NORWAY

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Norway is almost the same size as California, but long and narrow. The coast line, including the fiords, stretches for about 13,000 miles. The north is inhabitable only because its waters are heated by the gulf stream. With a population of only 3.9 million, Norway is the most sparsely populated country on the European continent.

While it is a beautiful country, it is poor in resources: only about 3 per cent of the total land area is tillable. This has forced us to the sea, and shipping is a major source of national income. Thanks to shipping and to industry, the Norwegian economy has developed favorably since World War II.

Let me review the main points of Norwegian history. The first kingdom was established in 872 A.D. and flourished under the Vikings. In 1319 Norway was united with Denmark. Later the country was hit by the black plague which killed one third of the population; recovery took several hundred years. In 1814 power politics transferred Norway from Denmark to Sweden, but in 1905 Norway won her independence, and in this century there has been rapid progress except during the five-year period of Nazi occupation during World War II.

The Health Service

The Norwegian health service has been developed on the principle of social responsibility—which can be separated from socialism. The political battles have therefore not been fought over the basic principle, but over the questions: How much? How soon? Who plans? Who decides? Who pays?

To describe the system I shall concentrate on two themes: manpower and money.

Manpower

In 1603 the government appointed the first doctor to treat the poor, especially the lepers. As our director of health, Karl Evang, has pointed

out, this was the first step toward socialized medicine, a step taken some 200 years before socialism emerged.

The number of posts in the program grew very slowly until 1860, when parliament passed a General Health Act transferring power and responsibility in health matters to the municipalities—at present, 407 rural and forty-seven urban. A unique organization was set up, with a Board of Health consisting of elected officials, but chaired by a state-appointed district health officer in each municipality. In this way local enterprise and responsibility were married to medical competence and central coordination. This system has survived the test of 100 years and is still working well.

The key persons in this system are the district health officers (DHO). These positions are well paid, carry high social standing, and are usually filled with competent and respected doctors. The government pays part of their salaries for preventive, administrative, and social work, and, in addition, they supplement their incomes by general practice on a fee-for-service basis. The country is divided in 369 districts, and the DHO is often the only practitioner in his district. Thus he represents a one-man integration of curative, preventive, and social medicine.

In the larger cities, the system has been modified. Here the Board of Health faces larger problems, and the DHO has had to specialize in public health and build up city departments of health.

Furthermore, the growth of medical knowledge and specialization requires larger administrative units, especially for hospitals, and it has therefore become necessary to involve larger units, the twenty counties, in organization and planning. Each county has a medical team, headed by a specialist in public health who is appointed by the government. He is paid partly by the government and partly by the county, and is responsible for the supervision and planning of health care in the county. His special duty is to develop a complete health plan, including a hospital program for the county. His recommendations must be accepted both by the county board of health and by the government.

Centrally, the system is managed by the Directorate for Health, whose chief is responsible to the government for health affairs.

The Norwegian system has two basic principles. One is decentralization, and the other is the coordination of public control and medical expertise in the health boards of the municipalities and counties. Health is too important to be left to the doctors, but also too complex to be left entirely to elected representatives. Our system solved this dilemma four generations ago.

Table 1 indicates the number of physicians in Norway and where they are employed. Nearly 50 per cent of all doctors work in hospitals full time and with a fixed salary. Almost all hospitals are publicly owned.

TABLE 1. ACTIVE PHYSICIANS IN NORWAY, 1971

(Ratio: 1:725 population)

	Number	*Percentage*
In hospitals	2,482	46.2
In practice (1/3 as specialists)	2,297	43.0
In teaching and research	270	5.1
In administration and prevention	176	3.3
In other work	136	2.4
Total	5,361	

MONEY

It does not take a great deal of medical care to use up the savings of the poor. About 100 years ago Norwegians began to realize that fact, and many private insurance programs were organized, often by labor unions. At the same time, society accepted economic responsibility for the care of some chronic diseases, first leprosy, and later tuberculosis and serious mental disease. In 1911 a state-operated, nonprofit insurance program, which was compulsory for the low income groups, was established.

The program rapidly won general support for several important reasons. First, it concentrated on the weakest group and thus complied with the philosophy of social responsibility. Second, the administration was decentralized to fit the model of local government. Thus the program was organized as an association of about 400 local insurance companies, one for each municipality. Locally the program was controlled by elected representatives, which eliminated misuse, since the program belonged to the people and not to a far-removed, rich government. Third, doctors supported the program because it assured better treatment for their poor patients and increased their own incomes. Fourth, the program injected money into the service and improved standards, especially in the hospitals. Fifth, the financial base was stable, since it was a combined effort of the members, their employers, the municipalities, and the state. Sixth, the program started slowly and was within the financial means of society. Thus 1911 saw a breakthrough in Norwegian medicine.

While the principles of the system have never been changed, more and more groups were invited to join, and finally, in 1956, membership was

made compulsory for all. More services have since been added, and in 1967 national insurance was established as an integrated and coordinated social insurance system covering the entire population. This program pays for medical care, as well as for pensions for the disabled and the aged. The benefits are generous: for example, if a Norwegian sailor is taken ill in America, all expenses are paid, including cash allowances to his family and transportation back to Norway. At the same time we recognize the danger of misuse. The patient must therefore pay about 40 per cent of the fee on his first visit to a doctor; later he pays less and less. Hospital care is free. Essential drugs are covered by the program, while less important ones are paid by the patient. Dental care is generally not included. The total expenses are still shared by four parties: about 47 per cent by the employers, 33 per cent by the members, 10 per cent by the municipalities, and 10 per cent by the state. The program is satisfactory to both patients and doctors, and the many reforms have usually been passed unanimously by parliament.

This all sounds too good to be true, and it is. Over the last few years the program has been threatened increasingly by overambitious doctors and politicians, and it is now running out of money. A few figures will illustrate this: between 1961 and 1971 public expenses for health and welfare increased from 10.9 to 17.4 per cent of the gross national product. The average yearly increase has almost doubled—from 13 per cent for 1961–66, to 22 per cent for 1971–72. Two items are particularly expensive: hospitals and pensions; in both we are facing a crisis of uncontrolled ambitions and expectations. For example, I have calculated that it will take 100 years to carry out the present plans for health institutions, simply because the plans are too ambitious. To summarize the financial picture, total public expenses for health and welfare in 1971 amounted to 17.4 billion kroner, or about 4,500 kroner (US $640) per person.

Preventive Medicine

Preventive medicine has a long tradition in Norway. It started with leprosy control and spread to include all infectious diseases, especially tuberculosis, which has been a serious problem. Today, infectious diseases are under control, public and personal hygiene are fairly good, and the immunization programs are adequate.

At the local level, preventive medicine is directed by the Board of Health and its chairman, the district health officer. At his side is a public health nurse, who has proved to be an important and effective person in the community. The cities have special health departments that are coordi-

nated centrally by the counties and by the Directorate of Health. The programs are financed by taxes and are entirely separate from the national insurance.

I am old enough to have seen the tremendous effects of these preventive programs on tuberculosis, for example, but I am also young enough to realize that traditional preventive measures directed against sanitation and infectious diseases are not going to take us very much further. This is simply because the present problems are entirely different: smoking, alcohol, drugs, urbanization, pollution, traffic accidents, vascular diseases, behavioral diseases—in short, the problems of a developed, industrial welfare state. To attack these issues we need new methods and increased funds. To raise more money, incidentally, we need to further strengthen the economy, thereby increasing these problems. Paradoxically, while we have the knowledge to fight many of them, we lack political drive, talent, and organization to cope with smoking, lung cancer, traffic accidents, and tooth decay, to cite four examples. Thus preventive medicine is in actuality an issue in health education.

Medical Education

I will limit my remarks to the education of medical students, although doctors should not be considered separate from the other health professionals.

Norway has two medical schools: Oslo, with an annual intake of 165 students, and Bergen, with 120. In addition, the new University of Tromsö —in the Arctic region— will take forty students next year, and the fourth university, in Trondheim, will start a medical school within five years. I must confess the great shame of Norwegian medicine: For years we have not educated enough doctors, and each year about 120 students go abroad to study medicine. The two new medical schools were founded to stop this "free-loading" on other countries.

The future Norwegian medical student starts in school at the age of seven, and goes to medical school twelve years later. The medical course lasts for six years and is followed by one-and-one-half years of internship, and one year of military service. The young doctor is then ready for specialty training. More and more doctors today are becoming specialists, and the feeling is growing that general practice also ought to be a specialty. Altogether, in Norway a doctor undergoes some twenty-seven years of training before he qualifies as a specialist, which I believe is too long.

The programs in Oslo and Bergen are similar: two-and-one-half years of preclinical and three-and-one-half years of clinical studies. The goal is

to train a fairly competent general practitioner for solo practice anywhere in the country. Although this system of education is solid and traditional, it does not recognize the great changes that have taken place in medicine and in society. Thus it is not integrated with postgraduate education and does not adequately consider the social and economic problems so closely related to medicine. It does not, furthermore, recognize the maldistribution of doctors, or the fact that, unconsciously, it trains students away from general practice. The approach of the medical schools is geared primarily to hospital practice, to scientific medicine, and to international research, not to practical medicine and national health problems. It is regrettable that there is no connection between the medical schools and the national health system; the schools have been somewhat disinterested observers of the tremendous changes in medical practice, the development of urban and social problems, and the need for better medical care outside the hospitals. Likewise, the national health service and preventive medicine have developed along their own lines, with too little support from research and education. The answer to the question—What impact has the national health service had on medical education?—is that there has been *no* impact.

The new medical school in Tromsø is trying to develop a program to remedy some of these weaknesses. We shall have an integrated curriculum based on the organ systems, we shall teach general practice, we shall send the students to the local hospitals and health centers, and we shall emphasize the social problems in medicine. We have succeeded in establishing good relations with the health service outside the university clinic, and we hope to bring the medical school into a dynamic and productive relationship with the service and with society. It will take ten years to tell whether we have succeeded, but we have made a good start.

Medical Research

If one divides medical research arbitrarily into three main areas, basic, clinical, and social, in 1970 we spent about 66 per cent on basic, 25 per cent on clinical, and 9 per cent on social research related to medicine.I think there is too great a disproportion between the areas selected for research and general medical issues. I am not attacking basic research, but we must apply ourselves to the pressing current problems, especially those of the cities, of the young people, and of the aged.

The medical schools should direct more of their resources to such issues because they have important contributions to make in their solution, and because this research should infiltrate their teaching. To put it clearly:

the proper study of medical men today is man, his works, his society, and his use of medical funds—not only his enzymes and his molecules.

Conclusions

To summarize some of these views:

1. The national health service in Norway is well organized, but has difficulties in adjusting to modern problems. We need a better distribution of doctors; we must improve primary medical care, especially in the cities; and we need better institutions for the chronically ill and the aged.
2. The national health insurance program is in many ways ideal, but it is running out of money. Ambitions must be lowered, priorities made firmer, and evaluation made tougher.
3. Prevention has largely solved the problems of sanitation and infections, but has not yet come around to a broad study and attack on the medical and social issues of the modern welfare state.
4. Medical education is solid, but must be modified to train doctors for the new society.
5. Research is of high caliber, but is not focusing on the most urgent problems.

The common denominator seems to be simple, but frightening: society is running away from medicine, perhaps not fast, but in a different direction. This is the problem we must try to face.

Discussion

Twenty-two per cent of the gross national product of Norway is allocated for health and welfare. With 8 per cent of these funds reserved for health programs, Norway has probably reached the ceiling on expenditures for health. Historically, health has had a higher priority in Norway than in most countries, but today Norwegian families are beginning to think that education has a higher priority than medicine.

For twenty years the emphasis in medical education has been on hospitals but it is now shifting to primary care and chronic care. Fifty per cent of the doctors in Norway work exclusively in hospitals.

There is a continuing question in all countries as to the proper balance of responsibility between the medical profession and lay administrators. Mechanisms need to be developed by which the physician becomes more broadly involved in the total management of the system of medical care. (It is bad to be governed by politicians but worse to be governed by experts!) The most important point is to develop a partnership in which

representatives of such other fields as politics, law, and economics determine public policy on health.

In the Norwegian system there is no fee-for-service in the hospitals since all hospital physicians are on a fixed salary. But a fee structure for practicing physicians is established annually through negotiations between the Norwegian Medical Association and the government.

In the last two years there has been a major shift in career choices; today some of the most outstanding graduates go into general practice. This is attributable in part to the establishment of new chairs for general practice in the faculties of medicine.