomotor system hereditary factors are thought to play some part. With gout there appears to be a genetically determined predisposition; it is suspected that

rheumatoid arthritis can also be inherited as an inborn error of metabolism (Copeman, 1966) or at least that there is a genetically predisposed constitution or susceptibility in some patients with rheumatoid disease (Robinson, 1963). In osteoarthritis it has been suggested that in those cases with many joints affected there may be an inherited defect of the articular cartilage (Duthie, 1966), while Copeman (1966) is of the opinion that there is increasing evidence of a genetic factor in all cases. In this series, of the 8 patients who reported a family history of locomotor disorder, only one had himself evidence of locomotor disease.

12) Summary of findings on Family History:

The results of this survey in respect of family history are summarised in the tables below. These findings are further discussed in a later section.

TABLE 46

Patients reporting family history (Numbers and % of sample)

System or condition	Recorded		Not Recorded		Totals	
	No.	%	No.	%	No.	%
Respiratory system	3	1%	57	31%	60	32%
Cardiovascular system	4	2%	57	31%	61	33%
Digestive system	3	1%	45	25%	48	26%
Central Nervous System	4	2%	6	3%	9	5%
Psychological Illness	3	1%	24	13%	27	14%
Eye Diseases	-	-	15	8%	15	8%
Malignant Disease	5	3%	37	20%	40	21%
Strokes	2	1%	26	14%	28	15%
Diabetes	1	-	8	4%	9	5%
High Blood Pressure	4	2%	27	14%	31	17%
Other	2	1%	17	9%	19	10%

TABLE 47

Reported Instances of Family History

	Recorded				Not Recorded			
	Par.	Sib.	Chil.	Totl.	Par.	Sib.	Chil.	Totl.
Respiratory Syst.	-	1	3	4	43	20	9	72
Cardiovascular Syst.	3	2	-	5	50	10	2	62
Digestive Syst.	3	-	-	3	37	14	4	55
Central Nervous Syst.	2	-	5	7	1	4	5	10
Psychological Illness	-	1	2	3	16	17	-	33
Eye Diseases	-	-	-	-	12	3	-	15
Malignant Disease	2	2	1	5	32	6	2	40
Strokes	2	-	-	2	26	-	-	26
Diabetes	1	-	-	1	3	5	-	8
High Blood Pressure	3	1	-	4	27	4	-	31
Other	1	1	-	2	9	6	2	17
Totals	17	8	11	36	256	89	24	369

Of a total of 405 reported instances of family history, only 36 (9%) were found to be recorded in the patients' records. By using arbitrary definitions of "importance" it is calculated (Appendix E) that 210 out of the 369 instances of family history reported by patients, but not recorded in their records (57%) could be considered to be "important" information, likely to be of value in the management of the patient.

4) DOCUMENTATION

In the 1920's, when the medical record envelope was introduced, it is probably true to say that considerably fewer items of service were in general rendered to patients than is the case today. The increase in the total quantity of medical care being delivered brings with it an increase in correspondence and an increase in recording. One of the major problems involved in the use of the medical record envelope as the holder for the general practitioner's medical records is the accumulation of bulk; in complex cases the phenomenon of the "fat envelope" is a daunting prospect.

In this practice an occasional "weeding out" process is performed on certain records to rid them of irrelevant or obsolete material, but this is not a routine, and the analysis which follows of the amount and nature of the documentation which has accrued in the medical record envelopes of the 187 patients who returned completed questionnaires gives a quantitative picture of the present situation.

(a) Continuation Cards

The number of continuation cards present in each medical record envelope was examined (Table 48).

TABLE 48

Continuation cards in the medical record
envelope

Number of Continuation Cards	Male Patients	Female Patients	TOTALS
ONE	15	34	49
TWO	15	53	68
THREE	9	21	30
FOUR	5	13	18
FIVE	2	11	13
SIX	-	3	3
SEVEN	-	3	3
EIGHT	-	1	1
NINE	-	1	1
TEN	-	1	1
TOTALS	46	141	187

The number of continuation cards present in a patient's medical record envelope is dependent on several factors, including the age of the patient and extent of his medical history, the number of doctors with whom he has been registered, and the assiduity with which succeeding practitioners get rid of blank cards. Blank cards are found in the envelopes often by reason of the fact that new continuation cards are issued whenever a patient changes doctor, and because of a lag in the registration process. If the patient has consulted the doctor before the documents have been forwarded by the Executive Council, the patient's record with that doctor is

often initiated on a separate card which continues to be used after the new continuation card comes to hand in the medical record envelope. In the 187 records examined, a total of 59 blank cards were found in 44 (24%) envelopes, distributed as in Table 49

TABLE 49

Blank continuation cards

Number of Blank Cards	Number of Medical Record Envelopes Involved
ONE	34
TWO	6
THREE	3
FOUR	1

Kuenssberg (1968) reports a survey of 2,000 records received from N. H. S. doctors, of which 43% had either a blank continuation card or none at all; in the present survey all the records referred to patients who had consulted the doctor at least once and who therefore had some entry on at least one continuation card.

(b) Documents other than Continuation Cards

An analysis was made of the number of documents other than continuation cards held in the medical record envelopes of the 187 respondents. These documents included hospital letters and consultants' reports, pathological reports and obstetric record cards. The breakdown is given in Table 50

TABLE 50

Documents other than continuation cards in the
medical record envelopes

Number of Documents	Number of Records		
	Male Patients	Female Patients	Totals
0 - 4	17	34	51
5 - 9	12	33	45
10 - 14	10	38	48
15 - 19	3	10	13
20 - 24	1	10	11
25 - 29	1	4	5
30 - 34	1	2	3
35 - 39	-	2	2
40 - 44	1	2	3
45 - 49	-	2	2
50 - 54	-	2	2
66	-	1	1
80	-	1	1
TOTALS	46	141	187

Although half of the records examined contained ten or more documents, the arithmetic mean of the number of documents held in the records of male patients was 8 and in the records of female patients 13. Marsh and Simons (1967) report average numbers of documents in the records of the practice they examined as 4 for males and 7 for females. These figures seem to indicate that the volume of documents found in the records in this survey are double

those found in Marsh's practice; however, Marsh & Simons do not state how they arrive at their average. In the current survey the median number of documents was 6 for males and 10 for females and the modal values - arrived at by using the formula $\text{Mode} = \text{Mean} - 3 (\text{Mean} - \text{Median})$, (Hill; 1966) - are 2 and 4 respectively.

The total number of documents filed does not reflect accurately the thickness of the bundle which accumulates in the medical record envelope. Unfortunately (and this is one of the major drawbacks of the medical record envelope system) the majority of documents received have to be folded once or twice to fit into the envelope.

Rough calculations of thickness were made (ignoring differences of paper quality and thickness) by estimating the thickness of obstetric record cards and letters not requiring to be folded as one, letters requiring to be folded once as two, letters requiring to be folded twice as four and old medical record envelopes filed in the current envelope (astonishingly three such were found in the course of this survey) as eight. Using this arbitrary method of calculation the following results were obtained for envelopes containing 11 - 15 documents (Table 50) .

TABLE 51

Estimated 'thickness' of document

Number of Documents Filed	Total Thickness (Arithmetic Mean)
11	32
12	32
13	33
14	43
15	49

Taking the same criterion for 'thickness', and also listing the major morbidity categories recorded, Table 52 shows the position in respect of the 9 really "fat" envelopes encountered in the survey - those containing 40 documents or more, in addition to the continuation cards.

TABLE 52

Contents of very "fat" Envelopes

Number of Documents Filed	Thickness	Morbidity
40	131	Ovarian Cyst, Oophorectomy
41	149	Depression
42	106	Asthma, Duodenal Ulcer
45	140	Epilepsy
47	166	Paraplegia, Cordotomy, Laminectomies, Herniorrhaphy
51	165	Diverticulitis, Depression
53	196	Asthma
66	195	Epilepsy, Laminectomy, Rheumatoid Arthritis, Peptic Ulcer, Personality Problem
80	260	Angina, Obesity, Depression Cholecystitis, Ventral Hernia.

These figures represent a considerable amount of documentation and hence bulk in filed records. They do not take into account the occasional destruction that is carried out of material that has only ephemeral interest or that has become obsolete. This "weeding out" becomes a necessary procedure if filing accommodation is limited, but the very process, and more importantly the extraction of relevant information, is rendered extremely difficult and time-consuming by the nature of the bundle of folded papers, often in haphazard order.

(c) Gussetted Medical Record Envelopes

A new form of medical record envelope, with a gusset (similar to a single fold of a concertina file) has recently been introduced by the Health Departments, in an effort to accommodate some of the growing bulk of correspondence which accrues. These envelopes are now being issued routinely, but provision was made in 1961 for such envelopes to be available on request for the records of patients where the collected documents were already taxing the capacity of the earlier envelope. In this survey 18 patients had their records filed in the new gussetted envelopes (Table 53).

TABLE 53

Patients with gussetted envelopes

Length of Time on List	Number of Patients with Gussetted Envelopes
Under six months	5
6 months - 1 year	4
1 - 2 years	3
2 - 5 years	2
5 - 10 years	3
More than 10 years	1

(d) No Medical Record Envelope

Fifteen of the patients whose records were examined had no medical record envelope filed for them at the time of analysis; in other words, for these patients there was simply a continuation card with any collected correspondence clipped to it. All 15 patients were newly registered (that is they had been on the list for less than six months), and the fact that for these patients there was no envelope available reflects the delay inherent in the scheme whereby a patient's records are transferred from one doctor to the next via the Executive Councils both of the new doctor and of the preceding doctor.

(e) Special Signalling Procedures

The College of General Practitioners (1964) has pioneered a system of colour tagging records to draw attention to especially important data (i. e. diabetes, epilepsy, tuberculosis, etc.) In this system, small tags of coloured paper are fixed to the outside of the envelope, the colour used being based on a pre-determined code, to signal to the user of the record that there is some particularly significant item to be considered. Other special signalling systems are used in individual practices; in this practice, while the College's system is not used, drug hypersensitivities, and sometimes other items of information that should be known to the doctor whenever the record is used, are written in full in the outside of the medical record envelope. Colour-tagging has also been used in this practice for administrative reasons, to distinguish the records of

patients in the area of an Executive Council other than the main one in whose area the vast majority of the patients are registered.

In this survey 6 of the records examined bore some special signalling device: 2 of these were tagged according to the C. G. P. system (both patients had tuberculosis), 2 were tagged for administrative reasons, one was tagged by a previous user and the significance was not clear, and one had a drug hypersensitivity recorded in clear on the outside of the envelope. If the College system had been adopted universally at least 15 records would have been tagged: the records examined included those of 5 patients who had TB (either quiescent or cured), 4 who had hypertension requiring hypotensive therapy, 3 who were epileptic, 2 diabetics and at least one who was on long-term medication.

(f) Summary Cards

Only 2 out of the 187 records examined contained cards summarising important information. Both of these were in respect of patients whose previous medical care had been provided outside the National Health Service; one was a patient who had been in the R. A. F., the other a patient who had been in an orphanage.

Although both the Health Departments and the Royal College of General Practitioners are prepared to provide special cards for summarised information to fit the medical record envelopes, it is clear that these are not widely used.

(g) Clinical Information Recorded in Letters but not on Continuation Cards

In the records of 24 (13%) out of the 187 patients in this survey it was found that one or more items of clinical information was available in letters filed in the envelope, but not available on the continuation cards. These items are noted in Table 54

TABLE 54

Clinical Information in Letters but not on Continuation Cards

Pelvic Floor Repair (3 patients)	
Excision of submandibular gland	
Appendicitis	
Diverticulosis	
Post-concussion headaches	
Osteoma of frontal sinus	
Fracture of tibia and fibula	
Caesarian Section	
Duodenal Ulcer	
Cholecystectomy	
Cyst on breast	
Median nerve decompression	
Carcinoma of colon and hemicolectomy	
Penicillin hypersensitivity	
Osteomyelitis of tibia	
Asthma	
Herniorrhaphy	
Depression	
Epilepsy)
Laminectomy)
Pelvic Floor Repair)
Peptic Ulcer)

TABLE 54 (Contd.)

Appendicitis)
Herniorrhaphy)
Laminectomy)
Cordotomy)
Pilonidal Sinus)
Appendicitis)
Ovariectomy)
Appendicitis)
Diverticulitis)

(h) Family or Social History Recorded in Letters but not on Continuation Cards.

In 9 (5%) of the 187 records examined, family or social history came to light from perusal of the letters and reports filed in the medical record envelope, where such information was not recorded on the continuation cards. Table 55 shows details of these items of information, set alongside the patient's own medical history or presenting complaint.

TABLE 55

Family or Social History Recorded in letters but not on continuation cards

Family or Social History	Patient's Own Medical History
Mother with Goitre	Goitre
Diabetic Brother	Cervical Spondylosis
Mother with Chronic Pyelonephritis	Pregnancy
Thyrotoxic Mother	Chronic Anxiety & Depression
Father with T. B.	Bronchiectasis
Mother with "Thyroid Trouble"	Thyrotoxicosis
Sister with Brain Cancer)	Depression
Daughter with Duodenal Ulcer)	
Patient Divorced & Remarried	Asthma & Depression

These items, both of clinical details and of family and social history, are of considerable importance and their value is diminished if they are not available either in the main body of the continuation record or in other ways easily accessible, as they are not when they are only contained on letters which are folded and tucked away, sometimes along with many others.

(i) No records previous to joining list

The medical record envelopes of 73 patients (39% of the sample of 187) contained no records made by practitioners other

than those working in the practice under consideration, and had no letters or reports sent to such doctors. Table 34 shows the distribution of these records in relation to the time the patient had been on the list and to the number of previous doctors with whom the patient had been registered.

TABLE 56

No records prior to patients' joining list.

Time on List	Number of Previous Doctors						Totals
	0	1	2	3	4 or More	Not Traced	
0 - 6 months	1	1	1	6	3	4	16
6 mnths - 1 year	-	-	-	-	-	1	1
1 - 2 years	-	-	-	-	-	-	-
2 - 5 years	-	3	-	-	3	3	9
5 - 10 years	1	4	2	2	-	-	9
More than 10 yrs	18	13	1	4	1	1	38
TOTALS	20	21	4	12	7	9	73

The high total in the group of patients who had been registered with the practice for less than 6 months reflects the fact that in many of these cases the records would not have had time to have gone through the process of transfer from the previous doctor via the Executive Councils. The other high scoring group is of those patients who had been with the practice for more than 10 years, and in many of these instances it may well be that the patient had

had little need to consult a doctor prior to joining the list (the patient who had had no previous doctors and who had only been on the list for less than 6 months was a Missionary recently returned from Africa who had therefore not previously been under the Health Service).

(j) Letters only Previous to Joining List.

In 29 cases (15% of the sample of 187) the patients had had some contact with their previous doctors, as evidenced by the inclusion in the medical record envelope of letters and reports sent to these doctors, but no entries had been made on the continuation cards. These instances are shown in Table 57 in relation to the time the patient had been on the list and to the number of previous doctors with whom the patient had been registered.

TABLE 57.

Letters only in record prior to patients joining list

Time on List	Number of Previous Doctors						Totals
	0	1	2	3	4 or More	Not Traced	
0 - 6 months	-	-	1	-	-	-	1
6 mnths - 1 yr.	-	-	1	-	-	-	1
1 - 2 years	-	2	-	-	-	-	2
2 - 5 years	-	1	1	3	2	-	7
5 - 10 years	-	5	4	2	2	-	13
More than 10 yrs	-	3	1	1	-	-	5
TOTALS	-	11	8	6	4	-	29

(k) Miscellaneous Material.

One of the drawbacks of using an envelope in which to store records is that it rather easily becomes a repository for unwanted material. In one of the records examined in this survey a letter was found about a patient who was in no way connected with the individual whose record was being examined; in another, part of an unused prescription pad came to light. Other "finds" made in the routine use of records not in the survey but during the period of analysis have included a Winbrobe tube and a ballpoint pen.

(l) Reason for Consultation.

At each consultation at which a patient was invited to fill in a questionnaire, the diagnosis or reason for consultation was entered on the appropriate punch card. A list is given in Appendix F of these diagnoses, related to the total number of patients with the same diagnosis seen by the author within the year which included the months in which the survey was undertaken (the latter figures being extracted from an "E" book, taking only patients within the age range employed in the survey).

VI. DISCUSSION.

1. The Sample.

Apart from a disproportionate weighting in favour of younger married female patients, the sample exhibited a reasonable diversity in terms of age, length of time on the list of the practice, number of doctors, and presenting complaints. Indeed, it is calculated that the records examined represent the recording practices of an aggregate of over 300 practitioners on the medical histories of 187 patients.

2. Personal Details.

In general the recording of name, age and address was found to be accurate, but there is a fairly marked deficiency in the recording of civil status. This is in large part due to defects in design of the outside of the medical record envelope, a defect which has been partially remedied in the latest amended form (EC5B and EC6B), although a further amendment to provide for date of change in status would be desirable.

The recording of occupation or employment was found to be poor, and this was especially so in the case of female patients working part-time. Part of the difficulty here lies in the frequent change of occupation found amongst these patients, but this difficulty does not excuse the lack of systematic enquiry by the doctor, whenever the opportunity arises, of the patient's occupation, and the noting of this information on the medical record. This is a small but important point which might well be stressed by those responsible

for training the younger generation of general practitioners.

3. Clinical Data.

In the great majority of cases the patient's own serious illnesses were well recorded, although in the case of operations the recording was not so complete. In several instances information about operations (as well as, in some cases, details about the patient's family history) was available in hospital letters but not incorporated in the main body of the notes, on the continuation cards. This is information which is thus available, but not easily accessible. The reason for this relative inaccessibility is that with the small envelope form of filing the majority of hospital reports and consultants' letters require to be folded to fit, and documents which are folded are from experience more unwieldy to handle and less easily placed in chronological order than papers laid out flat.

4. Family History.

If the general practitioner is to lay claim to the title of family doctor, he must be assumed to know his patients' family histories. The results presented in this study, although they must be interpreted with considerable caution, tend to show that in many cases the practitioner does not know the details of his patients' family histories, or if he does know them, that he does not record them.

The results presented in the section on family history above cannot be assumed to record the exact picture of morbidity in close

relatives of the patients whose records have been studied. Rather, they represent the patients' own understanding and memory of family history. It is unlikely that patients would invent, though they may well misinterpret, items of family history, but it is certainly possible that they might forget, or indeed never know, instances which could be of great relevance. These reservations do not invalidate the conclusion that only one tenth of the items of family history which could be elicited from patients are in fact recorded in the patients' own records.

It would require extremely sophisticated techniques of enquiry and analysis to determine how significant isolated instances of family history of diseases might be to the patient himself, or how knowledge of such history would contribute to the management of that patient's current problems.

There are a number of classical familial disorders which follow simple Mendelian laws, such as autosomal dominant traits (e. g. neurofibromatosis, Huntington's chorea), autosomal recessive traits (e. g. phenylketonuria, cystic fibrosis), intermediate inheritance (e. g. thalassaemia, sickle cell disease) or sex-linked inheritance (e. g. haemophilia). However, there are many much commoner conditions in which a familial incidence can be established, probably caused by the interplay of a number of mutant genes conferring on the individual a predisposition to the disease rather than the disease itself (Richmond, 1966). Examples of such conditions

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include peptic ulcer, hypertension, diabetes mellitus, thyrotoxicosis, pernicious anaemia and rheumatoid arthritis. Recording of family histories in these areas is clearly of importance, but it is reasonable to extend the history to encompass all serious illnesses in close relatives.

The primary purpose of the medical record should be to provide the doctor with information which will aid him in the management of his patient and the solving of the immediate problems that are presented to him. All wisdom is based on knowledge, and knowledge about the patient and his intimate background provide a sound basis for the establishment of a relationship within which the doctor can assess the patient and his problems and thus come to a diagnosis and from this proceed to offer therapy.

The pattern of the patient's family illnesses may often establish valuable clues about the patient's own predispositions to various types of hereditary or partially hereditary disease, and the predictive value of such clues may aid screening procedures and heighten the index of suspicion. Furthermore, it is clear in clinical practice that the patient's knowledge of a severely disabling or fatal condition in a close relative (especially if that relative was affected or died in early adult life) can induce profound anxiety, and therefore it is of importance to the physician to know of such instances. Thirdly, there are occasions when the serious illness of a close relative, particularly where there is a dependent relationship, constitutes a considerable source of environmental stress to the patient.

Walford (1955) has written that it is rather astonishing that the family history to which so much time is devoted in hospital record keeping, should be virtually ignored in the records of the general practitioner to whom the family is all-important. He also remarks in another paper (1955a) that family history is even more difficult to carry in one's head than personal history, because it so often relates to people with whom one has no personal interest, and that it is therefore all the more important to write it down where it will be seen, because surprisingly often it provides the missing clue.

Peterson et al (1956) in their study of general practice in North Carolina found that "physicians did know many of their patients quite well from the sociological aspect" although the physicians' knowledge of some of the clinical details about their patients was found to be lacking. What is not clear is whether Peterson et al considered family medical history to be part of the "sociological aspect", or part of the clinical picture.

Jungfer and Last (1963) in their paper reporting an examination of general practice in Australia found that the sample of doctors they interviewed did not get adequate information on the family and past history of their patients - an opinion which was based in part on a perusal of these doctors' clinical records.

There can be little doubt that systematic records improve the standard of practice, and that the present medical record envelope system in the National Health Service militates against

system. It is, however, particularly in respect of family history, not immediately apparent how systematic recording can be easily introduced and encouraged. Walford (1962) advocates the use of the back of the record envelope, or of a special Summary Card; he does not usually take a formal family history, but collects information on family history as it arises during consultations over the years. Kuenssberg (1964) has introduced the "F" book, a ledger system of recording family morbidity (or more precisely morbidity within households) using numerical coding techniques based on the International Classification. Watson (1967), Williams (1967) and Jameson (1968) have all described their own methods of constructing family morbidity indexes or family record cards. The practice run by the Department of General Practice at the University of Edinburgh use household record cards (Scott, 1950), while folders holding the records of all members of a family living in one household in the same file are used by some practices (Backett & Maybin, 1956; Bristol Local Health Authority, 1967).

Walford's method has the merit of simplicity, although it has been pointed out that the problem of putting down family histories on each patient's record in daily practice is a tremendous undertaking (Eimerl & Laidlaw 1969). In fact in the current survey not one of the 187 records examined bore any family history recorded in this way; the family history that was recorded was only to be found in the midst of day-to-day records of diagnosis, therapy, certification and other details. The "F" book is a splendid tool

for research (see Sklaroff 1963), but Williams (1967) thinks it is rather cumbersome for routine use and Marinker (1969) has pointed out that it cannot be used for recording a great deal of the morbidity that we see . . . because we have not yet invented a scientific language in which to make the recording. In the hands of the enthusiast the "F" book and other methods of recording on family registers and indexes provide valuable data for patient management and research, but enthusiasts tend to be in the minority; in a later Chapter it is shown that out of 167 general practitioners randomly selected in Scotland, only 3 kept any form of family morbidity register.

The response to the questionnaire administered in this study indicates a potential method of obtaining a good deal of information, especially about family history, previously unrecorded. In the future it is proposed that a similar questionnaire should be given to patients newly joining the list in the author's practice and that data collected in this way will be entered on special cards prepared for the purpose to be filed in the patients' records. This, however, will simply be considered to be an interim measure until a generally more satisfactory method of record keeping has been evolved and introduced.

(5) Letters and Reports.

The great value of hospital letters and consultants' reports lies in two main features: firstly that reports (perhaps especially those which emanate from general medical and from psychiatric departments) often contain a good deal of useful information in

summarised form. Secondly, such reports and letters are almost invariably typed and are thus more generally legible than the practitioner's usual handwritten notes on the continuation cards.

There is a hierarchy of usefulness in any collection of filed reports and letters: for instance full discharge summaries after an in-patient admission may be very useful, while follow-up reports may have use for only limited periods of time, and handwritten discharge notes given to the patient to take back to his own practitioner with simply brief indications of current therapy, while very useful at the time, are in the nature of things ephemeral documents. The decisions about when to destroy documents, and what documents to destroy, are by no means clear cut. The Tunbridge Committee classifies documents in hospital medical records as primary, secondary and transitory (Central Health Services Council 1965), but these grades are not easily applied in general practice. In another Chapter it is shown that 44% of 167 general practitioners questioned do not make a practice of destroying unwanted documents in the medical record envelopes; Of the 56% who do, only a few do so routinely.

The difficulties lie not only in decisions about the relative usefulness of the documents, but also again in the unwieldy bundle of folded papers. The figures in this study show 49% of the 187 records studied contained 10 or more (and in some cases substantially more) documents, excluding continuation cards. The majority of these documents have to be folded at least once to fit

the envelope, and a great many of them twice or more. Two suggestions have been made which might help to solve this problem. The first is made by the Walker Committee on Hospital Medical Records in Scotland, who advocate the use by hospitals of a special paper size ($4\frac{1}{2}'' \times 7''$) for reports and letters to be sent to general practitioners (Scottish Health Services Council 1967). The second suggestion, made by Marsh and Simon (1967) is that practitioners should file all reports chronologically, holding them together by treasury tags. In the records examined in this study at any rate, neither of these suggestions would appear to have been adopted in more than a very few instances.

In the vast majority of instances letters are folded and filed in more or less indiscriminate order in the envelope and attempts to extract information from them is all too often both time-consuming and irritating. It seems clear that the only sensible way to overcome this manifest inefficiency is to provide folders (not envelopes) sufficiently large to hold the majority of reports and letters unfolded.

(6) Continuation Cards.

The continuation cards (EC7 and EC8) are the documents on which the general practitioners record their own notes. Ideally, these cards should provide an on-going record of the patient's medical history, and should form the basic source of information which the letters and reports simply supplement. The cards themselves are designed to fit the envelopes, they are reasonably stiff and quite easily extracted. However, the manner in which individual practitioners record data is almost infinitely varied, and

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in the absence of some defined and accepted system it is difficult in many instances to disentangle diagnosis, therapy, family and social history and circumstantial narrative.

The notorious illegibility which afflicts the medical profession (perhaps fostered by the niggardly size of the documents on which many of them are required to write) compounds the difficulty, and the presence of blank cards (found in 24% of the records examined in this study) only serves to increase the lack of order. The simple expedient of underlining or "boxing in" all major diagnoses (Hodgkin 1963) certainly helps to make the record more coherent and provides a valuable summary (the absence of special summary cards has already been noted), but until some basic agreed methods of recording are evolved, more space provided and provision made for separating out different classes of information, the general run of records will remain haphazard and often confusing.

VII. CONCLUSION.

The documents used for medical records in general practice in the National Health Service are shown to be ill-adapted to their potential optimum use. What was satisfactory in 1920, is, not surprisingly, far from ideal today. There has been and continues to be a considerable increase in the amount of communication which passes about patients; increasingly more can be done and is being done in the provision of medical services. The "fat files" of patients with histories of any complexity contain a wealth of information which is not always used as it should because of difficulties in extraction consequent on lack of summaries and lack of order among letters and reports which have to be folded to fit the envelopes which hold them.

It emerges clearly that in the records of family doctors, family history is in general poorly recorded. To improve the situation, better training is required, but training itself is not enough and a fundamental reform is indicated in the type of documents used for recording. An essential part of such a reform must be the provision of means to separate out different categories of information, so that data on family and social history and such items as blood groups and hypersensitivities can be simply recorded and easily found, apart from the day-to-day recording of the details of individual consultations. To do this with the present medical record envelope system is not impossible, but it is certainly not easy.

Difficulties and deficiencies in the field of recording in general practice are becoming increasingly apparent, and some of these have been measured in this study; there is an almost exponential increase in the amount of communication which passes about patients, and the development of newer and more sophisticated forms of data recording is proceeding apace. In the light of all these considerations the time has surely come for those who are responsible for the formulation of policy with regard to general medical services within the National Health Service to look afresh at the whole question of general practice medical records.

CHAPTER 3

THE GENERAL PRACTITIONER'S USE OF MEDICAL RECORDS

"How use doth breed a habit in a man! "

Shakespeare "The Two Gentlemen of Verona"

I. INTRODUCTION.

In 1920 the then Minister of Health and the Secretary of State for Scotland appointed an Interdepartmental Committee under the chairmanship of Sir Humphrey Rolleston to advise on the "form of Medical Record to be prescribed under the conditions of service for medical practitioners contained in the new Medical Benefit Regulations". The recommendations of this Committee (Interdepartmental Committee on Insurance Medical Service, 1920) were accepted and documents comprising envelopes of approximately octavo size with continuation cards to fit were adopted for the keeping of general practitioners' records for their patients registered under the National Insurance Acts. With the implementation in 1948 of the National Health Service Acts this system was extended to cover all patients registered under the N. H. S. and it has continued with very little modification to the present day.

The Gillie Committee in their report on the Field of Work of the Family Doctor (Central Health Services Council 1963) expressed dissatisfaction with the format of the documents

used for general practice records in the National Health Service, and urged that much study and trial must be undertaken so that a change acceptable to doctors could be proposed. The Tunbridge Committee reporting on the Standardisation of Hospital Medical Records in England and Wales (Central Health Services Council 1965) echoed this plea with the hope that general practitioner organisations would continue to give serious study to the purpose and best use of the existing documents as well as to their improvement.

Four important studies of aspects of general practice which have included some evaluation of record-keeping have come from the U.S.A. (Peterson et al, 1956), Canada (Clute, 1963) the Netherlands (Querido, 1963) and Australia (Jungfer, 1965). The only published reports analysing experience in the National Health Service in the United Kingdom have been those of Collings (1950), Hadfield (1963) and Taylor (1954). Although these latter reports have examined in greater or lesser detail the quality of record-keeping, no quantitative survey of the way in which general practitioners use their records or of their opinion about the type of records they have to work with, has been discovered. This study is presented as an attempt to quantify some aspects of record keeping in general practice and as a contribution to the study of the problems which the Gillie Committee requested.

II. OBJECTS

The objects of this study were to obtain information, by means of questionnaires, about the way in which general practitioners in the National Health Service in Scotland use medical records, and their opinions about the documents used. Information was sought on the type and size of the respondents' practices, the availability of ancillary help and the nature of data usually recorded. Questions were asked about the use of records on home visits and night calls and the use of special indexes and registers. The way in which letters and reports from outside sources were handled were examined and opinion was invited about the usefulness of previous records and the present form of documentation. Although the sample was relatively small, the survey reveals something of the routine practices adopted in the field of recording in general practice, and comments are made on the findings which emerge.

III. MATERIAL AND METHODS

1) QUESTIONNAIRE.

The survey was conducted by means of a postal questionnaire designed by the author, with advice from the Director of the Research and Intelligence Unit of the Scottish Home and Health Department. In the autumn of 1968 a pilot survey was mounted: in this the questionnaire was sent to a sample of 30 doctors in the Edinburgh area. The sample was furnished by the Scottish Home and Health Department, who drew every seventh name from the Executive Council list and then deleted the names of doctors practising in partnership with one already selected, so that all the practitioners questioned came from separate practices.

After the results of the pilot survey had been analysed the questionnaires and the covering letter were re-drawn, with the addition of some questions and the re-phrasing of others. The lay-out of the pilot questionnaire (Appendix G) was thought to be clumsy and unattractive, and it was felt that the cyclostyled foolscap sheets with responses indicated by the ringing of numbers might fail to attract an optimum response. The questionnaire used in the main survey (Appendix H) was therefore printed on quarto-sized sheets, using the web-offset printing method, and making use where possible of "branching" questions and providing boxes for ticks to indicate responses.

In the hope of attracting a high response rate, the questionnaire was deliberately designed to be as simple as possible, in line with the opinion of Dean (1968) that, assuming good relations between the enquirer and the respondent, a very high response rate can reasonably be expected if, but only if, the questionnaire is kept very short and simple, and it relates to a subject which is of some practical and topical interest.

2) SAMPLE

A stratified sample from lists was obtained from the Scottish Home and Health Department. These are lists from each Executive Council area giving the names and addresses of general medical practitioners arranged in districts and with the names of doctors in partnership with each other grouped together. In order to obtain a balance between areas of high - and low - density of population, the names of one doctor in 15 were taken from the lists of the Executive Councils in the Scottish cities (Edinburgh, Glasgow, Aberdeen and Dundee) and from Lanarkshire and Renfrewshire, and one name in ten from the lists of the remaining Executive Councils. The selection was made from the lists of doctors in contract with these Executive Councils on 1st October, 1968. As there are no partnerships in Scotland of ten or more doctors, each name selected represented a separate partnership. The total list obtained was of 204 names, but the names of three doctors were deleted as they had taken part in the pilot survey, thus

leaving a total in the main survey of 201.

In the spring of 1969 the questionnaires were sent to the 201 doctors selected, along with a covering letter and a reply-paid envelope for the return of the completed document. After three weeks a further letter (Appendix I) was sent to non-respondents and a final reminder letter (Appendix J) with a further copy of the questionnaire and stamped addressed envelope was sent six weeks after the original posting to doctors who had not replied by that time. Each respondent was allotted a serial number as a means of identification, and on receipt the replies were coded and transferred to Cope-Chatterton punch-cards, with additional data relating to respondents' sex, year of qualification, possession of higher qualifications, area of practice (high - or low - population density) and place of qualification.

In order to clarify and expand certain of the replies, follow-up was conducted by means of letter and in a few cases visits to the practices concerned. In the pilot survey the follow-up was conducted by means of telephone enquiry, but difficulties were encountered in finding suitable times at which practitioners were available and not too busy to engage in this sort of exercise. Undoubtedly the most satisfactory method of follow-up was by arranging to visit the practices concerned, but distance and lack of available time precluded this method with the exception of a handful of cases.

IV. RESULTS

1. RESPONSE.

Of the 201 doctors approached, 168 (84%) returned completed questionnaires. One completed questionnaire was returned some months after the last reminder had been sent and was thus included in the analysis as a non-response. 5 doctors (2.5%) did not complete questionnaires but replied to the second follow-up letter giving their reasons as follows:-

- 1 : illness of partner and own impending emigration.
- 1 : "too many questionnaires of this sort without payment being offered".
- 1 : "too busy".
- 1 : "see no point in this type of research".
- 1 : stated that he had completed the questionnaire, but that it must have been lost in the post.

A total of 28 doctors (14%) did not respond at all.

17 doctors (8% of the total sample) returned questionnaires with sections unanswered, but these were all completed after a further approach had been made. The follow-up of certain incomplete replies, especially in instances where descriptive detail was asked for, was less uniformly successful, although in the majority of cases complete replies were eventually elicited.

2. REPLY RATE.

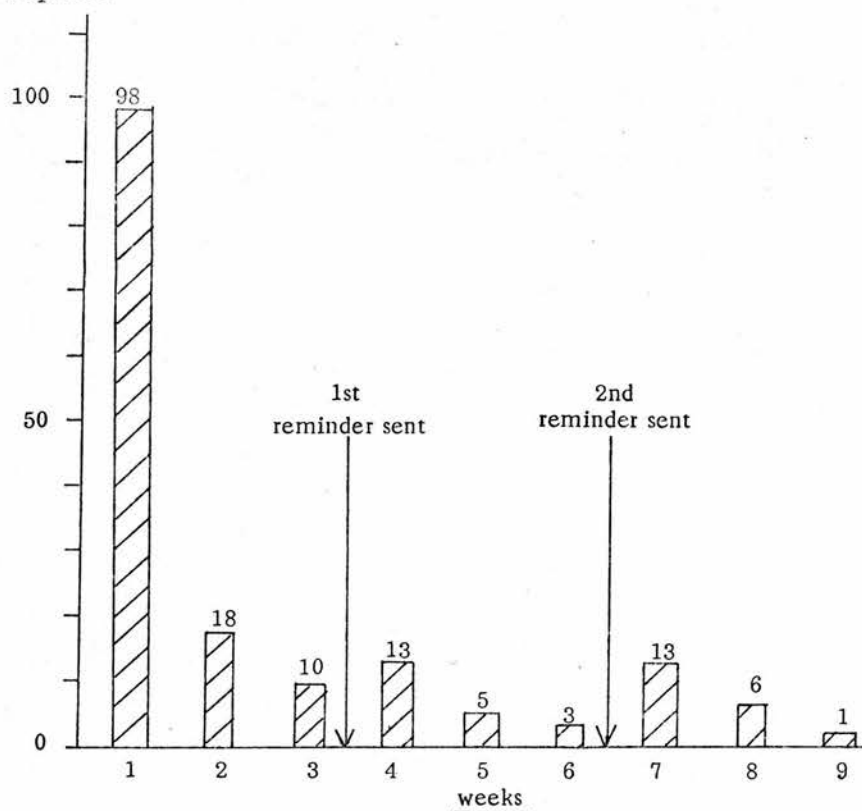
The completed questionnaires were all received within 9 weeks of the original posting, with the exception of one sent

in several months late. The timing of the receipt of the replies is shown in figure 1.

Figure 1.

Timing of receipt of replies.

No. of replies



As expected, the majority of the replies were received within the first week (in fact 98 replies: 59% of the total replying.)

3. COMPOSITION OF THE SAMPLE.

a) Total

The 201 doctors selected represent 7.7% of 2,597, this being the total number of principles on Executive Council Lists in Scotland at 1st October, 1968. As no practice was represented more than once, this amounts to 15.4% of the total number

of practices in Scotland (1, 302) (Scottish Home and Health Department 1969). The 167 replies analysed represent 6.4% of the total of Scottish principles and 12.1% of the total of Scottish practices.

b) Individual characteristics

An analysis was made of the sex ratio of the sample and of dates and places of qualification of the responding doctors, the possession of higher qualifications and of membership of the Royal College of General Practitioners. These figures have been tabulated and are shown in Appendix K.

c) Practice structure

A comparison was made between the number of doctors who responded in each of 7 given groups of practice structure with the numbers of doctors with similar practice structures in the total Scottish list. The comparison is not exact, in that in practices of three or more doctors the response in the questionnaire was phrased "self and two others", "self and three others" etc., while the Home and Health Department lists refer to partnerships of 3, 4, etc. In other words in the groups of three or more doctors, where a respondent's practice structure may include an assistant, in the Scottish Home and Health Department figures only partnerships are included. The results are shown in table 58.

TABLE 58.

Practice Structure

Practice structure	Sample	Scottish total	Sample as %-age of Scottish total
Single handed	35	550	6.4%
Self plus assistant	0	33	0.0%
Self plus partner	39	356	10.9%
Self plus two	43	238	18.1%
Self plus three	31	90	34.4%
Self plus four	10	19	53.2%
Self plus five or more	9	16	56.3%

On this showing, the sample, as expected, progressively over-represents the larger practice groupings.

d) List size

The approximate list sizes of the various groupings represented by the sample of respondents to the questionnaire are shown in table 59.

TABLE 59.

List sizes - respondents' practices

List size	1 Dr.	2 Drs.	3 Drs.	4 Drs.	5 Drs.	6 Drs. or more	Totals
Less than 2,500	27	6	-	-	-	-	33
2,500 - 5,000	8	20	8	1	-	-	37
5,001 - 7,500	-	12	25	5	2	-	44
7,501 -10,000	-	-	9	19	1	-	29
More than 10,000	-	1	1	6	7	9	24
	35	39	43	31	10	9	167

The total Scottish figures are broken down in rather different bands, so that it is not possible to make a direct comparison of the figures; the nearest comparable tabulation is shown in table 60.

TABLE 60.

List sizes - Scottish totals

List size	1 Dr.	2 Drs.	3 Drs.	4 Drs.	5 Drs.	6 Drs. or more	Totals
Less than 2, 599	428	64	1	-	-	-	493
2, 600 - 4, 999	122	243	36	2	-	-	403
Over 5, 000	-	82	201	88	19	16	406
	550	389	238	90	19	16	1, 302

A comparison of tables 59 and 60 confirms the sample bias in the direction of over-representation of larger list sizes as well as the larger practice groupings, in comparison with the Scottish totals. This also would be expected from the sampling procedure.

e) Practice area

The selection of the sample was made on a 1 in 15 basis for the cities and the counties of Renfrewshire and Lanarkshire ("high population-density") and 1 in 10 in all the remaining areas ("low population-density"). This division is somewhat arbitrary as within some of the low population-density areas as defined, there are pockets of high population-density - notably in areas of Fife and the large towns of Perth and Inverness. Nevertheless, this approximate distinction was felt to be sufficient for

selection purposes. The sample thus contained a bias towards the low population-density areas. (table 61)

TABLE 61.

Practice areas

Area	Responders	Non-responders	Totals
High population-density	66	16	82
Low population-density	101	18	119
	167	34	201

There was a slightly better response-rate from practitioners outside the high population density areas than from the cities, but the difference is not striking.

f) Ancillary help.

Of the 167 respondents, 118 (71%) have ancillary help for handling and filing records available at all consulting sessions. 19 (11%) have ancillary help, but not available at all sessions, and 30 (18%) do not have ancillary help. No figures were available for ancillary help in respect of non-responders.

The effect of the availability of ancillary help on record-keeping is examined in later sections.

g) Branch surgeries.

Of the 167 respondents, 47 (28%) have branch surgeries.

No data is available on this point in respect of the non-responders. The use of a branch surgery presents special problems in the field of record-keeping, and these are examined in a later section.

4. TYPE OF RECORDS.

a) Medical record envelopes.

163 (98%) of the respondents use the conventional National Health Service medical record envelopes and continuation cards (EC's 5, 6, 7, & 8). Five of these doctors supplement the medical record with the use of daybooks.

The four respondents who use systems other than the medical record envelope include three doctors who use quarto-size folders; all three doctors practise from Health Centres.

One practitioner uses a daybook only.

The fact that the vast majority of the respondents use the medical record and continuation card system is as expected. These documents are regulation official forms used not only as clinical records but also as registration documents, and doctors (other than those in special circumstances, as with the Health Centre practices) who elected to use other means of recording, would still be required to store the record envelopes of their patients and return them to the Executive Council when such patients registered with another doctor.

b) Special registers and indexes.

48 of the doctors who replied (29%) keep some form of

special register or index. These comprise:

Disease index	6
Age/sex register	32
Family register	11
Other special index or register	12

1 doctor keeps a disease index only.

24 doctors keep an age/sex register only.

7 doctors keep a family register only.

8 doctors keep some other form or register or special index only.

The following combinations or registers or indexes were recorded:

TABLE 62.

Combination of registers.

Disease index and age/sex register	2
Age/sex register and family register	1
Age/sex register and other undefined	1
Disease index, age/sex register and family register	1
Disease index, age/sex register and other undefined	1
Disease index, age/sex register, family register and other undefined	2

The undefined special registers or indexes comprised:

TABLE 63.

"Undefined" registers

Register of patients over 65	5
Register of children for immunisation	4
Maternity register	3
Register of hospital outpatient appointments and admissions	1
Register of women over 35 (for cervical cytology)	1
Register of cases of special interest or on special therapy	1
Drug index (this is in a dispensing practice)	1

The reports of the General Register Office review of morbidity statistics from general practice (Logan and Cushion, 1955) and the pioneering work of Hodgkin (1963), Fry (1966) and McGregor (1969) have all demonstrated ways in which facts about the content and scope of general practice can be gathered by means of meticulous recording methods. Much work has been undertaken within the past decade to devise suitable tools for the collection of morbidity and epidemiological statistics in general practice. Eimerl (1958) introduced the "E" book method of recording, based on the College of General Practitioners modification of the International Classification of Diseases. Several descriptions of the uses and potential of the "E" book have been published (e.g. C.G.P., 1963; Marshall, 1963; C.G.P., 1964a; Last, 1965; C.G.P., 1966a;

Last, 1966; Eimerl, 1967a; Spencer, 1967; Last & White, 1969) and a nucleus of 45 "E" book recorders provide the information that is collated by the Records and Research Advisory Service of the Royal College of General Practitioners to produce the "Returns from General Practice" published weekly in the British Medical Journal. An extension of the "E" book system, where the identifying factor is the diagnosis or presenting symptom, is provided in the introduction of the computer-compatible "S" cards, where the identifying factor is the individual patient (C. G. P., 1966).

The "E" book can be used to provide both a disease index and a method of collecting morbidity statistics. A similar, but simpler means of producing a disease index (also in ledger form) is incorporated in the "W" book (Walford, 1963). Spencer (1967) has shown how the "E" book can be used as a tool for the study of work load, and a special device for work study analysis is provided by the "L" book (R. C. G. P., 1967).

Of the 6 practitioners in this study who reported that they kept some form of disease index, 1 uses an "E" book, 1 uses a "W" book, one uses an "F" book as a disease index and 3 use different systems of their own devising.

In producing any epidemiological statistics from morbidity figures, a necessary adjunct is an age and sex register. Methods of compiling age/sex registers have been described (Watts, 1958;

Watson, 1967; Pinsent, 1968) and Hardman (1962) has shown how an age/sex register can be combined with a chronic disease index, while Acheson and Matthews (1964) use an age/sex register combined with a practice register.

In view of the generally poor recording of family history noted in the last chapter, the use of family registers is of especial interest. Kuenssberg (1964 & 1966) has described the "F" book method which he has devised and studies based on "F" book recording have been published by Sklaroff (1963) and Marinker (1967). Other special methods of recording family morbidity have been described by Watson (1967), Williams (1967) and Jameson (1964, 1968, 1969).

In this survey, of the 11 practitioners who stated that they had some form of a family register, 2 used the "F" book, 1 uses a system similar to the "F" book on card index, 1 has his own method of indicating family history on the record cards (so that this was not strictly speaking a register), 5 maintain family lists simply for administrative purposes (without using them for recording any morbidity data) and 2 did not reply to follow-up enquiries.

Descriptions of the various special index and register systems employed in the Royal College of General Practitioners are given by Pinsent and Scott (1966) and Zabarenko et al (1967) and details are amplified in "A Handbook for Research in General Practice" edited by Eimerl and Laidlaw (1969).

c) Special signalling systems.

The College of General Practitioners in 1964 devised a scheme for marking the outside of medical record envelopes with strips of coloured paper, to draw the attention of anyone using the record to certain items of special importance. The colour code was to be used only for clinical purposes, directed to the patient's safety and for the benefit of his treatment, and not for the administrative convenience of the doctor (C.G.P., 1964).

The convention adopted allocated colours for 7 categories:

- (1) Sensitivities (drug sensitivities, severe toxic drug idiosyncracies and major allergies)
- (2) Diabetes
- (3) Epilepsy
- (4) TB (active, quiescent or cured)
- (5) Hypertension (any variety which has warranted hypotensive Therapy)
- (6) Long-term maintenance therapy (e. g. steroids, thyroid, Vit. B12, antibiotics etc.)
- (7) Attempted suicide.

In this survey the respondents were asked if they used any special signalling system on the outside of the medical record envelopes. 15 doctors (9%) use the College colour-tagging system. A further 16 doctors use systems of their own. These included the noting in various ways (e. g. coloured stars, coded numbers or in clear) of one or more of the items covered by

the College colour-tagging code, or of the following:

Malignant disease

Blood groups

Anaemia

Urinary infections

Oral contraceptives

Measles vaccination

Cervical smears

Antenatal records

Failure of patient to keep appointments

5. TYPE OF INFORMATION RECORDED.

a) Categories

Respondents were asked to indicate whether or not, when making notes about a patient, they usually recorded

a) Diagnosis

b) Clinical details

c) Circumstantial narrative

d) Therapy

e) National Insurance certification

The replies are shown in table 64.

TABLE 64.

Categories of information recorded

Information	Number of doctors	%-age of sample
Diagnosis	155	92.8%
Clinical details	143	85.6%
Circumstantial narrative	60	35.9%
Therapy	159	95.2%
N. I. certification	143	85.6%

Various permutations and combinations of these ~~five~~ basic categories of recorded information are possible, and the numbers of respondents routinely recording such combinations are shown in table 65.

TABLE 65.

Combinations or routinely recorded items

No. of Drs.	Diagnosis	Clin. detail	Circum. narr.	Therapy	Cert.
71 (42.5%)	x	x	-	x	x
47 (28%)	x	x	x	x	x
13 (7.5%)	x	-	-	x	x
7	x	x	-	x	-
5	x	x	x	x	-
5	x	-	-	x	-
4	-	x	x	x	x
3	-	x	-	x	-
3	x	x	-	-	x
2	x	-	x	x	-
2	-	x	x	x	-
1	x	x	x	-	x
1	x	-	-	-	x
1	-	-	-	x	-
1	-	-	-	-	-

One doctor did not reply to this question and one, as shown in table 65 above does not record any of the given items.

The question "When making notes about a patient, do you usually record. ?" admits of a wide variety of interpretations and a number of doctors commented on this. One remarked that he noted all the items in varying degrees depending on the complexity of the case, and this is probably a majority practice. Four doctors very reasonably stated that they entered the diagnosis "if known" or "if possible". As regards certification one respondent noted this only in doubtful cases and another restricted this entry to first and final certificates.

The relative importance of different categories of information depend both on the nature of the particular episode and the purposes for which the records are made. Hodgkin (1963) has alluded to the over-riding importance of recording diagnosis, or if diagnosis is not possible at least major symptomatology, for every consultation or group of consultations. From the point of view of the permanent and on-going record diagnosis is certainly the most important category, and a series of diagnostic labels, especially if they are underlined or "boxed in", can provide a convenient summary at a quick glance of the patient's medical history.

The recording of clinical detail is much more a matter of preference; the full listing of all physical findings which may well be appropriate in a hospital record, is rarely called for in

general practice notes. An entry such as "acute exudative tonsillitis" along with a brief note of any specific therapy prescribed, may well suffice, although there may be times when a note of the temperature, of lymphadenopathy or of vomiting might be appropriate. Sometimes it is of importance to note negative findings, as for instance of normal fundi in a case of headache, or to note that a particular system has not been omitted from the examination - for instance the respiratory system in a case of abdominal pain. The touchstone should be the usefulness of such data at subsequent consultations, within the limits of brevity necessary in the record of multiple incidents.

The recording of circumstantial narrative is even more controversial than that of clinical details, although it may often be of equal if not greater value, and this is particularly true in cases of psychiatric disorder. Background information, especially family and social history, can come within this category, and the general poor level of recording of these items must be a subject for concern to all those who are responsible for training in general practice.

Therapy ought, of course, to be recorded, but the long term value of a record of therapy may be less important than that of diagnosis, although undesirable effects of therapy (hypersensitivities etc.) will always contribute to the continuing record. In the short term a record of recent therapy is always

of interest not only to the practitioner prescribing, but perhaps even more to any partner or locum having to deal with the case in the absence of the original practitioner.

To record National Insurance certification is of use for administrative purposes, but the significance of such recording is only usually of short-term interest.

b) Routine data

The question was asked "Do you routinely record:

- a) Drug hypersensitivities?
- b) Immunisations?
- c) Infant developmental milestones?

Of the 167 respondents,

- 153 (92%) recorded drug hypersensitivities
- 133 (80%) recorded immunisations
- 13 (8%) recorded infant developmental milestones

127 doctors recorded both drug hypersensitivities and immunisations routinely but not infant developmental milestones, while all 13 of the respondents who recorded the milestones also recorded both hypersensitivities and immunisations.

Reference has already been made to the desirability of recording information about drug hypersensitivities and to the importance of recording these prominently. Indeed such information can be potentially life-saving in view of the dangerous nature of severe anaphylactic reactions.

It is of interest to note that 80% of the respondents record immunisations routinely. This information conflicts with the findings in the last Chapter, but the earlier survey excluded the records of children, and it may well be that recording practice has improved recently in this respect, especially since the introduction of an overprint on the back of the medical record envelope providing for the routine recording of immunisations. (Scottish Home and Health Department, 1969).

The low level of routine recording of infant developmental milestones may reflect the dual responsibility in the provision of infant welfare between general practice and public health. The noting of milestones, provided they fall within normal limits provides a record of short - rather than long-term interest, and this is a field where some form of "check list" recording may well be useful.

c) Repeat prescriptions.

The question was asked "Do you, or your staff, note on the medical records repeat prescriptions issued at times other than those when the patient consults the doctor face to face?"

52 (31%) respondents do so always

43 (26%) respondents do so often

27 (16%) respondents do so rarely

4 (2%) respondents do so, but did not specify "always",
"often" or "rarely"

40 (24%) respondents do not do so

1 respondent stated that with him the situation
never arises.

Among those doctors who only record repeat prescriptions rarely on the medical record, 2 issue special repeat prescription cards to patients on long-term therapy which they (the patients) retain, and these doctors note repeat prescriptions on these cards. 3 other doctors who only record repeat prescriptions rarely do so for potential or suspected addicts or for "patients we cannot trust."

In summary, 126 (75%) of the respondents do record repeat prescriptions, with varying degrees of frequency, while 41 (25%) do not do so at all.

The effect of the employment of ancillary staff on doctors' recording habits with regard to repeat prescriptions was analysed, and the results are shown in table 66.

TABLE 66.

Effect of the employment of ancillary staff
on the recording of repeat prescriptions.

Frequency	Anc. help at all sessions	%-age with anc. help at all sessions	Anc.help but not at all sessions	%-age with anc. help but not at all sessions	No anc.help	% . age with no anc.he
Always	48	41.0%	1	5.3%	3	10.0%
Often	32	27.4%	6	31.6%	5	16.7%
Rarely	20	17.0%	3	15.8%	4	13.3%
Yes, un-specified	3	2.6%	-	-	1	3.3%
No	15	12.0%	9	47.4%	17	56.7%
	118		19		30	

This table can be summarised by comparing those doctors who record repeat prescriptions either always or often, with those

who do so either rarely or not at all, and matching these figures with the doctors who have full-time ancillary help and those who either have only part-time ancillary help or none at all (table 67)

TABLE 67.

Summary of effect of employment of ancillary staff
on the recording of repeat prescriptions

Availability of help	Frequency of recording		Totals
	Always/Often	Rarely/No	
All sessions	80	35	115
Part-time or none	15	33	48
	95	68	163

From this it appears that the employment of ancillary help, especially full-time ancillary help, is conducive to the full recording of repeat prescriptions, at a statistically significant level ($p < 0.0005$).

There is probably a considerable amount of variation in the extent of repeat prescriptions without direct patient consultation from area to area and from practice to practice, and this might be a worthwhile field for further investigation. Patients on constant or intermittent long-term therapy include anginal subjects needing glycerol trinitrate, asthmatics needing bronchodilators, migraine sufferers requiring periodic ergotamine preparations or patients with chronic glaucoma on miotic drops.

Once the diagnosis of these and similar chronic disorders have been made, and therapeutic regimes stabilised, it is neither always reasonable nor desirable to expect such patients to attend their doctors on every occasion that they need a further supply of their drugs. Frequently arrangements are made that these prescriptions can be requested by telephone and left for collection by the patient or sent by post. It is obviously important in the case of drugs of addiction that the issue of all such prescriptions should be recorded in the patient's notes. The importance of recording the supply of other drugs may be less obvious, but if this is not done the doctor may miss the early significance of gradually increasing frequency of requests for, say, ergotamine or for aerosol bronchodilators, which might alert him to request the patient's attendance to discuss a possible change of therapy or advise on the more rational use of some established therapeutic regime.

It can be quite a simple aid to efficient recording to use a separate sheet, suitably identified, on which to record such repeat prescriptions, thus obviating a potential cause of "clutter" in the main body of the on-going continuation sheets. It is certainly possible to do this with the conventional medical record envelope, but it would be considerably simpler to carry out the procedure with a folder which opens than with an envelope from which a card has to be extracted then re-filed.

6. OCCASIONS FOR RECORDING.

a) Surgery consultations.

The question asked was "When a patient consults you in your surgery, do you (or your ancillary staff) make a note about the consultation on the medical record?"

106 (63%) of the respondents do so every time

45 (27%) of the respondents do so only in selected cases

5 (3%) of the respondents do so rarely

6 (4%) of the respondents replied "yes" without stating frequency

5 (3%) of the respondents replied "no".

2 of the doctors who make notes every time realistically qualified this by stating "almost"; occasions inevitably arise from time to time when a brief consultation is made about a member of the family other than the main subject of the consultation when the records are not immediately available, and because of pressure of time or the triviality of the complaint no note is made.

An analysis of the response to this question in relation to the availability of ancillary staff is made in table 68.

TABLE 68.

Effect of the employment of ancillary staff on the frequency of recording at surgery consultations

Frequency	Anc.help at all sessions	%-age with anc.help at all sessions	Anc.help but not at all sessions	%-age with anc. help but not at all sessions	No anc. help	%-age with no anc. help
Every time	95	80.5%	5	26.3%	6	20.0%
Only Select.	14	11.9%	12	63.2%	19	63.3%
Rarely	3	2.5%	-	-	2	6.7%
Yes, unqual.	5	4.2%	-	-	1	3.3%
No	1	0.8%	2	10.5%	2	6.7%
	118		19		30	

A summary of these results comparing the frequency of recording with the availability of ancillary help is shown in table 69.

TABLE 69.

Summary of effect of employment of ancillary help on frequency of recording surgery consultations

Availability of help	Frequency of recording		
	Every time	Not every time	Totals
All sessions	95	18	113
Part-time or none	11	37	48
	106	55	161

There is statistical significance ($p < 0.0005$) in the effect of the availability of ancillary help at all consulting sessions in

promoting the recording of all surgery consultations.

The practice of recording every consultation may be questioned, in that this may lead to the amassing of a large amount of relatively unimportant data, thus making it less easy to identify really vital information. This introduces again the distinction between long- and short-term recording. In the long term it is probable that a summary of the more important illnesses would be sufficient, but in the short-term it is often of value to have a record of even quite minor consultations, if only to provide a suitable opening in the important business of re-establishing the relationship with the patient. The difficulty lies in making decisions as to what is of long-term interest and in separating the categories of information and deciding at what point in time it is appropriate to destroy short-term records.

b) Branch surgery consultations.

47 of the respondents (28%) have branch surgeries.

These doctors were asked "...do you have the records available at the branch surgery of the patients who consult you?"

16 (34% of the 47) have records available for all patients
seen at the branch surgery

13 (28%) have records available for most patients seen at
the branch surgery

2 (4%) have records available for only a few of the
patients seen at the branch surgery

12 (25%) do not have records available for the patients
seen at the branch surgery.

Thus 75% of the doctors having a branch surgery have the records available there for some or all of the patients consulting them at such a branch surgery, but 25% do not have such records available.

Geographical factors often dictate the need for practitioners to have branch surgeries, but the existence of branch surgeries presents problems, among which not the least is the lack of centralisation of records. It would be doctrinaire to recommend that all branch surgeries should be abolished, but there is clearly room for investigation of the problems of communication which can occur.

c) Home visits.

Enquiry was made about doctors' practices with regard to the taking of records and making notes on home visits. The question asked was "On home visits (excluding night calls) do you take the medical records with you?"

58 (35%) respondents take the records at some time
on home visits

109 (65%) respondents do not take the records with them
on home visits.

Of the 58 respondents who take the records with them on home visits,

14 (8%) do so always (though one added "except in epidemics")

13 (7%) do so often

30 (16%) do so rarely

1 does so, but did not signify whether "always", "often"
or "rarely".

Taking these 58 again,

13 (7%) always make notes at the time of the visit

12 (6%) often make notes at the time of the visit

16 (19%) rarely make notes at the time of the visit

17 (9%) do not make notes at the time of the visit.

The employment or otherwise of ancillary help does not appear to make a very significant difference to whether or not records are taken on home visits, as shown in table 70.

TABLE 70.

Effects of the employment of ancillary staff on the taking
of records on home visits

Frequency	Anc.help at all sessions	%-age with anc. help at all sessions	Anc.help but not at all sessions	%-age with anc. help but not at all sessions	No anc. help	%-age with no anc. help
Always	13	11.0%	-	-	1	3.3%
Often	10	8.5%	2	10.5%	1	3.3%
Rarely	21	17.8%	4	21.0%	5	16.7%
Yes, unspec.	1	0.9%	-	-	-	-
No	73	61.0%	13	68.4%	23	76.7%
	118		19		30	

These results can be summarised as follows

TABLE 71.

Summary of effect of employment of ancillary staff on the taking records on home visits

Availability of help	Frequency of taking records		Totals
	Always/Often	Rarely/No	
All sessions	23	94	117
Part-time or none	4	45	49
	27	139	166

There is no statistical significance ($0.10 < p < 0.20$) in the effect of ancillary staff being available on the encouragement of the practice of taking records on home visits.

Table 72 compares the frequency of taking records on home visits with the frequency with which notes are made at the time of the visit.

TABLE 72.

Frequency of taking records on home visits compared with frequency of making notes at the time of the visit

Make notes at time of visit	Take records on home visits				Total
	Always	Often	Rarely	Yes, unspecified	
Always	7	4	2	-	13
Often	4	5	3	-	12
Rarely	1	-	14	1	16
No	2	4	11	-	17
Totals	14	13	30	1	58

The 41 respondents who make notes at the time of the visit were asked to omit the question on whether or not the respondent or his staff entered notes later in the records. It has thus not been possible to analyse the frequency with which doctors who entered such notes only rarely at the time of the visit did so subsequently. Two of the practitioners who answered yes to the question "do you make notes at the time of the visit?" explained that those notes were made by dictating into an "electronic notebook" (a type of pocket tape-recorder) at or immediately subsequent to the visit, and that these notes were later transcribed to the records by secretaries. This technique (the use of pocket tape-recording devices) has much to commend it, and its wider adoption might well encourage a higher standard of recording of home visits than at present obtains.

These doctors who did not take the medical record envelopes with them on home visits or who, if they did take the records did not make notes at the time of the visit were asked "In respect of home visits, do you or your staff enter notes later in the records?"

16 of these doctors always make a subsequent entry (14%)

32 of these doctors often make a subsequent entry (28%)

42 of these doctors rarely make a subsequent entry (36%)

3 of these doctors make a subsequent entry, but did not specify whether they did this "always", "often" or rarely" (3%)

26 of these doctors do not make subsequent entries (22%)

7 of these doctors did not reply to this question (6%)

(The seven doctors who did not answer this question were possibly confused by the earlier "branching" question, and misinterpreted the application).

These results indicate that 68 doctors out of the sample of 167 (41%) never enter notes about episodes seen on home visits, or do so rarely. Hadfield, in his study, reports that only one third of the doctors he visited found it necessary or convenient to take record cards on visits or to enter details at the end of the day (Hadfield, 1953).

Taylor (1954) expressed the opinion that lack of details of domiciliary illnesses is a serious defect in any clinical record. This is amplified by Walford (1962) when he states that to keep records of minor illness in the surgery and not to keep records of major illness seen in the home is quite irrational, and that to visit a patient without having the old notes there to help you is to enter the fray with one hand tied behind your back. Elsewhere the same author states his view that there is little point in relying on memory for completing the records of such major illnesses as are seen in the home and that notes made later are practically valueless. (Walford, 1955).

d) Night calls

To the question "on night calls, do you take the medical record cards with you?"

39 doctors (23%) replied "yes": 2 doing so always(1%)
13 doing so often (7%)
22 doing so rarely(13%)
2 not specifying the frequency

while 126 doctors (75%) replied "no"

2 respondents did not answer this question.

The number of doctors taking the record cards on night calls was matched with the numbers of doctors taking the record cards on home visits, excluding night calls, and the results are shown in table 73.

TABLE 73.

Comparison of doctors taking records on night calls with those taking records on home visits

Records taken on night calls	Records taken on home visits					Totals
	Always	Often	Rarely	Yes, unspec.	No.	
Always	1	-	1	-	-	2
Often	5	4	2	-	2	13
Rarely	3	3	13	-	3	22
Yes, unspec.	-	-	-	-	2	2
No	5	6	14	1	100	126
Not answered	-	-	-	-	2	2
Totals	14	13	30	1	109	167

The arguments in favour of taking the medical records on home visits apply, perhaps with even greater force, to night calls, which are usually to incidents of a serious nature. However, the difficulties in obtaining the records at night may be greater, when no ancillary staff is available and where the practitioner may well be called from his home at some distance from his practice premises where the records are stored. It is therefore not surprising that the number of doctors who take the medical records on night

calls either always or often is only 15 (9%).

7. FILING OF LETTERS AND REPORTS

a) Filing

With regard to consultants' letters and hospital and pathological reports,

155 doctors (93%) file them in the medical record envelopes

6 doctors (4%) file them separately from the medical record envelopes

6 doctors (4%) do not file them

The difficulties of filing correspondence which in most cases has to be folded to fit the envelope and the subsequent even greater difficulties of extracting such documents and re-filing them, are discussed below. Filing letters separately from the record envelopes may obviate the need for folding and may thus increase accessibility, but the problem of matching up correspondence with the main record containing the continuation cards makes this an undesirably complex method of working. Of the 6 doctors who do not file letters and reports at all, 3 sometimes extract details from the letters and enter these on the continuation cards, while the other 3 never do so.

b) Trimming of letters

Of the 155 doctors who file correspondence in the medical record envelope, 43 (28%) cut down letters and reports to fit the envelopes. Experience, and the results reported in the last chapter show that the majority of reports received from outside sources require to be folded once and often twice, to fit the medical

record envelope. The folding of papers which often need to be consulted serially introduces filing difficulties, which can be overcome by the use of some system such as that advocated by Marsh and Simons (1967), where all letters are filed chronologically and held together by treasury tags. This system has a great deal of merit, but it requires a particularly careful and conscientious secretarial staff for its operation and it has not been widely adopted. However, even meticulous chronological filing, with correspondence kept together by some means, does not obviate the generally unattractive and often inefficient business of referring to papers which acquire a dog-eared and rather sad appearance with permanent folding.

One way in which the need for folding can sometimes be eliminated, and accumulating bulk in the envelope certainly reduced, is the "tailoring" of correspondence so that it fits the envelope, by the use of scissors, as is done by the 43 doctors in this survey. Certainly many letters include a good deal of waste space, both in paper that is not written on and in headings and addresses which can be suitably condensed. Nevertheless, trimming paper is hardly an efficient exercise nor a satisfactory employment of the time of trained staff.

Another means of overcoming the necessity for folding is by persuading hospital authorities to send correspondence to general practitioners on paper which fits directly into the envelopes. The Turnbridge Committee recommend the adoption in England and Wales

of A6 International Paper size ($4\frac{1}{8}'' \times 5\frac{7}{8}''$ / 105mm x 148mm) for this purpose (Central Health Services Council, 1965). The Walker Committee, looking at Hospital Medical Records for Scotland, could see no use for the size A6 and recommended instead a new size, $4\frac{1}{3}'' \times 7''$, for reports and letters to general practitioners (Scottish Health Services Council, 1967). The adoption of these recommendations - and they do not, as yet, appear to have been widely adopted - would certainly be an improvement on the present situation, but even this would not eliminate the basic defects of the envelope system for the efficient handling of records, noted by Kuenssberg (1968): the narrow side of the envelope is open, which means that the deep pocket leads to impaling of records and/or introduction of records or letters becoming tiresome or destructive to the road envelope; if reference is made to the content of the record, everything has to be pulled out and later replaced.

c) Extraction of data

The question was asked "With letters and reports, do you or your staff extract relevant data and enter these data on the continuation cards?" Out of 167 respondents,

79 (47%) do so: 11 always (6.6%)

66 sometimes (39.5%)

2 not qualified for frequency

89 (53%) respondents do not extract such data

3 respondents did not answer this question

If formal summaries are not kept (and this is, at present, rarely done) a rapid perusal of the continuation cards, if they have been used conscientiously and especially if diagnoses have been highlighted by underlining or ringing, should provide a reasonable picture of the patient's past medical history. This picture is, however, liable to be incomplete, especially if the patient has been investigated or admitted elsewhere, unless details of such investigations or admissions are extracted from the relevant correspondence and entered on the continuation cards (Geeves, 1957; Walford 1962; Adams 1963; Dover 1968). In a system where cross-reference between the continuation cards or sheets and the correspondence filed was simple - that is where correspondence is filed flat without the need for extraction from an envelope and unfolding - the most complete record would probably be kept, with the most economical use of time, by making a brief reference on the continuation documents to the relevant letters, where as a refinement the most vital data could be highlighted by underlining. In the situation which obtains at present with medical record envelopes, extraction of data and entry on to the continuation cards, though time-consuming, could well be the most efficient practice.

d) Destruction of correspondence

To the question "With letters and reports, do you or your staff go through these and destroy the less important ones (e. g. routine follow-up reports)?"

93 doctors (56%) answered yes: 15 doing so routinely (9.0%)

73 doing so occasionally(43.7%)

5 doing so but not qualifying

their reply in terms of frequency

74 doctors (44%) answered no

The elimination of such correspondence, the content of which does not add materially to the on-going record, is an increasingly necessary exercise to lessen the accumulating bulk in record envelopes, and this practice has been recommended by Walford (1962) and Adams (1963).

Some doctors have doubts about the medico-legal implication of destroying correspondence about patients, and the Medical Defence Societies are unable to give specific rulings about this (Medical Defence Union, 1969). However, reference to the instructions issued to hospital authorities on this point by the Ministry of Health (Ministry of Health 1961) might provide sufficient defence, should the need arise, where the documents destroyed fell within such categories as "correspondence and other papers of minor or ephemeral importance duplicates of documents known to be preserved elsewhere routine reports".

While it may be widely agreed that medical records need to be "purged" from time to time of irrelevant material, the fact that only just over half the doctors in this survey did no indicates that it is not a simple exercise. Two main difficulties arise; one

is in deciding what should go and what be kept, but the greater difficulty resides in the physical handling of the record, referred to earlier, where the main bulk of the documents has to be extracted, unfolded, and as often as not got into some form of order. This provides further argument for the provision of a file where letters can be filed unfolded and in chronological order, which would make purging a much simpler practice and would encourage its adoption as a routine.

e) Usefulness of previously recorded data

Respondents were asked two questions about the usefulness of previously recorded data; first whether notes written on the continuation cards by previous users were found to be helpful and second whether hospital reports and other documents sent on when patients transferred from another doctor were helpful.

74 respondents (44%) found the notes written by previous users usually helpful

56 respondents (33%) found them rarely helpful

21 respondents (13%) found them helpful, but did not indicate whether "usually" or "rarely"

16 respondents (10%) did not find them helpful

2 doctors (1 replying that the notes from previous users were "usually" helpful and the other finding them "rarely" helpful) added comments to the effect that usefulness depended a good deal on legibility.

With regard to hospital letters and reports passed on when patients transferred from one doctor to another,

118 respondents (71%) found these usually helpful

6 respondents (2%) found them rarely helpful

43 respondents (26%) found them helpful, but did not specify whether "usually" or "rarely"

No respondent found that these documents were not helpful.

The fact that 43% of the respondents did not find the notes made by previous practitioners on the continuation cards helpful, or found them only rarely helpful, while only 2% of the respondents found that hospital letters or reports were rarely helpful, is perhaps surprising. The question of legibility is probably a major factor; the vast majority of notes on continuation cards are handwritten, while hospital letters are usually typewritten. Also, hospital letters and reports often refer to major medical incidents, which may only appear briefly amidst a welter of other data which is less significant in the long run. This is a further argument for the routine practice of summarising the more important episodes, and also possibly for the filing of letters and reports in such a way that they are more easily accessible than is at present the case.

8. OPINION ON THE MEDICAL RECORD ENVELOPE SYSTEM

a) Suitability of the system

Respondents were asked the question "Do you consider the present N. H. S. medical record envelope system, for the

purposes of clinical recording, is ideal?"

33 doctors (20%) found the system ideal

134 doctors (80%) found the system less than ideal:

67 (40%) considering the record envelopes to be suitable
with minor modification

38 (23%) considering them to be not very suitable

28 (17%) considering them to be very unsuitable

1 doctor considered them to be not ideal, but did not
specify to what degree

Table 74 shows the breakdown of these results in relation
to the date of qualification of the respondents.

TABLE 74.

Opinion on medical record envelope system
in relation to dates of qualification

Dates of qualification	Opinion					Total not ideal	Total
	Ideal	Suitable with minor modification	Not very suitable	Very unsuit.			
1924 or before	1	1	2	2	5	6	
1925 - 1929	1	2	1	1	4	5	
1930 - 1934	5	5	1	-	6	11	
1935 - 1939	5	12	3	4	19	24	
1940 - 1944	6	12	5	3	20	26	
1945 - 1949	5	9	9	2	21*	26	
1950 - 1954	7	11	10	3	24	31	
1955 - 1959	2	12	4	8	24	26	
1960 - 1964	1	2	2	5	9	10	
1965 or later	-	1	1	-	2	2	
	33	67	38	28	134	167	

* This total includes the one doctor who did not specify the degree of unsuitability.

If two groups are taken, of those qualifying in 1949 or before as against those who qualified after 1949 (that is after the introduction of the National Health Service), the ratio of those who thought the medical record envelope was ideal to those who thought it was not ideal is shown in table 75.

TABLE 75.

Respondents considering m. r. e. to be ideal

Group	Ideal	Not ideal	Totals
1949 or before	23	74	97
After 1949	10	59	69
	33	133	166

$$0.20 < p < 0.30$$

Thus 24% of those graduating in 1949 or before thought the medical record envelope to be ideal as against 15% of those graduating after 1949.

Comparing those who found the medical record envelope to be either "very unsuitable" or "not very suitable" with those who thought it either ideal or "suitable with minor modifications", the results are shown in table 76.

TABLE 76.

Suitability of the medical record envelope

	Very unsuit. / not v. suit.	Ideal or suit. with min. mod.	Totals
1949 or before	33	64	97
After 1949	33	36	69
	66	100	166

$$0.10 < p < 0.20$$

In this case 34% of the respondents who graduated in 1949 or earlier thought that the medical record envelopes were either "very unsuitable" or "not very suitable" as opposed to 48% of those graduating after 1949.

These results give an indication, although not reaching the level of statistical significance, that there is a tendency for doctors in the "younger" range (i. e. those graduating after 1949) to be less satisfied with the current system than their more senior colleagues.

A further analysis in terms of practice structure, area of practice, availability of ancillary help and possession of higher qualifications, is shown in Appendix L. From these results the only statistically significant trend to emerge shows that practitioners with higher qualifications tend to be less satisfied with the medical record envelope system than their colleagues without higher qualifications.

b) Larger folder

The respondents were asked "If a scheme would be devised without involving practitioners in extra expense, to introduce a form of larger record folder (such as the quarto folder used in most hospitals), into N. H. S. general practice, would you welcome this?"

82 doctors (49.1%) stated that they would welcome this

84 doctors (50.3%) stated that they would not welcome this

1 doctor was undecided

Of those who would not welcome such a scheme

76 would prefer to use the present medical record envelope

4 would prefer not to use the medical record envelope

4 did not comment

These results were then analysed in terms of date of qualification, and this is shown in table 77.

TABLE 77.

Respondents welcoming or not welcoming a larger type of folder, in terms of dates of Qualification

Qualification	Number in each group		Total	Percentage in each group	
	Welcome	Not Welcome		Welcome	Not Welcome
1924 or before	3	3	6	50.0	50.0
1925-1929	4	1	5	80.0	20.0
1930-1934	2	9	11	18.2	81.8
1935-1939	6	17	23	26.1	73.9
1940-1944	11	15	26	42.3	57.7
1945-1949	14	12	26	53.8	46.2
1950-1954	17	14	31	54.8	45.2
1955-1959	16	10	26	61.5	38.5
1960-1964	8	2	10	80.0	20.0
1965 or later	1	1	2	50.0	50.0
	82	84	166		

If one disregards the groups which by dates of qualification contain less than 10 doctors (that is to say the first two and the last), the progressive increase in the proportion of those who would welcome a change in the system to those who would wish to retain the status quo, is quite striking.

When the question was phrased "If such a larger record folder could be introduced, but without extra funds being available to assist in the purchase of new filing equipment etc., would you wish to introduce such a system in your practice?" There was, predictably, less enthusiasm for such a scheme:

43 doctors (25.7%) answered in the affirmative

122 doctors (73.1%) would not wish to introduce such a

system in these circumstances, although one doctor qualified this by saying "unfortunately", and another by adding "not under the present system of payment"

2 doctors did not answer this question.

These last two questions are of course hypothetical and the results must be treated with some reserve, but it appears that opinion is equally divided about the desirability or otherwise of introducing a completely new system of medical records, with a preponderance of younger doctors being prepared to contemplate a change favourably. One quarter of the respondents declared themselves willing to introduce a larger form of record folder, even if financial assistance was not forthcoming.

9. COMMENTS

Respondents were invited to record any comments they cared to make about medical records, or suggestions for improved design.

The largest single group of comments offered was related to incoming correspondence, letters and reports. 19 doctors made a plea in one form or another for some standardisation of size in letters and reports emanating from hospitals. It is pertinent to note that the Tunbridge and Walker Committees on Hospital Medical Records in England and Wales and in Scotland, have made recommendations about standardisation of size in letters sent to general practitioners, but there is little evidence as yet that action has been taken on such recommendations. One doctor specifically mentioned the great inconvenience which resulted from the folding and unfolding of hospital letters to fit into or extract from the medical record envelope, and he welcomed the idea of a folder which would hold the A4 International Paper size flat.

9 doctors commented on the quality of the medical record envelope and suggested an envelope of more robust quality (one respondent suggested the use of plastic). One doctor thought that all medical record envelopes should be of the gusseted variety (in fact all newly issued envelopes are gusseted) and three wanted to retain the envelope form but in a larger size, while another three preferred the idea of a folder to an envelope but wanted to retain the

present size.

One doctor who welcomed the idea of a change commented that the present form of envelope was conducive to not using it. The difficulties in relation to any proposal to introduce a large folder were highlighted by the comments of two doctors who pointed out that space was limited and that although they might welcome the idea they could not themselves accommodate larger sized records. Another two doctors thought that the theory (of introducing larger folders) was sound but that the cost would be too great and one doctor suggested a compromise solution of having a small supply of larger sized folders or envelopes available for "chronic" patients.

One doctor felt that an increased size of folder would only allow room for more useless information and finally one doctor (who was kind enough to return the questionnaire duly filled in) ended by commenting "for goodness sake let sleeping dogs lie" !

V. DISCUSSION.

Medical records are acknowledged to be important clinical tools, useful, indeed often essential, in the management of individual patients. Their primary purpose in the field of general practice must be to provide a link between the patient and the practitioner in enabling the constant establishment and re-establishment of the relationship which is central to the provision of all medical care. Records have also important, though subsidiary, roles to play in administration and in research.

The primary documents used for medical records in National Health Service general practice (and previously National Insurance practice) have remained virtually unchanged since 1920. Yet this has been an era of half a century of unprecedented change in the practice of medicine. Improvements in the public health consequent on economic advance and environmental control have marched alongside the therapeutic revolution heralded by the discovery of prontosil, insulin and vitamin B12. These advances have been matched by an "information explosion" (Mitchell, 1969) which has brought in its train problems of increasing magnitude in handling and processing data; problems which are only partially likely, at least in the foreseeable future, to be solved by the use of the computer.

It is not surprising, in these circumstances, that a majority of general practitioners (in this survey 80%) find the

present system of medical record keeping to be less than ideal, and that 49% of the sample who returned questionnaires would theoretically welcome a radical change. What is perhaps surprising is that as great a proportion as 20% felt the medical record envelope system to be ideal, which may either represent innate conservatism or more hopefully a degree of adaptability and willingness to make the best of what tools are to hand.

No attempt has been made in this survey to evaluate the quality of general practitioners' records, but a number of facts have emerged about the way in which records are kept. Kuenssberg has noted that "until recently, most of the recording (in general practice) was only in relation to certification, absence from work, and the giving of drugs" (Kuenssberg, 1966). The results of this survey indicate that now the great majority of general practitioners routinely record information about diagnosis and therapy, 86% record clinical details and National Insurance certification and 36% record circumstantial narrative. Drug hypersensitivities are routinely recorded by 92% of the respondents and immunisations by 80%. This is what the practitioners themselves record - additionally there is a great deal of data to be obtained from correspondence and reports about patients filed in their records.

One third of the doctors replying to the questionnaire always record the issuing of repeat prescriptions and a further quarter do so often; the employment of full-time ancillary staff

is especially conducive to the regular recording of the issue of repeat prescriptions.

29% of the respondents keep some form of special index or register apart from their routine records. The majority of these appear to be used for administrative purposes: only 3% keep registers for research purposes. The use of the Royal College of General Practitioners scheme for "colour tagging" records of patients with certain important defined conditions has only been adopted by 9% of the respondents.

Two thirds of the practitioners replying to the questionnaire make notes about every surgery consultation, but only one third take medical records with them on home visits and 41% never enter notes about episodes seen on home visits, or do so only rarely. Only 9% of the respondents take the records on night calls. One quarter of the respondents who operate branch surgeries do not have the records available at these branch surgeries of the patients who consult them there.

The problem of the size of hospital letters, which often require to be folded, is met by 28% of the respondents cutting down the letters to fit the medical record envelopes. Half of the sample make at least an occasional practice of destroying some of the less relevant and less important documents which accumulate in the envelopes.

The great majority of doctors (97%) found hospital letters and reports passed on when patients transferred from one doctor to another to be helpful, while only 57% thought that the notes written on the continuation cards by previous practitioners were helpful.

Complete standardisation of record-keeping in N. H. S. general practice is probably neither necessary nor necessarily desirable, but the format of the documents used is standard and gives rise to major dis-satisfaction. Envelopes are unsuitable holders for documents which have to be folded to be filed and unfolded on extraction; folders would be more appropriate. The size laid down in 1920 (in order to fit filing equipment installed earlier) simply does not meet present-day requirements. Much thought needs to be directed towards the provision of space in the record clearly set aside for the noting of background information of a permanently valuable nature (family and social histories, blood groups, hypersensitivities etc.), easily accessible and separate from those items of day-to-day recording of more ephemeral interest.

Training in the best use of medical records in general practice to afford better service for patients and greater satisfaction for practitioners can only follow a careful examination of the particular problems of recording in general practice (problems in many ways different from those of recording in hospital practice), an assessment of the virtues and the defects of a system whereby

the patient's entire record follows him (often with considerable delay) as he moves from one area to another, and an examination of the possible uses of automated data retrieval systems in this field.

VI CONCLUSION.

Sufficient dis-satisfaction has been evinced in this study (especially among the more recent qualified respondents) and sufficient interest shown in the possibility of radical change, to support a plea for the setting up of a working party representing interested parties to look at the whole field of medical records in general practice, analagous to the recent committees reporting on hospital medical records, and to recommend changes.

CHAPTER 4

DEVELOPMENTS IN RECORD KEEPING

"The reasonable man adapts himself to the world; the unreasonable one persists in trying to adapt the world to himself. Therefore all progress depends on the unreasonable man".

Bernard Shaw "Man and Superman"

I INTRODUCTION

In general practice in the British National Health Service the prescribed medical record envelopes and continuation cards (E. C. s 5, 6, 7 and 8) are used by the vast majority of practitioners for the keeping of clinical records about their patients. The general conformity observed in the type of medical records used (though not necessarily of the ways of using them) is striking within the great diversity of types of practice and organisation to be found among those working in a section of the medical profession where individuality tends to be particularly prized. This uniformity simply reflects the take-over, in 1948, of the work of the Insurance Committees (under the Lloyd George National Insurance legislation) by Health Service Executive Councils, and with it the type of records and system of transfer in operation in the Insurance Medical Service, recommended by the Rolleston Committee (Inter-departmental Committee on Insurance Medical Records, 1920).

Under the regulations governing the Terms of Service for practitioners in the National Health Service (National Health Service (General Medical and Pharmaceutical Services) (Scotland) Regulations, 1948) each doctor is "required to keep records of the illnesses of his patients and of his treatment of them in such form as the Minister may from time to time determine . . ." This obligation is more extensively explained in the Handbook for General Medical Practitioners (Ministry of Health, 1955) in paragraph A58:

Apart from any records which they may keep for their own purposes, doctors should keep notes of the medical histories of patients included in their lists on forms of record specially provided (E.C. 7 & 8). One of these record cards (and the envelope in which it is kept - form E.C. 5 or 6) is sent to the doctor by the Executive Council when he accepts a patient for the first time. When a patient transfers from one doctor to another the Executive Council recall the record from the first doctor and send it to the second . . .

National Health Service medical record envelopes and continuation cards are thus official documents (and are in fact considered ultimately to be the property of the Minister) and their use for purposes of registration and administration may well have inhibited the study and trial of different forms of documentation

urged by the Gillie Committee (Central Health Services Council, 1963). While it is clear that there is a statutory obligation placed on general practitioners to keep records, the use of the prescribed official documents has only the force of exhortation. Nevertheless the administrative purposes which are served by the medical record envelopes preclude their destruction and make it necessary that the practitioner (save in exceptional circumstances) must store those of his patients. There is thus a general disincentive to the use of any other system for the keeping of clinical records in general practice. There certainly has not been any radical major evolution of recording methods and documentation in the fifty years since the Rolleston Committee reported; however, in a number of instances improvements and changes have been tried and some of these are described in this chapter.

II OBJECTS, MATERIAL AND METHOD

The object of this part of the study is to describe instances of different methods of day-to-day clinical recording in N. H. S. general practice - different from each other and different from the conventional medical record envelope system. A brief examination of the place of the computer in this area is made in the following chapter.

This material was gathered from a review of the literature on record keeping in general practice, supplemented by visits to twenty five doctors with particular interests in the subject during the tenure of an Upjohn Travelling Fellowship awarded by the Royal College of General Practitioners.

The scarcity of published material about records and record keeping in general practice has been remarked by several authors (Geeves, 1957; Staines, 1962; Slack et al, 1966). The descriptions which follow certainly do not comprise a complete review of all systems in use apart from the medical record envelope, but they do cover the majority known to the Department of General Practice at Edinburgh University and to the Records and Research Advisory Unit and the Practice Organisation Committee of the R. C. G. P. Attention is focussed here on methods of day-to-day recording in relation to individual patients; the various indexes and registers whose development for research purposes has been a marked feature of the advance of general practice in the last twelve years

are fully described elsewhere (Eimerl, 1960; Walford, 1963; Kuensberg, 1964; Pinsent, 1968; Eimerl and Laidlaw, 1969).

III EXAMPLES

a) Use of the Medical Record Envelope

1) Summaries

In examining the best use that can be made of the medical record envelopes and cards as they exist at present, several authors have stressed the importance of keeping summaries of important items of diagnostic information (Walford, 1955; McGregor, 1956; Staines, 1962; Kuenssberg 1964a; C. G. P., 1966). Special summary cards are available both from the Health Ministries (form EC7A) and from the R. C. G. P., but it has been shown earlier that neither of these has been widely adopted.

Hodgkin (1963) advocates the practice of underlining or "boxing in" statements of diagnosis as they occur, thus providing a running summary in the body of the day-to-day continuation notes. He also incorporates in his own special continuation cards details of important past illnesses, occupation and changes thereof, sensitivity reactions, family medical history and history of operations. The use of similar special record cards, fitting the medical record envelope, which also incorporate summarised information, is reported by Playfair (1951). Walford (1962, 1967) is another author who proposes the use of "boxed-in" diagnoses and of summaries and he has drawn attention to the need for a special summary of family history, set apart from the bulk of the continuation notes. He defines "important illness" which should

be entered in summaries, as "a disease whose absence from the summary would materially handicap a subsequent practitioner or delay his arrival at a diagnosis" (Walford, 1955)

The summarising of important diagnoses and of family history if generally carried out would undoubtedly make records, especially those of any complexity, more useful and more rational. However, it is clear that this is a technique which is not at all widely adopted, and two reasons may be suggested: firstly that the documents used are not easily adapted for this practice (even with the use of special summary cards), and secondly that practitioners are not trained in any one particular method of record keeping.

2) Elimination of bulk

Walford also suggests that most consultants' letters can be summarised in one line, and that it is therefore sensible to extract the sense from such letters (or pathological reports) and to enter these extracts on the continuation cards and to destroy the letters, except for those letters which might be required for medico-legal purposes (Walford, 1962).

This suggestion is echoed by Dover (1968) who has extracts from hospital letters typed onto his continuation cards. The technique of abstracting letters and reports onto continuation cards is one which has been adopted sporadically and it certainly helps to restrict the bulk which makes medical records so difficult to

handle, but the regular exercise of this method, with the discipline entailed (which often involves the extraction and unfolding of letters and their subsequent arrangement in chronological order) seem to militate against the widespread use of this method.

Another way of approaching the problem of bulk in records has been explored by Hodes and Williams (1968) who have experimented with the use of microfilm. This method has the advantage of reducing necessary storage space by some 95%, but the expense involved would seem to rule out any general applicability.

3) Order within the record

One of the defects of the envelope system is the liability for successive continuation cards to get out of order and for correspondence to be filed haphazardly and out of chronological sequence. Walford (1955, 1962) suggests that continuation cards should be stapled together in consecutive order. This works quite well when most of the patients in a practice are static, but a problem arises with a more mobile population when a new continuation card is issued with each change of doctor and some cards may contain only small amounts of information. To keep hospital letters and reports in chronological order Marsh and Simons (1967) propose the use of treasury tags, while for the same purpose Parrot (1968) uses brass split-pin paper fasteners.

4) Colour coding

In 1964 the College of General Practitioners devised and

proposed a system of colour tagging for records. The proposal was that there should be a defined coloured mark placed on the outside of the record envelopes of patients suffering from certain defined conditions (diabetes, epilepsy, TB, hypertension) or who exhibited drug hypersensitivity reactions or were on long-term maintenance therapy or who had attempted suicide. The intention was to draw immediate attention to any of these conditions whenever the patient was seen in consultation, without needing to make more detailed reference to the notes (C. G. P. , 1964; Kuensberg, 1965). Davies (1965) suggests a more "open ended" system, using a red triangle to denote important conditions, but widening the scope to include written labels within the triangles, covering a less restricted range of conditions than that covered by the colour coding system. This practice, of indicating especially important information in a prominent position on the outside cover of the record, has been adopted, either in the form of tagging or by writing in clear, by some, but by no means by a majority of practitioners.

b) Other Systems, Using the Medical Record Envelope

Fry in Beckenham has devised his own system of using special punch-cards which fit into the medical record envelopes, which are removed and analysed annually, to provide a complete annual record of each of his patients' attendances, diagnoses and management (Fry and Blake, 1956; Fry, 1966). These cards are used in conjunction with the normal clinical records, an age-sex register, a daybook and a disease index to provide data for sophisticated pub-

lished studies on morbidity incidence and prevalence in general practice. (Fry, 1952, 1957, 1961, 1966).

Scott of Keele University has also produced special cards (the 'S4' and 'S4A' cards) which have been adopted by the Records and Research Advisory Service of the Royal College of General Practitioners as complementary to 'E' book recording. The 'S4' card is a computer-compatible summary card which fits into the medical record envelope and is used for summarising data recorded in the ordinary way on the 'S4A' card; the latter remains with the doctor as the ordinary vehicle for his daily notes while the 'S4' card is used at intervals for punching and analysis at the central registry (Eimerl and Laidlaw, 1969). While with the 'E' book form of continuous morbidity recording the index factor is the diagnosis, with the 'S' card system it is the patient.

c) Individual Cards and Folders

At Shard End in Birmingham, Dean has abandoned medical record envelopes for routine use and in their place employs white cards measuring 11½" x 9½". In his practice hospital letters and reports are kept separate from the continuation records. Important points from hospital reports are abstracted and entered in green ink on the large cards. When a patient leaves the practice a summary of the record is written out on an ordinary Executive Council continuation card and placed in the medical record envelope for forwarding to the next doctor. One simple thought which was

prompted by seeing this system in operation was how much pleasanter white card is to work with than the rather unattractive official buff.

In Edinburgh, in the practice run by the Department of General Practice at the University, for the past twenty years records have been kept in quarto-sized folders (Scott, 1950) and this method has withstood well the test of time, the doctors in the practice being clear that they would not wish to revert to the medical record envelope system. When a patient joins the list in this practice a summary of the previous record is made, to initiate the new file. The medical record envelope and continuation cards received from the Executive Council are stored separately and are only brought out again when the patient leaves the practice, at which time an updated summary is prepared and typed on to an ordinary continuation card and forwarded to the next doctor via the Executive Council in the record envelope. The quarto size of continuation sheet is found to make day-to-day recording considerably more convenient than the use of the much smaller-sized N. H. S continuation cards. The system includes the convention of having a running summary of diagnoses down the right hand side of the sheet, with important points from hospital letters extracted and typed onto the continuation sheets. Separate sheets are used for summaries and for the results of laboratory investigations. A particular feature of this practice is the use of special "household cards" which give details of each member of the household with summarised important medical or social data. These cards are made available along with the

individual's record at each consultation.

A folder system is also in operation at the Health Centre in the new town of Cumbernauld. Strong manilla folders are employed 12" x 8½" with a ½" wide spine, and there are pockets on the inner sides of the two leaves of the folder, one to hold continuation record sheets, the other for correspondence which can be held unfolded and easily kept in chronological order.

A similar system of folders is being introduced by Loudon and his partners in a new Health Centre in Wantage in Berkshire (Hawkey et al, 1968; Loudon et al, 1968).

d) Family Folders

While the Edinburgh, Cumbernauld and Wantage folders are designed to hold the records of individual patients, a variation is found in the system adopted at the St. George Health Centre in Bristol (Bristol Local Health Authority, 1967). Here the medical record envelopes supplied by the Executive Council are grouped together by families living at the same address, in folders of quarto size, so that all correspondence relating to the persons whose records are within the folder may be kept flat and easily seen. The medical record envelopes are retained within a pocket in the folder.

A modification of the Bristol family folder system is used by Hogg-Smith and his partners at their Health Centre in Langholm, employing folders manufactured locally which have the admitted

disadvantage of stapled pockets - it is felt that the "gusseted" type of pocket would be preferable. In Langholm the family folders are used in conjunction with both an 'E' book and an 'F' book and it is a variation on the Bristol usage that diagnostic code numbers referring to conditions entered in the 'F' book are also entered under the name of the respective family member on the inside flap of the folder, thus giving both a summary and a coded family history at a glance.

Experience of the use of a similar quarto sized folder with pockets, used to hold the records of families, has been reported from a Northern Ireland practice (Backett and Maybin, 1956).

e) Wallets

The Research Committee of Scottish Council of the Royal College of General Practitioners has reported on the experimental use in eight practices of a specially designed double folding wallet - designated the 'K' wallet (Kuensberg 1968). This wallet when closed is of similar dimensions to the present medical record envelope (it is in fact $\frac{1}{2}$ " longer than the English E.C. 5/6 and $\frac{1}{2}$ " shorter than the Scottish one) and thus fits filing systems in current use. The advantage of the wallet over the conventional envelope is the ability it gives to open the record and view correspondence without the need to pull out and later replace a sheaf of papers. There is no doubt that this system is an advance, but the major objection to it is that the International Paper Size A4 - $11\frac{3}{4}$ " x $8\frac{3}{4}$ " (30 x 21 cm) cannot be accommodated without folding or trimming (and paper of

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this order of size is still used extensively by hospitals for correspondence). The 'K' wallet is also unsuitable for the storage of really bulky notes, which are just those in which it is most necessary to have an orderly system.

Laidlaw in Worcester has evolved an experimental folder (Laidlaw 1969) with the new International Paper Sizes particularly in mind. His folder measures 9" x 6 $\frac{1}{2}$ " and has pockets on the two inner surfaces for holding letters (although again the A4 size requires to be folded) and for continuation cards.

IV RECORDING FOR THE COMPUTER

In Livingston New Town in Midlothian an experiment is being mounted by the Scottish Home and Health Department designed to make available, in time, all patients' records on computer file. It is anticipated that ultimately patients arriving at the Health Centre will be attended initially by a receptionist who, after identifying the patient will immediately extract from an on-line computer selected information from the Patient History File. For each consultation it is envisaged that the doctor will record the details on a Dictaphone and that these details will subsequently be coded by a coding assistant and then fed into the computer to up-date the Patient History File.

The system is being introduced in Livingston by phases: initially the computer file is composed of registration data (name, address, date of birth, sex, etc.) and to this are added blood group, immunisation and cervical smear status and sensitivities. Later, details of diagnoses and of drug therapy are coded and added to the File.

This experiment, and the parallel one at Thamesmead, (Abrams et al, 1968) are obviously going to be of vital importance in the development of the use of the computer in general practice medical records, and the evaluation of these projects in terms of practicability and of cost will be awaited with considerably interest.

At the present stage of development in Livingston the medical record envelope has been abandoned in favour of quarto-size folders,

(simply adapting those used at the local district hospital) which enables the data to be extracted more easily for computer coding (because it is more accessible) and which eases the doctor's task in the day-to-day handling of the record. In the projected first stage of the Thamesmead experiment a foolscap gusseted wallet is to be used to contain the documents of the record; here as at Livingston the small size of the conventional envelopes has been rejected in favour of more spacious paper documents, from which it is obviously easier to locate and extract data for computer coding.

Some of the current thinking on computer usage and the present status of computer-assisted recording will be examined in the next chapter.

V SUMMARY

Published material relating to the use of the medical record envelope system in general practice is reviewed. Experimental developments in the use of individual folders, family files, wallets, and records designed to be used in conjunction with computer facilities are also described. These systems and experiments represent only a very small fraction of the total recording in general practice in the National Health Service.

CHAPTER 5

COMPUTER ASSISTED DATA PROCESSING

"It was a miracle of rare device . . ."

Coleridge "Kubla Khan"

I INTRODUCTION

The use of the digital computer in Medicine is a field of much current interest, and aspects of the subject have been explored in a number of recent books and reports (Payne, 1966; Acheson, 1967; Hardy, 1968; McLachlan and Shegog, 1968; Robertson, 1968; B. M. A., 1969). In administration, laboratory analysis and patient monitoring the place of the computer is well established, but the role of computers in assisting diagnosis and more particularly the computerisation of records, present complex problems and difficulties which are still being explored. Some of the recent literature on the subject of automated data processing by use of the computer is reviewed in this chapter, and the potential of computerised recording systems in general practice is examined.

II COMPUTERS IN THE HOSPITAL SETTING

The two outstanding features of computers in relation to recording are firstly their ability to store compactly a prodigious amount of information and secondly their ability to selectively search and analyse such data incredibly quickly (Payne, 1966). Leaving aside questions of the hardware involved and considerations of cost, the first major problem in constructing medical computer files is that of input. Payne makes a useful distinction between two classes of data: enumerable data, such as patients' identification number, age, sex, blood groups, results of pathological tests and diagnostic and morbidity categories are termed Class I data; Class II data comprises information that is innumerable, such as doctors' notes, radiographs, E.C.G.s etc. Class I data can be efficiently and economically stored, but Class II data requires more complex processing.

The B. M. A. Planning Unit's report on Computers in Medicine (B. M. A., 1969) states that many of the very severe difficulties involved in any proposal to replace a substantial part of the conventional medical record by a computer-based system are associated with the problem of getting the information into the system. Medical record information is of many different types, and much of it is largely unstructured; it is generated by a wide range of medical, para-medical, nursing and clerical staff, many of whom will be unwilling or unable to use a typewriter-like keyboard. Work on this problem is being undertaken at King's College Hospital and

in North Staffordshire, and in relation to discharge summaries at St. Thomas's Hospital, while the problem of a more convenient terminal device is being studied at Essex University.

Experiments in automated recording and data retrieval have been reported from a number of centres in the United States (Levy et al, 1964; Spencer and Vallbona, 1965; Slack et al, 1966; Aussman et al, 1966). In one study from New York on an experimental medical record system, there is a significant comment on the difficulty of converting "Class II" information into data which can easily be handled in computer programs: 'unfortunately the irregularity, non-uniformity and subtlety of expression contained in the progress notes does not accommodate the relatively restrictive control of objective statement enumeration'. (Aussman et al, 1966).

In the United Kingdom the United Birmingham Hospitals use a computer program for hospital administration and for the construction of morbidity and operation indexes (Knox, 1968; Cross et al, 1968; Dale & Roberts, 1968). Kennedy et al, (1968, 1968a) have reported a computer system which collects, stores, reproduces and analyses full clinical case histories for a group of patients attending the peptic ulcer clinic at the Western Infirmary in Glasgow. Although restricted at present, this system has been designed to be completely adaptable to other situations and is thus claimed to be the first practical computer system for patients' case records in this country. In this latter system the narrative of the initial history is entered in formal English sentences, obviating the need for the use of

one of the special computer languages, the problems of which in this type of setting have been examined by Baruch (1965).

III COMPUTERS IN GENERAL PRACTICE RECORDING

In addition to the experimental systems of computer recording in Livingston and Thamesmead, which have already been mentioned, Clarke et al (1969) have given a preliminary report on a simple computerised system of recording in a general practice in Sheffield, where details of diagnosis, treatment and disposal are coded and entered on a computer file. Dinwoodie (1969) has reported the use in his Edinburgh practice of a computer for morbidity indexing, to provide, in effect, an automated 'E' book. Note has already been made of the similar work being undertaken by the Records Advisory Service of the Royal College of General Practitioners in Birmingham in relation to 'E' book and 'S' card recording. Hodes (1968) has described the compilation of a computerised registration file for the patients in his group practice in Hertfordshire and he has reported (1968a) the use of this file for the administration, recording and assessment of screening procedures. Acheson and Forbes (1968) have mounted a similar exercise in an Oxfordshire practice in conjunction with the Oxford Record Linkage Study.

IV MEDICAL RECORD LINKAGE

The idea of the linkage of health records held in several separate places is not a new one. Sir James Mackenzie wrote in 1924 "there is slowly emerging a principle which is yet but dimly perceived, but which it is hoped will enable us to develop the method of record-taking that can be applied not only in Institutes and Hospitals but in the routine practice of the general practitioner . . ."

The arrival of the computer on the medical scene has brought this principle within the reach of practical possibility.

Bothwell (1965) has called for the integration of all medical and social documentation and has drawn attention to the potential represented by computer storage for the realisation of this aim. Benjamin (1967) in a plea for record linkage, has stated: "we need a system of community health records in which the computer with the general practitioner as the natural focus joins into one information system the patient and all those who have anything to do with his care".

E. D. Acheson has analysed the first results of the Oxford Record Linkage Study, which has been in operation since 1962 (Acheson, 1967). In this Study, at least up until the present time, general practitioners' records have not been utilised for source information.

H. W. K. Acheson has reported the pilot stages of the Stoke-on-Trent Linkage Survey (R. C. G. P. , 1967a) involving seven

practices in North Staffordshire with off-line computer facilities. Local record-linkage was also achieved in the one year morbidity survey undertaken as the first part of the Exeter Community Health Research Project (Ashford and Pearson, 1968). These two projects, along with the work at Livingston and Thamesmead new towns, represent the only examples reported so far of record linkage incorporating general practice records.

V OUTPUT

Gruer (1968) and Marinker (1969a) have both examined some of the potential feedback which can be expected from the use of computerised records. It is of course axiomatic that the type, quality and accuracy of the output data is entirely governed by the nature of the input. It is suggested that the following items of data could be entered on computer files for general practice recording:

- 1) Name of patient
- 2) Date of birth
- 3) Number (NHS number or specially constructed identification number)
- 4) Marital status
- 5) Social status and/or occupation
- 6) Address
- 7) Blood group
- 8) Parity
- 9) Immunisation status
- 10) Cervical cytology status
- 11) Sensitivities
- 12) Registration data (dates of joining and leaving list)

From these items it would be possible to obtain basic practice information: age/sex register and demographic data and material for use in keeping up-to-date immunisation and cytology programmes - in these instances the computer itself could be employed for the necessary periodic recall, as is the practice at

present in West Sussex (Galloway, 1963, 1966).

Further data could be added to obtain operational statistics:

- 13) Dates of consultation
- 14) Types of consultation (surgery, visits, telephone etc.)
- 15) Laboratory investigations
- 16) Referrals (internal - to practice nurse or health visitor, and external - to outpatient or inpatient facilities)

From these data assessments would be possible of workload, referral rates and the use of diagnostic facilities.

To expand the use of the file, simple clinical data may be added:

- 17) Diagnosis
- 18) Therapy

From these it would be possible to construct a morbidity index - from the use of the 'E' book and similar tools a good deal of experience has been gained in the coding of morbidity in general practice. Nevertheless, problems of definition and nosology arise which need more detailed scrutiny before any information on morbidity from disparate sources can be accepted as fully valid for large-scale epidemiological or statistical studies.

Within a given practice the above data on computer file could be programmed to establish recall procedures for patients with defined chronic conditions such as diabetes or pernicious

anaemia, or patients on certain types of defined long-term therapy such as hypotensive drugs or hypnotics. It would also be possible to establish monitoring schemes to alert practitioners about patients with, say, recurrent urinary tract infections or recurrent otitis media. Another possibility would be the establishment of a regular audit of prescribing habits and trends.

The eighteen items of information listed above can fairly easily be coded and thus included in the category of "Class I" information. More difficulty may be encountered with the narrative of the record: description of history and of physical signs elicited and background information of family or social history. In deciding how practical it may be to computerise the entire medical record the value and the reproducibility of such data will have to be evaluated carefully.

VI THE FUTURE

It is becoming reasonably clear that computerisation of at least basic registration and identification data and of summarised medical information is a practical proposition, although the economics of the introduction of computer facilities in general practice remain to be defined. What is not clear is how far it may be practicable or indeed desirable to computerise the whole record, and to know this we may have to await the evaluation of the experiments at Livingston, Thamesmead and Sheffield. Predictions on the subject are cautious; at a conference on Record Linkage in Edinburgh in 1968 it was stated that the documentation of all attendances in general practice was unlikely to be practicable in the near future (Record Linkage Conference, 1969). Kuenssberg, however, is of the opinion that mechanical handling of records in general practice could be 10 years or less away (Kuenssberg, 1968).

Marinker states: "Even granted the enormous investment of money and the enormous investment of time and thought by computer scientists and doctors alike, it may seem to many that the day when most general practitioners will sit in front of their V. D. T. (Visual Display Terminal) screens and read their patients' histories is far away. But who, in the age of the computer, would dare to predict just how far?" (Marinker, 1969a).

Clark (1969) is of the opinion that "the completely automated medical record is not in sight yet, for we have such a vast amount

of information that remains inactive for so long that it is clearly at present impossible to store it all on a computer. "

Mitchell is convinced that complete computerisation of records is not desirable: "The history of an illness and the physical findings in that illness, elicited by one or more doctors in a space of time, constitute a story, and to try to reduce a story to a series of answers to a list of pre-determined questions is to invite the loss of vital information in many instances . . . I suggest therefore that one can no more usefully computerise a whole case record in this way on a prospective basis, than one can similarly usefully computerise a detective story." (Mitchell, 1967)

Whatever the future may hold in regard to the computerisation of medical records, it is clear that, for at least an appreciable time, effectively designed primary paper documents will still require to be used, both in their own right and as sources of data to be fed to the computer. It is unlikely that in general practice a direct switch could be made from medical record envelope recording to on-line computer facilities without the intervention of a primary record designed to allow the clearer separation and setting down of desired categories of information. It may be argued, as Mitchell argues, that in any case the computer cannot replace the entire medical record. If this is accepted, then the need for an improved form of paper record in general practice may be held to be a matter of urgency. Even if Mitchell's argument is not accepted and

Marinker's vision of all doctors having direct on-line computer facilities is pursued, it would still appear to be desirable to explore the possibility of an intermediate stage when general practice records could be kept in a more manageable and workmanlike state than is at present the case.

VII SUMMARY

The uses and potential of the digital computer in the field of medical recording and of record linkage are examined and some of the current work in this area reviewed. The practicability and indeed the desirability of computerising the complete medical record are not yet known and evaluation of the experiments being undertaken is awaited.

CHAPTER 6

THE WAY AHEAD

"All progress is based upon a universal innate desire on the part of every organism to live beyond its income".

Samuel Butler "Notebooks"

I INTRODUCTION

The development of the medical record envelope system in the British National Health Service has been traced in earlier chapters and an examination has been made of some of the deficiencies which are apparent in a sample of existing records. The ways in which general practitioners in Scotland use their medical records and their opinions about the documents which form such basic tools of their profession have been explored. A substantial minority of the practitioners questioned indicated their dissatisfaction with the existing system and less than a quarter of the sample approached concluded that the N. H. S. medical record envelopes are ideal for their purposes. A review of different suggested techniques in the use of records and of a number of experimental systems being currently tried out, including the employment of computers, has served to show that the conventional medical record envelope system is not the only, nor indeed necessarily the most desirable practical solution to the problems inherent in the present situation.

In this concluding chapter we turn to examine published opinions about the medical record envelope and continuation card system and then explore briefly the purposes and philosophy of record keeping in general practice before finally making broad recommendations about possible changes.

II PUBLISHED OPINIONS

The only wholly favourable comment which has been found about the medical record envelope is in Taylor's examination of "Good General Practice" in which he states his belief that the N. H. S. medical record card is ideal for its purpose (Taylor, 1954)

Walford, who has written a good deal on the subject of general practice medical records, is of the opinion that "the medical record envelope is deficient in one respect: "it is often not large enough". (Walford, 1955)

Corbett (1962) writes that "... the present envelopes ... are now inadequate for their purposes", and he suggests that a type of folder, similar to those in use in hospitals, would be preferable.

The comments of the Gillie Committee on the Field of Work of the Family Doctor (Central Health Services Council, 1963) have already been quoted: the Committee was far from satisfied with the format of forms E. C. 5, 6, 7 and 8 and it felt that much study and trial must be undertaken, urgently, so that a change acceptable to doctors could be proposed.

Last (1966) comments: "The record card at present used in the National Health Service could hardly be more unsuitable for the maintenance of good records. Its size alone discourages the transcription of comprehensive clinical notes and it contains no place at all for recording essential information in continuity".

Acheson, in his report on the Oxford Record Linkage Study,

is of the opinion that forms E.C. 5 and 6 are perhaps the most important and the least satisfactory of all the medical documents used in the National Health Service. "Unfortunately these records are designed in such a way that they could not fulfil their function even if communications within the Health Service were perfect ... Their size was no doubt appropriate when doctors made their rounds on foot or on horseback and when treatment was simple. Correspondence about a panel patient in the days of Lloyd George was presumably slender. Today with the increasing complexity and availability of medical care they are hopelessly inadequate. They bulge with letters of different shapes and sizes. As these letters require to be folded in different ways it is difficult to keep them in sequence. To assemble them to precis the salient facts of the history is a time-consuming and disheartening task. In view of the derisory accommodation providing for his own clinical notes it is not surprising that in many cases the general practitioner prefers to rely on his memory". (Acheson, 1967)

Hodson, in a posthumously published treatise on the doctor-patient relationship is of the opinion that "the present meagre records are a disgrace, a barrier to effective communication, and although probably adequate for half-hearted pre-war panel practice - from which they have been adopted - bear no relation to the needs of a comprehensive National Service". (Hodson, 1967)

Abrams et al (1968) also point out some of the defects of the

medical record envelope system: "General practitioner records are kept on small buff cards fitting into small buff envelopes, designed some 60 years ago and looking every year of their age. It is small wonder that the actual notes kept on these cards often seem inadequate and give little information to anyone except the doctor who wrote them, who presumably can decipher his own personal shorthand. By the time a few hospital letters and reports, of assorted shapes, sizes and dates are crammed into the envelope alongside the increasing volume of cards, the task of sorting out current data becomes intolerable . . . The basic problem is that of presenting clinically important data prominently at the time when it is needed. The time and effort involved in this task makes it an ideal which it is impracticable to achieve with conventional record keeping."

Calls for change in the present system of medical records in general practice (though little in the way of constructive suggestion) have appeared in leading articles and letters in the medical press ('G. P.', 1967, 1967a; Eastwood, 1967; Watson, 1968; Davies, 1969) and may be summarised by the conclusion of the Lancet to a leading article on "Rethinking Medical Records": "... there is no lack of simple yet fundamental things worth doing to medical record systems in this country at all levels. In an organisation which can see biochemists already within sight of the fully computerised laboratory with multiple autoanalysers reporting direct to the ward by teleprinter, while allowing general practitioners to struggle still

with a filing system introduced by Lloyd George in 1912, we need not wait for technical advances before finding things that cry out for change." (Lancet, 1967)

III THE PURPOSES AND FUNCTIONS OF THE MEDICAL RECORD

Bennett and Holland (1968) suggest that a case record is compiled to serve a number of purposes: firstly, it is required for the continuing care of the patient; thereafter it is of value for research, administrative purposes, and medico-legal requirements.

If records are designed and used in such a way as to fulfil efficiently the first of Bennett and Holland's purposes - the continuing care of the patient - the fulfilment of the subsidiary purposes will flow therefrom either directly or by using the records in conjunction with indexes, registers or data extracted from the primary record and summarised on computer files. What then is the function of the record in the continuing care of the patient? It is simply to provide a link or bridge between the patient within his environment of family, social history and past morbidity experience, and the doctor who is looking after him. The record exists to enable and promote the establishment and re-establishment of the relationship between patient and doctor which is central to the provision of all medical care.

Watson has written of the patient at the time of his consultation with his doctor: "At this moment behind and around him, visibly or invisibly, stand his family and his habits, his genetic and personal past". (Watson, 1967) It is this background of the patient's environment and his experiences which should be represented by the record.

In essence, then, the medical record should be an aide-memoire for the doctor to place the patient in the context of the major influences which have acted and are acting on him and to complement and enlarge the information given by the patient at each particular consultation. An effective aide-memoire of this sort should include information on:

Identification: name, address, date of birth, N.H.S. number, civil status and occupation.

Family and social history.

Preventive procedures: immunisation, routine chest radiography and cervical smear status.

Physiological and pathological measurements: blood group, height and weight, blood pressures etc. , and results of laboratory investigations.

Clinical data and morbidity: accepting in this context McGregor's definition of morbidity as "simply any condition of the mind or body that caused the patient to visit the doctor or ask for his assistance". (McGregor, 1956)

Treatment prescribed.

Taking the above six groups of information in turn, the problems which arise in these areas with the use of the medical record envelope system are now examined.

a) Identification

Generally, identification data was found to be accurate in

the sample of records studied earlier, with the exception of civil status and occupation. Of the 187 records examined, civil status was either not recorded or was recorded incorrectly in 112; this was due in large measure to a defect in the design of the records (recently remedied), but also to lack of training in record-keeping. Occupation was not recorded in the cases of 55 out of the total of 105 individuals in the sample of 187 in employment (full or part-time). This deficiency must be accounted for entirely by lack of training and system in record-keeping.

b) Family and social history

The 187 patients who responded to the questionnaire analysed above reported a total of 405 conditions of medical importance in closely related members of their families; 36 of these conditions were noted in the medical records examined and 369 were not recorded. This finding of only one tenth of the possible items of family history which could be recorded being so recorded indicates a serious deficiency. Such family history as was recorded was embedded in the body of the continuation notes and difficult to identify. The recording of the patient's own social history (admittedly a somewhat more nebulous concept than that of family history) was not examined (apart from the question of the patient's occupation) but experience indicates that there are major deficiencies in this respect also.

Methods of filling this important gap in medical recording

have been described: these include family record folders, household cards and the 'F' book. None of these have been widely adopted, and it is suggested that the recording of this sort of information would be most easily encouraged by the provision of a separate clearly identified part of each individual's record reserved for the recording of this category of information. It should be left to the individual practitioner to decide the amount of detail about family and social history he felt it was significant to record; the important aim is to provide simple means for noting in a place that is easily accessible the information on these topics which is gathered piecemeal over serial consultations.

c) Preventive procedures

The recording of immunisation procedures was found to be poor in the extreme, although this may in part reflect the age range of the sample chosen, which excluded children. Of the 167 practitioners who responded to the questionnaire, 80% reported that they routinely recorded immunisations given. The recent introduction of an overprint on the back of the medical record envelopes (Scottish Home and Health Department, 1969) with its provision for the recording of immunisations and also mass miniature radiography and cervical smears, may well effect an improvement in this sphere.

d) Physiological and pathological measurements

As with family and social history, the results of diagnostic tests and physiological measurements tend to be found in the body of

the continuation notes and are thus difficult to identify. Laboratory reports are usually filed on pieces of paper (often folded) in haphazard order. Once again it is suggested that greater efficiency would be promoted by the use of separate cards or sheets. As far as reports of laboratory investigations are concerned, the practice generally adopted in hospitals of fixing such reports in consecutive order onto a specially identified sheet within the record folder has much to commend it, but this would not usually be possible given the present size of the medical record envelopes and continuation cards and the usual dimensions of laboratory reports.

e) Clinical data and morbidity

The on-going morbidity experiences of the patient form the bulk of the medical record. A great deal of this is entered on the continuation cards kept by the general practitioner. Of the 167 respondents in the sample of general practitioners quoted, 93% routinely record diagnosis, 86% routinely record clinical details and 36% routinely record circumstantial narrative.

The recording of clinical details (symptoms and signs) and of circumstantial narrative can be of vital importance to the practitioner for use as a check or as a "lead in" for the next occasion on which he sees the patient, but in later years the single most important item of information which he will want to know is the diagnosis or if no diagnosis is possible at least the major presenting symptom.

There is scope here for the division of this sort of material into classes of permanent and of more ephemeral interest; diagnoses (other than of obviously trivial conditions such as mild upper respiratory tract infections, minor trauma and the like) would be considered to be of permanent interest, while clinical details and circumstantial narrative might well be considered to be of ephemeral interest only. It is suggested that summaries should be made of items of permanent importance (in this context usually diagnoses) and that records of more ephemeral interest should be destroyed after the passage of a period of time. This is, of course, a procedure which could be used with the present records, but it has not been adopted save in a very few instances, despite the provision both by the Health Departments and the Royal College of General Practitioners of forms of summary cards which fit the envelopes. Again, this may partly due to lack of training and agreed system, but it may also be that the cramped size of the record inhibits this sort of exercise.

Further clinical information is contained in the correspondence (consultants' letters, discharge reports etc.) which accumulates in the files. Over half of the 187 records analysed earlier contained, in addition to continuation cards, ten or more documents - and a number contained very many more. Of the 167 general practitioners who responded to the questionnaire on the use of medical records, 28% cut or trim the letters they receive

so that they may more easily fit the envelopes; 45% extract data from the letters and reports they receive and enter these onto the continuation cards (38% "sometimes" and 7% "always".)

Much of the information which is given in correspondence about patients is of permanent value, but inevitably with the passage of time some of this material becomes obsolete, and routine follow-up reports and discharge notes which are later superseded by fuller letters can be destroyed without decreasing the value of the record. 56% of the doctors answering the questionnaire destroy the less relevant and less important letters in their medical record envelopes (9% "routinely" and 44% "occasionally".)

Most letters require to be folded once and many twice or more to fit the record envelopes. Paper which is folded and filed in an envelope is relatively inaccessible. For the optimum presentation of data recorded in correspondence, for its easiest accessibility and to aid efficient and rational "pruning", the filing of letters flat in a folder would be greatly preferable to their being held folded in an envelope.

f) Therapy

The recording of therapy prescribed is of course an integral part of the clinical record and the initiation of new treatment is appropriately recorded in the body of the day-to-day continuation notes. However, a problem arises with patients on long-term therapy - a substantial proportion of those in regular contact with

their general practitioner. For many of these patients repeat prescriptions need to be supplied over periods of months or years. The recording of the issue of these repeat prescriptions is desirable both for clinical and legal reasons but their embodiment in the routine day-to-day continuation notes adds to the "clutter" and potential confusion. In the sample of general practitioners questioned, 31% record repeat prescriptions "always", 26% do so "often" and 16% do so "rarely", while 24% do not do so. There is a good case in this instance too for separating out a particular category of recording onto a special and clearly defined sheet or card. This is possible with the present medical record envelope, but it is not especially easy; the identification of one special card among several which have to be extracted from an envelope is a less rapid exercise than the identification of a special sheet by turning over the pages in a folder.

IV WHO USES THE MEDICAL RECORD?

If it is accepted that the primary purpose of the record is that of a clinical aide-memoire, the question may be asked, whose memory is it to aid? A major emphasis in official Health Department literature is laid on the provision of information for practitioners to whose care the patient is later transferred. McGregor & Potts (1956) also stress the importance of providing information for partners, assistants or locums. Walford, however, is of the view that "too much emphasis should not be laid on writing notes for the benefit of later practitioners and more emphasis should be laid on providing them with a brief summary of the patient's history. (Walford, 1955)

In the survey analysed earlier 44% of the responding general practitioners found the notes written by previous users to be "usually helpful" while 33% found them "rarely helpful" and 10% did not find them helpful.

Three factors make the question of who uses the records especially topical. First there is the increase in the numbers of general practitioners coming together to practice in partnerships or groups, with the result that although the patient is registered with one partner, an increasing number of other partners (not to mention assistants or locums) may have access to and use of the patient's record. A second, allied, factor is the increasing employment of ancillary staff - secretaries, nurses, health visitors,

social workers etc., who may also have access to the records.

The third factor is the phenomenon of population mobility. In urban areas particularly population mobility may account for a turnover in the order of 10% of a practice population per annum.

Pinsent examines this aspect of the contemporary scene in his paper on continuity of care in his Birmingham practice and he concludes that the key to continuity of care lies in the records:

"In a fluctuating practice the element of personal acquaintance may be less but that of personal involvement with the problems presented need not be so. One function of efficient records is to enable all practice staff to bear their full share of personal involvement . . . Only systematic records can replace a series of memories in which a patient's medical history may at present reside, in greater or lesser detail." (Pinsent, 1969)

The application of these three factors underline both the need for the existence of records and the need for systematic record keeping. The implication of Walford's dictum is that if records are well and systematically kept by whichever individual is currently using them (especially if important information is summarised) they will be valuable to other users, even if the recording is not made specifically with other potential users in mind.

V SYSTEM AND CLASSIFICATION

Systematic record keeping implies some form of classification of data. Three forms of classification may be considered: firstly classification in terms of temporal usefulness - that is, items likely to be of long-term interest and items of only short-term or ephemeral interest. Secondly classification may be made in terms of separable categories of information. Thirdly, information may be classified as enumerable or as innumerable data. These forms of classification are not exclusive, either mutually or of the adoption of other criteria, but they may serve as a basis for considering ways in which a medical record may be most usefully and systematically set out.

a) Temporal usefulness

The Tunbridge Committee on the Standardisation of Hospital Medical Records (Central Health Services Council, 1965) found it useful to classify records into three types - primary, secondary and transitory. Primary medical records are defined as those completed during a patient's spell of treatment which would be of importance to the patient's care throughout his stay in hospital and during any later spells of treatment. The primary documents are those of long-term value. It is felt that such non-primary documents as might have legal value in that they might be needed in the case of litigation ought also to be separately identified and these are designated secondary documents. The remaining documents which have neither legal nor medical significance after discharge

of the patient are referred to as transitory documents.

In general practice, of course, with its emphasis on continuity of care represented by the continuity of the record, the patient is never in any formal sense discharged. Nevertheless, the concept of primary and transitory information can be applied, although the point of time at which information can be considered to be transitory would have to be decided arbitrarily.

One of the unique features of the British National Health Service system of general practice is the potential for building up a life-time's continuous picture of the patient's medical history. Backett et al (1953) have drawn attention to the fallacy of the idea of the complete life-long record, in that no account is given of ill-health which may exist but for which advice is not sought from the doctor. Also it is often found that no account is given of treatment which has been given by sources not in direct communication with the general practitioner (e. g. some hospital casualty clinics, industrial clinics and the like). Nevertheless, a fairly comprehensive picture can be built up and the main danger may be that of over - rather than under-recording. It has been remarked that "most physicians still believe that what is written is the truth and must therefore be recorded. It is difficult to persuade them that it is necessary to define exactly what information has lasting value". (Bennett and Holland, 1968) The indiscriminating collection and retention of all data that accrues about a patient may in fact obscure

the salient points and this is a problem which can only be overcome by the regular "pruning" of transitory material and the regular summarising of important features for the permanent or primary record. Such procedures could meet the reported objections of A. Engel to the concept of life-time records, when he suggests that "amassing such an astronomical amount of factual information and personal opinion would be difficult to handle and that 'too much of it would be left untouched by the human mind' to use Sir George Godber's words." (Martin, 1969)

The practical implication of accepting the need to divide information in the record into classes of primary importance and transitory importance is that much of the day-to-day continuation material must be recorded in such a way that it is easily identifiable and discarded when it is no longer considered to be of value; as a corollary provision has to be made for summarising any data considered to be of primary or long-term interest from the transitory record before the latter is discarded. The same principle obtains in dealing with the correspondence which accumulates in the file.

b) Categories of information

Within the primary record some form of separation is clearly desirable between certain different categories of information. It is already apparent that family and social history are at present poorly recorded and it is suggested that at least one reason for this is the lack of provision for such items to be recorded in

a clearly identified part of the record separate from the day-to-day continuation notes. The issue of repeat prescriptions for long-term therapy needs to be recorded separately from other information. Similarly the reports of laboratory and other special examinations should be collected in some defined section of the record. It is already accepted as routine practice that the records of pregnancies are separated from other parts of the clinical record and there is room for extension of this form of structured or checklist type of recording to other situations where routine follow-up consultations are usual, such as infant welfare, diabetes, hypertension, pernicious anaemia, etc. (Wright, 1966; Staines, 1968)

c) Enumerable and innumerable data

Payne's classification of information into enumerable (Class I) and innumerable (Class II) forms (Payne, 1966) has already been mentioned in the section on the use of computers. Class II information can be converted into Class I information by complex coding techniques.

Whenever and however automated data processing mechanisms are introduced generally into medical recording in general practice, they are likely to complement rather than replace the primary paper record. If this is so, the necessity remains for the original record to be so ordered that the different categories of information required for entry onto computer files should be easily identified and thus easily extracted. That this is possible

with the conventional type of medical record envelope recording is shown by the use of the 'S' card system, but its efficient development is likely to be dependent on the provision of a record within which there is greater space and greater flexibility in the deployment of the documents used, as in the experimental system at Livingston.

VI AN IMPROVED RECORD SYSTEM

In summary, the two features of the medical record envelope system which tend to impede efficient recording are:

- 1) Type of holder: an envelope, the contents of which have to be extracted through one open end, renders the data held therein relatively difficult to extract.
- 2) Size: cards of approximately 8" x 5" encourage cramped writing and illegibility; the majority of letters and reports which are filed in the envelope require to be folded and are thus not easily accessible.

Partly no doubt because of the defects in the design of the documents used there has been observed a general lack of system in the use of these records (and of training in the systematic use of records), in particular in respect of the summarising of important information and the discarding of information of only transitory importance and in the separation of different categories of information to allow easier access and use.

It is submitted that if there is to be an improvement in recording in general practice the medical record envelope will have to be replaced by a different form of primary document. Any such new record should fulfil the following criteria:

- a) It should be of suitable type; it should not be an envelope,

open at one end only, but a folder which can open out and display its contents by the simple turning of pieces of paper rather than requiring its constituent documents to be extracted and unfolded for inspection.

b) It should be of suitable size; this would need to be decided after discussion, but the guiding principle should be that the majority of correspondence received should be accommodated without the need for folding. It is probable that the International Paper Size A4 ($8\frac{1}{4}'' \times 11\frac{3}{4}''$ / 210mm x 297mm) would meet this criterion.

c) It should be designed to encourage the summarising of important data and separation of defined categories of information, by the provision of recording sheets identified for special purposes by agreed codes of colour bands or tags.

d) It should be designed to permit flexibility of use so that within the broad categories encouraged by the use of defined recording sheets (e. g. for family history) individual users could devise their own styles of recording most suited to their own needs and circumstances. The design of the record should also permit the easy employment, as desired, of special structured or check-list forms of record for specified conditions.

e) The documents contained in the record should be designed so that as and when the situation arises they may easily be converted to systems which are computer compatible.

VII INTRODUCTION OF NEW SYSTEM

It has already been pointed out that any practitioner is at present at liberty to use any system of record keeping he may desire, but that within the National Health Service the conventional medical record envelope system is perpetuated by the use of the records as registration documents and the automatic provision of such envelopes by the Executive Councils when patients change their doctors. It is obvious that if any new and radically changed system was to be promulgated for general use, consultation and agreement between the representatives of the profession and the Health Departments would be required. There are obvious difficulties (quite apart from questions of design of suitable documents) inherent in the suggestion that the medical record envelope should be abandoned or phased out and that a larger folder should be introduced in its place.

Problems which would require to be examined include:

- 1) Introduction: this would need to be on a gradual scale - an overnight change in the system would not be a practical possibility. As a start the new folders could be issued to practitioners electing to use them, to be used for the records of all new patients (i. e. patients newly joining the list and new births). For a period of time at least the new folder system and the old medical record envelope system would have to run in parallel and there would have to be an element of choice open to practitioners whether or not in the initial phase they opted to use the new system. Conversion of

filing equipment will be difficult in many cases - although it may well be that a system which encouraged more regular and systematic "pruning" of documents could in the long run diminish rather than increase the total volume of space required for filing.

- 2) Conversion of existing records: practices might wish to do this by degrees, starting with the more complex records or "fat folders" whose handling at present is so difficult and where conversion to a folder would obviously aid more efficient patient management.
- 3) Registration of patients: at present the medical record envelope is a registration document. Consideration should be given to the possibility of divorcing the Executive Council registration procedure from records altogether. It should not be too difficult to devise a system whereby the notification of the registration of a patient on a practitioner's list by the Executive Council could be carried out by sending a card which would then form part of a practice card index system which in itself could be used as an age/sex register.
- 4) Circulation of the record: if the separation of the record from the registration process as suggested above was adopted, then the initiation of a medical record by the practitioner could be related to his acceptance of the patient on his list, or the first consultation, and not as at present to the notification by the Executive Council that such acceptance has been registered. It would be a matter of

debate whether it would be considered desirable that the preceding practitioner should always be required to send the entire record to his successor, or whether an adequate summary would suffice. If the record holder is no longer needed for registration purposes it would seem reasonable that stocks of the new folders should be kept at practice premises and new records initiated, as suggested, on the first contact with the patient; the economic advantages, or otherwise, of the contents of the record then being returned to the Executive Council on the patient's withdrawal from the list, in a disposable envelope, and the outer folder being retained in the practice for re-use with a new identification label, would need to be explored.

5) Cost: the costs of any radical change would be likely to be high; Kuenssberg estimated that the cost of a complete changeover to a new size of records would be in the region of £2 million (Kuenssberg, 1968) - or approximately 0.1% of the present annual expenditure of the National Health Service. If the Health Departments accepted that a new record system was desirable in terms of greater efficiency within the Service, then it would seem reasonable that the provision of folders and recording sheets should be accepted, as with the present forms E. C. 5, 6, 7 and 8, as a central Departmental responsibility.

More difficulty, however, is presented by the question of the costs of conversion of existing filing systems. Heretofore the

provision of filing equipment and accommodation has been accepted as the practitioner's own responsibility. In answering the questionnaire, 49% of the responding sample of 167 general practitioners stated that they would welcome the introduction of a form of larger record folder, if such a scheme could be devised without involving practitioners in extra expense. However, only 26% stated that they would wish to introduce such a system in their practices if extra funds were not available to assist in the purchase of new filing equipment etc.

Thought must centre on the possibility of assisting practitioners electing to use a new system by means of grants for conversion: the sums involved, especially if spread, as they would need to be, over a period of some years, are small enough within the context of the total National Health Service budget, provided again that the initial premise of likely increase in efficiency is accepted.

VIII TRAINING FOR RECORD KEEPING

Staines (1962) has remarked that we are not taught about how to use and manipulate the records we make. Walford (1955a) points out that the techniques for record-taking taught to medical students in hospital are not applicable to general practice. Hardy (1968) has urged that to achieve the prodigious advances that are possible in medical recording it will be necessary to train a generation of general practitioners to record - and to continue to record.

This emphasis on training is a necessary one, but adequate training must be preceded by the provision of adequate tools on which to train. It is the contention of this thesis that the tools at present used by general practitioners in the National Health Service are no longer adequate.

A test of the adequacy of the medical record (accepting its role as an aide-memoire for use in the clinical management of the patient) is the situation which faces the practitioner attempting to review the history of a complicated case. The picture is all too familiar. The doctor has in his hand a bulging buff envelope, often rather the worse for wear at the edges, giving him on immediate glance the patient's name, address, date of birth and (sometimes) occupation. From this he pulls a series of continuation cards, usually in no particular order, some of them blank, many containing lines of often cramped and illegible handwriting with information, if it is decipherable, about past diagnoses, symptoms, signs and

therapy all scattered in generally unsystematic fashion. Once these are got in some sort of order a wad of consultants' letters, operation notes, pathological reports and sundry correspondence in a bewildering assortment of shapes and sizes has to be unfolded, faced the right way and sorted into chronological order.

These operations are wearisome and frustrating enough when the doctor is on his own gathering data for a referral letter or insurance report. In the presence of the patient the performance tends to take on a slightly humiliating or at least irritating aspect, and it is manifestly inefficient. There is plenty of information to be got (though it is often incomplete) but its retrieval is liable to be haphazard and difficult. This is not an indictment of those doctors who use a system which is virtually forced on them, it is an indictment of the system itself.

Until this system can be improved, training in record-keeping in general practice is unlikely to rise above its present rather primitive level. In many respects general practice has moved out of the "cottage industry" era, but record-keeping has lagged behind the great advances that have been made in clinical medicine and in organisation.

IX CONCLUSION

"Any record system can be made to work by an individual doctor, but it stands or falls as a national system on whether or not it induces the generality of practitioners to keep adequate clinical records; this the present E. C. 5, 6, 7 and 8 does not do..." (Kuenssberg, 1968). This study supports Kuenssberg's conclusion. That only half of the doctors questioned in the survey reported stated that they would welcome the introduction of a new system need not deter those whose responsibility it is to plan; advance depends less on concensus opinion than on leadership, provided those who give the lead are prepared to marshall and present the facts.

It is now half a century since the Rolleston Committee reported. There could be no more appropriate celebration of this jubilee than a determined effort to devise and introduce a new and more suitable form of medical record for use in general practice in the National Health Service.

APPENDIX A

CONFIDENTIAL

- 1) Name: 1a) Surname before marriage:
- 2) Address:
- 3) Date of Birth:
- 4) Occupation: (If retired, please state "retired" followed by name of your previous profession or employment)
- 4a) Occupation: (Please put a tick opposite the appropriate space)
- | | |
|----------------------|---|
| Housewife | — |
| Part-time employment | — |
| Full-time employment | — |
- If in part- or full-time employment, please state nature of employment:
- 5) Is your husband/wife in any way handicapped or unable to carry on his/her normal activities by reason of ill-health? Yes/No
- If Yes, please state nature of handicap or cause of ill-health:
- 6) Have you ever had any serious illness requiring hospital admission? Yes/No
- If Yes, please specify:

7) Have you ever had any operations? Yes/No

If Yes, please specify:

8) Please make a list of any conditions about which you have consulted a doctor during the past two years:

9) Is there any history in your family (apart from yourself) of:

a) Chest trouble (e. g. bronchitis, asthma, T. B.) Yes/No

b) Heart trouble (e. g. angina, coronary thrombosis) Yes/No

c) Digestive trouble (e. g. ulcer, chronic indigestion, colitis) Yes/No

d) Nervous trouble (e. g. epilepsy, depression) Yes/No

e) Rheumatic trouble (e. g. rheumatism, arthritis) Yes/No

f) Cancer Yes/No

g) Stroke Yes/No

h) Diabetes Yes/No

i) High blood pressure Yes/No

j) Any other serious illness Yes/No

If the answer to any of the above questions is Yes, please give details:

10) Are you, to your knowledge, allergic to any drugs (e. g. aspirin, sulphonamides or penicillin?) Yes/No

If Yes, please specify:

11) Have you been immunised against:

Diphtheria Yes/No/Don't know

Whooping cough Yes/No/Don't know

Tetanus Yes/No/Don't know

Polio Yes/No/Don't know

Smallpox Yes/No/Don't know

APPENDIX B

CONFIDENTIAL

1) Name: 1a) Surname before marriage:

2) Address:

3) Date of Birth:

4) Occupation: (If retired, please state "retired" followed by name of your previous profession or employment)

4a) Occupation: (Please put a tick opposite the appropriate space)

- Housewife —
- Part-time employment —
- Full-time employment —

If in part- or full-time employment, please state nature of employment_

5) Is your husband/wife in any way handicapped or unable to carry on his/her normal activities by reason of ill-health? Yes/No

If Yes, please state nature of handicap or cause of ill-health:

6) Have you ever had any serious illness requiring hospital admission? Yes/No

If Yes, please specify:

7) Have you ever had any operations? Yes/No

If Yes, please specify:

8) Please make a list of any conditions about which you have consulted a doctor during the past two years:

9) Have you ever consulted a doctor about any of the following:

- | | |
|------------------------------|--------|
| a) Asthma | Yes/No |
| b) Bronchitis | Yes/No |
| c) Spitting of blood | Yes/No |
| d) Pleurisy | Yes/No |
| e) T. B. | Yes/No |
| f) Shortness of breath | Yes/No |
| g) Rheumatic fever | Yes/No |
| h) Angina or chest pain | Yes/No |
| i) Coronary thrombosis | Yes/No |
| j) High blood pressure | Yes/No |
| k) Giddiness | Yes/No |
| l) Fainting attacks | Yes/No |
| m) Fits | Yes/No |
| n) Nervous breakdown | Yes/No |
| o) Depression | Yes/No |
| p) Jaundice | Yes/No |
| q) Stroke | Yes/No |
| r) Diabetes | Yes/No |
| s) Malaria | Yes/No |
| t) Chronic indigestion | Yes/No |
| u) Stomach or duodenal ulcer | Yes/No |
| v) Colitis or diverticulitis | Yes/No |
| w) Rheumatism or arthritis | Yes/No |
| x) Gall stones | Yes/No |
| y) Kidney stones | Yes/No |

If the answer to any of the above questions is Yes, please give details:

- 9) Is there any history in your family (apart from yourself) of
- | | |
|--|--------|
| a) Chest trouble (e. g. bronchitis, asthma, T. B.) | Yes/No |
| b) Heart trouble (e. g. angina, coronary thrombosis) | Yes/No |
| c) Digestive trouble (e. g. ulcer, chronic indigestion, colitis) | Yes/No |
| d) Nervous trouble (e. g. apilepsy, depression) | Yes/No |
| e) Rheumatic trouble (e. g. rheumatism, arthritis) | Yes/No |
| f) Cancer | Yes/No |
| g) Stroke | Yes/No |
| h) Diabetes | Yes/No |
| i) High blood pressure | Yes/No |
| j) Any other serious illness | Yes/No |

If the answer to any of the above questions is Yes, please give details:

- 10) Are you, to your knowledge, allergic to any drugs (e. g. aspirin, sulphonamides or penicillin?)

If Yes, please specify:

- 11) Have you been immunised against:

Diphtheria	Yes/No/Don't know
Whooping cough	Yes/No/Don't know
Tetanus	Yes/No/Don't know
Polio	Yes/No/Don't know
Smallpox	Yes/No/Don't know

APPENDIX C

CONFIDENTIAL

- 1) Name:
- 2) Address:
- 3) Date of birth:
- 4) Occupation: (If retired, please state "retired" followed by name of your previous occupation or profession)
- 4a) Occupation: (Please put a tick opposite the appropriate space)
- | | |
|----------------------|---|
| Housewife | — |
| Part-time employment | — |
| Full-time employment | — |

If in part- or full-time employment, please state nature of employment:

- 5) Is your husband/wife in any way handicapped or unable to carry on his/her normal activities by reason of ill-health: Yes/No

If Yes, please state nature of handicap or cause of ill-health:

- 6) Have you ever had any serious illness requiring hospital admission? Yes/No

If Yes, please specify:

7) Have you ever had any operations?

Yes/No

If Yes, please specify:

8) Parents

Mother: If alive, state of health:

If dead, cause of death and age at death:

Father: If alive, state of health:

If dead, cause of death and age at death:

9) Brothers and Sisters (please give in order of ages)

Names	Ages	State of health (or cause of death)
-------	------	--

10) Children (please give in order of ages)

Names	Year of birth	State of health
-------	---------------	-----------------

11) Is there any history in your family of:

- | | |
|--|--------|
| a) Chest trouble (e. g. bronchitis, asthma or T. B.) | Yes/No |
| b) Heart trouble (e. g. angina, coronary thrombosis) | Yes/No |
| c) Digestive trouble (e. g. ulcer, chronic indigestion, colitis) | Yes/No |
| d) Nervous trouble (e. g. epilepsy, depression) | Yes/No |
| e) Rheumatic trouble (e. g. rheumatism, arthritis) | Yes/No |
| f) Cancer | Yes/No |
| g) Stroke | Yes/No |
| h) Diabetes | Yes/No |
| i) High blood-pressure | Yes/No |
| j) Any other serious illness | Yes/No |

If the answer to any of the above questions is Yes, please give details:

12) Are you, to your knowledge, allergic to any drugs (e. g. aspirin, sulphonamides or penicillin?) Yes/No

If Yes, please specify:

13) Have you been immunised against:

Diphtheria	Yes/No/Don't know
Whooping cough	Yes/No/Don't know
Tetanus	Yes/No/Don't know
Polio	Yes/No/Don't know
Smallpox	Yes/No/Don't know

APPENDIX D

CONFIDENTIAL

1) Name:

2) Address:

3) Date of birth:

4) Occupation: (If retired, please state "retired" followed by name of your previous occupation or profession)

4a) Occupation: (Please put a tick opposite the appropriate space)

Housewife _____

Part-time employment _____

Full-time employment _____

If in part- or full-time employment, please state nature of employment:

5) Is your husband/wife in any way handicapped or unable to carry on his/her normal activities by reason of ill-health:

- Yes/No.

If Yes, please state nature of handicap or cause of ill-health:

6) Have you ever had any serious illness requiring hospital admission?

- Yes/No.

If Yes, please specify:

7) Have you ever had any operation? Yes/No

If Yes, please specify:

8) Parents:

Mother: If alive, state of health:
If dead, cause of death and age at death:

Father: If alive, state of health:
If dead, cause of death and age at death:

9) Brothers and Sisters (please give in order of ages)

Names	Ages	State of health (or cause of death)
-------	------	--

10) Children: (please give in order of ages)

Names	Year of birth	State of Health
-------	---------------	-----------------

- 11) Is there any history in your family, apart from yourself, of:
- a) Chest trouble (e.g. bronchitis, asthma or T.B.) Yes/No
 - b) Heart trouble (e.g. angina, coronary thrombosis) Yes/No
 - c) Digestive trouble (e.g. ulcer, chronic indigestion
colitis) Yes/No
 - d) Nervous trouble (e.g. epilepsy, depression,
(nerves", anxiety) Yes/No
 - e) Eye trouble (e.g. glaucoma, blindness) Yes/No
 - f) Cancer Yes/No
 - g) Stroke Yes/No
 - h) Diabetes Yes/No
 - i) High blood-pressure Yes/No
 - j) Any other serious illness Yes/No

If the answer to any of the above questions is Yes, please give details:

APPENDIX E

THE IMPORTANCE OR OTHERWISE OF THE
NON-RECORDED ITEMS OF FAMILY HISTORY

Estimates of the importance or otherwise of given items of family history must necessarily be somewhat arbitrary. An attempt is made here to calculate roughly the probable importance of those instances of family history reported by patients replying to the questionnaire, where such instances were not recorded in the patients' own records.

1) RESPIRATORY SYSTEM

In this section the instances of asthma (excluding the reported cases of asthma in respondents' children) may be considered to be important. Similarly, the two reported instances of TB where the relative died under the age of 40. This gives a total of 14 "important" instances out of a possible 72.

2) CARDIOVASCULAR SYSTEM

The items accepted in this section as important are those of coronary heart disease - both coronary thrombosis and angina. The total here is 44.

3) DIGESTIVE SYSTEM

A family history of peptic ulcer is taken as important. The total arrived at in this instance is 38 out of a possible 55.

4) CENTRAL NERVOUS SYSTEM

The instances of multiple sclerosis and of congenital deaf-

ness are accepted as probably of importance - giving a total of 6 out of 10 instances.

5) PSYCHOLOGICAL ILLNESSES

Because of the significant effect that psychological illness in a close relative may have on a patient, as well as the possible genetic factors involved, all 33 instances of psychological illness are counted as "important".

6) EYE DISEASE

In this section, out of the 15 instances of family history reported, the 4 instances of glaucoma are accepted as important to record.

7) MALIGNANT DISEASE

Although similar considerations obtain with family history of malignant disease as with psychological illness, the 18 instances referring to relatives dying over the age of 60 may be thought to be of lesser importance, so that the total accepted as important is 22 out of 40.

8) STROKES

Only 2 of the instances of strokes reported are accepted here as important - those being of the two relatives who died under the age of 60.

9) DIABETES

All 8 of the instances of diabetes in a close relative are accepted as being important to record.

10) HIGH BLOOD PRESSURE

No distinction was made between essential and other forms of hypertension, but since essential hypertension is by far the commonest type of high blood pressure a rough calculation is made that 27 out of the 31 instances of family history of high blood pressure reported may be taken as being important.

11) OTHER

In this section the three reported instances of thyroid disorder, the one instance of pernicious anaemia and the eight cases of locomotor disorder are all accepted as important.

SUMMARY

Summarising these findings it must again be emphasised that the criteria adopted are arbitrary and these results can only give a very incomplete picture of the importance of the findings reported. In the table below the totals refer to the number of unrecorded instances of reported family history.

System or conditions	"Important"	Total
Respiratory	14	72
Cardiovascular	44	62
Digestive	38	55
C. N. S.	6	10
Psychological	33	33
Eyes	4	15
Malignant	22	40
Strokes	2	26
Diabetes	8	8
H. B. P.	27	31
Other	12	17
	210	369

On the basis of these calculations, 57% of the instances of family history reported by patients in this survey, but not recorded in the patients' records, could be considered to be "important" information, likely to be helpful in the management of the patient.

APPENDIX F

DIAGNOSES MADE AT TIME OF CONSULTATION,
RELATED TO TOTAL NUMBER OF PATIENTS
IN THE 21-75 AGE GROUP SEEN IN ONE YEAR

Diagnosis	Patients in Survey	Patients seen During Year
Herpes Zoster	1	5
Influenza	3	99
Carcinoma of cervix	1	2
Lymphosarcoma	1	2
Uterine Fibroids	1	1
Asthma	1	29
Myxoedema	1	2
Diabetes)	1	10
) (a)		
Addison's Disease)		
Obesity	4	44
Hypochromic Anaemia	4	32
Anxiety State	14 (+1)	185
Depression	8	85
Insomnia	3	11
Auricular Fibrillation	1	1
Paraplegia	1	1
Trigeminal Neuralgia	1	1
Carpal Tunnel Syndrome	2	4
Elepharitis	1	4
Refractive Error	1	10
Glaucoma	1	1
Meibomian Cyst	1	5
Otitis Externa	2	22
Acute Otitis Media	1	2

Diagnosis	Patients in Survey	Patients seen During Year
Chr. Otitis Media	1	5
Meniere's Disease	1	4
Wax in Ears	1 (+1)	28
Mitral Incompetence	1	10 (b)
Congestive Cardiac Failure	1	8
Hypertension (Benign)	2	17
Chilblains	1	4
Varicose Veins	2	41
Haemorrhoids	2	25
Angina	2 (+1)	12
Chest Pain	1	1
Upper Respiratory Infection	4 (+1)	36
Tonsillitis & Pharyngitis	2	100
Acute Sinusitis	1	29
Laryngitis or Tracheitis	7	60
Pneumonia	1	6
Acute Bronchitis	2	29
Chronic Bronchitis	1	20
Haemoptysis	1	1
Diseases of Buccal Cavity	1	13
Duodenal Ulcer	2	23
Appendicitis	1	3
Abdominal Pain	2 (+2)	21
Cystitis	4 (+1)	44
Prolapsed Uterus	1	4
Irregular Menstruation	1	12
Menopausal Symptoms	4	15
Parametritis	1	
Ovarian Cyst	1	8 (c)
Leucorrhoea	1	35

Diagnosis	Patients in Survey	Patients Seen During Year
Pregnancy	27	123
Boils	1 (+1)	20
Warts	1	3
Eczema	1	46
Other Dermatitis	1	11
Psoriasis	2	17
Pruritis	1	9
Rheumatoid Arthritis	1	21
Osteoarthritis	3	31
Fibrositis	1	1
Other Known Locomotor Disorder	3 (+1)	10
I-V Disc Lesion	1	5
Tenosynovitis	2	7
Bursitis	1	5
Backache	5	35
Other Locomotor Symptoms	2	43
Sprains and Strains	6	61
Head Injury	1	12
Contusions, Lacerations, Etc.	5	48
Immunisations (Other than Smallpox)	3	3
Medical Examination for Administrative Purposes	2	21
Oral Contraception	7 (+1)	61
Health Education	1	7
Administrative Procedures	1	13

NOTES:

- (a) Both in same patient
- (b) All rheumatic heart disease
- (c) All "other diseases of female genital tract"

The figures in brackets refer to non-responders to the questionnaire.

APPENDIX G

PILOT QUESTIONNAIRE

(For affirmative answers, please ring the appropriate numbers at the right-hand side of the questions)

1. TYPE OF PRACTICE

- a) Single-handed _____ 1a
- b) Self and assistant _____ 1b
- c) Self and partner _____ 1c
- d) Self and two others _____ 1d
- e) Self and three others _____ 1e
- f) Self and four others _____ 1f
- g) Self and five or more others _____ 1g

2. APPROXIMATE NUMBER OF PATIENTS ON YOUR NHS LIST.

If in partnership please estimate number of NHS patients you yourself look after:

- a) None _____ 2a
- b) Under 1,000 _____ 2b
- c) 1,000 - 1,499 _____ 2c
- d) 1,500 - 1,999 _____ 2d
- e) 2,000 - 2,499 _____ 2e
- f) 2,500 - 2,999 _____ 2f
- g) 3,000 - or more _____ 2g

3. DO YOU HAVE ANY PRIVATE PATIENTS?

- a) None _____ 3a
- b) 1 - 19 _____ 3b
- c) 20 - 49 _____ 3c
- d) 50 - 99 _____ 3d
- e) 100 or more _____ 3e
- f) Private practice only _____ 3f

4. DO YOU HAVE ANY SECRETARIAL AND/OR RECEPTIONIST HELP IN YOUR PRACTICE?
- a) Yes, full-time (38 hours or more per week) _____ 4a
- b) Yes, part-time (less than 38 hours per week) _____ 4b
- c) No, none _____ 4c
5. WHAT SYSTEM OF CLINICAL RECORDS (excluding visiting books or call books) DO YOU KEEP FOR YOUR NHS PATIENTS?
- a) Medical record envelopes and continuation cards (ECs 5, 6, 7 & 8) _____ 5a
- b) Other systems _____ 5b
- c) None _____ 5c
6. IF YOU USE A SYSTEM OTHER THAN THE CONVENTIONAL NHS MEDICAL RECORD ENVELOPES, PLEASE GIVE DETAILS (e.g. plain cards, daybook, quarto folder etc.)
7. WHEN A PATIENT CONSULTS YOU, DO YOU USUALLY RECORD:
- a) Diagnosis only _____ 7a
- b) Clinical details only _____ 7b
- c) Circumstantial narrative only _____ 7c
- d) Therapy only _____ 7d
- e) Certification only _____ 7e
- f) A combination of the above PLEASE SPECIFY: _____ 7f
8. DO YOU KEEP ANY:
- a) Disease index _____ 8a
- b) Age/sex register _____ 8b
- c) Family register _____ 8c
- d) Other special index or register _____ 8d

9. DO YOU (OR YOUR SECRETARY) MAKE A NOTE ON THE MEDICAL RECORD WHEN YOU ARE IN THE SURGERY:

- a) Every time you see the patient or repeat a prescription _____ 9a
- b) Every time you see the patient, but not for repeat prescriptions _____ 9b
- c) Only when you consider there is especially important data to record _____ 9c
- d) Only when the patient visits you in your main surgery (but not in a branch surgery) _____ 9d
- e) Rarely _____ 9e
- f) Never _____ 9f

10. ON HOME VISITS (EXCLUDING NIGHT CALLS) DO YOU TAKE THE MEDICAL RECORDS AND MAKE NOTES ON THE SPOT:

- a) Always _____ 10a
- b) Often _____ 10b
- c) Rarely _____ 10c
- d) Never _____ 10d

11. ON NIGHT CALLS DO YOU TAKE THE MEDICAL RECORDS AND MAKE NOTES ON THE SPOT:

- a) Always _____ 11a
- b) Often _____ 11b
- c) Rarely _____ 11c
- d) Never _____ 11d

12. IF YOU DO NOT USUALLY TAKE THE RECORDS ON HOME VISITS DO YOU (OR YOUR SECRETARY) ENTER RELEVANT DATA ON THE RECORDS LATER:

- a) Every time _____ 12a
- b) Usually _____ 12b
- c) Only when there is especially important data to record _____ 12c
- d) Never _____ 12d

13. DO YOU ROUTINELY RECORD:

- a) Drug hypersensitivities _____ 13a
- b) Immunisations _____ 13b
- c) Infant developmental milestones _____ 13c

14. DO YOU USE ANY COLOUR-TAGGING SYSTEM (such as the RCGP scheme) OR OTHER SIGNALLING SYSTEM ON THE OUTSIDE OF THE RECORD ENVELOPES:

- a) Routinely _____ 14a
- b) Selectively _____ 14b
- c) No _____ 14c

15. WITH REGARD TO HOSPITAL LETTERS AND REPORTS DO YOU (OR YOUR SECRETARY):

- a) File them and keep them all in the medical record envelope _____ 15a
- b) File them separately from the medical record envelope and cards _____ 15b
- c) Extract relevant points from the letters and enter these points in the continuation cards _____ 15c
- d) File them in the m. r. e. after first cutting them down to fit _____ 15d
- e) File them but occasionally go through them and destroy less relevant ones from time to time _____ 15e
- f) File them but routinely go through them and destroy the less relevant ones from time to time _____ 15f
- g) Rarely file them _____ 15g
- h) Never file them _____ 15h

16. ARE YOU SATISFIED THAT THE MEDICAL RECORDS OF PATIENTS TRANSFERRED TO YOU FROM ANOTHER DOCTOR ARE:

- a) Usually helpful _____ 16a
- b) Often helpful _____ 16b
- c) Rarely helpful _____ 16c

17. DO YOU CONSIDER THAT THE PRESENT NHS MEDICAL RECORD ENVELOPE SYSTEM AS A CLINICAL TOOL IN GENERAL PRACTICE IS:

- a) Ideal _____ 17a
- b) Suitable with minor modifications _____ 17b
- c) Not very suitable _____ 17c
- d) Very unsuitable _____ 17d

18. IF A PRACTICABLE SCHEME COULD BE DEvised TO INTRODUCE A FORM OF LARGER RECORD FOLDER (such as used in most hospitals) INTO NHS GENERAL PRACTICE, WOULD YOU:

- a) Welcome this _____ 18a
- b) Prefer to use the present medical record envelope system _____ 18b
- c) Have no strong feelings either way _____ 18c

19. ANY OTHER COMMENTS YOU MIGHT LIKE TO MAKE ABOUT MEDICAL RECORDS:

APPENDIX H

Tel. 031-334 3266

2 Manse Road,
EDINBURGH 12.
EH12 7SN.

Medical Records

In association with the Department of General Practice at the University of Edinburgh, I am carrying out a study of the development and use of medical records in general practice, in the hope that eventually some improvement might be suggested in the design of these documents. Literature on this subject shows that very little is known about the opinion of more than a small handful of doctors on this important matter.

I am setting out to obtain more information about the use which general practitioners make of medical records and their opinion about the design of this everyday tool. To this end I should be extremely grateful if you would be willing to fill in the enclosed questionnaire. A pilot study has already aroused interest and a good response. Your name has come up as part of a random sample of doctors to be approached; naturally any data obtained will be treated anonymously and completely confidentially. In particular I should stress that this is in no sense an "official" investigation, but an attempt on the part of an individual general practitioner to do some operational research to establish fact and opinion on this subject. In order to get as full a cover as possible I intend to follow up some of these questionnaires by means of visits or telephone enquiry, and I trust that this will be acceptable.

I think and hope that the questionnaire is not too formidable and will require only a few minutes to fill up; I am sorry to add to your paperwork, but you may agree with me that fuller information on this topic could well be of benefit to us all. I enclose a stamped addressed envelope for the return of the completed questionnaire. If you are in any doubt about any part of this please do not hesitate to contact me.

Thank you for your kind help and co-operation.

Yours sincerely,

Dr. Jack Cormack.

APPENDIX H

Main Questionnaire

PLEASE PUT A TICK IN THE APPROPRIATE BOX

1. What type of practice do you have?
- (a) Single-handed
- (b) Self and Assistant
- (c) Self and Partner
- (d) Self and two others
- (e) Self and three others
- (f) Self and four others
- (g) Self and five or more others
2. What is the approximate number of patients on your N.H.S. list?
- (If in partnership, please total number on combined lists of all partners)
- (a) Less than 2,500
- (b) 2,501 - 5,000
- (c) 5,001 - 7,500
- (d) 7,501 - 10,000
- (e) more than 10,000
3. Do you have ancillary help for handling and filing records?
- (a) Yes
- (b) No
- If YES, is such help available at all consulting sessions?
- (c) Yes
- (d) No
4. In keeping clinical records, do you use the conventional N.H.S. medical record envelopes and continuation card system (EC's 5, 6, 7, 8)?
- (a) Yes
- (b) No
- If NO, please give details of system used (e.g. plain cards, daybook, folder, etc.) :

(If the answer to this question is NO, omit questions 16, 17 and 18).

5. When a patient consults you in your surgery, do you (or your ancillary staff) make a note about the consultation on the medical record?

- (a) Yes Only in selected cases
Every time
Rarely

(b) No

6. Do you, or your staff, note on the medical records repeat prescriptions issued at times other than those when the patient consults the doctor face to face?

- (a) Yes Always
Often
Rarely

(b) No

7. Do you have a branch surgery?

- (a) Yes
(b) No

If YES, do you have the records available at the Branch surgery of the patients who consult you there?

- (c) Yes Only for a few patients
For all patients
For most patients
(d) No

8. When making notes about a patient, do you usually record?

- (a) Diagnosis - Yes No
(b) Clinical details - Yes No
(c) Circumstantial narrative - Yes No
(d) Therapy - Yes No
(e) N.I. Certification - Yes No

9. On home visits (excluding night calls) do you take the medical records with you?

- (a) Yes Always
Often
Rarely

(b) No

(If NO, omit question 11)

10. On Night Calls, do you take the medical records with you?

- (a) Yes Always
Often
Rarely

(b) No

11. On home visits do you make notes at the time of the visit?

- (a) Yes Always
Often
Rarely

(b) No

(If YES, omit question 12)

12. In respect of home visits, do you or your staff enter notes later in the records?

- (a) Yes Always
Often
Rarely

(b) No

13. Do you routinely record?

- (a) Drug hypersensitivities? Yes
No
- (b) Immunisations? Yes
No
- (c) Infant developmental milestones Yes
No

14. Do you keep a -

- (a) Disease Index Yes
No
- (b) Age/sex register Yes
No
- (c) Family register Yes
No
- (d) Other special index or register Yes
No

(If (d) is YES, please specify)

15. Do you routinely use any special signalling system on the outside of the medical record?

- (a) Yes (b) No
- If YES, do you use the R.C.G.P. colour tagging system?
- (c) Yes (d) No

If (d) is NO, please specify system used

16. With regard to consultants' letters and hospital or pathological reports, do you (or your staff) file them in the medical record envelope?

- (a) Yes
(b) No

If NO, do you file them separately from the medical record envelope?

- (c) Yes
(d) No

(If (b) is NO, omit question 17)

17. Before filing letters and reports in the medical record envelope, do you, or your staff, cut them down to fit?

- (a) Yes
(b) No

18. With letters and reports, do you or your staff, extract relevant data and enter these data on the continuation cards?

- Yes Always
Sometimes
No

19. With letters and reports, do you or your staff, go through them and destroy less important ones (e.g. routine follow-up reports)?

- Yes Routinely
Occasionally
No

20. With patients transferred to you from another doctor, do you think that the notes written on the continuation cards by the previous users are helpful?

- Yes Usually
Rarely
No

21. With patients transferred to you from another doctor, do you think that the hospital reports and other documents (apart from the continuation cards) sent on to you are helpful?

- Yes Usually
Rarely
No

22. Do you consider that the present N. H. S. medical record envelope system, for the purposes of clinical recording, is ideal?

Yes
No

If NO, do you think that it is :

Suitable with minor modification?
Not very suitable?
Very unsuitable?

23. If a scheme could be devised without involving practitioners in extra expense, to introduce a form of larger record folder (such as the quarto folder used in most hospitals), into N. H. S. general practice, would you welcome this?

Yes
No

If NO, would you prefer to use the present medical record envelope system?

Yes
No

24. If such a larger record folder could be introduced, but without extra funds being available to assist in the purchase of new filing equipment etc., would you wish to introduce such a system in your practice?

Yes
No

If NO, would you prefer to continue using the present medical record envelope system?

Yes
No

25. Any other comments you might like to make about medical records, or suggestions for improved design:

Thank you for your help.

APPENDIX I

Tel.: 031 334 3266

2 Manse Road,

Edinburgh.

EH12 7SN

I have now received replies to over half of the questionnaires on medical records sent out three weeks ago. The results are not yet fully analysed, but some interesting facts are emerging, both about the way in which we use records and about differing opinions on the suitability of the documents we use.

It is most important that as representative a cross-section as possible should be obtained before any conclusions are drawn from this study, so I am taking this opportunity of reminding you about the questionnaire and asking if you could be good enough to fill in your copy and return it to me as soon as is convenient. Please do not be put off by the number of questions - you will find that it only takes about five minutes to complete.

If by any chance you feel that you cannot complete the questionnaire, either because you think it is too complicated, or you are too busy, or you object to answering questionnaires on principle, then if you could just send me a brief note to that effect I will undertake not to trouble you further.

Thank you again for your co-operation and help.

Yours sincerely,

Dr. Jack Cormack.

APPENDIX J

Tel: 031 -334-3266

2 Manse Road,
EDINBURGH
EH12 7SN

I am hoping to start analysing the results of my investigation on medical records in early June. There are still a number of questionnaires outstanding which have not been returned; I fully appreciate the difficulties in finding the extra five minutes or so needed to fill in yet another form, but to get a complete picture I would stress that the information which you can give me is of the greatest importance.

I am taking the liberty of sending you a further copy of the questionnaire, together with the original covering letter, and I would be most grateful if you could complete this and return it to me in the envelope provided by 7th June.

I apologise for troubling you further on this matter, but I can assure you that your help is vital if this study is to achieve the objective of attempting to promote an improvement in the design of this very important tool of our trade.

I should be extremely grateful for your help and co-operation.

Yours sincerely,

Dr. Jack Cormack.

APPENDIX K

Individual Characteristics of the Sample1) Sex

Although the sample was not drawn with this in view, a reasonably even distribution between male and female practitioners in comparison with the ratio in the Scottish total was achieved (Table 1)

TABLE 1

Sex ratios of the sample

	Total Scottish Principles	Responders	Responders as %age of Scottish total	Non-responders	Non-responder as %age of Scottish total
Male	2329	154	6.6	33	1.5
Female	268	13	4.9	1	0.4

2) Date of qualification

The dates of qualification of the sample studied were extracted from the Medical Directory (1968), and are represented in table 2.

TABLE 2

Dates of Qualification

Years of qualification	Responders	Non-responders	Total
1924 or earlier	6	1	7
1925 - 29	5	2	7
1930 - 34	11	2	13
1935 - 39	24	8	32
1940 - 44	26	6	32
1945 - 49	26	7	33
1950 - 54	31	4	35
1955 - 59	26	1	27
1960 - 64	10	3	13
1965 or later	2	-	2
Totals	167	34	201

3) Place of qualification

The place of qualification of each of the doctors approached in the survey was extracted from the Medical Directory. In the majority of cases the place name refers to the University where the recipient gained his degree, but in a minority the qualification is from one of the Conjoint Boards, and no distinction is made in the table which follows (table 3).

TABLE 3

Places of Qualification

Place of qualification	Respondents	Non-respondents	Total
Glasgow	79	17	96
Edinburgh	39	8	47
Aberdeen	26	5	31
St. Andrews	16	2	18
London	2	1	3
Liverpool	1	1	2
Cambridge	1	-	1
Dublin	1	-	1
Nagpur	1	-	1
Bologna	1	-	1
	167	34	201

4) Postgraduate qualification

38 (23.8%) of the respondents had one or more postgraduate degree or diploma and 6 (18%) of the non-respondents. These qualifications are set out in table 4.

TABLE 4

Postgraduate Qualifications

Qualifications	Respondents	Non-respondents	Totals
M. D.	5	1	6
M. R. C. P. Ed.	2	1	3
F. R. C. S. Ed.	1	1	2
D. P. M.	1	-	1
D. P. H.	5	1	6
D. Obst. R. C. O. G.	23	2	25
D. T. M. & H.	8	-	8
D. O. M. S.	1	-	1
	46	6	52

6 of the respondents had two higher qualifications each:

1 with an M. D. & M. R. C. P. Ed.

1 with an M. D. & F. R. C. S. Ed.

1 with an M. D. & D. P. M.

1 with an M. R. C. P. Ed. & D. Obst. R. C. O. G.

1 with an D. P. H. & D. T. M. & H.

1 with a D. T. M. & H. & D. Obst. R. C. O. G.

1 respondent had three postgraduate qualifications:

D. T. M. & H. , D. O. M. S. & D. Obst. R. C. O. G.

None of the non-respondents in the sample had more than one postgraduate qualification.

5) Membership of the R. C. G. P.

Membership of the Royal College of General Practitioners is not a registerable qualification and it is only recently that the College

has sanctioned the use of the letters M. R. C. G. P. by its members. It is likely therefore that not all members of the College (which in this context includes associate members) enter information about their College membership in the Medical Directory. The figures (table 5) which were taken from the Directory, in all probability under-estimate the College membership of the sample.

TABLE 5

Membership of the R. C. G. P.

R. C. G. P.	Responders	Non-responders	Totals
Members	15	3	18
Non-members	152	31	183
	167	34	201

From this evidence, which is as stated probably not completely accurate, the ratios of members to non-members of the R. C. G. P. among those who responded and those who did not are almost identical.

APPENDIX L

Opinion about the suitability of the medical record envelope system

TABLE A

Opinion about medical record envelope system in relation to practice structure

	Not v. suit/ v. unsuit.	Ideal/suit. with min.mod.	Totals
Single handed	16	19	35
Partnerships	50	81	131
	66	100	166

$$0.50 < p < 0.60$$

$$(\chi^2 = 0.379)$$

TABLE B

Opinion about medical record envelope system in relation to area of practice

	Not v. suit. / v. unsuit.	Ideal/suit. with min.mod.	Totals
High population	23	43	66
Low population	43	57	100
	66	100	166

$$0.30 < p < 0.40$$

$$(\chi^2 = 0.789)$$

TABLE C

Opinion about medical record envelope system in relation to availability of ancillary help

Ancillary help	Not v. suit. / v. unsuit.	Ideal/suit. with min. mod.	Totals
All sessions	43	74	117
Part-time or none	23	26	49
	66	100	166

 $0.20 < p < 0.30$
 $(\chi^2 = 1.101)$

TABLE D

Opinion about medical record envelope system in relation to possession of higher qualifications

	Not v. suit. / v. unsuit.	Ideal/suit. with min. mod.	Totals
Higher qualifications	22	16	38
No higher qualifications	44	84	128
	66	100	166

 $0.010 < p < 0.0250$
 $(\chi^2 = 5.821)$

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