

# Outcomes research in general practice

**H**EALTH services research, as opposed to clinical research, is still in its infancy in this country. This is particularly true of research in the field of primary health care, and more specifically general medical practice, where much of the work conducted during the last two decades has, of necessity, been descriptive. Large-scale studies of general practice have built up a comprehensive picture of the service, while national and local surveys have provided information about practice staffing, organization and attitudes.<sup>1-4</sup> The national morbidity studies and other studies on the process of care describe the nature of problems presented to general practitioners and the pattern of care provided.<sup>5-7</sup> Population surveys have looked at the use of general practitioners by patients and their satisfaction with the service provided.<sup>1,2,8-10</sup> In addition to these large-scale studies there are many small-scale studies, often conducted by doctors in their own practices, which do much to fill in the detail of a complex picture. Taken as a whole, these descriptive studies are an extremely valuable source of information, although much of the picture still remains unclear.

Existing research demonstrates clearly the extreme variability of general practice, both in terms of its organization and in the pattern of care provided. Practice size, staffing and facilities vary from the single-handed doctor with no ancillary staff practising from lock-up premises, to a large group practice with a full range of ancillary staff practising from a modern purpose-built health centre. The pattern of care provided by general practitioners has also been shown to be extremely varied.<sup>7</sup> Consultation rates range from less than two per patient per year in some practices to more than five in others, laboratory test rates from less than one per 100 consultations to more than 10 and referral rates from less than three per 100 consultations to more than 20.<sup>11</sup> Does such variability, which cannot be explained by variations in the types of cases seen, matter? Are some patterns of care more effective than others? If so, which factors are most important? In order to answer these questions direct attention must be paid to the outcomes of care, rather than to further descriptions of the patterns of care.

Research in general practice on outcomes of care goes beyond descriptions to ask questions which require the establishment of causal relationships; there is an attempt to identify aspects of the provision of care which lead to desired outcomes and prevent negative outcomes. This is sometimes taken to imply that the study of outcomes of health care is solely concerned with measuring the health status of patients, and that this is the key problem facing the researcher. In fact health is only one of a range of possible measures of outcome. The following inter-related tasks offer an agenda for developing studies of outcome in general practice. They are not exhaustive, but do provide a framework which helps to identify the important issues to be considered.

This is a shortened version of a paper presented to a seminar on outcomes in primary health care organized by the University of Manchester and the Department of Health and Social Security. Copies of the full paper are available from Dr D. Wilkin, The Department of General Practice, DHSS Research Unit, University of Manchester, Rusholme Health Centre, Walmer Street, Manchester M14 5NP.

## *Defining the problem(s)*

The problem under study should be carefully defined in such a way as to ensure that cases can be identified and clearly distinguished from other problems. A disease-based classification may not be the most appropriate system. Defining problems in terms of physical or mental functioning, or ability to meet normal role obligations, may be more appropriate, depending upon the nature of the health care inputs being evaluated and the objectives of care.

## *Defining the objectives of health care intervention*

This is perhaps the most important but most neglected stage in research into the effectiveness of health care. In principle, the criteria by which outcome is judged should be selected on the basis of explicit objectives, but in practice the objectives usually remain implicit. The researcher should at least make explicit the assumptions on which the provision of care is based. But it is important to try to go beyond this by recognizing that there are many possible objectives and that different interested parties (for example, doctor, patient, family and society) will accord different values and priorities to these. There is a need to develop and apply systematic techniques for eliciting and elaborating the objectives of care. It is sometimes argued that, because general practitioner care lacks explicit objectives, objective setting is artificial and inappropriate. However, the fact that objectives are not normally spelt out should not be taken to mean that they do not exist.

## *Selecting/developing outcome measures*

An enormous amount of effort has already been devoted to the development of reliable and valid indicators of the outcomes of health care. While there remains much work still to be done, the researcher should not be led to believe that this is virgin territory, and that each new study will require the development of new measurement techniques. Frequently it will be possible to select an appropriate measure from those already available. Measures of symptom severity, functional capacity, dependency, life satisfaction, and many others have been validated and tested for reliability. The researcher will need to be aware of a wide range of possible measures drawn from different disciplines. The strengths and weaknesses of measures will need to be assessed in the context of the particular problems being studied. Evidence of validity and reliability should constitute essential criteria for the choice of instruments.

In addition to the wide range of more specific instruments, multidimensional measures of health status are becoming increasingly sophisticated and are being adopted widely. These include both additive scales, producing a single index, and scales which describe a number of different dimensions. As far as outcome studies in general practice are concerned, general health status measures are unlikely to be adequate on their own as outcome measures because they are insufficiently sensitive to inputs and the process of care, and reflect a much wider range of health status determinants. However, in conjunction with more specific measures they provide a valuable means of comparing study populations with norms derived from general population surveys.

It is often necessary to employ both objective and subjective measures of outcome. There is a tendency to prefer objective measures where these are available, but if this is done without

recognition of the importance of patients' subjective experiences, the outcome criteria will be incomplete. For example, the objective measurement of lung function using a peak flow meter cannot replace a measure of the patient's experience of discomfort and quality of life. The two measures are complementary.

### *Describing the service inputs*

It will often be necessary to describe features of the practice (for example, practice size, accommodation and staffing) and the care provided, both of which are theoretically relevant to the problem being studied. In order to test hypotheses about the relationship between particular inputs and desired outcomes it will be necessary to include measurements of potentially intervening and intercorrelated variables. All too often, insufficient attention is devoted to the problem of adequately describing service inputs. There is a tendency to measure that which is easiest rather than that which is most relevant, and to assume the equivalence of crudely defined inputs — for example, consultations or referrals by one doctor are assumed to be equivalent to those of any other. Much more work is needed on the development of measures of inputs which are able to disentangle the multitude of factors involved. In addition to the problems of measuring input by doctors, it should be remembered that many of the problems dealt with will require a wide variety of community-based and hospital-based service inputs and it is necessary therefore to devote attention to measuring these as well.

### *Describe the non-service inputs*

If service inputs are neglected, non-service inputs are frequently ignored altogether. In primary health care particularly, the achievement of desired outcomes will depend as much on non-service inputs as on the contribution of health care. Structural factors such as housing, income and employment need to be measured as well as the actual care provided by family, friends and neighbours. Research on the elderly, the mentally handicapped and the physically disabled has already devoted much attention to the problems of measuring informal care.

### *Specifying the relationships between defined aspects of care and the observed outcome*

It is important to develop a coherent argument which explains the hypothesized causal relationships between observed inputs and outcomes. The observation of statistical associations between variables without reference to the mechanisms involved is often unhelpful to an understanding of the relative contribution of different elements of care. If the researcher elaborates possible underlying causal connections it is also easier to identify and examine the potential influence of intervening variables.

### *Selecting the research design*

The choice of a research design will be a compromise between the ideal and what is practicable. The classic double blind randomized controlled trial is rarely feasible in general practice research. Often, it will be necessary to use either non-randomized trials or observational studies. Comparisons of populations exposed and not exposed to defined inputs and those with and without desired outcomes are the two principal analytic approaches. The value of the work which has already been carried out on objective setting, measurement of inputs, outcome measures and so on, will only be fully realized if these are employed in an adequate research design.

The need to conduct research which examines the outcomes of general practitioner care will continue to grow. A combination of scarce resources and a seemingly infinite variety of pat-

terns of provision leads inevitably to questions about effectiveness and efficiency. General practitioners will need to cooperate with other health professionals and health service researchers to study outcomes. The problems to be overcome are difficult but by no means insurmountable. The framework of tasks advanced here is intended to provide a means of reducing the problems to manageable proportions by examining each problem separately. Many of the tools necessary are already available and others can be developed in collaboration with health service researchers. My own research unit is about to embark on a number of studies designed to examine aspects of outcome in general practice. An extensive bibliography is being accumulated which will form the basis for a critical review of current theories, concepts and methods. It is hoped that in this way researchers can offer a valuable service to practitioners by helping them to mount studies without the need either to reinvent the wheel for each new piece of research, or to devote a great deal of time and effort to searching an extensive international literature on health care outcomes.

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## Biotechnology: human growth hormone

Professor Vessey (Oxford) has pointed out that the use of cadaver-derived human growth hormone has been linked to Creutzfeldt-Jakob disease and not to Alzheimer's disease (Hodgkin P, Yoxen E. Biotechnology and general practice. 2. Beyond the technology — social and ethical problems. *J R Coll Gen Pract* 1985; **35**: 527-531). New synthetic growth hormone does not have this possible link with Creutzfeldt-Jakob disease.