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Improving Health Services

Background, Method and Applications



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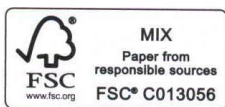
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Improving Health Services

Preface

Health services research is the systematic study of the means by which basic medical and other relevant knowledge is brought to bear on the health of individuals and communities under a given set of conditions.¹

This is a personal account of the development of health services research (HSR), mainly in the United Kingdom but with reference also to developments in the United States.

I had originally intended to describe and assess all the HSR that had been commissioned and published in the UK but a survey of the available literature revealed three fairly major obstacles to this approach. First, it was not always possible to be sure that projects started had ever been completed and findings published. Second, in some cases I was unable to determine why a study had been commissioned, what problems arose during its execution, and what action if any had been taken as a result. Third, HSR studies in areas other than my own – for example, nursing or dentistry – lay outside my field of expertise so that any conclusions could be open to challenge.

I, therefore, decided to base the book on my own personal experience since this type of research began in the UK in 1962. This has enabled me to describe the background, commissioning and outcome of HSR studies in the particular context of epidemiology. It has meant that there is considerable disparity in the length of some of the chapters. Chapter 5, for example, is very short but requires to stand alone on the central issues of organisation and funding. Chapter 6, in contrast, is very long but once again, since it describes the body of work carried out in the St Thomas' Social Medicine and Health Services Research Unit, it does need to be read as a whole. A note on the text: throughout the text discussion the term Department of Health is often used to describe what was formerly and variously known as the Ministry of Health or the Department of Health and Social Security (DHSS).

Sound HSR is absolutely central to the effective functioning of any modern health service. I hope this book will show how HSR in the UK has developed over time and how it can illuminate and improve health service policy and practice.

REFERENCE

1. Global Advisory Committee on Medical Research (1983). *Who Chronicle*, 37(1), 4–5.

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1. Health services research: a general perspective

INTRODUCTION

Health services research (HSR) differs markedly from the clinical research traditionally associated with medicine. Most clinical research focuses on the investigation of natural diseases occurring in humans. The problems examined are those posed by knowledge of the normal or diseased and examination occurs within the defined boundaries of a particular branch of science such as genetics, molecular biology or immunology. In clinical research, the main area of enquiry relates to the application of this type of scientific biology to the manifestation and treatment of disease in man and is now often referred to as translational research.

The term HSR is used variably by different groups and is often misunderstood. It describes a field of enquiry characterised by its applied and multidisciplinary nature and occupies territory that includes public health research, population health sciences, health systems research and clinical research. Definitions have been proposed by various organisations and individuals ranging from the Advisory Committee on Medical Research of the World Health Organisation,¹ Flook and Sanazaro,² and the Academy of Medical Science Working Group.³ All are agreed that HSR is concerned with the relationship between need, demand, supply, use and outcome of health services. The discipline, therefore, examines some or all of the following factors: quality, distribution, access, outcome and effectiveness of health care services, irrespective of who provides them.

The tasks of HSR can be categorised under the following four headings:

1. Availability, distribution and use of health care services
In any health care system, the resources available for health care provision must be defined and examined. This may involve studies of health personnel and the identification of areas of manpower

needs. The distribution of physical resources and personnel must be understood.

2. Operational characteristics of health care provision

One of the most important areas covered by HSR is the actual delivery of health care. This may include the description or measurement of work patterns in clinics; determination of transport requirements for patients; assessment of the need for various types of facilities, such as operating theatres; or the development of a rationale for allocating resources between different geographical or social subgroups. This may vary in complexity from simple work studies to complex manpower or economic computer modelling of the whole health care sector.

3. Determination of attitudes and behaviour

Consumers of health care services – both therapeutic and preventive – are not passive in their response to the provision of services. Cultural, social and educational factors determine the attitudes of a population to illness and to usage and expectations of health care services. It is necessary, therefore, to understand and measure such factors and this kind of knowledge is of particular importance in planning and mounting public health initiatives.

4. Technical and economic assessment of the efficacy of medical therapy or technology

In the past 50 years, there has been a marked growth in technical medicine and it has become economically and functionally essential to measure the technical performance of alternative techniques or strategies in the provision of health services. Such assessment has become the concern not only of the medical profession, but also of the funders and administrators of health care. Assessment may be needed for different patterns of care, exploring alternatives to hospital admission – for example, community care – or to provide a sound social, biological or economic basis for introducing mass immunisation or screening programmes. Problems in arriving at acceptable programmes may arise from biological, behavioural or economic factors and thus this research is likely to extend beyond the relatively simple area of pure biological research. In addition, it may be necessary to look at a new programme in practice before assessment is possible. This type of enquiry is called intervention research and requires the development of pilot studies in order to assess a programme's potential value and cost before wider introduction is considered. The aim must be to improve the quality of care but costs in relation to marginal improvements must also be taken into account. Thus, in order to provide appropriate services,

HSR overlaps with epidemiological research since knowledge of the causes, distribution, prevalence and incidence of disease is essential.

The aim of this book is to cover all these fields and to trace the development of HSR in the UK.ⁱ A brief description of developments in the US is also given to demonstrate the similarities and differences (see Chapter 2).

HISTORICAL BACKGROUND

There is a long history of research into the manifestation and treatment of illness, but the recognition of the importance of HSR as a discrete and necessary component for the adequate functioning of health services on which this treatment depends has been slow to develop. Only in the past 50 years has there been any concerted attempt to coordinate and foster HSR in the UK. There are a number of reasons for this neglect. Probably the most important of these has been the belief that advances in medical treatment and technology are infinite, and that the development of appropriate methods of treatment will solve the majority of ills. This can be well illustrated by the erroneous belief of many of the founders of the National Health Service (NHS) that expenditure on health services would diminish because the introduction of universal services would improve the health of the population and thus lead to lower demand for health services. There is now an appreciation that this is not the case and that the evaluation of health services and what they have to offer is vital if there is to be any reasonable allocation of resources to the health sector by government or society.

The longest history of support for HSR as a distinct entity has been in the US.⁴ In 1966 Anderson⁵ stated: 'systematic research on health care emerged in the 1920s in response to concerns about equity of access to health services and its emphases have historically selected prevailing societal definitions of the issues surrounding the organisation, financing and quality of health services.'

It is possible to identify four distinct stages in the development of HSR in the US. The first stage, up to the middle of the 1930s, was sporadic and largely descriptive, sponsored by private philanthropic foundations and only rarely covered by governmental funding. During this period, the

i. Most of the descriptions are based on the experience in England and Wales during the years 1960–1995.

US Public Health Service began to be concerned with the health of the poor and indigent, in particular with the care of children. A number of largely descriptive studies were started – for example, the community studies in Hagerstown, Maryland.⁶

In the second stage, between 1930 and 1950, the major emphasis was on a national health service, partly to evaluate the effects of the enactment of the Social Security Act and also because of concerns with the performance of the different component parts of the private health sector. Most of the research at this time was undertaken by individuals employed by government agencies, and occasionally by staff financed by private foundations.

It was the third stage – between the 1950s and the mid-1960s – that saw the greatest expansion in HSR as academic institutions gradually became involved. Some of the impetus for this sprang from the availability of repeated national health surveys, the increasing interest of social scientists, the factors governing the use of health services, and the allocation of resources for building hospitals and health facilities. University programmes in health administration began to be introduced and the teaching of community medicine and epidemiology became concerned with matters beyond infectious disease.

In the fourth stage, from the mid-1960s onwards, HSR in the US developed its major strength with the founding of the National Center for Health Services Research and Development, which changed its name several times. There has been an increasing realisation of the need to study the wider problems of health care delivery because of the rising costs of health care and the limits to what clinical medicine can achieve. The subject has been under increasing strain because of the growing complexity of the research required, as well as its far-reaching consequences. It has been well summarised up to the middle of the 1970s by Flook and Sanazaro.² More recently, White has described the developments of HSR in the US,^{7, 8} and he and Eisenberg give a good account of how HSR can contribute to the development and operation of a market-orientated health care system.⁹

In the UK, six main factors have made the development and support of HSR a necessity.

- Reassessment of the medical task and the role of general economic and social forces in the health status of populations.
- Phenomenal growth in medical manpower and medical technology.
- Rising costs and complexity of health care provision.
- Political and social need for equity of health care provision.
- General increase in the complexity of society and the increasing

scale of social and health effects possible from modern political, environmental and industrial developments.

- Increasing knowledge and expectations of consumers of health care services, through newspaper articles, television and the Internet.

In the last 70 years there has been a gradual reappraisal of the task of medicine and the health care services in the developed world. During a period of phenomenal growth in health care resources, personnel and technology, it has become clear that massive investment in personal health care services has substantial limitations in improving the health and well-being of people, while the potential cost of providing these services is almost limitless. The same period has witnessed the success of public health measures such as immunisation and malaria control. It has been increasingly realised that improvements in diet, water supply, social environment and public awareness may be of far greater importance for the health and welfare of populations than any direct, curative interventions by medical or allied professional staff.

Throughout this period, governments have become more involved, directly or indirectly, in meeting the costs and assisting in the organisation of the national health care system. The increasing political desirability of ensuring equality of access to medical services has followed from this and in turn has raised the general level of demand for and usage of health care services. The last six decades have also seen a rapidly changing environment associated with massive technological innovation. The health outcomes of industrialisation have produced serious social, medical and cultural problems.¹⁰ Against this background, the need for the continual assessment of health care provision, relevance and effectiveness has never been greater and it is in this context that HSR has come of age.

THE ROLE OF HEALTH SERVICES RESEARCH

The role of HSR is to provide evidence on which decision-makers can base their policies and to give managers the technical knowledge to translate these policies into action. This is of profound importance to the well-being of people served by the health care system and there must be a direct link between health care policy and the direction of much of the research being undertaken. But problems arise when issues cross boundaries and are not purely a matter of health. One clear example of this is cigarette smoking, unambiguously recognised as harmful to health. The threefold aim must be to try to persuade individuals not to start smoking

in childhood, to produce less harmful smoking products, and to dissuade people from continuing to smoke. From the point of view of the national economy, however, tobacco is a potent source of tax revenue. This is a classic example of the conflict that can arise between different sectors of the national economy; in this case, between the health service and other government departments such as HM Treasury.

Another example of such conflict is seen in the area of industrial development. Coal is a cheap form of energy, but inefficient burning of coal generates a variety of harmful by-products such as suspended particulates, sulphur dioxide (SO₂), nitrogen dioxide (NO₂) and perhaps even carcinogens. Burning coal efficiently prevents atmospheric pollution but increases the cost of production. The hazards of coal burning have been assessed and described by Holland and colleagues.¹¹ In the national context, however, the benefits to be gained by reducing pollution have to be balanced against the costs incurred.

HSR can provide guidance to policy-makers, managers and providers of health care in two main ways. First, it can evaluate existing or proposed health care measures – evaluation research. Second, it can look at the effect on society of existing or proposed policy measures so that effective health care policy options can be developed – health care research and health policy analysis.

Evaluation Research

Although there is a long history of the technical evaluation of medical care, the use of statistical or epidemiological analysis as a major tool of medical research is comparatively recent. In clinical research, the effectiveness of treatment is seen mainly in purely physiological terms – for example, lowering of blood pressure – or in terms of patient survival – for example, in the assessment of cancer therapy. When considering the effectiveness of a particular drug or other intervention, however, other factors must also be considered. It may be, for example, that complex and costly treatments are best provided from a few specialist centres of excellence. But then patients may be reluctant or unable to travel to such centres that may be some distance from their homes and this may increase geographical health inequalities. A particular intervention required may also be unacceptable to particular social, ethnic or cultural groups and may need to be adapted to meet their requirements – for example, the necessity for gynaecological treatment to be administered by women for some ethnic or religious groups.

The approach of the clinical scientist cannot provide guidance in these areas. In many cases, the purely scientific basis for choosing a particular

treatment programme has not yet been satisfactorily resolved. Thus, after almost one century of debate, we still remain unclear as to the best ways of preventing and treating breast cancer.

Decision-makers in any health care planning organisation must take decisions about implementing programmes of care or about determining priorities involving medical, technical, demographic, social, anthropological or economic factors. It is in this context that HSR must operate to evaluate the need for and effectiveness of medical therapies. This can be illustrated by looking at research on preventive procedures such as Lechat's classic study of rubella prevention.¹² The risk of a woman contracting rubella during pregnancy as a cause of malformations in her newborn baby was first observed in Australia in 1941. Lechat described how various studies using different methods developed precise knowledge of the possible risk of rubella at different stages of pregnancy. Research was then undertaken to develop an effective vaccine. Two major policy options emerged. The first was to attempt to eradicate the disease by vaccinating the entire population and maintaining its immune status; the second was to identify and immunise those at greatest risk to prevent them from developing the disease. The necessary investigations for such strategies are described in Lechat's review.

A different set of concerns – namely, policies on access to health services – were reviewed by Gulliford and Morgan.¹³ The concept of access to health services is of major universal concern and is extremely complex. This review discussed some of the problems and measures required in order to assess such factors as availability of the service and its accessibility, accommodation, affordability and acceptability. Their study describes the types of questions patients should be asked about these five factors that will influence their use of services. The answers to these questions should be considered before any procedure is introduced into practice.

The effectiveness of a specific preventive policy was addressed in studies to determine whether the fluoridation of the water supply influences the development of dental caries¹⁴ – an example of a pure epidemiological investigation with important implications for the provision of dental services. Other examples of apparently simple HSR investigations were those on the provision of food for hospital patients that were important in highlighting deficiencies in this area and in suggesting possible improvements.¹⁵ As a result, the Department of Health now recognises that hospital food is an important part of patient care and, together with the Hospitals Caterers Association, has published practical guidance. Complaints about hospital food persist but the gross

inadequacies in some hospitals, particularly in geriatric units, are now much less common.

The interaction of different methods of investigation and intervention is illustrated by the studies of methods for the prevention of coronary heart disease in North Karelia, Finland.¹⁶ Initial studies showed that this part of Finland had one of the highest death rates from coronary heart disease in the world. Investigation of the habits, lifestyle and environment of the local population suggested a number of possible risk factors, including diet and smoking habits. Various methods were used to try to improve the situation: the fat content of meat products for sale was reduced; people were advised about their smoking habits and their cholesterol levels; individuals identified as having raised blood pressure were given appropriate advice and treatment. The health of this population improved dramatically. These experiments were a successful example of the need for cooperation between those concerned with public health in the widest context and those involved in the provision of health services.

Health Care Research and Health Policy Analysis

It is impossible to overstate the importance of good communication between HSR workers and health care policy-makers. Since the research worker is seldom responsible directly for health care planning or policy-making, it is essential that a satisfactory interchange of ideas occurs early in the formulation or resolution of policy issues.

Some authorities suggest that HSR and health care policy analysis are separate entities. Klarman¹⁷ claimed that the time and programme scales of research and policy differ fundamentally. The objective of research is to describe the situation before and after the introduction of a health care programme with a description of the programme and, if possible, its effects. At the level of health care policy analysis, however, research by itself cannot always provide clear guidance on the setting of priorities. These will always involve other political or time factors.

Klarman sees research as describing the real world and testing hypotheses about how a given state came to be and policy analysis as listing and appraising alternative future outcomes. Both HSR workers and policy analysts must be able to deal with the uncertainty of outcomes or conclusions.

In spite of these differences, Klarman believed that the same individual may sometimes be able to perform both research and analysis as long as the worker or unit acknowledges clearly which activity is being undertaken at a particular time. The difficulty of communication between the policy-maker and the researcher, and the timescale involved, are crucial

issues. It may be possible for the researcher to act both as researcher and policy analyst but it is a difficult role to fulfil effectively. The researcher may require more stringent data for arriving at decisions than the policy-maker who is constrained partly by political and time factors. The policy-maker may thus have to make decisions based on inconclusive or incomplete data.

More often and more satisfactorily, the researcher and policy-maker work separately while in communication. In this way, the researcher can be independent of those concerned with the formulation and implementation of policy decisions and the policy-maker can have a more objective view of the feasible options.

It must also be accepted that HSR does not stop once a policy has been agreed. The time interval between decisions on introducing a particular health care service and full-scale implementation, after pilot studies, is usually long enough for adequate research to be undertaken to evaluate its effectiveness and outcome and to make adjustments as necessary.

It is clear that such a role for HSR depends heavily on the type of organisation and network which links it to the decision-making centre of the health care system.

Three main streams of activity relate HSR to health care policy analysis.

1. Examining Policy Options

In this application of HSR, an attempt is made to forecast the effects of implementing specific health care policies so that politicians and administrators can have as much information as possible on which to base their choice of available options. This may require action research on a small scale or purely theoretical modelling. Examples can be found in areas such as policy relating to immunisation programmes,¹² antenatal care,¹⁸ obstetric care,¹⁹ and care for the mentally ill.²⁰ Policy analysis must also show the assumptions and value judgements on which different policies are based.

2. Determination of selective factors influencing the distribution of existing programmes

In this activity, HSR identifies factors such as demography, available manpower, available hospital or clinic resources, or economic characteristics that influence the use of facilities. Such research may be related to the overall regional resource allocation or the reallocation in single regions between capacity services. Typical examples of this in different areas are in the document by Katz et al.²¹