THE ANALYSIS OF ROUTINE MEDICAL RECORDS

(From the Records and Statistics Unit of the College of General Practitioners)

SINCE its inception the Research Committee of the Council of the College has worked on the measurement of, and the consequences of, morbidity among patients seen by family doctors. A classification of morbidity applicable to the special conditions of general practice was an essential prerequisite and such a classification, which experience has shown to be workable under all conditions of practice, was introduced in 1963. This classification has been used for many different methods of recording morbidity data.

The National Morbidity Survey carried out jointly with the General Register Office in 1955–56 employed specially prepared patient cards as a vehicle for records. These cards were prepared individually for each patient and were filed in the patient's N.H.S. record envelope until the end of the survey. The Records Unit has used similar methods in subsequent studies as well as using the ledger type Diagnostic Index (E. book) which has now been introduced into many countries.

The key to the Diagnostic Index is the diagnosis given to the patient's illness; the identifying details of the patient being entered under the appropriate diagnosis. A number of diagnoses relating to the same individual may be entered serially or coincidentally under different headings. Punch card analysis enables consecutive illnesses to be related to the individual but information relating to the person, as opposed to his clinical episodes, is not readily forthcoming.

In routine medical practice it is customary to record information in relation to the patient rather than in relation to the diagnosis and it was necessary for the Records Unit to devise a second method of morbidity recording based on the patient; who would then become the identifying factor. To be wholly effective the method to be adopted required to be based on the current procedure for keeping N.H.S. records. By using the classification of morbidity introduced by the College this information recorded by one method would be

strictly comparable with the other.

The Records and Statistics Unit has developed a method of research recording which allocates code numbers to some of the items of information concerning the patient which are normally recorded by general practitioners as they work, and thus enable the information to be utilized by central analytical or computer facilities. While designed to fit the framework of the British National Health Service it is believed that the principle can be applied to general practice in any country.

The basic requirement is a specially designed summary card (S.4.) and an appropriate medical record card (S.4.A.) used by the doctor for his routine clinical notes. The summary card is carefully planned to receive coded information relating to the doctor, the identity of the patient, various characteristics of the patient or his environment, as well as details relating to the illnesses from which the patient has suffered. A year's work and trial has led to the design of the summary card S.4. This is planned to contain the maximum amount of information and at the same time possess a degree of flexibility which will allow for additions and alterations in recorded matter. The same cards can be introduced for general use, or for the conduct of special research studies.

In use the identifying details of the doctor and patient are entered on the summary card, and a continuation card S.4.A. is prepared.

Routine records are made on S.4.A. cards, and on completion of the first episode it is summarized in numerical terms in the correct spaces on card S.4. Second and subsequent episodes of illness will be treated in the same way and the summary card will gradually fill with material which can be punched on to card or tape without further interpretation. The dimensions of the present cards are those of the existing N.H.S. Medical Record Envelopes, but they may be of any size and shape provided that the relation of the headings to the numerals and columns is unaltered.

At a decided point in time the summary card can be abstracted for central analysis. Summary cards may be copied directly on to prepared pro formae (3) or sheets by a secretary and the manuscript copies sent in to the analysis centre, or the cards themselves can be xerographed or photocopied. In either event a note will be made on the summary card indicating which recorded episodes have been abstracted. Later abstraction will continue the process from the point previously reached and since the codes for doctor and patient remain constant, linkage of serial events to either individual can be effected easily.

The summary card divides naturally into two parts, one containing information identifying the doctor and the patient, while the other

COLLEGE OF GENERAL PRACTITIONERS RECORDS and STATISTICS UNIT

S4 COPYRIGHT (1965)

Dr. Code							Surname of Patient				Forename		Date of Birth		
1	2	3	4	5	6	7	8	9	10		11		12-13	14-15	16-17
0	1	6	0	5	6	7	B	R	O	WN	M	ARY	07	12	12

Card	Sex	MS	SS	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	F	M	4																			

Address 25 St John's Road Brighton

Occupation Housewife

Remarks

(Husband, machine operator)

Ep. No.	Date			Diag. Code			Att.		T	U	V	W	X	Y
41-42	43-44	45-46	47-48	49	50	51	52	53	54	55	56	57	58	59
1	02	02	65	3	7	9	0	2						
2	18	05	65	4	C	6	0	1						
3														
4														
5														
6														
7														
8														
9														
10														

Ep. No.	Date			Diag. Code			Att.		T	U	V	W	X	Y
41-42	43-44	45-46	47-48	49	50	51	52	53	54	55	56	57	58	59
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														

Figure 2
Summary Card S.4
(Instructions for the use of the card, as described below, are printed on the reverse)

COLLEGE OF GENERAL PRACTITIONERS RECORDS and STATISTICS UNIT

SURNAME	BROWN	FORENAMES	Mary	CARD No.	1
ADDRESS	25 St. John's Road. Brighton.			DATE OF BIRTH	7/12/12

DIAGNOSES CARRIED FORWARD

Obesity, Varicose Veins

DATE/CODE			NOTES	THERAPY
2/2/65	01	1	Eruption on inner side (L) leg	1 wk
(379)			OE Varicose Eczema	Cream Hepyramine
12/3/65	2	1	Eczema again, on arms.	Flerinol.
(379)			Leg lesions improving	Rep Cream
18/5/65	01	2	Painful Swelling (L) Knee after housework.	
			OE bilateral Osteoarthritis L/R	
(406)				Strapped.

S4A COPYRIGHT

Figure 1.
Card S.4.A.

relates to episodes of illness which the patient may experience. Up to 20 episodes of illness can be summarized on one card. When filled, a fresh card is made up.

Both parts of the card contain ' boxes ' which are identified by capital letters or small numerals only. These are used to amplify the basic details relating to doctor, patient and illness for special purposes and will be completed according to instructions which will be issued centrally and which may vary from one special study to another.

Linkage will be carried out in the same way as it is done in Diagnostic Index (E. Book) practice. Either method will allow a picture of the sickness experience of an individual to accumulate over the years and be made readily available. Each method has its special advantages. The Diagnostic Index provides a cumulative index to the work of a practice to which the doctor can refer, at the cost of effort to maintain the ledger. Using ' S. Cards ' recording requires no departure from customary practice other than completion of the summary cards. This may be done by the doctor or by his secretary on his behalf. In recording diagnoses the College classification is used, glossy copies of which are kept on the desk for ease of reference.

The instructions which follow apply when the card is used for basic studies of prevalence and incidence of morbidity. These can be amplified and expanded where special studies of influencing factors are undertaken.

Instructions

Identification section

1. *Doctor's code* (Boxes 1–7). In N.H.S. practice this will be the six or seven digit number stamped on the doctor's prescription pads by the Executive Council. Where the number is of six figures only, the prefix ' O ' will be added. For use outside the N.H.S. a constructed number will be issued by the Records and Statistics Unit. For certain short-term surveys a special number may be issued by the Unit. This number can be pre-printed on the cards before issue.
2. *Patient's code* (Boxes 8–17). This is constructed from the first three letters of the surname of the patient plus the first initial of the forename. This is a variation from previous usage likely to be more acceptable overseas. The remaining component of the patient's code is the full date of birth in order day—month—year. In Canada and U.S.A. month—day—year would be used.
3. *Card No.* (Box 18). The summarized illnesses will accumulate over years and further cards containing details of a further 20 episodes can be linked to the first by a numeral in this space. Changes in details relating to patients may also necessitate the construction of a fresh card, as for example marriage or change of civil state.
4. *Sex* (Box 19). Indicated by M = male
F = female

5. *Matrimonial status* (Box 20). Matrimonial status is indicated by the following code:

   S = single
   M = married
   D = divorced
   W = widowed
   O = other

   Where an entry is made indicating change of name by marriage a new summary card is made up based on the new name.

6. *Social status* (Box 21). Insert numeral 1–5 according to the Registrar General's classification of social groups (listed below), by reference to the occupation which should be inserted in full:

   Class 1. Professional occupations
   Class 2. Intermediate occupations
   Class 3. Skilled occupations, including mine-workers, transport workers, clerical workers, Armed Forces
   Class 4. Partly skilled occupations, including agricultural workers
   Class 5. Unskilled occupations, including building and dock labourers.

   In the case of wives, children and students receiving full-time education, the social class of the husband/father should be entered.

7. *Variable identification details relating to the patient* (Boxes 22–40) are completed in accordance with special instructions from the Records and Statistics Unit. For some special studies these may be printed on the reverse of the summary card. Information will be keyed to the letters of the alphabet above each box.

8. *The address, occupation and other observations* will be recorded in manuscript and not normally coded unless instructions are given and code numbers specially allocated.

Episode section

9. Episodes are inserted in the order indicated between boxes 41–59, entry being made against the date on which a patient first attended for a condition after the introduction of the card. Boxes 43–48 are therefore filled in at this attendance. In boxes 47–48 the *last* two digits of the year *only* are recorded.

10. *Diagnoses* (Boxes 49–51). The diagnosis is inserted in boxes 49–51 using the terms of the College Classification of Morbidity. This should be carried across from the continuation sheet as soon as a diagnosis is made on which action is taken.

    A change in, or refinement of, diagnosis will be indicated by a subsequent entry using a further diagnostic code number.

11. *Attendances number* (Boxes 52–53). The number of attendances arising from an episode of illness will be completed from the appropriate column of the continuation card at the end of an episode of illness. This may only be possible when the patient attends with a fresh complaint.

12. *Variable details relating to episodes* (Boxes 54–59) will be entered according to codes prepared by the Records Unit and linked to the alphabetical and small numeral code. The nature of the information to be recorded will vary in different studies.

Guidance as to abstracting procedure will be given by the Records and Statistics Unit from time to time and inquiries will be dealt with.

It is evident that this method of recording of morbidity can only

be fully effective if there is a central analytical agency to which coded information can be sent and where analysis can be undertaken by mechanical means. This method is of less immediate and direct benefit to the recording practitioner than is the Diagnostic Index, but it can be used to produce information strictly comparable with that derived from the use of E. Books. The task is one which the central unit can undertake.

In operation the continuation cards S.4.A or record sheets remain with the doctor as the ordinary vehicle for his daily notes. The summary card S.4 remains with the doctor also, for each day's work means fresh additions. It is intended that, where the method is adopted on a wide scale, summary cards are, after preliminary scrutiny, photocopied or xerographed at the doctor's consulting room or office. The photocopies are sent to the centre for punching, the originals remaining with the doctor for subsequent additions. Photocopying would be repeated at predetermined intervals.

The College is not yet in a position to set up an analytical service based on summary recording for general usage, though the principles are applicable wherever a central analysis department can be established. More than one analysis centre could be at work, and if the same procedures were adopted exactly comparable information might be gained by each. It is in the hope that centres may be set up that the College of General Practitioners has devised this method. As the epidemiological study of morbidity is steadily replacing that of mortality all over the world it is more than ever important that there be consistency and comparability in working methods as well as in nomenclature.

The S. Cards were designed by a working party of the Records and Statistics Unit of the College. The members were Drs W. B. Acheson, D. L. Crombie, K. W. Cross, R. J. F. H. Pinsent and James Scott of Keele University, whose initial identifies the series. Professor R. McWeeny, professor of theoretical chemistry and Dr H. H. Greenwood, computation director, also of Keele, acted as advisers and draft designs were brought to their final stage by Mrs Winifred Rollason and Mrs Patricia Jones, with the staff of the Records and Statistics Unit.

REFERENCES

J. Coll. gen. Practit., **6**, 204, 1963.

Logan, W. P. D., and Cushion, A. A. (1958). Studies on Medical and Population Subjects No. 14. *Morbidity Statistics from General Practice.* Volume 1 (General).