

Research Implications of the Virginia Study

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Information is collected in family practice for several reasons: for clinical care; for practice management; for curriculum planning, clinical audit, and continuing education; and to contribute to the general body of knowledge about family medicine. These are four very different objectives. It is possible, of course, for the same data to be useful for all four purposes. To be generally useful in this way, however, the data have to be collected and presented in such a way as to comply with the requirements for each objective. The requirements for the fourth and last objective are particularly rigorous.

It is particularly important that education in family practice be based on good information. In setting up their information system, the faculty of the Department of Family Practice at the Medical College of Virginia have not only provided a factual basis for their education programs, but they have also provided an essential prerequisite for research. Good research depends on good records. The information in our records, however, must not only be good but also accessible. The records of family physicians are potentially a gold mine of information, but so often this is buried and inaccessible. The authors of the Virginia study have now demonstrated a system which can be a fruitful source of clinical research. If family medicine is to develop as a discipline, every program and, indeed, every practice

will need to have an information system which can at least provide an index of problems and diseases. Given this basic tool, the family physician can identify groups of patients in his practice for intensive observation over a period of time.

Besides providing access to a large body of data for individual studies, the information itself can be generally useful. Without further manipulation it provides an approximate overall picture of the great number and variety of problems dealt with by family physicians in their offices.

To use the data for comparison with other studies we will have to await the presentation of the data in a comparable form. This the authors will be doing for certain selected areas. The question of comparability raises some general issues for research in family medicine.

Family Practice Research

The scientific method has two essential features: the precise and minute observation of facts, and the formulation of theories and generalizations which can be tested against experience. In the development of an observational science, the stage of generalization is usually preceded by a long period in which observations are collected and classified. I think it would be correct to describe family medicine as still in this first stage.

Until 25 years ago there had been few systematic attempts to study the phenomena of illness in general practice. A small number of outstanding individuals did make important contributions to medicine from general practice. It is, in fact, possible

to trace a thread of distinguished individual work from the origins of general practice down to our own day. Only in the last 25 years, however, have we seen the growth of a general body of information collected by large numbers of observers.

To have general value, observations made by one observer must be comparable with the observations of others. Only in this way can separate building blocks from hundreds of observers be put together into a coherent framework. Comparability is ensured by the precise definition of terms and by agreement on a system of classification. When quantitative data are being compared it is necessary to express them as rates over a denominator. Research workers in family medicine have faced many difficulties in achieving this degree of precision. The difficulties can be considered under two headings: the numerator, or basic unit of observation, and the denominator.

1. *The numerator.* In most studies the numerator has been the problem or problems recorded at a consultation or doctor-patient contact. This has led to several difficulties. A consultation may be for a new problem or the follow-up of an old problem. If these are not distinguished it is impossible to make inferences about the *incidence* of problems, since the number of times a problem is recorded will depend on the individual physician's habits of practice. For example, if 100 diabetics are each seen ten times, and 1,000 patients with upper respiratory tract infection (URI) are each seen once, the statistics will show diabetes to have been as common a reason for

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consultation as URI. This information may be useful in itself. But, if we wish to compare it with other studies we will not know whether any difference is due to a difference in incidence and prevalence, or to a difference in habits of practice. Comparisons will be meaningful when the data from Virginia have been presented in this way.

Another more intractable problem has confronted research workers in family practice. An illness managed in family practice may evolve during a series of consultations. The problem, at first recorded as "abdominal pain," may later become "gallstones." With our existing methods these will be recorded as two separate problems. Many problems in family practice present both physical and behavioral facets. For example, a patient with sore throat may also have cancer-phobia. To record these as two separate problems is misleading, since they are really two facets of the same problem. So far, however, we have evolved no system for simultaneously recording clinical and behavioral phenomena which are interrelated. The authors of the Virginia study have identified this problem. The low recording of behavioral problems may have been due to lack of awareness; I suspect, however, that it was also due to our lack of a classification system for dealing with these problems. Up to the present, we have been studying family practice with tools developed

for other fields of medicine. These tools allow us to describe an illness in one dimension. To a family physician, however, most illnesses have several dimensions. The development of a method for handling data of this kind is a problem we have yet to solve.

2. *The denominator.* Ideally, the denominator should consist of the total population at risk for the condition recorded in the numerator. In family practice, this is the population of the practice, or some subgroup of it. Under certain forms of medical care — prepayment programs for example — it is possible to obtain a denominator of this kind. Under average conditions of practice in North America, however, this is not possible. Although individual physicians and groups have registered their practice populations, any project with a large number of observers must use another denominator. In the Virginia study mention is made of a total population at risk, but there is no indication as to how this was arrived at. The most satisfactory alternative to a registered population is the number of patients consulting. This information is available in the data from Virginia, and it will therefore be possible to express the data in the form of rates.

The Future

As the authors have pointed out, one of the most important functions of an information system is to provide

access to groups of patients for more intensive study. There is a dearth of information about the natural history of many common disorders. We know very little about the course and outcome of the many ill-defined illnesses which family physicians encounter. Although we will continue to collect general information for other purposes, it is unlikely that more information of this kind will add much to our general knowledge. Research in family medicine should now proceed in two directions. First, we should move from general to specific studies, designed to test new hypotheses. Second, we must think in new ways about the information we have already. Accurate observation is an essential component of the scientific method. But science is more than the collection of observations. Progress in science occurs when somebody says, "Let's see what happens if we look at this in a different way." Now that we have collected a large body of information, we need a unifying theory around which this information can be organized. So far, we have been using conceptual tools developed for other disciplines. The inadequacy of these tools for dealing with the multidimensional problems of family practice has been demonstrated many times. The existence of family medicine as an independent discipline rests on the assumption that its problems cannot be approached from the standpoint of other disciplines.