

REPORTS

THE DIAGNOSTIC INDEX

From the Research Unit of the Royal College of General Practitioners

'Tout ça change, tout c'est le même chose'

The need for a standardized method of recording diagnoses was noted by Abercrombie in the early 1950s. He suggested that this should take the form of a nosological index and that its use would result in fresh perspectives in the study of the distribution of disease. A similar need was felt by the working party of members of the newly founded College of General Practitioners and the General Register Office who planned the first National Morbidity Survey. This survey, carried out in 1955-56 employed a data recording card which was kept in the patients' medical record envelope. The information recorded was in no way coded or structured and the efforts of many coding clerks over many months were needed to bring order and method to the chaos of diagnoses which general practitioners can produce if left entirely to themselves. The feat of converting the results of this one-year survey to the terminology of the *ICD* was a remarkable one.

The lesson learned was clear—that an essential requirement for planned collection of data was a framework within which practitioners would agree to fit their diagnostic terms. A further advantage of a standard classification framework would be that it could be coded for mechanical analysis—then a newly developing art—and that the coding would be done at the point at which the primary decision was made. If the diagnosis was not fully coded by the observing doctor himself it would be done by a member of his staff who could refer to the doctor in any matter of doubt. Many of the rubrics in the *ICD* overlap particularly in the field of symptomatic rather than definitive diagnosis. Unrestricted use of the alternatives makes collected material more difficult to interpret.

The first need, then, was for a diagnostic classification or matrix appropriate to general practice where professionally unselected clinical material is normally encountered, in contrast to the highly selected case-spectrum of the hospitals. It was hoped that a classification of disease would enable comparisons to be made across the various medical disciplines and naturally enough the *International Classification of Disease and Causes of Death* was first examined. A working party of general practitioners had been set up by the research committee of council of the College early in 1956, members of which began a year's study in which they tried to classify every episode of illness they met with in terms of the *ICD*.

Before it had gone far this working party came up against a further difficulty, namely that diagnosis itself is not finite and that the degree to which the diagnostic process is taken depends on many variables. These include the training and experience of the doctor, the habits of thought and practice he has acquired, the availability of diagnostic technology (in those days open access to hospital technologies was a pipe-dream) and the relevance of a sophisticated diagnosis to the care of the particular patient. To a general practitioner diagnosis did not necessarily involve serological confirmation of influenza, bacteriological typing of the cause of an episode of diarrhoea or cell-typing of a carcinoma. His needs were often met by something simpler which would serve him as a working basis for medical care. Looked at in this light the *ICD*, which had been devised by pathologists and clinicians from material available to them, was of very limited value. Applicable diagnostic rubrics were submerged beneath a mass of diagnoses which could only be made by post-mortem examination or the use of technologies out of reach of the doctor in practice. There was nothing for it but to try to separate out those diagnoses which were meaningful in general practice. Furthermore, the 'diagnosability' of the actual problems and conditions met with by the general practitioner had to be taken into account. In only some four per cent of these problems is the full aetiology and pathology known.

In distilling the working party's data two principles were kept in mind, the frequency with which conditions were met with in general practice, and their severity in terms of disability to the patient. Things which commonly occurred were included. Things which 'mattered' were included. Room was found for upper respiratory infections because they amount to so much of the work of a practice, and for appendicitis, not because it is common so much as its intrinsic

importance as a diagnosis to be made by the practitioner. To accommodate the rarities and the conditions only diagnosable with laboratory technology appropriate symptomatic and residual classification headings were introduced. By the application of criteria based on actual work in practices the number of different rubrics was cut to less than 500, and decisions were made concerning the manner of its introduction.

This short list is of necessity a compromise not only for reasons already discussed but also because patients present their doctors with problems and not just definable one-disease processes. For example in half the problems dealt with by general practitioners there is, in addition to any organic disease process, an emotional or psychiatric component as well. A precise description of clinical problems would therefore demand a two-dimensional diagnostic code. This ideal is at present unobtainable simply because material from general practice must be compatible with that from all other sources, and at present all other users employ the unidimensional *International Classification of Diseases*.

The range of problems examined by practitioners is wide and some require that diagnostic classification be undertaken at a comparatively low level of specificity. With this in mind the first classification introduced by the College was a hierarchic one with four levels. The most superficial being the nineteen main headings of the *ICD* and the fourth the full *ICD* itself. In between were two sub-classifications, each more elaborate than its predecessors made up of those conditions selected for inclusion by the working party. This arrangement had some merit for it enabled a research worker to specify in advance the level of sophistication which he proposed to set himself, ensured comparability with other workers at the same level, and with all other users of less detailed sections. A disadvantage, however, was that to make a hierarchic classification work it was necessary to introduce a new relationship between the College's enumeration scale and that of the *ICD*, a relationship not immediately evident. Though used with success by practitioners this classification was never understood by those outside practice and by the early 1960s work on its replacement had begun.

The revision required to secure acceptance of the new classification was not as extensive as had at first been expected. The same rubrics, with a few additions and amendments, were rearranged under the *ICD* main headings. Where one college code number included several *ICD* codes this was made clear by placing one code system to the left and the other to the right of the descriptive rubric. Immediate cross reference was thus possible. New college numbers were introduced totalling under 500, with no more than three integers. The number sequences were broken to allow later additions. The classification in this form was introduced in 1963.

The introduction of a diagnostic framework in this form simplified the problem of devising methods of recording. Ledgers and case-sheets had been used by some practitioners. Browne had experimented with a commercial ledger system and Eimerl had used a loose-leaf ledger of new design in which overlapping sheets were held in place by split-rings. The Eimerl ledger was of a convenient size to be carried on visits or in an overcoat pocket, and each diagnosis made could be entered by the doctor on an appropriate page. The working party were impressed by this method and set themselves to incorporate the new classification into the method. A larger ledger carcass was required, designed for desk use, carrying larger data recording sheets separated by card interleaf sheets on which the College Classification was printed in full. This method was introduced as the 'E' Book in 1963.

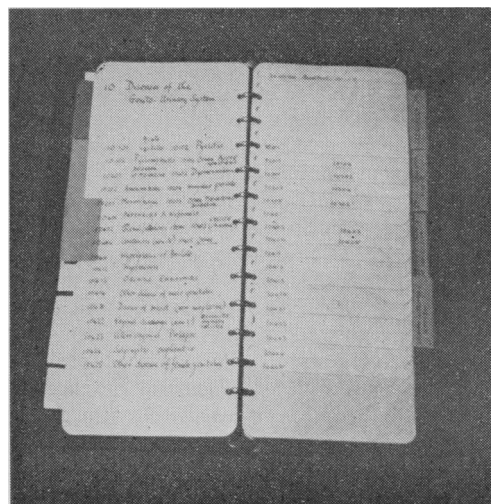


Figure 1
'E' Book

The 'E' Book in its Mark I form enabled doctors to enter names and NHS numbers of patients to whom a diagnosis had been allocated in their correct places. The correct data sheet

was found by identifying the number in the right hand column, exposing the sheet to which it related and making a manuscript entry. By convention notes on male patients were made on the front of the sheet, those of females on the reverse. In this form the 'E' Book was an index to case-notes rather than a means for collection of mechanical analysable data for central analysis and this aspect was developed further by Walford for doctors who preferred not to be constrained by the limitations of a diagnostic framework and wished only to maintain an index of their case records.

The principle of the 'E' Book has been maintained through a number of evolutionary changes which have led almost imperceptibly to the Diagnostic Index which is its contemporary successor. The changes began with the introduction of a series of variants of the sheet on which entries were made. By 1965 a sheet had been designed which carried the date of the entry and a personal identification based on a modified Hogben number constructed from evidence available at any time to the doctor or his staff. This replaced the NHS number which was often unavailable. This version of the data recording sheet was arranged in numbered columns so that information recorded on it could be readily transferred to punch-cards of Hollerith type for mechanical processing. This facility has been maintained and this, and all subsequent versions can be used as computer input with equal ease.

Suggestions that the method be given the more descriptive title of 'Diagnostic Index' was made by members of the Australian College of General Practitioners but the original title was used in parallel with the alternative in spite of departures from the original design, and history will no doubt show that " 'E' Book" is a title with lasting qualities. The diagnostic index of the 1970s, however, is the result of progressive evolutionary change within the same basic design. The method had been used widely, in the UK and in Commonwealth countries, had played a part in the Dutch National Morbidity Survey and had become an accepted way of recording episodes of illness in many countries. Notification systems relating to illnesses of certain kinds were based on it and adaptations of the data recording sheets was made to meet the special needs of many special research projects. The stimulus to the present change came from the decision to base the second National Morbidity Survey on the use of the method. This also was an exercise in which the General Register Office, under its new title, the Office of Population Censuses and Surveys, again joined the College, with financial support from the Department of Health and Social Security. For this purpose both the data collection sheet and the Classification of Morbidity were re-examined.

The modification to the data recording sheet which was crucial was that the new version permitted the recording of every item of service relating to the illness diagnosed, thus going further than the mere recording that an illness of the given kind had occurred. At the same time it was possible to record details of certain events in connection with the illness such as admission to hospital or reference for clinical investigation. These modifications were incorporated in such a way as not to interfere with the comparability with material previously recorded in 'E' Books. This more detailed recording enabled closer comparisons to be made with information gained in the first survey, which had used different methods to achieve the same objects. The design of the current data recording sheet was achieved by a joint working party with the Office of Population Censuses and Surveys.

The same government department also joined in the reconsideration of the 1963 College Classification of Morbidity in the light of recent alterations and amendments to the *ICD* itself. The task of revising the College Classification was made easier because of the interrupted number sequences which had been put in in anticipation of change and the present classification of morbidity now being used for the second National Morbidity Survey is an extension of the first, remaining comparable with it and preserving the value of data recorded up to the present. A further stimulus towards a second look at the classification came from Canada where Tarrant and Westbury had carried out practice studies comparing the applicability of the *ICD* and the College Classification with others in use in Canadian practice. It may well be that from this international study a further revision can be recommended to World Health Organization as an internationally standardized framework for data recording in general practice.

The present diagnostic index is obtained from the Research Unit of the Royal College of General Practitioners. It is designed to be used by practice staffs under supervision by the doctors. It is at once an index to practice records, a summary of practice work which is cumulative year by year, and a source of information which may be tapped for legitimate research

purposes by the central research organization. It can be adapted to the special interests of the practitioners or modified to incorporate any particular line of investigation which they may wish to follow. Any modifications are best discussed with the staff of the Research Unit in advance for some existing data recording sheets may be easier to adapt to a particular purpose than others. New standard designs will, no doubt, continue to be added as time passes.

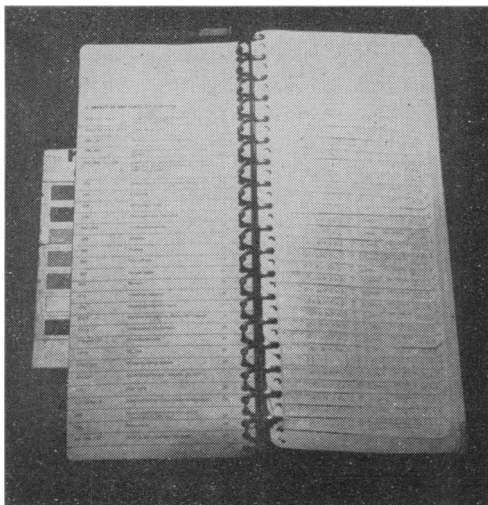


Figure 2
Diagnostic index



Figure 3
Transfer ledgers

The diagnostic index is a research instrument with a future. It can provide epidemiological information of both clinical and operational interest which increases in value as the years go by.

It can be predicted that the method will form the basis of community disease-monitoring systems set up to establish disease patterns for localities and to bring to light changes possibly due to some environmental hazard. No other existing mechanism can achieve this.

The diagnostic index is, also, an indispensable tool for use in undergraduate and post-graduate teaching. An essential basis for the full exploitation of the potential of the disease index is an age-sex register. The two are complementary, the register enabling recognized morbidity to be set against the population background in which it occurs. In the diagnostic index the layout for the recording of each episode of illness is standardized with basic recording methods such as the 'S' card or 'L' ledger, again with mutual comparability as the object.

The Research Unit has limited analytical capacity so it is unable to undertake the analysis of every index which it supplies. It can, however, recommend ways in which analysis can be carried out by practice staff at practice level in a standardized fashion to give comparable results. The unit's staff is always ready to advise newcomers to practice data recording and anxious to hear of new uses to which its methods can be put. Those with problems to which this, or any other practice research method can be applied can contact the Research Unit, The Royal College of General Practitioners, c/o Birmingham Regional Hospital Board, Arthur Thomson House, 146 Hagley Road, Birmingham B16 9PA.

EUROPEAN TRENDS IN TEACHING GENERAL PRACTICE

Report on the European Conference on Teaching General Practice, organized by the Scientific Society of Flemish College of General Practitioners held in Brussels, 2-4 October, 1970

From deliberations at this conference it is clear that in medical schools all over Europe there is a trend towards affording the undergraduate opportunities to deepen his education by some experience of medicine outside the hospital.

In these opportunities most medical schools appreciate the distinction between education