

**“SIX HONEST SERVING MEN”\***

A Prelude to Research in Practice

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*I keep six honest serving-men  
(They taught me all I knew)  
Their names are What and Why and When  
and How and Where and Who.*

*Rudyard Kipling*

—Just So Stories.

Perhaps we have, in the past, been over-impressed by the word “research”. Research has come to be associated in the public mind with the white-coated, backroom scientist of the laboratory and academic institute, who is usually pictured against a background of complicated electrical apparatus. He is a formidable figure, the experimental research worker, and we could not do without him. He would never have existed however if the field research worker had not preceded him, setting boundaries—albeit imprecise—to the problems which the experimentalist now investigates in detail.

In our time interest is reviving in the field observation of phenomena as they happen, as opposed to the study of phenomena under artificially contrived conditions. Statisticians and epidemiologists and others are looking at the occurrence and distribution of disease in the community, and at the effectiveness of the steps we take to prevent and relieve them. Though many workers are based in the ivory towers of formal research they must come outside in search of their material—outside into the world of general practice.

While much observational study must be based on research institutions, much also, an as yet unknown quantity, can and must be done by the observers who share the environment with the patients they observe. It is with research of this kind that we are concerned today; observational study of our own problems and those of our patients in the practices in which we work day by day. This is as much research as is the latest exercise in nuclear physics. Its discoveries may be less dramatic but it is equally necessary.

Kipling has described his serving men for us and I would like to

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consider with you, today, how we might equip and employ them under the circumstances with which we are particularly concerned. Some of us may be newly entering practice, some may be long established, but all can appraise the circumstances and opportunities which lie before them, to see if unanswered questions exist which they can help to resolve. They can create conditions in which their six assistants can serve their master most effectively.

Whether young or old in practice, certain preliminaries should be undertaken and basic information relating to the practice and its locality set down. The observer should make what approximates to a military "appreciation" of the situation, though of course under a different set of headings from that which the soldier uses. At once he finds himself calling on some of his serving-men. Where is the practice? What is it like? Who live in it? What do they do? Let us begin with this first appraisal.

Few are fortunate enough to select the place and circumstances of their practice; most come to an unfamiliar district and strange people from, as it were, outside. Later they become absorbed into the community, but at first all is new. Look at your practice geographically. Is it town or country or both? Has the locality any geographical characteristics which make it unusual? It would be surprising if the problems presented by an East Anglian fishing port were similar to those of Tees-side or of a Highland glen. As one grows into a practice, seeing the same streets, hedges and houses each day, it is all too easy to accept one's own surroundings and very difficult to look dispassionately at what becomes one's home district.

A practice is among people—these must be looked at too. Where do they come from? To what ethnic group and social culture do they belong? Are they indigenous or immigrant? Do their standards, values, and ways of life conform to accepted patterns? In my own practice there is a large West Indian element, with its own social and medical problems, and an increasing Irish community whose characteristics differ in many ways from those of the native Brummies. Social patterns and habits are closely linked with health and disease, and knowledge of the human composition of the practice, what it is and what it does also, is essential to the interpretation of its problems.

How much of all this can be reduced to practical terms? A start can be made with the practice "list" since in most practices the N.H.S. element is dominant. This defined population to whom the doctor is at risk of call, is in itself a valuable research tool. No other system of practice has produced such a useful by-product and the best use must be made of it. Executive councils vary in their effi-

ciency and practice secretaries do too. There can be few “ lists ” in which the medical cards are a one hundred per cent accurate representation of the population at risk. Always some cards seem to be left behind or not asked for at a patient’s death or removal, distorting the statistical background.

Executive councils may agree to “ clean up ” a list on request and from the revised list a practice register may be prepared. This, in its simplest form, is a loose-leaf book with names and addresses arranged alphabetically. Males and females may be separated. Date of entry to the practice, along with supplementary information concerning family relationships or occupations can be added at will. New entrants to the practice are booked in when their medical records arrive from the executive council but not sooner, and the departing are struck off with note of the date. This practice register, once constructed, represents the first and simplest practical research tool.

The next activity undertaken is the preparation of an age-sex register. The method of preparing this has been standardized by the College and descriptions published. A ledger is prepared with a page for a year, ruled into columns for males and females. Names and details sufficient for identification are set on the appropriate page. Much that is not at once apparent may be learned from study of the age-sex register in the light of the doctor’s increasing experience. Who lives longest? Whereabouts in the practice area do they live? What is the dominant age group in the practice? This latter will be linked with the practising habits of the doctor and vary according as to whether he does midwifery or no. The age-sex register can be convincingly represented graphically, males and females being counted out laterally from a vertical down the centre of the page. Many kinds of information can be superimposed on the resulting chart, which resembles a Christmas tree, tapering sharply or gradually at the top as each of the “ cohorts ” represented by the horizontal age-group begins to die away.

At this stage note should be taken of any features peculiar to the practice which may influence its composition. Situation may determine the social class of the practice, and the Registrar-General’s classification may be applied to those whose names are recorded in the registers mentioned above. Occupation is often important and note should be made of this though changes make a continued high standard of accuracy difficult to maintain. A large-scale map may be brought into use; of particular value in country districts. The work of Allen Price, an assistant M.O.H. in Devonshire, suggested that the larger the scale used the better, for plotting of observations right down to household levels may yield otherwise

unobtainable information.

Now for the medical cards. These constitute one form of register in themselves, and as they are received from the executive council they should be checked for missing information. On registration they may be put into the filing drawers or shelves. These envelopes with which we are all familiar can be made into a more effective research tool by marking those envelopes belonging to patients fulfilling certain qualities. All patients known to have chronic diseases such as diabetes or myxoedema may have their cards marked with a tag of appropriate colour. A colour-code is suggested for use by members of the College, and others, which will show its value when records pass from one doctor to another. The envelopes can be marked with an adhesive patch or flag, or stamped with an ink pad, if they have been entered in the register for example, or if the patient has had a negative urine test, definite information being conveyed to the doctor at first glance.

Many epidemiologists and most family doctors will be convinced of the importance of the family as a unit, in research as in much else, and the medical record envelopes can be grouped in families where this is desired. Some use a specially designed family folder while others keep envelopes grouped with a stout rubber band. It is not always easy to define a "family"; the sociologist will regard a family as the occupants of a house or flat, while the geneticist will specify blood relationship. The practitioner will select his grouping according to his interests and may decide to group families on paper in the practice registers while leaving the record envelopes in strict alphabetical order.

The procedures described above correspond to the building of the laboratory in which our experimental colleague works. It is an ordered preliminary before any study is begun, and necessary whatever kind of observational research holds the interest of the doctor. He must take such measurements as are possible of the environment in which he works, so that his observations may be made within a framework that can be compared with that of others. Let us assume the laboratory built, the preliminary survey of the district completed, and see how different research methods may be employed within its compass.

By the time the interested doctor has measured up his practice in this way he will almost certainly have discovered some particular aspect of illness, or of practice which he would like to study. It is most important that the idea, the stimulus arise within the observer himself for enthusiasm for a study of one's own choice and devising is most likely to be sustained. The task may well reveal new and unrecognized aspects of the doctor's own practice. Yet more will

be revealed by the next stage, that of adoption of a method of recording of the morbidity which the doctor encounters in his defined framework.

The newcomer to research recording may wish to study some particular disease, but he would be well advised to submit himself to the discipline of a period of recording of total morbidity. This is invaluable experience and the observer will find the extent to which he can maintain accurate records as well as the method of recording which suits his way of working best.

In most studies of total morbidity the unit of measurement is the item of service, whether consultation or visit. Records are made as each item of service takes place either by the doctor, his secretary, if he has one, or both. There is no room for wasted effort here, time does not allow such a luxury, and the recording method must be simple and effective. For the beginner the recording of two or three observations as an item of service is quite sufficient, while experience is gained and the habit of recording is formed. This habit is an insidious thing and it intensifies as time goes on. The capacity to record more in the same time increases and the habit of recording leaves the observer with a curious sense of omission when for some reason or other an item of service passes unrecorded.

The recording instruments are of the simplest nature. Dr Charles Hill, as radio doctor, once said that the most important medical instrument in our time was the ballpoint pen, and that is very true so far as observational research goes. Recording is blended in with routine note-taking and prescription writing in the most effective and yet painless way appropriate to the study, and there are a number of alternatives from which to choose.

The simplest form of record, and still the best for some purposes, is the daily ledger which may be kept in a book or on foolscap sheets specially duplicated or printed. Basic information such as the name, sex, year of birth of the patient seen may be inserted by a secretary and direct entry of other matters which it is desired to record added subsequently by secretary or doctor. Such information will include diagnosis (probably and preferably within the diagnostic classification proposed by the College). Further columns in the ledger are used to record any other aspect currently under observation and these may be extended at the discretion of the observer. Days, weeks, and months of recording will soon add up and by doing the addition sums regularly a picture of practice morbidity soon builds up. The statistics are quite elementary and yet curiously satisfying; themselves a stimulus to consider other and more elaborate working methods.

Either directly, or indirectly from ledger sheets, information may

be recorded on punched cards of Cope-Chat type. Some workers, outstanding among whom is Fry of Beckenham, have kept consistent records in this way for many years and drawn conclusions from study of these records relating both to the illnesses met with in the practice and the people who experience the illnesses. Punch-cards can be designed which will fit into the medical record envelope, or they can be improvised from continuation cards. Analysis is by standard Cope-Chat technique and cumbersome when lots of above 500 cards are to be handled. Storage of completed cards may present difficulty in time, and the detail which can be recorded is not great since it is limited by the number of punch-holes on the card.

An alternative method, the flexibility and capacity of which commends it, is the use of a loose-leaf register of the type devised and developed by Dr T. S. Eimerl of Penketh, Lancs. Details of the method have been published in the *College Journal* (1960) and the individual worker will find the method versatile and easy to work. Entries are self-coded under diagnostic headings and can be made easily and quickly during the course of work. Dr P. A. Walford of Felsted, has shown how information collected in a loose-leaf book of this type can be consolidated year by year into a similar book of larger dimensions making storage of information a minimal problem. The loose-leaf ledger is at once a running record of practice illness and an index to the further information contained in the patient's medical record envelope. Each may be used in conjunction with the other as the two components of a cross-reference system, the cards relating the information to people, the ledger relating it to illnesses.

A logical extension of this kind of day book is a Chronic Disease Register of the kind devised by Dr C. A. H. Watts of Ibstock. As patients attend and their illnesses are recorded the chronic diseases soon sort themselves out. It is soon apparent that there are more patients with multiple pathology in the practice than was at first thought, and this register can be made the basis for flagging of the medical record envelopes as suggested above. Registration of chronic diseases in some way or other is the first step towards recognition of associations between chronic disorders and other acute or chronic diseases of different types. There is a wide field here for future study.

Working from an age-sex register and a loose-leaf ledger in which classification of illnesses has, as it were, been done for you, it is possible to represent types of disease by age groups in graphic fashion. The method first used by William Pickles of Aysgarth in his immortal epidemiological studies can be adapted to show the distribution of morbidity in the practice in a pictorial fashion. This technique, too,

may help us to understand associations between diseases and circumstances which might otherwise be overlooked.

I will not go on to discuss episode cards and the punch cards which are tools of group research rather than single-handed endeavour. Many of you will already have taken part in group studies of different kinds, and will be familiar with the punched cards designed for mechanical analysis by Hollerith or Powers-Samas machines. While primarily the tools of group research the college hopes to offer mechanical sorting facilities to its members in the future, in return for basic information collected and returned according to a pre-arranged plan. In this way the computer will be brought into the consulting room and much tedious mathematics will be eliminated. This, though, is for the future and I have undertaken to limit myself to activities which are the concern of the individual doctor in his own practice.

One thing more must be said, however, that every practitioner who takes the time and trouble to measure up his practice will have defined a background which may make his work comparable with that of others. The work of the singlehanded doctor in this way benefits others also. After some early studies he may find a new and unexpected urge to compare his findings with those of his colleagues. Though exact comparisons are unachievable, comparison to this simple level is possible and is of value to the wider conduct of observational research.

Let us, then, set Kipling's honest serving-men to work in our practices, seeking with their help knowledge that is completely new and unobtainable without their help. They will find more than this for us, for they can help us to develop a new interest in our own work, in that of our colleagues, and in that of the profession we have chosen.

#### REFERENCE

Eimerl, T. S. (1960), *J. Coll. gen. Pract.*, 3, 246.

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**The Treatment of Seasickness.** B. M. JENSEN, L.M.S.S.A. *The Practitioner* (July 1961) 187, 87.

Dr Jensen is surgeon to the R.M.S. *Empress of Canada* and can write with experience on the treatment of seasickness. He advocates an intramuscular injection of 50 mg. promethazine hydrochloride followed by half an hour lying down before getting about again. In over 5,000 injections, only two absolute failures were recorded.