RURAL HEALTH PROGRAMS IN DIFFERENT NATIONS[1]

MILTON I. ROEMER, M.D.[2]

WIDESPREAD discussion of measures for improving rural health services in the United States suggests the possible value of exploring the undertakings of other nations in this field.

THE RURAL HEALTH SITUATION

We have become concerned about the special problems of rural health and medical care in the United States with increasing intensity over the last ten years. Some recognition of a special rural health problem can be traced, at least, to the pre-Civil War period when, in the report of the first Commissioner of Agriculture to President Lincoln, a chapter was devoted to the health problems of farm families (1). As urban medical facilities improved and as physicians and other medical personnel increasingly settled in the cities, the acuteness of the rural health problem became increasingly appreciated. In 1911 the first department of public health was organized for a rural county—in Yakima County, Washington. Around 1920, rural communities of New England began to take organized steps to attract physicians, through providing them subsidies and housing facilities (2). In 1933 the first organized measures were taken by the federal government to make personal medical services more readily available to farm people, through the prepayment medical care program of the Farm Security Administration. In 1946 legislation was passed designed above all to improve the medical care facilities in rural areas—the National Hospital Survey and Construction Act (3).

In countries throughout the world there has been this same recognition of the special problems of rural health and the need for special measures to attack them. In general, an appreciа-

[1] Address before the National Home Demonstration Council, October 8, 1947, at Jackson's Mill, West Virginia.

[2] Surgeon, Division of States Relations, United States Public Health Service.

tion of rural health problems has come about earlier abroad than in the United States, commensurate with earlier industrialization and hence earlier evidence of the sharp disparity between urban and rural health resources. In all nations the development of scientific medicine and the promulgation of public health and sanitary measures have been initiated in the cities, leaving the rural areas for a long time to get along as best they could. Everywhere certain "natural benefits" have been attributed to life in the country and, at the same time, students of public health have increasingly pointed out that rural health conditions are not so rosy as abundant fresh air and sunshine might lead one to expect.

Dr. René Sand of the University of Brussels, one of Europe's foremost leaders of public health and social medicine, writes:

> These (public health) services exist now, in more or less complete form, in the large towns. They are too often non-existent in rural districts, where hygiene is neglected to such an extent that, in spite of the hygienic advantages of the country, its mortality often exceeds that of the towns. . . . In France and Belgium, half the population lives in municipalities unprovided with a water supply, two-thirds have to go without drains, without service for the removal of domestic refuse, without medical notification of births and deaths, and without the aid of a public health nurse (4).

In countries where little industrialization has taken place, the attack on the health problems of the entire nation has been, in effect, a task of rural medicine and rural public health. Such is the case in the tropics, where colonial powers have been called on to face the tremendous problems of reducing or wiping out malaria, dysentery, African sleeping sickness, hookworm disease, elephantiasis, schistosomiasis, and scores of other diseases that result from extreme lack of proper sanitation or housing (5). It is probably fair to say that the problems of so-called "tropical medicine" are not so much the result of temperature as of poverty. In nations like China or India, where teeming millions live at a bare subsistence level, we find

tremendous problems of infectious and hunger diseases which, in other nations at the same geographic latitude, have been wiped out or materially reduced primarily through improvements in the general standard of living. In the Orient tens of thousands of people die every year from cholera and in Africa from yellow fever. These are rural health problems which make our own look mild by comparison.

It is in the more industrially advanced nations that we find closer parallels to the tasks of rural medicine and public health faced in the United States. For in such nations the diseases resulting from bad sanitation do not loom so large that they obscure all other health problems. In other words, in the more industrially developed nations health leaders have been faced with the task of bringing day-to-day medical care to rural people, as well as the preventive measures of environmental sanitation. The relative shortages of medical personnel and facilities in the rural sections of such nations have stimulated the promotion of numerous special programs to bring medical care to peasants and other country dwellers, through government action (6). It may help us a little in facing the problems of rural health and medical care in the United States to review briefly some of the highlights of these rural health programs in other parts of the world.

Rural Public Health

First we may consider organized efforts in the field of public health. The province of public health activity has had varied definitions at different times and places. In all countries public health activity has taken its origin in the attack on contagious diseases (7), but in many it has broadened to a sphere considerably beyond that which is practiced in the United States. In the rural areas particularly, many foreign nations make their public health agencies responsible for the provision of medical care to the general population or, at least, to large sections of the population. In this country we look upon the prevention of scarlet fever, for example, as a responsibility of the health

department, but the treatment of a case of scarlet fever is regarded as the proper responsibility of a private physician. In Norway, the public health officer in a rural district is expected to treat cases of scarlet fever and other communicable diseases as well as to prevent them. At the same time he provides medical care in any illness to low-income people who cannot afford to buy it privately. Dr. Karl Evang, the Director-General of Health in Norway, describes the functions of a rural public health officer as follows:

> In the central districts of Norway a public health officer is in the great majority of cases a physician who within a definite, comparatively limited district has an extreme duty and a great responsibility. He represents not only the central medical administration in his district but is also charged with the task of being sanitation and hygienic superintendent, of looking after medical-judicial affairs and of directing enterprises for the safeguarding of health. Along with all this he also serves as a practising physician in his district. The major part of his working time is not spent in any office but round about in the district, in direct contact with the people. He is paid by the State for his hygienic and administrative work, but in reality also directs the local Board of Health within his district. Besides his income from the State, he also enjoys income from activity as a practising physician. On a single trip through his district it may well happen, for example, that he first treats a patient for a bone fracture, then meets with the Board of Health to decide to isolate a case of contagious tuberculosis, then inspects sanitary conditions in a slaughter house, then undertakes physical examinations of school children, thereafter performs a post-mortem and finally meets with one or several of the voluntary health organizations to plan the further extension of infant-care stations (8).

The broad functions of public health officials in the Scandinavian countries are not confined to the health officer. The public health nurses in rural areas of Sweden, for example, give a great deal of their time to the nursing care of the sick, as well as to the health educational and preventive activities which absorb practically all of their time in this country (9).

In our neighbor to the north, especially in the western Canadian provinces, public health activities are likewise very broadly defined. In Alberta, for example, under the health department, there are medical clinics that travel through the rural districts and provide diagnosis and treatment for many illnesses at a small charge, varied in accordance with the patient's means. In this province also, infantile paralysis is treated through the resources of the health department without expense to the patient. The same applies to all cases of cancer, for which the health department has organized a network of surgical, x-ray, and radium services. Hospitalization for maternity cases is likewise a responsibility of the health department, financed out of general revenues (10).

In some nations, considerable responsibility for what are here regarded as public health functions has long been assigned to voluntary agencies in rural areas. This is the case in Italy, for example, where tasks like tuberculosis control, venereal disease control, and maternal and infant hygiene are assigned to private societies that receive grants of public money to carry on their work (11). In Holland, there has been a growing system of so-called "Cross" organizations with similar functions since about 1870. In that year, the White Cross was organized to provide home nursing services in the rural districts. Later a Green Cross organization was set up and today about half the population of Holland is served by either the White-Yellow Cross or the Green Cross, depending on religious affiliations.

The Dutch Cross organizations represent a combination of what we would call a voluntary prepayment plan and a county public health agency. In order to obtain services from one of the local Cross organizations, a rural dweller must pay a membership fee which varies from the equivalent of $1 to $4 per year depending on income. This membership entitles the family to home nursing services and to the loan of nursing and medical supplies in the event of sickness. If a baby is to be born, for a small fee the Cross will furnish a midwife and afterwards a special obstetrical housekeeper-aide (known as a

"baker") who will do the housework as well as care for the baby in the post-partum period. The Cross organization likewise operates baby and pre-school child health centers in rural districts. In some localities, it enters the schools to supervise the health of school children. As in Italy, these agencies are subsidized to as much as two-thirds or three-quarters of their cost by different levels of government, and the government protects its investment by appointing members to various committees which help formulate operating policies (12).

Among the South American countries, public health services are advanced in Chile perhaps more than anywhere else. In that greatly spread out nation, the problems of rural public health have been tremendous and the government has looked upon their solution as one of its major political tasks. The pattern of health work is very similar to that which we carry on in this country, but one device is unique and deserves special mention. This is the requirement that all persons covered by the Chilean social insurance system (which we will discuss later) should receive a periodic medical examination once a year, designed especially to eradicate or minimize tuberculosis, syphilis, heart disease, and occupational diseases. Since farm laborers are covered in the Chilean program, this provision has its beneficial effects in rural areas (13).

Although the special problems of rural public health have been faced throughout the world, perhaps earlier in some places than in the United States, it is widely recognized that much remains to be done to bring rural preventive services up to their urban level. In 1931 the League of Nations held an International Conference on Rural Hygiene, in which many recommendations for the expansion of public health services for rural districts were made. Great emphasis was placed on the need for education of the people, for the training of rural public health personnel, and for the construction of rural health centers (14). There is no question that the present World Health Organization, associated with the Social and Economic Council of the United Nations, will likewise devote much of its

efforts to the advancement of rural public health services throughout the world (15).

Medical Personnel for Rural Areas

The relative dearth of doctors and other health workers in rural areas has been even greater in most foreign countries than in the United States. There are nations like China or pre-revolutionary Russia in which the concentration of the available doctors in the cities has been so overwhelming that millions of rural people have simply never seen a doctor. The severity of the problem, combined perhaps with certain psychological factors, have for some years led to organized measures to bring doctors and related personnel to rural areas in nations throughout the world.

In Sweden, for example, the problem has been attacked directly by government through imposing responsibility for general medical care on the official health officer. There are three types of doctors in Sweden: the private practitioner, the hospital physician, and the public health officer (16). Most rural people get their medical care from the so-called "provincial doctor" who serves as health officer and is on government salary, but who may charge small fees if the patient can afford to pay. If an individual must go to the hospital, he is treated by a hospital doctor who is nearly always on salary from the local or national government. In order to attract men to the position of provincial doctor in a rural area, the local government often provides not only medical facilities but also a home in which to live (17).

In China the problem of personnel is so enormous that the present government is setting up a system of completely socialized medicine, in which virtually all doctors serving the millions of agricultural people will be on government salary and have combined responsibilities for medical care and public health (18). This is the current practice, indeed, for the native populations of Puerto Rico, the Virgin Islands, and the British West Indies, although the supply of public medical practitioners is quite inadequate. The great problem in regions like China,

India, or most of Africa is the task of training enough doctors to meet the needs. Once the doctors and other personnel are trained, their distribution to rural areas will be simpler than in this country, since medical care will be provided as a direct government service.

Action by a national government to provide medical personnel for rural people has been taken along different lines in Scotland. In northern Scotland the thinly settled country presented a special socio-economic problem for many years, leading in 1913 to the establishment of the now well-known "Highlands and Islands Medical Service." A special grant was made by the British Parliament to the Department of Health for Scotland, in order to subsidize doctors and nurses who would settle in this low-income area. Each year private doctors who are willing to practice in the area receive a special government stipend, plus an allowance for the travelling necessary to reach the scattered families. In addition, the doctor may charge small private fees in accordance with the family's ability to pay. Nurses are provided through nursing associations which receive grants, in addition to the funds they derive from charity and private fees. Grants are given to community councils in the area to build or improve houses for the doctor to live in. Hospitals are likewise subsidized and in recent years it has been possible to bring specialists into the area through the same device (19).

It is to be noted that under this program the rural doctors remain private practitioners although they are financially assisted by government. It is hoped in the future to integrate the activities of these practitioners with local public health functions in the area. Through the Highlands and Islands Medical Service more and better medical care has undoubtedly been made available to these rural people. A government investigation of the program some years ago concluded:

> In contrast with what existed before the Fund was set up, it can now be said that there are no districts that cannot obtain a doctor's services on reasonable terms. . . . With the guarantee

> of a reasonable minimum income to the doctor in these areas, a much better class of practitioner is being attracted. . . . The result is that there has been a marked improvement in the general standard of the medical service available. . . . To encourage men to keep abreast with developments of medical science, arrangements have been made to enable a limited number each year to obtain the benefit of a post-graduate course of study (20).

In western Canada subsidies to maintain physicians in rural areas have been provided by units of local government for many years. The provinces of Saskatchewan and Manitoba are divided into so-called "rural municipalities," (each with a population of 2,000 or 3,000) somewhat analogous to our rural townships. About 1921, a few rural municipalities of Saskatchewan decided to use tax funds for paying a fixed annual salary to any doctor who would settle in the area (21). For this he would be expected to render general medical services to the entire population, but an extra fee could be charged for special procedures. The pattern spread and today there are nearly 100 rural municipalities and some 60 villages covering 203,000 people, that are assured of a doctor's services through this pattern. A somewhat smaller number are found in Manitoba and Alberta (22).

Our neighbor to the south, the Republic of Mexico, likewise has taken some interesting steps to obtain medical personnel for rural areas. In Mexico medical education is financed entirely by the government so that many rural young people, who would otherwise not be able to afford it, can be trained as physicians. A government regulation requires that every graduate must serve a so-called "period of social service" in a rural community for at least one year following his hospital internship. These rural externes practice under the direction of a district public health official, but they render general medical care to the people of one or more rural villages. In this way rural people are provided with services, the young doctors gain valuable experience, and many graduates are attracted to settle in the rural district permanently (23).

The nation that is always in the news these days, Soviet Russia, has taken some interesting steps to maintain medical personnel in rural districts. Dr. Henry E. Sigerist, the distinguished scholar of world medicine and formerly of The Johns Hopkins Medical School, describes the Soviet practice as follows:

> I remember an interview with the People's Commissar of Public Health of the Ukraine on a hot summer evening of 1938. I told him that in the United States we found it difficult to persuade well-trained young doctors to practise in rural districts and asked him what their experience had been. For a while he failed to see the point and did not understand why this should present a problem. He came from a farm family himself and said that the majority of the medical students of the Ukraine came from farms and studied with the intention of returning to the farms. As a matter of fact talented young people are frequently delegated to a medical school by their collective farms which defray all their expenses while they are studying in the city. The reasons that rural practice is not unattractive to Soviet doctors are easy to find and can be summarized in a few points.
>
> The Soviet country doctor does not depend for a living on the per capita spendable income of the population he serves. Being salaried, he is economically independent. His salary is larger than that of a city doctor of equal position and experience, because his task is more difficult and his responsibility greater. Like all medical workers he enjoys all benefits of social insurance. The erection of rural medical centers with hospital and laboratory facilities permits the country doctor to practise scientific medicine, the kind of medicine for which he has been trained in medical school. Besides having one month's vacation every year, the rural physician attends every three years a postgraduate course of at least three months, either in regular medical schools or in special postgraduate schools. During that period he receives not only his salary but also a special allowance. The country doctor thus keeps in constant touch with medical developments. After graduation almost all young physicians spend three years in rural practice as part of their general training.

> This gives them an all-round experience after which they may return to the city if they so choose but many remain in the country. This part of the training program brings a constant stream of young physicians into the rural districts (24).

In most foreign countries steps have been taken to make health services available to rural people through the extensive training of auxiliary personnel. In nations with an over-all shortage of physicians, this has been the most practical way to provide at least a minimum level of service promptly—that is, without waiting for the twenty or thirty years necessary to train an adequate supply of doctors.

Much has been done along these lines in South America. In Peru, for example, a number of so-called "sanitary inspectors" have been trained to render minimal services in the villages along the Amazon and other rivers. These personnel are trained in a short course given in Lima. They learn the rudiments of sanitation and personal hygiene and the simplest ways of recognizing and treating major hazards of the jungle country, like malaria, hookworm disease, tuberculosis, yaws, and accidents. In the isolated villages these health workers promote sanitary practices and handle the common disease problems, but difficult cases are referred to doctors who come periodically on "dispensary launches." The sanitary inspectors themselves travel from village to village by canoe (25).

The same general type of pattern is followed in many parts of Africa. Dr. Clement C. Chesterman of the Belgian Congo was in the United States recently and described the valuable services rendered by simply trained but devoted "native practitioners" in Central Africa. Dr. Chesterman has prepared a handbook of general medicine and minor surgery which is used widely by these rural assistants (26).

In more socially advanced countries auxiliary medical personnel are also widely used in rural districts. Chile makes much use of briefly trained practical nurses and midwives; they work in rural areas under the direction of a doctor who makes periodic visits (27). In Russia there has been widespread use of medi-

cal aides known as "feldshers" since as long ago as 1860. These rural workers are somewhat analogous to our public health nurses, but they have considerably more latitude in their work, doing minor surgery and obstetrics as well as prescribing drugs for common illnesses. After the Soviet Revolution, elimination of the feldshers was considered, but instead they were given improved training and put under the supervision of district physicians. Thus, pending the training of more physicians, rural villages are furnished with at least limited medical services by these feldshers, most of whom incidentally are men, without the people having to travel long distances to an urban center (28).

In New Zealand there is an especially interesting class of auxiliary health practitioner making services available to rural and urban people alike. This is the so-called "school dental nurse." These health workers are not simply dental hygienists in the sense that we use the term, but serve as full-fledged dentists providing services to school children throughout the nation. They are mostly young women trained in a three-year course at government expense, subsequently becoming employees of the national government. They render dental care that is complete (that is, including prophylaxis, fillings, extractions, and related services) except for prosthetic work and orthodontia to all school children whose families say they are unable to pay a private dentist. Reports on this program indicate that the quality of dental care is excellent and the quantity of services is considerably higher than that received generally by rural children in this country (29).

A vital and unique system of training auxiliary health workers in rural districts was set up some years ago in Yugoslavia at Zagreb. The school of public health there trains health officers, sanitarians, and nurses. But it also provides short courses in hygiene for peasants. The system has been described as follows:

> Peasants from the villages come, men for a course of five months, women for three months. They are housed in special quarters

> provided by the school, and during the course they are given instruction not only in public health but in history, geography, economics, and agriculture. Back in the villages, these peasants become the pioneers of health, the health conscience of the village. They instruct and advise their fellow peasants and are the most valuable co-workers of the health officers. They know the local conditions best and know better than any doctor possibly could where help is needed most urgently. . . . The School also organizes courses in homekeeping for women in the villages during the autumn and winter months, and during such a course the peasant women are taught the elements of hygiene (30).

Medical Facilities for Rural People

In the provision of physical facilities for medical care in rural areas, nations throughout the world have taken public action even more than in the provision of personnel. The preponderance of hospitals under voluntary or private control in the United States—and especially in rural America—is a feature almost unique among nations. In most lands throughout the world, hospitals and other medical facilities are predominantly controlled and financed by national or local governments. As a result of the financial support implicit in such arrangements, rural people have enjoyed special benefits.

The pattern of governmental hospitals is particularly well developed in the Scandinavian countries. In Sweden more than 90 per cent of all general hospital beds are owned and operated by the national government or the authority of the province or commune. In the nation as a whole there are reported to be 4.2 beds in general hospitals per 1,000 population, which may be compared with a national average in this country of about 3.3 beds per 1,000. The best supplied province (Uppsala) has 5.2 general beds per 1,000 and the most poorly supplied province (Norrbotten) has 2.6 beds per 1,000. Even in the poorest rural districts of Sweden the hospitals are fully utilized, since their services are financed almost entirely out of government funds and social insurance. Thus, the Swedish population is hospitalized at a rate ranging from 1.02 to 1.63 days per person per year in the different provinces, without counting days spent in out-

of-province hospitals (31). Average utilization in the United States is under one day per person per year and in the predominantly rural states it was only about 0.65 days per person per year in 1940.

The same general situation obtains in Norway and Denmark. In Denmark in 1942 there were 4.8 beds per 1,000 population in general hospitals, not counting the beds in small infirmaries, private physician clinics, maternity homes, and tuberculosis and mental institutions. The utilization was 2.12 days per person per year (32). In all three Scandinavian countries, physicians are permanently attached to the hospitals on government salary, so that the patient does not have expensive surgical or medical fees to pay. With this system there is a certain loss of continuity between the treatment of the patient by his family doctor and his care in the hospital. The hospital physicians, on the other hand, become highly skilled in the various specialties and as a rule they make full reports on cases to the family doctor who will see the patient when he returns home.

In the Scandinavian countries likewise, hospitals have long been planned to form a regional network of which we have heard so much in the United States in the last few years. A Danish article, describing the recent hospital construction legislation in the United States, comments that this measure puts the United States in the position where Denmark was in 1806 (33). Whether or not this is an exaggeration, the fact is that little Denmark has made great progress in its regional hospital development, designed to assure services for rural people. Danish hospitals have been operated by county and borough councils for many decades, but the regional pattern was launched in 1912 when the means of transportation were considerably improved. Then, instead of simply building more hospitals in the rural villages, a system of so-called "central hospitals"—one or two per county—was developed. Difficult cases from the small rural hospitals are sent to the central hospital for special services. In Copenhagen there is a large institution which serves the entire nation with the most advanced services.

In most of South and Central America hospitals likewise are operated and financed predominantly by the government, treatment being free to all who cannot pay. They are operated by the national, state, or municipal units and some are exclusively for persons covered under the social security system. The number of beds is actually far below the needs and in rural areas the problems are particularly acute (34). On the other hand, we do not find in Latin America the paradox we see in this country of rural hospital beds remaining empty in the face of vast unmet needs, simply because rural people cannot pay the price to use them.

A few years ago I visited Newfoundland and was impressed with the modest though effective hospital arrangements in that none-too-prosperous fishing and lumbering country. Most of the population of Newfoundland is peppered along the periphery of the island, settled in small villages. At intervals along the coast, there are what the local people call "cottage hospitals," subsidized by the central government and partially financed by a head tax on all persons in the locality. Attached to each hospital is a physician whose salary is financed in the same way. All persons coming to the hospital are treated without charge whether they receive bed care or out-patient care. The doctor may charge extra fees, however, for services in the home. Difficult cases may be sent to a public hospital maintained in the capital at St. John's, but there is need for development of somewhat more advanced hospital facilities outside of this single center.

It is interesting to observe how throughout the world, nations have arrived at the concept of regional hospital planning as the answer to rural needs. Everyone recognizes that rural people are entitled to the same specialized services as urban people and yet small rural communities cannot sustain complex facilities by themselves. The obvious solution is to take advantage of modern transportation to carry the difficult cases to distant urban centers and yet to make available small rural hospitals in the locality for the care of common conditions. In connection with

its new national health legislation, Great Britain has designed especially promising regional hospital plans.

As a corollary of regional hospitalization, there has grown up throughout the world the concept of the rural health center. The functions of a health center vary in different nations, but the common denominator everywhere is that of a physical facility from which preventive services are distributed to the entire population and therapeutic services for certain conditions or for certain population groups. It is somewhat like the parallel of a hospital in which people are served before they are forced to go to bed, with the pervading emphasis on the prevention of disease. Yet, in some nations, the health center is expected to contain a small number of hospital beds for limited types of conditions. Even in the United States the concept of the health center is highly variable from section to section, although the emphasis here is on limiting its functions to those of the health department alone (35).

Dr. René Sand of Belgium lists the wide variety of functions which health centers serve in different nations. They provide facilities for infant welfare stations; tuberculosis and venereal disease control clinics; immunizations; pre-natal and post-partum clinics; mental hygiene; offices for the medical officer of health; the district nursing service; public assistance services; voluntary social and health agencies; laboratories; dental clinics; and eye, ear, nose, and throat clinics; beds for contagious diseases and maternity cases; x-ray and ultraviolet therapy; and first-aid stations. Also included under the broadest conception of a health center is the provision of public baths and a laundry, a gymnasium, a day and night nursery, and a canteen. Sand says that health centers having various combinations of these functions, if not all of them, have been developed in Canada, England, Belgium, France, Poland, Latvia, Czechoslovakia, Hungary, Yugoslavia, Bulgaria, Roumania, Spain, Germany, Austria, Turkey, Palestine, and China (36).

In the reports of many nations it is difficult to distinguish actual accomplishments from proposals for future action. In

Yugoslavia, however, through the work of the great public health leader, Dr. Andrija Štampar, some 123 rural health centers were established in the years before the Second World War. The Yugoslavian concept has been to provide a health center for each rural district of about 15,000 inhabitants, with an attendant staff of a full-time, salaried physician, public health nurses, and sanitarians. In Yugoslavian villages, the health centers provide public baths and kitchen facilities for preparing meals for children. They serve also as social centers for the community. The physician is not limited to administrative services but treats sick people as well (37). It is a fitting tribute to Dr. Štampar that he has been made the Chairman of the Interim Commission of the World Health Organization.

Chile has made progress in the establishment of health centers and 519 are reported to be operating in rural areas. Not all of these are attended by a full-time physician, but they usually have a resident midwife or an apothecary and are visited periodically by travelling medical specialists and dentists (38). Other nations of South and Central America have done likewise and all have plans for using the health center as the central device for bringing medical care and public health to rural areas (39). During the war period considerable progress was made in the Central American countries through the technical and financial assistance of the Institute of Inter-American Affairs. An American physician who worked on this program in Nicaragua for three years recently indicated that he never found in the United States the deep gratefulness for the provision of health services that he found among the village people of Nicaragua. The task to be done to reduce the infectious and filth-borne diseases in Central and South America is still enormous.

As might be expected in a socialized economy, rural medical services in the Soviet Union are rendered almost entirely through health centers. Virtually all physicians practicing in rural areas are attached to health centers. The vast Soviet territory is divided into districts known as "zemstvos," some-

what like our counties. In each zemstvo is a district health department under which is a "Director of Rural Medical Services." He is located in a health center which contains medical, surgical, and maternity divisions and has full-time specialists in these fields. There is a pharmacy and an ambulance service also attached to the district center. Branching out from this center directly into the villages and collective farms are "medical stations," each serving on the average a few hundred people. To these stations are attached feldshers, nurses, and midwives, but the stations serving larger numbers of rural people have a physician on the staff. In any case, frequent visits are made to the outlying stations by the specialists from the district health center. The district center sets the standards and supervises the work of the outlying stations. The work of the district centers, in turn, is supervised by larger medical centers associated with medical schools in the chief cities of each region (40).

The British colonies in South Africa have recently made important progress in the development of health centers. There, in each magisterial district of the Transkei, is a "District Surgeon" and under him are rural clinics attended by native nurses (41). Dr. John B. Grant of the International Health Division of the Rockefeller Foundation believes there is much we can emulate in this country from the South African experience, especially the use of nursing personnel attached to health centers in areas under-supplied with physicians (42). The closest parallel to such a pattern we now have in this country has been the federal program of health services for migratory farm workers, under the United States Department of Agriculture (43). In the Republic of Turkey a "Ten Year Health Plan" is being launched which will aim to provide one health center for each forty villages. It is intended that the medical officer in charge should be responsible for the total health of all the residents of his district. In addition to being a center for all the usual preventive services, the Turkish health center will be designed, in the words of the Ministry of Health and Social Welfare, to "treat any disease encountered during the fulfillment

of the .... preventive services to the extent of the capacity and competence of the institution" (44).

A remaining type of health facility especially designed for rural areas is the mobile unit. With our relatively good highways and advanced development of the automibile industry, we have made considerable use of such units in this country. The functions of mobile clinics, however, have generally been rather narrow, being confined to venereal disease control, dental care for children, hookworm eradication, or the like. Mobile clinics in other nations like Canada, the Soviet Union, the South American republics, and China have had broader functions, providing dispensary service for all illnesses that may afflict rural people.

A related type of service, the airplane ambulance, has been developed further in foreign nations than in the United States. The Swedish Red Cross provides such service on a regular basis. Airplane ambulances are operated as a routine feature of the Scottish Highlands and Islands Medical Service. Missionary groups in Australia carry on such service for range people in the hinterlands. The new Cooperative Commonwealth Federation (CCF) government of Saskatchewan provides airplane ambulance service for the rural people on the province's thinly settled plains, especially for those in the cold northern territory. Helicopters operated by the United States Coast Guard occasionally perform ambulance duty for fishing families on the desolate beaches of Cape Hatteras off the coast of North Carolina, but this type of rural health facility has been used relatively little in the United States.

Meeting the Problem of Financing Medical Care

The underlying problem in the provision of medical care to rural people in all nations has been the method of financing. The real reason why personnel have been lacking and facilities deficient in rural areas has been that agricultural people throughout the world have been relatively poor and unable to meet the cost of scientific medical care. When public hospitals have been constructed in rural areas, serving the people without

charge, or when officially salaried physicians and nurses have rendered service to agricultural people, this has been, in effect, a method of financing medical care through the tax funds collected by a province or nation. In addition to such measures, however, there have been other methods of financing medical care in rural areas that lighten the burden on the individual through group action. Most important have been what we in the United States call group prepayment plans.

The first voluntary insurance plans for spreading the risk of medical care costs were started in the Middle Ages as a function of the workmen's guilds. At first these guilds set up mutual benefit funds for providing indemnification against loss of income in periods of disability; later the costs of medical care itself were insured. Outside of the bourgs and towns, when most rural people were attached as serfs to some feudal estate, medical care of a sort was provided through the grace of the lord of the manor (45). Today we see a kind of derivation of this pattern in the system of plantation medicine for the agricultural workers in the Territory of Hawaii (46).

As the voluntary insurance societies in the cities developed with the industrialization of our society and as medieval serfdom died out, the pattern of group prepayment spread to the countryside. Various cooperative societies for the group financing of medical care developed among peasants and rural dwellers in European countries, therefore, years before programs of government sponsored insurance were written into law. Even when compulsory social insurance legislation came to characterize the financing of medical care in Europe, these rural medical cooperatives retained their autonomy in many nations.

In Yugoslavia before the war, we had an example of rural health cooperatives still operating without any official relation to the compulsory system of social security for the industrial workers of that nation. There were in Yugoslavia in 1936 some 115 rural health cooperatives with some 57,000 members. Many of these cooperatives owned and operated their own small health centers and they employed some eighty-five physicians.

Because the peasants were poor, the cooperatives gave limited service and some of them were kept alive only because of charitable grants from philanthropic foundations in the United States, especially the Milbank Memorial Fund (47). Cooperatives among rural people reached an especially high state of development in the Scandinavian countries.

Then in the late 19th century the principle of group financing of medical care was taken over by the government and we had the birth of the modern conception of social insurance. The first national legislation along these lines was enacted under the administration of Bismarck in Germany in 1883. It is interesting to recall that Bismarck was the leader of the Conservative Party and that compulsory insurance for the costs of medical care and disability was introduced earlier than old age and unemployment insurance, since it was regarded as less controversial and closer to the hearts of the people (48).

All through Europe and in countries influenced by Europe, like Australia and Japan, the conception of government responsibility for the assurance of medical care to the population gradually expanded (49). The systems of compulsory medical care and disability insurance set up by government did not sweep aside the voluntary insurance societies, that had been doing the job in the past, but rather built upon them, assigning them many official administrative responsibilities (50). At first the compulsory features of the legislation applied only to limited segments of industrial workers, but gradually compulsory coverage was extended to agricultural laborers as well. The slowness in encompassing agricultural workers in these health insurance programs was due largely to administrative difficulties in making periodic collections of premiums from them, although the lack of political pressure from agricultural labor, in contrast to that from industrial labor, also undoubtedly played a part.

To overcome the administrative difficulty, country after country made use of the so-called "stamp plan" for collecting contributions. This is simply a device whereby the employer

of farm workers buys social security stamps in a post office and pastes them in a small book, carried by the farm laborer, after a certain period of employment of that individual. The cost of the stamps is actually borne partly by a deduction from the farm worker's wages and partly by the employer himself. When the stamp book is filled, it is sent in to the government as evidence that this farm worker is duly covered under the social security system, and a new book is issued. The presentation of an up-to-date book by the farm worker is evidence that he is entitled to insurance benefits. This system saves the agricultural employer the job of keeping records and makes possible accurate information on a hired farm worker, no matter how much he moves about for employment. Through various modifications of this device, agricultural and horticultural workers are provided some type of social insurance benefits in at least sixteen countries including: Belgium, Bulgaria, Chile, Costa Rica, Czechoslovakia, France, Germany, Great Britain, Hungary, Italy, Netherlands, New Zealand, Peru, Spain, Sweden, and Uruguay (51). This information is as of early 1945, and the extension of social security measures throughout the world has been so rapid since the end of the war that it is probably out-dated by now.

Two countries, France and Hungary, have special independent systems of social security for agricultural workers. In France this is administered by the Ministry of Agriculture and covers also the French "metayers," analogous to our sharecroppers (52). The scales of payments and benefits are somewhat different for agricultural workers from those for industrial workers in view of their lower income levels. In Holland a special law was passed in 1922 extending workmen's compensation protection to agricultural workers (53).

It is to be noted that social insurance for medical care relating to persons engaged in agriculture applies mainly to agricultural workers or employees rather than farm operators. Up to the end of the Second World War, it appeared that no nation except New Zealand encompassed all farm operators under a

strictly compulsory health insurance system. This did not mean, however, that self-employed farmers in other foreign countries could not enjoy insurance protection for medical costs. In many countries they could voluntarily join the same local insurance society which the farm laborer was required by law to join. Thus, in Denmark the majority of independent farmers are insured for medical care through voluntary enrollment in a so-called "friendly society" (54). In fact, the Danish health insurance scheme is almost compulsory, since farm operators are compulsorily covered for invalidity insurance and the way to comply with this requirement is to join a local society offering medical care benefits at the same time. The voluntary societies in Denmark, as in many other nations, are subsidized by the government and accordingly subject to public supervision.

The voluntary insurance societies are ordinarily required to provide a minimum set of benefits for persons encompassed in the social security program. These benefits vary in different countries. In England, for example, they have included disability payments in the event of sickness and cash benefits for maternity. Payments for general practitioner medical care and drugs, as a matter of fact, are directed by the Ministry of Health, without going through the friendly societies. In addition to these required basic benefits, the different societies may furnish supplemental benefits, if the members are willing to pay for them. A society of rural workers in Scotland, for example, offered in 1939 supplemental medical care benefits consisting of dental services, maintenance in and travelling expenses to the hospital, surgical care, obstetrical care, home nursing, and the services of a convalescent home (55). In 1942 there were in Great Britain twenty separate rural approved societies which had formed a federation with a membership in England and Scotland of 400,000 persons (56).

Even imperial Japan set up a system of autonomous voluntary health insurance societies in the towns and villages in 1938. All householders of small income were eligible to join these, and the prefectural governors in some sections were permitted to

make membership compulsory (57). It may be especially interesting to health officials in the United States that the administrative supervision of these village insurance programs is carried out largely by public health nurses.

There is not space to go into the details of operation of these health insurance programs in foreign nations as they affect rural people. A few essential points may simply be made. For one thing, under all the programs the patient's free choice of doctor is protected—to the extent that more than one doctor is available—and the physician still can carry on his work as an independent practitioner. Only the payment of the doctor's bill or the hospital bill is controlled by a governmental plan. For another, despite the things we sometimes read, the medical profession appears to be generally satisfied with the insurance system and criticisms are leveled only at some details of administration, coverage, and remuneration (58). Thirdly, the general trend of events has been toward continual expansion, rather than contraction, of the benefits and coverage of all the programs. Finally, there seems to be considerable evidence that agricultural people covered by these programs have been able to obtain more and better medical care through them than before. Dr. Erwin Liek, a leading European critic of health insurance, put it this way:

> In 1904, when I was an assistant in the Danzig municipal hospital, sickness insurance had not been applied to agricultural workers. . . . What did we see in the hospital? Numerous old dislocations, badly united fractures, chronic inflammations, all of which had either not been treated at all or treated by quacks. All that was changed from the moment that the agricultural workers became compulsorily insured. . . (59).

Since the end of the Second World War there have been great extensions in health insurance coverage for rural people throughout the world. France, for example, has worked out a program to cover eventually almost the entire population with minimum services, and the voluntary mutual benefit societies supply additional benefits to those who desire and can afford

them. The same general type of extension is being made in Sweden (60). And in North America the first program of compulsory health insurance has finally been established—in the Canadian prairie province of Saskatchewan.

The CCF government was voted into power in Saskatchewan partly on the platform that it would institute a "system of socialized medical services" for the entire population. In carrying out this pledge, the government began by setting under way in January, 1947, a program of compulsory hospitalization insurance covering everyone in the province, except special dependent groups whose care was otherwise provided for. A health tax of $5 per person is levied up to a maximum of $30 per family. In addition, the government subsidizes the fund out of general revenues. For this money everyone is entitled to ward care and practically all services offered by the hospital, without any limitation on length of stay. The hospitals, in turn, are paid for the service by the government at a rate commensurate with the level of service rendered by the particular institution; through this plan the hospitals are stimulated continually to improve their quality of service, for in this way they get higher payments (61). The intention of the CCF government is gradually to expand services to include the care of physicians, laboratory tests, and eventually comprehensive medical care. In one "health region" of the province the comprehensive program has already been set up on an experimental basis. It is too early to draw final conclusions from this experiment on our northern border, but it is already clear that the people of this predominantly rural province are receiving through this program considerably more hospital care than ever before (62).

Finally, among foreign programs for financing medical care, must be mentioned those in which services for the general population are financed mainly out of general tax funds, rather than social insurance contributions. The most highly developed of such systems is in the Soviet Union where medical care is provided to the entire population, rural and urban, at the expense of the government. In other words, the medical care program in

that nation does not limit services to those who have established eligibility through payment of an insurance premium, because of low income, or in any other way. In the initial period the funds were raised by a system of social insurance supplemented by a direct governmental contribution, but even at that time the entire population was entitled to care. Today there are no social insurance collections as such and the entire cost is borne out of general revenues, as is done in our country in the field of public education (63).

One other nation has a method of financing medical care which makes it available to the entire population without an eligibility test, and this is New Zealand. The funds in New Zealand are raised mainly through social insurance, with supplemental contributions from the general treasury. Comprehensive services are not yet available to all and the New Zealander may be charged an extra private fee by his physician, beyond the payment made by the government for a service, but the basic structure of a system of complete public medical services has been laid (64).

While the world presents just these two examples of 100 per cent population coverage for medical care, there is an obvious trend in this direction. The extension of the French and Swedish legislation has been mentioned. The government of China has plans to finance medical care for its entire population, as soon as it can develop the financial resources, although we know that this is a good many years off. The same applies to India, if the recommendations of a special commission recently appointed to study the problem are followed. This commission recommended that the relatively small industrial population in the cities of India be provided medical care through a system of compulsory health insurance, while the great rural population should be provided services entirely at the expense of the government through general revenues (65).

Closer to our culture pattern is Great Britain. There the present government has launched a new National Health Service program to become effective in July, 1948. As in the New Zealand

and Soviet systems, all persons rural and urban will be entitled to services without an eligibility test. The scope of care will be comprehensive including not only the general practitioner's services and drugs, offered to insure workers under the original British health insurance program, but also the care of specialists, hospitalization, and auxiliary benefits. All doctors participating are expected to be on a basic salary supplemented by a capitation fee for each person choosing the particular doctor. A great network of health centers will be constructed and office space will be made available in them to private practitioners. There will be special subsidies to attract physicians to the rural areas. This program will be financed largely from the Exchequer, supplemented by a contribution from the National Insurance Fund which will also finance other social security benefits (66).

Conclusion

This relatively sketchy review of rural health programs in different nations hardly warrants any general conclusions that would hold true in all countries. General social and economic conditions and historical developments have been too variable in different parts of the globe to lead to any single universal approach to rural health problems everywhere. And yet it is possible to define a few principal characteristics by which efforts to tackle the rural health problem in foreign countries may be compared with those in our own.

It would seem that throughout the world a large measure of attention has been given to the problem of supplying personnel and facilities in rural areas. Over-all medical resources abroad may be poorer, but greater advantage seems to have been taken of those available. Perhaps because of greater relative rural poverty abroad or perhaps because of differences in political philosophy, foreign governments seem to have undertaken organized measures to provide care for rural people in greater degree than we have in the United States. In bringing health services to rural people, fewer distinctions have been made between the preventive realm of public health and the thera-

peutic realm of private medicine; the public health officer is called on for a great deal of medical practice and the private medical practitioner is called on for a great deal of public health work. The methods of financing medical care on a group basis have developed to a considerably higher level in many other nations than they have so far in the United States.

The central problems of rural health service in the United States probably can be described in terms of three elements: economic, ecological, and educational. The problem is economic because of the relatively low income of rural people; it is ecological because of the thin dispersion and irregular settlement of the rural population over large areas; it is educational because of lack of knowledge concerning proper hygiene among many rural people. In virtually all nations of the world these three aspects of the rural health problem are found. And no program can be successful which does not conquer the handicaps of all three. To conquer the economic handicap, various systems of financing of medical care and preventive services have been developed. To conquer the ecological handicap, there are programs for attracting personnel to outlying areas and for developing regional patterns of hospitals and health centers. To conquer the educational handicap, programs of public health have been extended.

It is obvious that we have a great deal to learn from the numerous rural health measures undertaken in other nations. This paper has not attempted to review the special steps taken in the United States to improve rural health, but it is equally certain that other nations have much to learn from us.

Although we have considered health programs around the world from the special point of view of rural areas, it should be clear that the rural health problem can never be solved in a vacuum independent from the health problems of any nation as a whole. Most of the large-scale efforts to improve rural health and medical care abroad have been launched as an aspect of a general health program for the entire nation. If rural people are to enjoy all the benefits of modern medical science,

the closest possible tie-up with urban medicine is obviously essential, since the centers of medical research and education will naturally be in the cities. The financial support for rural health services must likewise come in large measure from urban wealth, through public taxation, if compensations are to be made for the economic disadvantages of agriculture in this industrial civilization.

Whatever may be the differences among nations in political and economic matters, it would seem that in the realm of public health and medical science a truly international spirit can be observed. If we will take full advantage of the lessons of the entire world, we may be confident that the objective of the World Health Organization to assure "the attainment by all peoples of the highest possible level of health" will some day be realized.

ACKNOWLEDGEMENT: For technical assistance in the preparation of this paper, acknowledgement is gratefully made to George St. J. Perrott, Miss Martha D. Ring, Arthur Weissman, and E. B. Kovar.

REFERENCES

1. Hall, W. W.: Health of Farmers' Families. *Report of the Commissioner of Agriculture for the Year 1862,* Washington, pp. 453–470.

2. Moore, Harry H.: AMERICAN MEDICINE AND THE PEOPLE'S HEALTH. New York, D. Appleton and Company, 1927, pp. 194–195.

3. Hoge, Vane M.: The Hospital Survey and Construction Act. *Public Health Reports,* January 10, 1947, 62, pp. 49–54.

4. Sand, René: HEALTH AND HUMAN PROGRESS. NewYork, The Macmillan Company, 1936.

5. Barkhuus, Arne: The Health of Nations. *Ciba Symposia,* October, 1943, 5, No. V.

6. Štampar, Andrija: Observations of a Rural Health Worker. *New England Journal of Medicine,* June 16, 1938, 128, pp. 991–997.

7. Winslow, C.-E. A.: THE CONQUEST OF EPIDEMIC DISEASE. Princeton, New Jersey, Princeton University Press, 1944.

8. Evang, Karl: MEDICAL SERVICE IN NORWAY. Processed, London, 1944, p. 11.

9. The Royal Social Board: SOCIAL WORK AND LEGISLATION IN SWEDEN. Stockholm, Tryckerisktiebolaget Tiden, 1938.

10. Cassidy, Harry M.: PUBLIC HEALTH AND WELFARE REORGANIZATION—THE POSTWAR PROBLEM IN THE CANADIAN PROVINCES. Toronto, The Ryerson Press, 1945.

11. Reports of the Health Division of the United Nations Relief and Rehabilitation Administration (UNRRA), Rome, 1945.

12. Notes and forthcoming reports by George St. J. Perrott and Dr. Joseph W. Mountin, United States Public Health Service, following observations on health programs in Western Europe during July–August, 1946.

13. Sigerist, Henry E.: Socialized Medicine Abroad. *Journal of the Association of Medical Students,* April, 1939.

14. League of Nations Health Organization: EUROPEAN CONFERENCE OF RURAL HYGIENE: MINUTES. Geneva, 1931.

15. United States Public Health Service: Progress toward a World Health Organization. *Public Health Reports,* February 14, 1947, 62, pp. 225–248.

16. Wallgren, Arvid: Some Aspects of the Medical Profession in Sweden. *Canadian Medical Association Journal,* December, 1946, 55, pp. 605–610.

17. Swedish Traffic Association: SWEDEN—ANCIENT AND MODERN. Stockholm, 1939. Also information furnished by George St. J. Perrott, United States Public Health Service.

18. Personal communication from Dr. Sze, Chinese representative in Health Division of UNRRA, 1945.

19. SUMMARY REPORT BY THE DEPARTMENT OF HEALTH FOR SCOTLAND FOR THE YEAR ENDED 30TH JUNE, 1945. Edinburgh, 1945.

20. Department of Health for Scotland: COMMITTEE ON SCOTTISH HEALTH SERVICES REPORT. Edinburgh, His Majesty's Stationery Office, 1936, pp. 221–233.

21. Rorem, C. Rufus: THE "MUNICIPAL DOCTOR" SYSTEM IN RURAL SASKATCHEWAN. Chicago, University of Chicago Press, 1931.

22. Information furnished by Dr. F. D. Mott, Chairman of the Saskatchewan Health Services Planning Commission, 1946.

23. Moll, A. A.: AESCULAPIUS IN LATIN AMERICA. 1944.

24. Sigerist, Henry E.: Rural Health Services in the Soviet Union. *American Review of Soviet Medicine,* February, 1944, 1, pp. 270–280.

25. Westphal, Edward A.: Medical Pioneers in the Peruvian Amazon. *Medical Record,* March, 1945, pp. 134, 138, and 142.

26. Chesterman, Clement C.: TROPICAL DISPENSARY HANDBOOK. (An aid to the Training and Practice of Native Medical Assistants and for the Guidance of All Engaged in Medical Practice in Rural Dispensaries in the Tropics). London, United Society for Christian Literature, 1946.

27. Cohen, Wilbur J.: Social Security in Chile. *Social Security Bulletin,* May, 1947, 10, No. 5, pp. 10–19.

28. Same as reference 24.

29. Information furnished by Dr. J. L. Sanders, Chief Dental Officer of New Zealand Ministry of Health, July, 1947.

30. Sigerist, Henry E.: Yugoslavia and the XIth International Congress of the History of Medicine. *Bulletin of the History of Medicine,* January, 1939, 7, pp. 99–147.

31. Same as reference 12.

32. SOCIAL DENMARK: A SURVEY OF THE DANISH SOCIAL LEGISLATION. Copenhagen, Socialt Tidsskrift, 1945.

33. Martensen-Larsen, Florian: Den Amerikanske Sygehuslov af 1946. *Socialt Tidsskrift,* February, 1947, 23, pp. 67–76.

34. O'Leary, Shirley B. and Moll, A. A.: HEALTH AND LIVING CONDITIONS IN LATIN AMERICA. Washington, Pan-American Sanitary Bureau, July, 1941, Pub. No. 166.

35. Mountin, Joseph W. and Hoenack, August: The Health Center: Adaptation of Physical Plants to Service Concepts. *Public Health Reports,* September 20, 1946, 61, pp. 1369–1379.

36. Same as reference 4.

37. Same as reference 30.

38. Same as reference 27.

39. Medical and Health Aspects of Social Security in Latin America. *Bulletin of the Pan-American Union,* January, 1939.

40. Same as reference 24.

41. Sigerist, Henry E.: A Physician's Impression of South Africa. *Bulletin of the History of Medicine,* January, 1940, 8, pp. 22–27.

42. Grant, John B., in an address at the Institute of Social Medicine, New York Academy of Medicine, New York, March 20, 1947.

43. Mott, F. D. and Roemer, M. I.: A Federal Program of Public Health and Medical Services for Migratory Farm Workers. *Public Health Reports,* March 2, 1945, 60, pp. 229–249.

44. Turkish Republic, Ministry of Health and Social Welfare: FIRST TEN YEAR HEALTH PLAN. Ankara, 1947, p. 82.

45. Sigerist, Henry E.: MAN AND MEDICINE. New York, Norton and Company, 1932.

46. Larsen, Nils P.: Analysis of Health on our Plantations. *Plantation Medicine,* (Hawaii), January, 1944, 8, pp. 4–20.

47. Same as reference 30.

48. Sigerist, Henry E.: From Bismark to Beveridge: Developments and Trends in Social Security Legislation: I. The Period of Bismarck. *Bulletin of the History of Medicine,* April, 1943, 13, pp. 365–388.

49. Newsholme, Sir Arthur: MEDICINE AND THE STATE. London, Allen and Unwin, 1932.

50. Perrott, George St. J. and Mountin, Joseph W.: Voluntary Health Insurance in Western Europe: Its Origins and Place in National Programs. *Public Health Reports,* May 23, 1947, 62, pp. 733–767.

51. Cohen, Wilbur J.: Foreign Experience in Social Insurance Contributions for Agricultural and Domestic Workers. *Social Security Bulletin,* February, 1945, 8, No. 2, pp. 5–10.

52. Armstrong, Barbara N.: THE HEALTH INSURANCE DOCTOR. Princeton, Princeton University Press, 1939.

53. Same as reference 12.

54. Same as reference 52.

55. The Scottish Rural Workers Approved Society: TWENTY-SIXTH ANNUAL REPORT BY THE BOARD OF MANAGEMENT, 1938–39. Edinburgh, Registered Office.

56. Memorandum of Evidence by the National Federation of Rural Approved Societies. SOCIAL INSURANCE AND ALLIED SERVICES (Memorandum from Organizations, Appendix G to Report by Sir William Beveridge). London, 1942.

57. War Department Technical Bulletin: MEDICAL AND SANITARY DATA ON JAPAN. May, 1945, TB Med. 160.

58. Mountin, Joseph W. and Perrott, George St. J.: Health Insurance Programs and Plans in Western Europe: A Summary of Observations. *Public Health Reports,* March 14, 1947, 62, pp. 369–399.

59. Quoted in: Falk, I. S.: SECURITY AGAINST SICKNESS. New York, Doubleday, Doran, and Company, 1936, pp. 288–289.

60. Same as reference 50.

61. Province of Saskatchewan: THE HOSPITAL SERVICES PLAN AND ITS PLACE IN SASKATCHEWAN'S PUBLIC HEALTH PROGRAM. Regina, Processed, 1946.

62. Mott, Frederick D.: The Saskatchewan Hospital Services Plan. *Physicians Forum Bulletin,* January–February, 1947, pp. 20–25.

63. Sigerist, Henry E.: SOCIALIZED MEDICINE IN THE SOVIET UNION. New York, Norton and Company, 1937.

64. Robb, Douglas: HEALTH REFORM IN NEW ZEALAND. London, Whitcombe and Tombs Ltd., 1947.

65. Personal communication from Dr. Henry E. Sigerist, 1946.

66. Ministry of Health of Great Britain: NATIONAL HEALTH SERVICE BILL—SUMMARY OF THE PROPOSED NEW SERVICE. London, March, 1946.