A record system for general practice

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THE Medical Record Card (EC 5-6-7-8) used by general practitioners in the National Health Service has existed in an almost unchanged form ever since the introduction of the National Health Insurance system in 1911. The peculiar lay-out of this record in an envelope does not conform to international paper sizes, and whilst it is easy to carry around, it is difficult to use as a record system. The Records and Statistics Unit of the Royal College of General Practitioners, and many others, have devised ways and means of using this record, but as Kuenssberg (1968) has emphasized, 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 EC 5-6-7-8 does not do. It is difficult to envisage a satisfactory format for a record which is confined to the size of the present NHS record despite the novel methods recorded by Kuenssberg.

In recent years attention has been increasingly devoted to research into the early stages of disease and into population groups, and the results of this type of research have led to the more frequent need in practice to be able to identify readily high-risk groups in the population both for investigation and treatment. In 1961 Witts, Acheson and Truelove suggested that there was a need for a national epidemiology. Since the introduction of the National Health Service in 1948 the records of the general practitioner have theoretically become ideally suited to fulfil this need. The general practitioner's record has acquired an unique epidemiological and clinical potential because it is the only record that covers the medical history of an individual from birth to death, and is transmitted after the person wherever he or she moves.

It seems likely that in the future the personal health services of the local health authority will be more closely integrated with the general practitioner services as the health visitor and district nursing sister are attached to individual group practices, and consequently this team will become responsible for a common population. At the present time there are in existence a multitude of local health authority records (birth record, 0–5 record, school medical record, district nurse's record) which are all related to an individual and which often contain duplicate information. More important, the information in any one of these records is not readily available to other members of the team. There are, consequently, good reasons why the local health authority records and the general practitioner records should be amalgamated.

The computer is already being used widely for administrative purposes. It is likely that its main use in medical recording in the immediate future will be as a means of storage, analysis and retrieval of data selected from a written record. The computer has other potentials such as visual display of records, but this method of recording is probably not going to be practical for most doctors for many years to come.

For the reasons outlined above there is an obvious need to experiment with new systems of recording in general practice. The establishment by the Welsh National School of Medicine in 1968 of a general-practice unit made such an experiment possible,

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and this report describes the records system which has been in use in the unit for the past 18 months. The medical staff of the unit are in contract with the Cardiff Executive Council and provide general medical services from a health centre for those families living on a new housing estate which is being built on the outskirts of Cardiff. Health visitors and district nurses are attached to the practice by the Cardiff Local Health Authority.

The Llanedeyrn Estate is a modern housing project conveniently situated about one mile from the new teaching hospital in Cardiff. Fifty-five per cent of the houses on the estate are being built by the local authority and 45 per cent by private development. This should ensure a reasonably even distribution of social classes. The first residents were accommodated in June 1968, and the general-practice unit also commenced operation at the same time from temporary premises. The total population of the estate, which is due to be completed by 1972, will be approximately 14,000 persons. Further development may result in a population of 25,000 by 1975.

Description of the records system

The records system described in this paper was designed to achieve the following objectives:

- 1. To combine in a single record the data collected by the doctor, the health visitor and the district nurse in such a manner as to be available to each when they are seeing a patient.
- 2. To experiment with the use of the type of folder recommended by the Tunbridge Committee (1965) together with standard-sized stationery and forms.
- To design a format that would provide a continuing medical record of an individual which would be of use for research.
- 4. To experiment with methods of data collection and recording so that selected information may be stored in a computer file for subsequent analysis and retrieval.

The following principles have been observed throughout the design of the records:

- A primary medical record must be available at all times. It must be simple to maintain and should record essential information in such a way that can be readily appreciated by the doctor, health visitor or nurse.
- 2. The data must be recorded in a form that is comparable with data recorded elsewhere.
- 3. That, although the records system was to be computerized and used in a university teaching and research practice by a team of doctors, health visitors and nurses, it should also be so designed as to be capable of use by a single-handed doctor or by a group practice team without the facilities of a computer and with the minimum of additional secretarial assistance.

The folder

The folder is the same as that used by the Welsh Regional Hospital Board and has a split spine which makes it possible to insert or remove additional sheets without disturbing the whole record (figure 1). Pipe cleaners are used to fasten the records to the

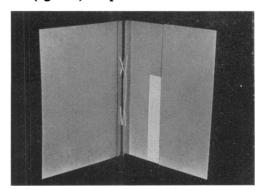


Figure 1—The folder

folder and are satisfactory and economic. The back of the folder contains a pocket for filing letters and obstetric record cards, etc. These documents record important episodes of medical care to which referral might be necessary. The folder is plain on the outside so that the name of the patient may be written at any convenient place.

Card 1. This card (figure 2) is stapled to the inside front cover of the folder. It contains much of the basic information concerning a patient which does not, as a rule, alter frequently. It can be partially filled in by a receptionist when the person registers, supplemented by the doctor at the first consultation and when the patient's permanent record is received from the executive council.

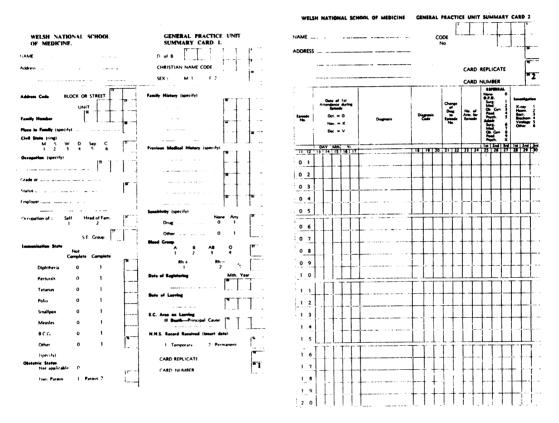


Figure 2—Card 1

Figure 3—Card 2

Card 2. This card (figure 3) which is fixed to the front spine of the folder, is a modification of the 'S' card designed by the Records and Statistics Unit of the Royal College of General Practitioners (1966). When a patient is seen on the first occasion of an episode of illness, the date is inserted in columns 13-17. As soon as a diagnosis is made this is recorded and coded according to the classification of the Royal College of General Practitioners (1963) which is a three-figure modification of and comparable with the International Classification of Disease. A change in a diagnosis is recorded by a new entry and by indicating in columns 21 and 22 the number of the episode in which the diagnosis has been changed. The conclusion of an episode is determined by the doctor and indicated on the clinical record sheet. At this stage columns 23-30 are completed. All the recording on Card 2 can be done by a records clerk after each con-

sultation, and the only additional work for the doctor is to indicate on the clinical record the necessary information as in the following examples:

Diagnosis

Change of diagnosis

Referral

Investigation

Episode ended

Pyelitis

Mitral stenosis 03

OPD medical or admit gynae:

X-ray chest

EO4

In some instances the decision as to whether an episode of illness has ended may be difficult. For this reason, each day the records of all those patients who were seen on the corresponding day four weeks earlier are abstracted and those with unfinished episodes are scrutinized by the doctor concerned. In cases of chronic disease, e.g. disseminated sclerosis, 99 is inserted in columns 23–24 and these records are reviewed annually. When a patient leaves the practice a photocopy of Cards 1 and 2, together with any hospital letters, are returned in the EC 5-6 to the executive council.

The clinical record sheet

This sheet is fixed to the front spine behind Card 2 and is the same as that recommended for use in hospital by the Tunbridge Committee (1965) (HMR4). The doctor may record day-to-day clinical notes in accordance with his individual custom. The findings of the health visitor and district nurse are also recorded on this sheet and so form

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v	WELSH NATIONAL SCHOOL OF MEDICINE GENERAL PRACTICE UNIT		GENERAL PRACTICE UNIT			
			PAEDIATRIC CARD.		T-1	
IN	MMUNISATION AND SCREENING RECORD.		Name	Code No		
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			APGAR SCORE	•	[a]	
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SMALLPOX	LL		8 Psychiatric illness		"	
			9. Other (specify)		L1	
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2nd		_]	Post meturity. Foetal distress.			
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	CARD NUMBER	1			<u></u> '	

Figure 4—Card 3

Figure 5—Card 4

a chronological record by the staff involved in the care of an individual. Further record sheets may be attached without disturbing the whole folder. Details of treatment may be recorded on the clinical record sheet or on a separate treatment record affixed immediately behind the clinical record. A pathology mount sheet (HMR100) and ECG mount sheets may be fixed to the back spine.

Immunization and screening record

Card 3 (figure 4) records the dates upon which a variety of immunization and screening procedures are performed. The function of this card is primarily administrative.

Paediatric card

Card 4 (figure 5) which, together with Card 3, is fixed to the back spine, records much of the permanently relevant data at present contained in the local health authority birth and infant record, the 0-5 record and the school medical record. A chart for recording the weight, height and head circumference is printed on the reverse of Card 4. Both Cards 3 and 4 depend on a computer for the development of their potential usefulness.

Filing

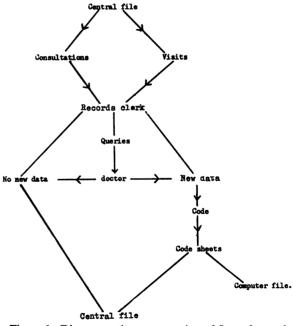
The record folder may be filed in any conventional manner and is easy to carry on visits to a patient's home. In the general practice unit, Scanex Rotary Filing cabinets are being used because, apart from being easier, they effect a considerable saving in floor space.

Flow of records

Figure 6 shows diagrammatically the way in which the record is handled.

Computerization of the record

After the information has been coded, new items of data are listed on special forms. These are taken to the University Computing Centre each week where the data are transferred to punch cards. The computer is an English Electric System 4-50 and the estimated amount of computer time needed is 20 minutes per week. The computer file consists of four magnetic tapes, and it is thought that this will be sufficient to accommodate 10,000 individual records including a historical file of persons who have left the area. Card 2 contains a considerable number of spare spaces which can be used for any ad hoc research projects. The computer is programmed to produce a variety of



information at regular intervals, Figure 6—Diagrammatic representation of flow of records or when necessary, which can be conveniently classified under three headings:

- 1. Administrative and service data such as 'at risk' groups and summary data
- 2. Epidemiological data
- 3. Research data,

Ancillary staff

During the initial stages of the operation of the General Practice Unit whilst there are large numbers of new families registering, it has been necessary to employ a records clerk in addition to the staff normally considered necessary. We anticipate that, once the population is established, it will not be necessary to have any further help. As the volume of data being recorded increases, it will be economically justifiable to undertake the card punching at the General Practice Unit using an automatic punch-verifier.

Discussion

As medicine has progressed from the era of the description of new diseases, there has been an increasing interest in the development of a chronological record of illness which could be maintained for each individual. The concept of such a record became a practical possibility with the introduction of the National Health Service in 1948.

The prime objects of any medical record are to serve the needs of the immediate and any future clinical problems and to provide the basis for research. There is a conflict between the data which need to be recorded for these three purposes, but if a medical record is to be designed so as to encourage doctors to use it efficiently, then there must be a clear distinction between the data recorded for each of these reasons.

Certain items of information, for example, occupation, blood group and drug sensitivity, are basic to the individual and should be recorded together with other identifying features such as name, sex, age. These data will serve the requirements both of the clinical situation and of research. In a particular clinical situation it is necessary to record only those facts which are or may be relevant to the current episode of illness. Once an episode has finished it can be argued that it is doubtful whether any details other than the diagnosis are often of value in the management of subsequent illnesses. There are, however, occasions when clinical data other than the diagnosis recorded in one illness may be of value in a subsequent illness. For instance, it may be relevant to know that the blood pressure was normal six months previously in a patient presenting with hypertension. Consequently, day-to-day clinical notes should be preserved, but the one major item of importance, the diagnosis, should be specifically recorded in such a manner as to be readily discernible when a patient subsequently attends.

The requirements of medical research in terms of record keeping pose a very different problem. The data which it may be necessary to record in order to fulfil the needs of retrospective clinical research are literally infinite and quite beyond the scope of any service record. It is easier to define the data which are likely to be of value in the field of epidemiological research and prospective clinical research. In most instances the facts required for these purposes are the same as those needed for routine clinical purposes; namely, certain identifying features of the individual and a record of morbidity. It is not quite so simple because epidemiological research is becoming increasingly concerned with the study of the natural history of disease processes and of normal development. This type of study demands the recording of large amounts of data which is only possible in a prospective project. It should be possible to graft this type of research on to any satisfactory record system.

Medical records should also serve as a means of communication between different workers in the same field. This is of particular importance if, as in the case of general practitioners and local health authority staff, they are providing health care for the same section of the population. It must be a rare occasion when the general practitioner, health visitor and district nurse, or indeed any two of those workers, need to see the same patient at the same time. Consequently there is much to be said for combining the records of all three. Duplication of recording inhibits communication and is wasteful of time.

The district nurse keeps records that can be readily inserted into the same day-to-day

record as that of the general practitioner, because the same criteria as to the needs of recording apply to her work. On the other hand, the health visitor has a dual rôle. Part of what she records may be related to a specific episode of illness, but a large part of her work is concerned with prevention and early detection of disease. She is accustomed to recording normal milestones of development in considerable detail. If details of this kind are noted in a day-to-day clinical record the information will tend to get lost among other data. Except for research, it is doubtful whether any purpose is served by recording information other than abnormal findings and facts concerning an individual which will enable the health visitor to isolate high risk groups of the population for selective follow-up. It is wrong to devise a service record which has to be completed to show that a particular worker has ascertained a list of data. An aide memoir card can fulfil this purpose if it is necessary.

The record provides for all the requirements of a day-to-day clinical record, and at the same time provides the basis for clinical and epidemiological research. The clinical record may be maintained by the general practitioner, health visitor and district nurse according to individual custom, though it is to be hoped that vocational training for general practice and the future training of health visitors and district nurses will include instruction in good record keeping. Cards 1 and 2 provide an easily read summary of a person's individual characteristics, family and past medical history and a record of morbidity. Inevitably some authorities will question our selection of data on Card 1. For example, the space allowed for the family history and past medical history, and the fact that there is no room for change of address, civil state or occupation. A family which had more than four significant items of family history, and any individual who had more than five significant episodes of past illness, must be peculiarly unfortunate. Changes in the civil state, or occupation, can be made by insertion of a new card or by pasting over the fresh information.

We anticipate more criticism of the selection of the data on the paediatric card—Card 4. A considerable amount of data usually recorded in the birth record, the 0-5 record and school medical record is not only duplicated, but also contained in the general practitioner's records and consequently on Cards 1 and 2.

The other aspect of communication which is most important is that between the hospital and the community health services. Mark-sense methods of data collection and computer-based visual display of records will take a considerable time to perfect and evaluate, and record linkage is bedevilled by the question of a national agreement upon a method of identification of the individual. For some time to come the traditional letter will form the principal means of communication between the general practitioner and the hospital specialist. These letters, if properly composed, should form a valuable summary of inpatient clinical findings in some of the most significant episodes of illness from which a person suffers.

Objection to changing general-practitioner records is commonly based upon the question of cost. Kuenssberg (1968) estimated that it would cost two million pounds to change from the present EC 5-6 to a hospital-type folder. It is difficult to obtain comparable figures of cost because so many different features are involved. For instance, the satisfactory implementation of a record system such as we describe would make it unnecessary to have duplicate record cards for health visitors and district nurses. We suggest that the advantages resulting from a change to a standard-sized folder would be well worth the additional cost.

A loss of confidentiality of the record is often raised as an objection to the computerization of general-practice records. This need have no basis. The programme can be so constituted that access to the computer file is restricted. If card punching is performed outside the medical centre the operator is supplied solely with a list of codes which are

meaningless without the code chart. If the card punching is performed at the medical centre the operator will be subject to the same strict standards of confidentiality as are receptionists and secretaries.

The record system which we have described requires further evaluation in the environment of a university teaching practice. It also needs to be tested in the conditions of ordinary practice in order to show that it can be used when computer facilities are not available. When used in this way it is probable that Cards 3 and 4 should be omitted. The record of a health visitor attached to the practice could be filed in the pocket of the folder.

Summary

- 1. The reasons why changes are necessary in the medical records of general practice are discussed.
- 2. A new record system which is being used in a university teaching practice is described.
- 3. The requirements of medical records in a group practice of general practitioners, nurses and health visitors, are discussed.

Acknowledgements

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During a six-year period 1,808 women aged 20 to 59 underwent gynaecological examination at a well-woman clinic. Cervical erosions were found in 269. Nine patients had cervical carcinoma, confirmed by biopsy; of these, eight had eroded cervices. The remaining patients with non-malignant erosions were examined at six-monthly intervals. Of these, roughly 39 per cent showed spontaneous healing within a year, 31 per cent responded to medical treatment, 17 per cent healed only after surgical treatment, nine per cent remained unhealed when reviewed six months after the last active treatment, and four per cent relapsed after originally healing well.

The difficulties of getting patients to return for cytological examination increase with the interval between the original examination and recall. It is suggested that patients should be re-examined initially at an interval not exceeding six months, so that false negative results are minimal.