The First 12 Years of WHO

THOMAS PARRAN, M.D., LL.D., Sc.D., Dr.P.H.

At the Eleventh World Health Assembly Dr. Thomas Parran received the Leon Bernard Foundation Prize for outstanding achievement in social medicine. The award, established by the League of Nations and administered by WHO, was presented to him in recognition of his contributions to public health in the United States, particularly control programs for venereal disease, tuberculosis, and cancer, and Federal assistance to States for hospital planning and construction.

Dr. Parran, first dean of the Graduate School of Public Health, University of Pittsburgh, and Surgeon General of the Public Health Service from 1936 to 1948, has recently assumed direction of the Avalon Foundation.

Other recipients of the prize have been Prof. René Sand (Belgium), Prof. C.-E. A. Winslow (United States), Dr. Johannes Frandsen (Denmark), Prof. Jacques Parisot (France), Andrija Stampar (Yugoslavia), and Prof. Marcin Kacprzak (Poland).

NO GREATER HONOR can come to anyone in public health and social medicine than to receive the Leon Bernard Foundation award. This is particularly true when one reviews the role of honor of those who have earlier received the award and when one considers that it is voted by the World Health Assembly, representing the world health leaders of our time.

I accept the award with deep gratitude and humility.

My first contact with international health affairs was in 1926, when I was selected as one of 12 young medical officers from 11 different countries to engage in a study tour of Denmark for some months, following which we spent a week in Geneva to report upon our experiences and to learn about the work of the health section of the League of Nations. For me, this was a great educational experience. Since then, I have continued to learn about international health in many capacities. Each of these experiences has broadened my understanding of the needs for, and the possibilities of, international cooperation in the field of health and of technical assistance generally.

In July 1946, at the signing of the constitution of the World Health Organization, I said that we were "signing a Magna Carta for health which will bring into being a World Health Organization unique in its scope, authority, and functions." I ventured to forecast the successive steps which WHO would take during the years ahead. These included "help in healing the wounds of war and eliminating the ancient human plagues, such as malaria and cholera, tuberculosis and syphilis. Prevention of disease is a first objective.

"To attain freedom from want of food is another goal which we may hope to reach by pooling our nutritional knowledge with the food and agricultural efforts of the United Nations.

"A next step toward world health is the positive improvement of health. Higher levels of physical development, a longer, more productive, more vigorous life span will be sought and attained.

"But prevention, treatment, and control of disease should be supplemented by intensive research in the laboratory, at the bedside, and in the field to push back the frontiers of the unknown in the health sciences."

Also, I said, "In our Magna Carta for health, we have ventured to declare that we have a contribution to make to the central world problem of today, which is to help man learn to live harmoniously with his fellow man. In making this proposition, I for one believe that health science must share the task with religion and education."

I concluded by saying, "The World Health Organization is, therefore, a collective instru-

ment which will promote physical and mental vigor, prevent and control disease, expand scientific health knowledge, and contribute to the harmony of human relations. In short, it is a powerful instrument forged for peace."

The goals set for the World Health Organization represented the highest aspirations of the human spirit. Few of us believed that they could be reached fully and in a short time span; but we should never lose sight of them. It is a source of great satisfaction that we have moved "ten steps forward." They have been 10 important steps which might be described more accurately as 10 times 10. That such substantial progress has been made is all the more remarkable when we consider the continued unsettled conditions in world affairs during these past 12 years. For what has been accomplished, primary credit is due to the competent leadership of the first two Directors-General, Dr. G. Brock Chisholm and Dr. M. G. Candau. Credit goes also to the staff in Geneva and in the regional offices, as well as to the delegates to the 11 annual health assemblies and the members of the Executive Board.

In retrospect, I think that a sound decision was taken at the First World Health Assembly to limit the initial objectives and programs to urgent problems of worldwide importance. These were control of malaria and tuberculosis as well as important acute communicable diseases, the improvement of nutrition, measures to promote maternal and child health, and sanitation of the environment.

It is gratifying that the initial programs have been intensified through a somewhat larger central budget and through the Expanded Programme of Technical Assistance, and that the substantial resources of UNICEF have been joined in promoting some of the important objectives of the World Health Organization.

From the outset, education and training have played important roles—8,000 WHO fellowships attest to this—and the more recent concern both of the United Nations and the World Health Organization with atomic energy in relation to health recognizes the importance of this new factor in man's environment.

Because of my preoccupation with the advancement of the health sciences through research and the training of future workers, both in the general field and in a number of its subdivisions, what I have to say will naturally center about this experience.

In May 1957, we held a series of seminars in Pittsburgh as a part of the ceremonies inaugurating our new chancellor and dedicating our new School of Public Health building. The themes were "Contributions of the Sciences to Public Health in the Years Ahead" and "Fusion of the Sciences for Better Health." I shall try to summarize some of the conclusions.

Viewing the sciences in historic perspective, one can detect periodicity. There have been periods of fusion and the reverse, a disintegration of effort. In the earliest period, the natural philosophers were the universal scientists, exploring all of life in order to gain greater knowledge of its meaning. (In the future, as in the past, the philosophers will contribute to our understanding of life, of natural laws, and of the universe.)

In due course, it became possible to study one or another aspect of life and living creatures. This led to specialization by medical research and medical teaching which burgeoned until a specialist came to be defined as a person who knows more and more about less and less. There are signs that this trend is being reversed—that a scientist needs to have more than one skill under one skull—and that future progress lies through a fused spectrum of scientific knowledge. This trend, apparent in medical and public health practice, is to see man and his environment as a whole and especially to interpret the dynamic interactions in these man-environment interrelationships. In short, human ecology.

During recent years the earlier distinction between public health and medicine has been blurred; there has also been a great decrease in the earlier distinction between physical and biological science so that at present there is no boundary within the biological sciences which the physical sciences cannot usefully pass. In this process of infiltration, there is the resulting integration of all biological sciences into a continuous and more meaningful whole. The viruses are a case in point. They are inert chemicals under certain circumstances; under other circumstances, reproducing organisms

with emergingly known genetic behavior, and disease agents of grave seriousness. Who has jurisdiction here? Is it the physical scientist, the biologist, or the physician? Clearly, we need to submerge the old distinctions and preserve the interrelations and wholeness of nature.

There has been a long transition from the primitive ritual of the medicine man to today's medicine of the sciences. The expansion of medical knowledge and teaching in recent years has been dominated by the scientific discipline of medicine itself and by segments of knowledge drawn from other sciences, so that today biological and natural sciences have become the very matrix of medical thought. Physics, chemistry, and biology are its language and tools.

The past century has been called the era of the biological and the physical scientist, but today we may be entering the century of the psychological or of the physiological-sociological-anthropological man. Perhaps in the next century the first half of this one will be noted as the period in which society moved away from its preoccupation with man solely as an economic creature.

Public health has been termed "an applied technology resting upon the joint pillars of natural science and social sciences." During the past century the natural science pillar has been greatly strengthened, but until both the pillars are strong the arch of public health will not be firm. Now, consideration also is being given to the social aspect of the environment, especially as it interacts with biological and physical stresses. Since stress effects are both psychological and physiological, emphasis must be given to fuller understanding of psychological factors in stress and disease reactions.

My colleague, Dr. Robert E. Olson, draws attention to the problems facing public health: "The biochemist who studies the kinetics of a purified enzyme system has only a few variables to control; the physiologist who studies the metabolism of an intact organ in an animal has many more to consider; the physician who studies a disease process in an intact human animal has even more parameters to correlate and attempt to control in the diagnosis and treatment of his patient. But the public health scientist who is studying the behavior of populations is dealing with an infinitely complex situation, to which, in many instances, only statistical solutions are possible."

In the past, certain factors known to affect public health adversely could be engineered out of the physical environment. Today, there is needed a revealing analysis of the social environment which blocks the way of abundant public health. Most of the degenerative diseases, which constitute our major health problems, have psychosocial components. The so-called psychosomatic diseases such as hypertension, peptic ulcer, rheumatoid arthritis, thyrotoxicosis, and schizophrenia have direct psychiatric determinants; others such as obesity, alcoholism, and coronary artery diseases have at least indirect relations to sociocultural patterns of diet, anxiety reduction, and stress.

Public health needs to be increasingly concerned both in research and in teaching with a comprehensive ecologic approach to problems of disease and of health if we are to be successful in understanding better the degenerative diseases and mental illnesses. The clinician must expand his horizon to include the role of the family and the community in relation to the disease problem at hand. By the same token, the public health scientist must not be content solely with statistical solutions and epidemiological inferences in his analysis of these knotty problems. The meeting ground is the interdisciplinary team play of a group from many fields of science, in sympathetic agreement with each other, and with access to the experimental laboratory, the patient, the family and the community, if need be, in the pursuit of the problem under study.

Those of us who use epidemiological and biostatistical methods primarily should remember that acute clinical observation may supply the clue, even though it be made only on one patient. Claude Bernard, French physiologist, once said, "I do not reject the use of statistics, but I condemn not trying to go beyond them" (quoted in the New York Times, E–9, April 13, 1958).

It is recognized that epidemiology does not deal solely with infectious diseases. It was through epidemiological investigations that the nature of pellagra and of goiter was discovered. There is an epidemiology of suicides, of acci-

dents, of cancer, and of atherosclerosis. Some beginnings have been made in the epidemiology of mental health and disease. I have pointed out elsewhere (*1*) the need for intensifying greatly these types of epidemiological studies.

When we have parallel biochemical studies, we may, by the epidemiological method, identify disease-prone individuals in a population before they become sick. Once these individuals with biochemical differences can be identified, it may be possible to control internal factors as well as the external environments and thus retard the progression of disease; almost certainly, there are such psychosocial and nutritional factors. Such knowledge may be to the prevention of degenerative disease what immunization and good sanitary engineering have been to the prevention of communicable diseases.

It is agreed that the behavioral and the biological or biochemical aspects of man are not separated by an impassable gulf.

But in our preoccupation with new and complex problems, public health workers should continue their emphasis upon traditional bases for action. We need also to apply to the newer problems the principles which have been learned from the past.

As one looks back, man has been concerned over the centuries with getting enough food to meet his metabolic needs and controlling his microbiological environments. Neither objective is met for most of the world's people. The continued growth of population, estimated at 1.6 percent per year, may continue to outrun increased food production. Consequently, public health must be concerned with problems of natality as well as with those of mortality.

The economy of scarcity has been superseded by overabundance in the United States and other western nations. Hence, we are concerned with metabolic disorders, obesity, alcoholism, and effects of smoking, which are disorders of excess rather than deficiency. Even the concept of stress as a cause of mental ill health connotes excess—the impact of more challenges than the organism is able to bear. Sir Geoffrey Vickers says, "Our hazards from excess range from excessive nuclear radiation through excessive smoking, to the excessive consumption of ice cream—products which have in common the fact that our superabundance is our own desiring" (*2*).

Recently, George J. Stolnitz has reported on "A Century of International Mortality Trends." He concludes that the rise in life expectancy over the past century probably has been more far-reaching than the gains of the previous 2,000 years; that the increases in western countries in the expectation of life at birth since 1890 have been more than double the gains over the preceding half-century; and that many of the mortality trends in western life changes are "unrepeatable phenomena." It is irrefutable that major gains of the future in lifesaving must come in the ages beyond 60. In documenting this point, Stolnitz calculates that if all mortality before age 45 were eliminated, the resulting gains would be no more than half of the rises in life expectancy at birth since the beginning of this century (*3*).

Each new breakthrough in the health sciences and each shift in living patterns will produce additional tasks for the World Health Organization and for national health services. Certainly, we are agreed that additional responsibilities have been produced by urbanization, by industrialization, by the major threats arising from air pollution, and even from the density of automobiles on the highways. Yet none of the serious problems evoked has been solved.

Added to the familiar environmental hazards is that new factor in man's environment, nuclear fission, and its use for the production of power. The known supply of fossil fuels is inadequate. In the absence of practical methods for harnessing solar energy and for unraveling the secrets of photosynthesis, nuclear power is being developed on a huge scale. This will increase at an ever-accelerating pace with many nations getting into the act but having too little comprehension of the dangers.

The disposition of radioactive garbage poses a whole series of enigmas not yet solved by the nations most technically advanced in nuclear fission. Such problems will confront us increasingly. We must develop the organization and the personnel and, most important of all, acquire the knowledge with which to cope with these problems.

Radiation biology now offers many new fields

for research and for the training of individuals to deal with them. The Graduate School of Public Health at Pittsburgh is pioneering in such a program of research and in the training of new types of specialists who can combine knowledge of the traditional health sciences with the newer knowledge of nuclear technology. This expanded area of health training will be invaluable in maintaining the health of mankind as we enter nuclear competition.

While never losing sight of its long-range goals, the World Health Organization in every situation must build upon what now exists in every country and region; each step forward must be practical in the light of the limitations imposed by traditions, customs, and resources.

It is gratifying to note the trend in many countries to seek the Organization's help in working out long-term plans for a continuing development of their own health services, and the growing willingness of nations to engage in joint action with their neighbors to solve common problems.

In the Director-General's Annual Report for 1955, the importance of strengthening the national health services is stressed. There are indications that nations, large and small, are becoming increasingly aware of the value of self-help in taking responsibility for the long-range development of their own health services, and that they seek aid mainly in three directions: supplies to be used in the worldwide struggle against communicable disease, the strengthening of the services already established, and the raising of standards of education and training of all types of health workers.

Even more attention needs to be given by the World Health Organization and every member state to the collection of more accurate and more comparable health statistics. Without them the course of public health cannot be charted wisely.

I have referred to the worldwide population explosion and the need for health agencies at all levels to be concerned about it, to seek to understand better these complex phenomena, and within religious and cultural contexts to devise programs of research, education, and action to deal better with them.

There are two great drains upon the resources, the manpower, and the accumulation of capital in most countries which detract from human health and well-being: expenditures to provide housing, food, clothing, and other items required for normal living by the too rapidly increasing population, and expenditures for war or the prevention of war, defense.

What a different world we could have if some of these expenditures could be diverted to the better cultivation and development of the human capital, the human resources, in each country. Health, education, recreation, and nutrition are obvious needs. Should not most of these savings be diverted to programs in each country to improve standards of health and well-being, and some funds be made available to the World Health Organization and other specialized agencies?

Specifically, I propose that all member states of the Organization, in addition to their regular contributions, take 2 percent from their annual appropriations for military purposes and use it as an extra contribution to the Expanded Programme of Technical Assistance of the United Nations, in which the World Health Organization should have a substantial share.

With such funds and the sentiment behind them, malaria eradication would be speeded up; smallpox, tuberculosis, syphilis, and yaws would be next to go. In fact, all of the ancient plagues could be conquered within a measurable number of decades. Then WHO could turn its energies more fully to improving nutrition, to promoting physical and mental vigor, to expanding scientific health knowledge, and finally to the most difficult task of all—the improved harmony of human relations.

The substance of the comments in this address was published in California Medicine 88: 411–416, June 1958.

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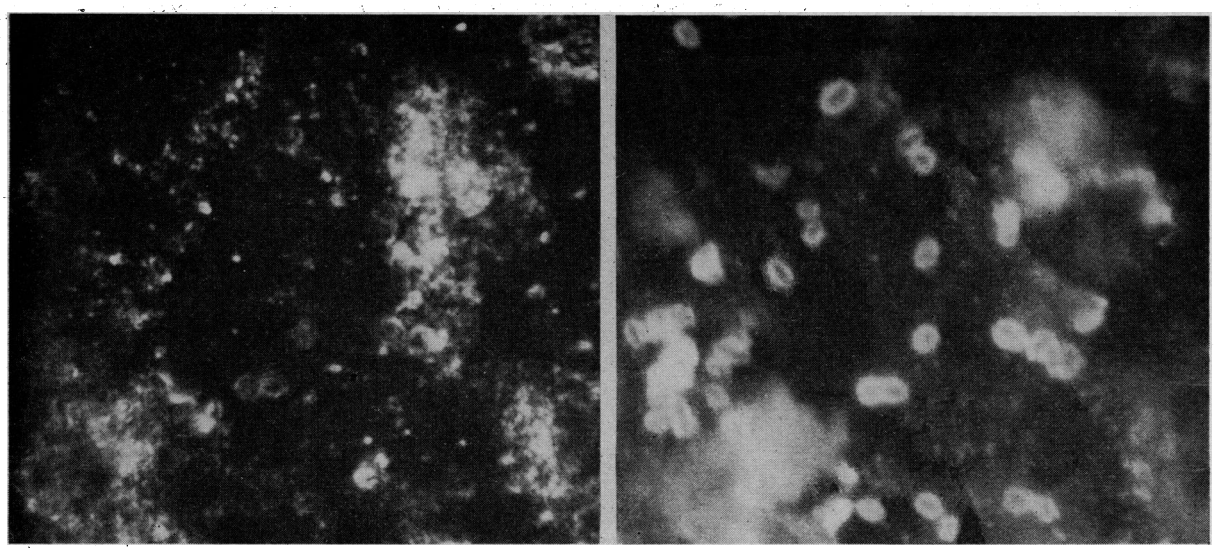

Plague organisms from a mouse spleen smear, which has been stained with fluorescent antibody. On the left side, with visible light, the viewer sees a great deal of material from which it is exceedingly difficult to separate the plague organism; on the right side, with ultraviolet light, only the plague bacteria show up.

FLUORESCENT ANTIBODY TECHNIQUES

Fluorescent antibody techniques for rapid laboratory identification of pathogens, and of antibodies produced in man by these microorganisms, are under development at the Communicable Disease Center of the Public Health Service. These new diagnostic methods, which use a fluorescein dye to "light up" individual disease organisms, promise one day to enable the physician to make an accurate diagnosis of certain communicable diseases within minutes after the patient comes to his office.

In describing these methods, Dr. R. J. Anderson, chief of the Communicable Disease Center, explained that the first step is to "label" with a fluorescent dye a globulin solution containing antibodies specific to certain organisms. When dried smears made from specimens are covered with the tagged antibody solution and observed through a microscope under ultraviolet light, any homologous organisms or their products will fluoresce. The process takes a few hours or less, whereas other methods take 2 or 3 days or even sometimes weeks.

A corollary method detects antibodies rather than the actual pathogenic organisms at stages of infection when the organism is not available for identification.

These quick, relatively simple, versatile laboratory procedures may possibly apply to the identification of pathogens in all kinds of specimens either from the individual patient or from the environment. As the somewhat laborious matter of adapting them to use with different bacteria and viruses and with their respective antibodies is completed, they are expected to take an important place in the work of laboratories all over the country.

Before these procedures can come into general use, several practical problems will have to be solved, Dr. Anderson indicated. Microscopes equipped with the appropriate ultraviolet light will have to be made available, and technicians will have to be trained to use the new methods. Tight budgets also may delay the use of the fluorescent antibody techniques in many localities.