

## Health services research:

# The Best Service with the Resources Available

By Peter F. Hjort and Hans Th. Waaler

**Health services research will not solve fundamental problems, neither in the medical sciences nor in health politics. But it may help to evaluate the service, study alternatives and calculate costs and effects. The goal is not a perfect service, nor a cheap service — but the best service possible with the resources available.**

### The authors

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The health service in Norway is a vast organization. It provides care for every citizen, day and night. It delivers babies and comforts the dying. It handles jobs of tremendous complexity, like kidney transplantation, but also treats simple ailments, like common colds and piles. Its tools may be computer controlled X-ray machines or — simply — the touch of a friendly hand. Its personnel may be highly trained neuro-surgeons or young aides. Clearly, the organization is not only the largest, but also the most complex in the entire society.

There are other large organizations, like the railways. Its product is transport, and passengers are able to judge the product, because they know what trains are like and whether they run on time. The

product of the health service is health, which is very difficult to measure. Patients cannot judge the quality of care, the skill of a surgeon or the wisdom of a psychiatrist. Moreover, interviews have shown that patients tend to be grateful and satisfied with whatever service they get. Therefore, the health service is dependent on its own evaluation.

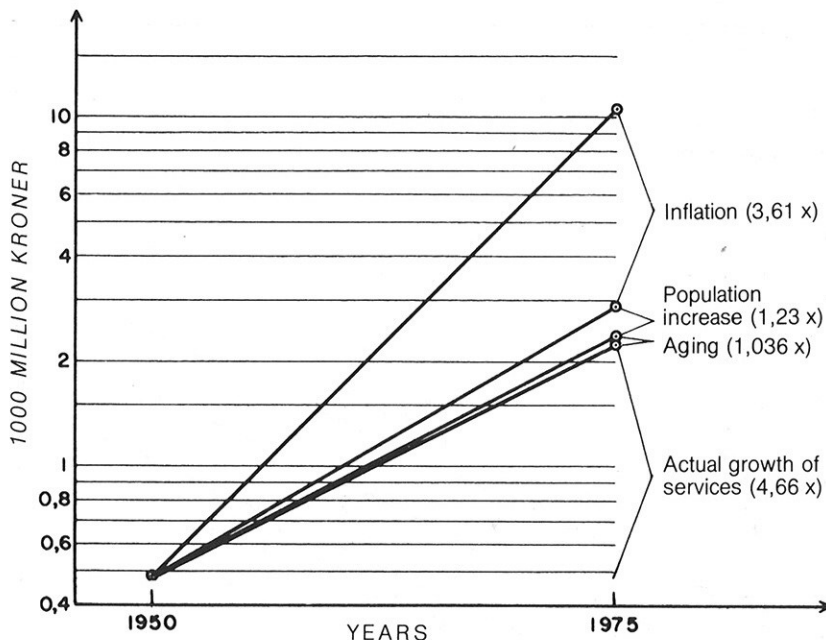
The service has grown rapidly. Over the last generation — 30 years — the personnel has increased threefold (about 1.5 times, when measured in whole time equivalence and corrected for increase in population and decrease in working hours). The expenses have increased even more. This rapid growth means inherent problems:

- The rate of growth is slowing down, leading to painful and difficult adjustments.
- Uneven growth has created regional differences.
- There are large differences in the quantity and quality of care.
- The task of medicine changes gradually. For example, long term care of

old people takes an ever-increasing share of the resources. It is difficult for the service to make the necessary adjustments.

As a result the health service is forced to look more carefully into plans and priorities, and must develop systems of evaluation and quality control. This calls for planned research, and over the last 10—15 years health services research has developed in many countries to fill this need. It is not a new field or a new discipline of research. It has traditions in public health, epidemiology and controlled clinical trials, but it has grown in volume and has become better organized. It is applied research, and its broad goal is to contribute to better care and better use of resources. The research is multidisciplinary in nature, and requires a group of researchers from the health services and from the social sciences.

In Norway there are two such research groups, the Norwegian Institute of Hospital Research in Trondheim and the Group for Health Services Research established in Oslo by the Norwegian Research Council for Science and the Humanities (NAVF). This group was established in 1976 and has eight researchers, a nurse and a sociologist, three economists and three doctors. This article makes use of examples from the work of this group to illustrate what health services research is about. We emphasize, however, that research groups do and should differ, and we cannot give a complete survey of the field, nor of our own work.



*Growth in the Norwegian health service 1950—1975, with and without corrections.*

### Health economics

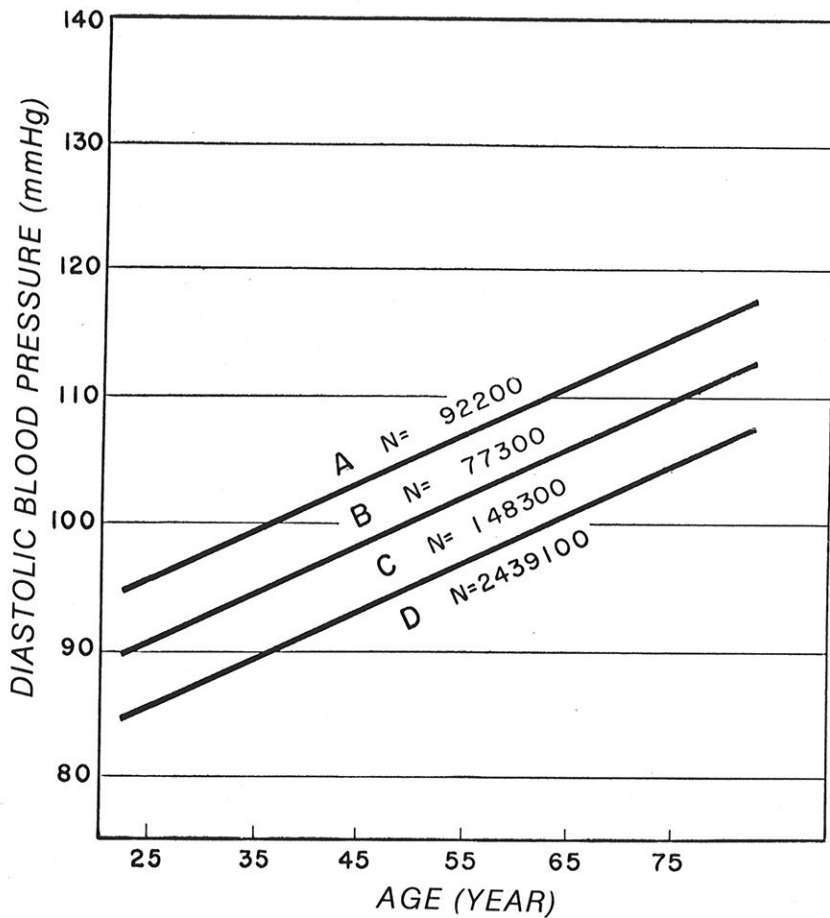
Politicians have increasing difficulties in finding enough money for the health service. Many countries cut their health budgets, and «cost containment» is the new slogan. Health economics is often seen as the science of cutting health budgets.

It should be emphasized that the health service is there to spend money, not to save money. The goal is not a cheap service, but a good one — the best possible for its money. If it becomes necessary to cut the budget, this is a political job, not a scientific one. And the health economist should not be used as a scientific budget shrinker, but as an expert in balancing alternatives and calculating consequences. The traditional goal is cost-benefit analyses, but it is extremely difficult to calculate the benefits of the health service. Such analyses are therefore often ap-

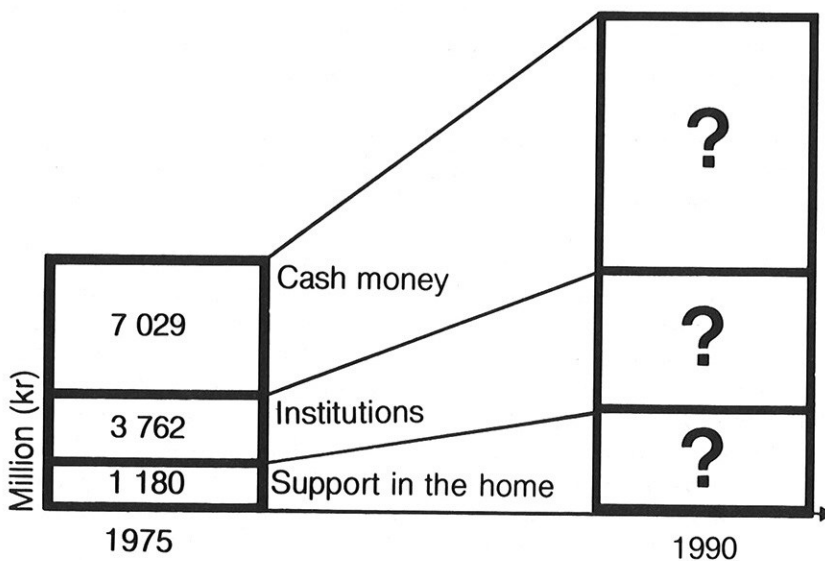
plied to carefully selected problems which are not representative, and the generalizations may therefore be misleading.

It seems more useful, therefore, to involve the health economists in more representative studies, even though they are less clear-cut, more difficult and require many compromises. The health economists should also engage in education, aiming at greater cost consciousness and a better understanding of the fact that choices must be made.

We have studied the growth of the Norwegian health service in economic terms. Between 1950 and 1975 the expenses increased 4.66 times in fixed prices per capita, see Fig. 1. This is fast growth, but still slower than the growth in cars, TV's and students. The important point is not the growth rate, but the value we get for the money.



Four priority groups in a programme for hypertension. (The numbers indicate number of people in each group).



Public expenses for the old — profile in 1975, choices for 1990.

### High blood pressure as a model

Health services research should study large problems, not only interesting ones. It is often useful to develop models for diagnosis and treatment, to study alternative programmes and calculate costs and potential benefits.

We have applied these ideas to high blood pressure or hypertension. This is a major disease responsible for many deaths and serious disabilities. About 200,000 Norwegians suffer from it, but many are at present quite well. It is often said that only half of the patients are known, that only half of the known patients are treated, and that only half of the treated patients have an adequate blood pressure. Thus, only 1/8 receive adequate care — the tip of the iceberg.

A carefully balanced programme could improve this situation. It is difficult to design such a programme, but still more difficult to win general support for it, because the principle of complete clinical freedom is firmly rooted.

Norway is in a unique position to work out such a programme, because we have the data base for it. In 1963—64 about 70,000 people or nearly 80% of the adult population in Bergen had their blood pressure recorded. The mortality has been followed since and related to the blood pressure, thus providing risk data for age, sex and blood pressure.

Working with a panel of experts in hypertension we have studied alternative treatment programmes, calculated costs in money terms (clinical and social side effects are too difficult

to calculate) and benefits in terms of potential life years gained. The result is a proposed programme. The key to the programme is a graph of age versus blood pressure (Fig. 2). Three lines divide the population in 4 groups: treatment essential, treatment of possible value, no treatment but follow-up, no hypertension. The programme has been discussed with many groups of doctors and will now be tested in one of the counties.

### Utilization of drugs

A basic principle for a national health service is fairness: patients should receive care of similar quality. Yet, in every health service there are large differences, and a major problem is variations in standard and quality of care. It is difficult for the individual doctor or hospital to tackle this problem. They can — and should — study their own performance, but they lack general standards for comparison. These variations in quality are an important problem for health services research, possibly the most important.

Øystein Haugen, an economist in our group, has used the utilization of drugs as a means of studying variations in care. The reason for selecting this approach is that Norway has a drug monopoly — the Norsk Medisinaldepot. It runs detailed statistics on sales, based on so-called defined daily doses per 1000 population. It is possible to compare the use of drugs in counties, hospitals and pharmacies. So far, there is no routine recording of prescriptions, and therefore it is not possible to study the prescription pattern of individual doctors.

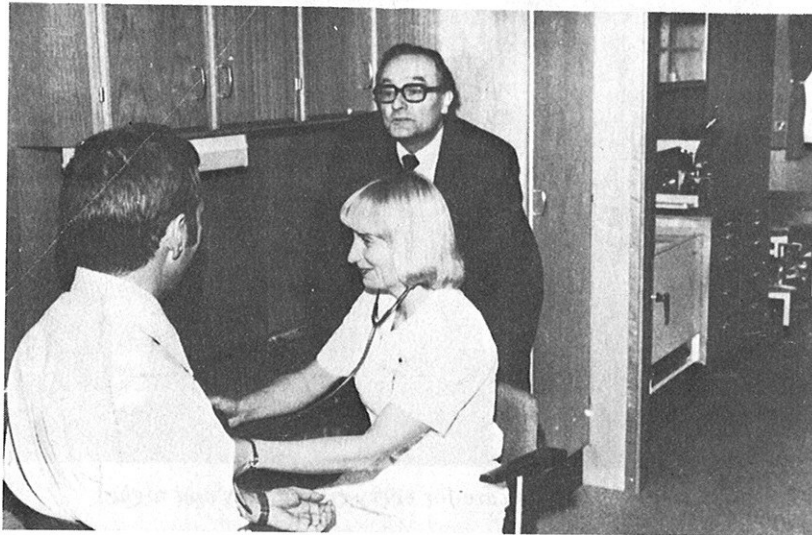


*The health service provides care for every citizen, day and night. (Photo: NTB)*



*Emergency ward in Oslo (Photo: NTB)*





Norway's first mobile company health service. Doctor and nurse examine a patient in the specially equipped bus. (Photo: NTB)

We have compared the drug sales in the 19 Norwegian counties. The sales were corrected for variations in age structure of the population, but large differences remained for all the 13 groups of drugs we studied, comprising about 65% of total sales. We tested 16 possible explanations for these differences and found that for the 13 groups of drugs tested 15–60 per cent of the differences between county sales could not be explained by any of them. This unexplained «rest» is probably due to individual differences between doctors and hospitals. These differences indicate that the health service does not treat

equal with equal. It is likely that the differences have consequences for the individual patients, since probably all alternatives are not equally good. In addition, the differences have important economic consequences. Thus, for 1974 we calculated the differences in costs between two hypothetical situations: all counties on level with the «cheapest» county versus all counties on level with the most «expensive» county. The difference was 330 million kroner. Our data do not say anything about which county is «right».

It is no goal to regulate a health service in such detail that the doctors must prescribe ac-

ording to government rules. However, our findings do suggest that doctors should work out tentative programmes for the major diseases. The purpose should be to ensure a reasonable quality of care and a reasonable use of resources.

The programmes should be worked out by the doctors themselves, not by the government. They should recommend — never dictate, because in individual cases there may be important reasons for choosing a different programme.

### Care of the old

Old people increase in numbers — about 25 per cent by 1990. In addition, they become relatively older. They occupy about 60 per cent of all beds in health institutions, and this figure will increase. Thus, care of the old is a major task.

The first question is simple: What resources do the elderly use, and what will they need by 1990? Jan Grund, an economist, compiled from many sources all public expenses for the elderly in 1975. The sum was large — about 12,000 million kroner. The main expenses were pensions — 59 per cent, health care — 33 per cent, social services — 6 per cent, and housing — 2 per cent. More detailed studies suggest that the profile should be modified to allow for more preventive work and better home services.

The next step was to develop alternative programmes for the period 1978–90. This is difficult, because the profile of a programme depends on its total volume (Fig. 3). The smaller the programme, the more important it is to protect housing and home services. Therefore, alter-

native programmes were developed, and we are now trying to interest planners and politicians in the report. This illustrates an important aspect of health services research. The job is research, not politics. Yet, the job is only half done when the report is finished. The second half is to convince «the market» that the result should be used. If this use requires new procedures, routines and decisions, potential users may be less than enthusiastic.

The great dividing line in the circle of the old runs between home and institutions. Patients generally want to stay home as long as possible, but what is possible? This is the key question. It requires systematic observation and experiment, and we have started such an experiment in Oslo. Two groups of people over 80, living at home, are compared. One group receives special support in their homes, the other receives standard care. The experiment is carried out by a special team led by a physician (Otto Chr. Rø), and it will take two years to answer the question. Ideally, the experiment should tell us what to do for what patients and with what benefits. Even if it says much less, it will be helpful.

### Care of the dying

The last generation has seen impressive progress in scientific medicine. This progress has required specialization and technical developments which have led to the modern rise of hospitals. The task of the hospital is to apply hard data and complex technology to soft human beings. This may require compromises, and it is important to protect and improve the care



*A basic principle for a national health service is fairness: patients should receive care of equal quality. (Photo: NTB)*

aspect of medicine. Research may be used to evaluate the quality of care.

Each year 40,000 Norwegians die, half of them in hospitals. Thus, care of the dying is an important part of hospital medicine. We have studied the care of all patients who died during one year in Diakonhjemmet hospital and in the intensive-care ward of Department VII, Ullevål hospital — 213 and 67 patients, respectively. The study was done by a nurse, Liv Wergeland Sørbye, who collected all the available information on every patient and interviewed the closest relative 8—12 weeks after death. This difficult project could best be handled by a skilful nurse, because people talk more freely to a nurse than to a doctor.

There are many problems in terminal care. The main ones are medical care, nursing care, communication with patients and relatives, and support for the bereaved. We have been impressed by the willingness of the hospital personnel to discuss these problems quite openly. For example, in the case of about 20

per cent of the patients dying in Diakonhjemmet hospital we have discussed, retrospectively, whether the care was too prolonged. This is a very difficult question, both from a medical, ethical and human point of view, and each patient and each relative is different. It is neither possible nor desirable to design a programme for the care of the dying. Yet it seems possible to lay down a basis of understanding on which you can build the care.

We have illustrated problems, ideas and methods in health services research. The health service has grown so much in size and complexity that there is a permanent need for such research. It should be carried out by multidisciplinary teams and it seems reasonable to develop teams connected with all four medical university faculties in Norway. These teams should run their own projects, as we have illustrated, and they should also encourage and advise the many health professionals who want to study and improve their own performance. In addition, they should teach. ■