CHRONIC DISEASE AS A PUBLIC HEALTH PROBLEM[1]

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THE period of economic depression through which we have passed in recent years has taught us many valuable lessons, not the least of which is a realization that coming years must see an expanding field of public health. Today, it is clear that public health activity must embrace other fields than the prevention and control of communicable diseases. Today, it is clear that the outstanding public health problem is the prevention and control of chronic disease.

Fifty years ago, the expectancy of life at birth in the United States was about forty years. Today, it is around sixty-one—a gain of some twenty years. This increase has been accomplished largely through public health measures. Better sanitation, improved water supplies and sewerage systems, the advance of bacteriology, education for personal hygiene, and a successful attack upon communicable diseases have all contributed to this advance. Tuberculosis, typhoid fever, and diphtheria as well as other diseases have been decreasing, some of them to the vanishing point. Modern infant and maternal welfare work has saved the lives of thousands of infants, and, as a result, the average age of the population has increased.

The astonishing lengthening of expectation of life at birth may well be regarded as the most impressive advance made by the human race in any direction for a thousand years. However, we cannot regard this as a promise that adults at any given age may expect to live many years longer than could those at the same age fifty years ago. Studies of life tables indicate, for example, that no

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more than a small increase may be expected by adults living today in the productive age groups, from thirty to fifty years of age. For those individuals past fifty, no such optimistic statement may be made. A glance at life tables of the Commonwealth of Massachusetts from 1789 to 1930 shows that the expectancy of life of people at sixty has decreased a fraction of a year. This decrease is in line with a similar decrease in the expectation of life of the same age group in the original death registration states from 1900 to 1930, as well as in the 1920 death registration states from 1920 to 1930. The decrease in the expectation of life at age of sixty was nearly 5 per cent in Massachusetts, and in the original registration states, 2 per cent. Similar examination of records of the original death registration states indicates that among males in age group fifty to eighty years, the expectancy of life was actually higher in 1890 and 1900 than in any year from 1922 to 1927.

Another point to be considered is the increasing age of the population of the United States. Immigration has been restricted, thus decreasing the number of young adults of the productive and child-bearing ages. The birth rate has declined and is declining, even the actual number of births declined between 1920 and 1930. The result of these combined forces is a higher percentage of the older age group in the total population. In 1880, 11.8 per cent of the population was over fifty; in 1910, this age group accounted for 13.9 per cent of the population and in 1930, 17.2 per cent of the total population of the United States was over fifty years of age. It has been estimated that the proportion of persons in this age group will keep on increasing in the population of the future, until in 1980 over one-fourth of our people will be in the older age groups. Such facts as these have turned the attention of public health workers to the problem of determining and initiating measures to protect the health of this large group of people.

The past fifty years have witnessed a change in the type of diseases causing death in the older age groups, and a consideration

of this change will emphasize the importance of recognizing chronic disease as a vital public health problem. In 1900, only three-tenths of all deaths in persons over fifty years of age were due to heart diseases, kidney diseases, and cancer (including tumor). Today, over one-half of the deaths over fifty are registered for these causes. This change forces thoughtful public health workers to consider certain conditions that arise with the presence of chronic disease. Individuals with a chronic degenerative disease usually suffer over a much longer period of time than those with acute diseases. So little information is available as to the duration of chronic disease that we cannot estimate the economic burden imposed upon individuals and those responsible for giving them adequate care. We do know that when a chronic patient is admitted to a general hospital, his admission compels the hospital to exclude from three to ten acute cases. Many general hospitals have therefore excluded chronic cases for treatment; such hospitals estimate the average length of a patient's stay to be only fourteen days, while hospitals admitting both chronic and acute cases estimate the average length of treatment to be from twenty-three days to thirty days. It is not necessary to point out to this conference the disastrous economic effect upon individuals and families combating chronic illness.

The aging of the population, the increase in death rates among the older age groups, the increase in death rates from chronic disease, and the growing need for care of the chronically ill are straws in the wind—important straws that have stimulated the United States Public Health Service to undertake a study of the chronic disease situation. The survey is a project of the Office of Statistical Investigation. Known as the National Health Inventory, it is being conducted in nineteen states, and has been organized on the largest scale, commanding the widest scope of any similar survey yet undertaken in this country. It is designed to study the extent and nature of disability in the general population, with special

reference to chronic disease and physical impairment. Answers to many of the questions which thoughtful public health workers are asking about chronic disease are being sought. What is the volume of chronic disease in the general population of the United States? How is it distributed throughout the country? What is the age and sex distribution of these diseases? Is occupation a factor in chronic disease? Nationality? Unemployment? Housing, with reference to crowding? What are the urban-rural aspects of the problem? What disability is caused by chronic diseases? What economic problems are associated with it? How is chronic disease cared for? To what extent are the facilities now available to the sick being used in different types of communities? Are more facilities needed, and if so what kind of facilities?

The United States Public Health Service believes that these questions must be asked and answered before the health service of the future can intelligently approach a solution of the chronic disease problem. In order to obtain answers to these questions, the survey is attacking on various lines. First, a house-to-house canvass in ninety-five communities, located in nineteen states, representing the various geographic divisions of the country; second, an inventory of public health and medical facilities throughout the nation; third, a study of morbidity and mortality according to occupation, based upon the records of sick-benefit associations in industry; and fourth, communication with every physician attending a case of illness reported in the house-to-house canvass, for the purpose of obtaining his technical knowledge of the nature of the disabling illness. This material is now being collected.

At present the house-to-house canvass is at the peak of its activity. This study is going on in both urban and rural communities. Information is obtained on approximately 3,000,000 individuals. The enumerators, from relief rolls, have been carefully selected and especially trained for this type of work. In the larger cities, sample areas are surveyed, while in the majority of the communi-

ties every family is canvassed. In New York, which is one of the sampled cities, every thirty-fifth dwelling is being canvassed, which makes nearly a 3 per cent sample of all persons in the City. Age, sex, nativity, marital status, occupation, and employment of both the sick and the well are recorded. Enumerators request an estimate of the income of every family, in order to study the relation of disease to economic status. Number of rooms in the house, comparative rentals and appraisals, and certain sanitation factors are recorded.

Next, information is recorded as to the illnesses present in the family on the day of the visit; their duration; the amount of disability; the kind and source of medical care, if any; hospitalization; nursing care; and amount of time lost from work. Further, any illnesses disabling for seven days or longer during the past year are recorded in the same way. And, finally, a similar record is made of the presence of specific chronic diseases and physical impairments regardless of whether such ailments are disabling on the day of the enumerator's visit, or have not been seriously disabling during the past year.

The inventory of public health and medical facilities, supplementing the information now available, is equally thorough, comprising records of public health agencies, both official and unofficial; medical facilities, including the distribution of physicians, hospitals, and institutions; and the number and distribution of public health nurses, nurses in private practice, and nurses employed by visiting nurse associations, public and private. All existing material is utilized, such as data already published by the American Medical Association, the American Hospital Association, and other agencies, including the American Public Health Association. New data is collected only where and when it is needed in order to fill up gaps in the knowledge and inventory of health and medical facilities. This phase of the work will not involve the employment of relief personnel. Most important of all,

the inventory of public health and medical facilities will be coordinated with the information obtained in the house-to-house illness survey. The value of this phase of the survey to the study of chronic disease is clearly seen when we can correlate the disability and duration of chronic disease not only with medical facilities available, but also with the extent to which such facilities are used by the chronically ill.

Statistical research in the prevention, control, and cure of the communicable diseases has already proved its worth. Epidemiological studies have played an important part in the control of typhoid fever, malaria, and tuberculosis, and in the reduction of infant mortality. If our surveyed population is a fair sample of the general population, and we believe it is, the data, when analyzed, will furnish more light on many of the baffling questions of epidemiology regarding these diseases.

Epidemiological studies reveal significant factors in the occurrence of specific diseases—for example, age, sex, economic status, nationality, and density of population. It is the purpose of the present survey to determine the significance of intimately associated conditions in the chronic disease problem. The data will furnish more light on many of the baffling questions of epidemiology regarding these diseases, and will represent the contribution of statistical research toward discovering how social and economic factors are related to chronic illness.

To learn the rate of complete disability in chronic disease is one of the important purposes of the survey. It is also necessary to estimate the percentage of the chronically ill who are cared for at home, the percentage receiving hospital care, or who were hospitalized during the past year. The check-up on medical service obtained, the inventory of local hospitals, relief agencies, public health clinics, and other organizations will tell us what percentage of the chronically ill in the lower-income levels receive medical care.

A comparison of sickness rates in the country with those in specific occupations in the city will indicate what significance different living conditions and different working conditions have in the extent and nature of chronic diseases.

The presence of a chronic illness in a household puts a staggering burden on the ability of the family to remain self-supporting, while securing adequate medical care for the patient. Even in the face of the present lack of knowledge as to the extent of economic disability due to chronic disease, we know that most of the victims of these diseases are incapacitated and impoverished. A recent survey made by the Public Health Service in ten cities showed that families hardest hit by the depression received only about one-half the amount of medical care obtained by the comfortable group; this difference would have been much greater except for the large volume of free care received by the poor group. This free service included services paid for by state or local government, service rendered without cost by physicians, and aid from private philanthropy. However, chronic disease with its resultant disability, suffering, and economic loss now constitutes so vast a problem that we cannot look to private philanthropy for its solution. Nor can we expect physicians and institutions to bear the burden unaided. Nothing less than an active and nationwide recognition of chronic disease as a public health problem will provide the impetus for a concerted attack, by federal, state, and local public welfare agencies, both public and private.