

WORLD HEALTH STATISTICS

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IT IS a cause of rejoicing to be able to speak here today of World Health Statistics, not as one of the many desiderata still needed as a basis for a vigorous and wholesome international life, but as an accomplished fact. When we are now primarily concerned with further extension, betterment of quality, and problems of comparability of world health statistics, our younger colleagues are apt to forget that the very creation of the system is of such a recent date that several of its pioneers are still with us.

More than thirty years ago, while in the service of the Prudential Insurance Company of America, one of my daily tasks consisted of preparing ratings for extra life insurance premiums payable by Americans who were foolhardy enough to insist on travelling abroad. Our collection of mortality statistics and of information on health conditions in foreign countries was one of the very best existing at the time. Nevertheless, by far the most weighty ingredient of the brew was an arbitrary loading. Today there is a steady flow of valuable information from all parts of the world, and it is readily and promptly accessible to anyone who takes the trouble to ask for it.

The history of health statistics as an international enterprise falls into three major periods. The first period, which lasted up to 1921, was characterized by private initiative. Then came the League of Nations period of a quarter of a century's duration. The third period, barely arising from our blueprints, is under the auspices of the United Nations and its specialized agencies, notably the World Health Organization.

While inter-governmental organizations have taken the lead since 1921, private initiative is not dispensed with. Also, it should be remembered that no organization, however strategically placed, is better than the men who furnish the leadership and the daily work.

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Prior to World War I, the International Statistical Institute and the Office international d'Hygiène publique took a limited interest in public health statistics. The former never went beyond demographic statistics, and the latter practically confined itself to the maritime quarantine diseases. The League of Red Cross Societies appeared upon the scene in 1919. Its statistical thinking was still along pre-war lines as shown by the name of its unit concerned: Department of Vital Statistics. It was soon realized that health statistics are essentially a government function, and in October 1921 the Department was transferred to the League of Nations where, integrated in the new Health Section, it became the nucleus of the Epidemiological Intelligence Service. For the first time proper machinery was available for international collection, analysis, and publication of health statistics. This development meant that the decisive step from statistics of deaths to statistics of cases could now be attempted on a worldwide basis.

Mortality statistics were not neglected, but our efforts were concentrated on morbidity statistics, and among these, chiefly on epidemic diseases. More information was available regarding these diseases, and their control rated highest among the tasks of the new service. A *modus vivendi* was established with the pre-existing agencies. The Singapore epidemiological station was opened in 1925. As early as 1923, monthly and annual epidemiological reports had replaced previous reports appearing at irregular intervals. Regular Weekly Epidemiological Records were taken in hand in 1925; their serial number is now in the 1180-ies, and there has never been any interruption. Daily reports and epidemiological broadcasts followed. Gradually, the published data extended to such diseases as tuberculosis, malaria, and syphilis.

In the course of a few years practically every country and colony throughout the world was reporting to the best of its ability. Naturally, the data were of unequal value, and our reports always contained warnings to that effect. Looking backward over these twenty-seven years from the establish-

ment of the League of Nations Health Organization there can be no doubt that material progress has been made in both quality and quantity of information. The factors contributing to this progress may be roughly grouped under four headings:

1. The amazing growth during this period of the science and application of public health.
2. The emulation produced by the current publication and constant utilization on an international level of national public health statistics.
3. The frequent personal contacts of leaders in public health and statistics through expert committees and study tours of the League of Nations Health Organization.
4. The actual recommendations of these expert committees and the publication by the League of Nations of handbooks on the organization of health and statistical services in the various countries.

For the first time adequate funds were available for furthering the work of international comparability of statistics—nothing lavish to be sure, but adequate for problems which were then ripe. I can best explain the advantage of this new state of affairs by a simple illustration.

Dr. Jacques Bertillon was the first successful pioneer of international comparability of mortality statistics, and his list of causes of death is to this day the cornerstone of that ever growing edifice. The third decennial conference for the revision of this nomenclature was overdue in 1919. Bertillon, who had retired, had been pressed into service as Director of medical statistics of the French army. I found him one bitter winter day in a wooden barrack on the old Paris fortifications; he was all wrapped up in blankets and every once in a while stooped to shovel coal into a small pot-bellied stove beside his desk. It had not been possible to scrape money together for the conference, he told me. The League of Red Cross Societies was persuaded to appropriate \$5,000 for the purpose.

A mere \$5,000 had to suffice to refloat this important work.

According to Bertillon's last wishes the List of Causes of Death followed us into the League of Nations Health Organization. A few years later we had four expert committees working on such questions as multiple causes of death, age grouping, confidential medical certification of causes of death, and definition of still-births far ahead of the next decennial revision. I shall leave the further developments of the international list of causes of death to Dr. John T. Marshall who took a prominent part in the work centering around the sixth decennial revision. The expansion of this work from the third to sixth revision furnishes one of the most striking illustrations of the growth of sound international collaboration in a suitable technical field.

The League of Nations was hard hit by World War II. World health statistics came out strengthened by the crucial test. The League of Nations Service of Epidemiological Intelligence and Public Health Statistics continued to function in Geneva, and it managed to obtain much valuable information from the other side of the fence which would otherwise have been inaccessible to us. In May, 1944, the League of Nations Health Research Unit was formed in Washington, D. C. In January, 1945, this Unit became the Epidemiological Information Service of UNRRA which, among its many tasks, had the execution of the 1944 international sanitary conventions. The semi-monthly UNRRA Epidemiological Information Bulletin furnished current and up-to-date statistics and analyses of the world health situation during two crucial years. In 1947 these activities were absorbed by the new World Health Organization.

The most important development in the field of health statistics which has ever taken place is certainly a comprehensive plan recommended by the Conference for the Sixth Decennial Revision of the International List of Causes of Death and adopted by the First World Health Assembly in Geneva in July 1948.

An Expert Committee on Health Statistics was established under the World Health Organization, and international tech-

nical conferences will be convened as occasion arises. All governments were invited to establish national committees on vital and health statistics composed of those entrusted with the compilation of such statistics. A list of problems urgently in need of solution was selected with special reference to international comparability and the subjects were distributed to the various national committees for their special attention. The member governments have accepted in principle, and a preliminary list of the distribution of subjects follows:

1. The competent authorities of Belgium, France and Switzerland will study the question of completeness and accuracy of medical certification of causes of death in relation to the confidential character of the certificate.

2. Those of Canada and the United States of America will prepare an adaptation of the International Statistical Classification of Diseases, Injuries and Causes of Death to the needs of armed services.

3. The Canadian and United States national committees individually or jointly will pay particular attention to the methods by which health statistics might be linked with other types of related statistics in such a manner that they will be based upon a knowledge of the characteristics and distribution of the population.

4. The vital statistics administration of Switzerland, the United Kingdom, and the United States of America will study methods of presentation of statistics of multiple causes of death.

5. The competent authorities of Denmark, France, Norway, Switzerland, and the United Kingdom will pay particular attention to the problem of cancer registers and statistics.

6. The competent authorities of the United Kingdom and of the United States of America will pay particular attention to the methods for obtaining reliable statistics on the frequency and causes of foetal death (classification of periods of gestation under twenty-eight weeks, classification of multiple causes, methods of certification).

7. The competent authorities of France and India will pay particular attention to the problems of morbidity and mortality from tropical diseases.

8. The competent authorities of Ecuador, India, Italy, and Venezuela will study the problems involved in the statistics of malaria morbidity.

The advantage of such a decentralized system is that the burden of indispensable spadework will be shared and that, therefore, the many urgent problems awaiting solution can be taken up at once. No single office or commission could hope to cope simultaneously with so many different difficult questions if it had to do all the preparatory work. The national committees will then report their findings from time to time to the expert committee of WHO for international consideration and co-ordination with the interested statistical services of inter-governmental organizations.

The WHO will also make a survey of instruction in health statistics given in the medical schools of the various countries in order to determine what action may be desirable in order to propagate knowledge of statistical methods in the medical profession. In general, the list of subjects to be dealt with is not exhaustive, but will be continuously revised. Already, the WHO Tuberculosis Committee has demanded help from the Committee on Health Statistics.

While new problems must be taken up as soon as they show promise of being ripe for solution, old problems cannot be neglected even though solved in theory. Thus, while a perfectly good definition of stillbirths made by the best experts was recommended to state members of the League of Nations as early as in 1927, it is high time to check up on whether effect has been given to this recommendation.

Needed now is a master plan specifying the kind of information which is desirable for local, national, and international appraisal of health conditions. No longer does it suffice to know how people die, we must know in what state of health or ill-health they live. Preventive medicine is not merely concerned with lifesaving. Its primary aim is to prevent sickness. Therefore, our aim must be constantly to enlarge the scope of mor-

bidity statistics and improve their quality and comparability. We must also have valid statistics of public health activities and other factors directly influencing the community state of health.

For simplicity's sake let us take our illustrations from the best known infectious diseases: How can a valid epidemiological study be made of smallpox or diphtheria without information on the state of vaccination and the types of the cases? How can the danger points for yellow fever be determined without current data on the *aedes* index? The danger from water, milk, or food-borne diseases can be appraised only when adequate sanitation statistics are available. X-ray surveys have little meaning so long as the now highly developed theory of sampling is disregarded, nor so long as no international definition of a pulmonary tuberculosis case and its stages has been adopted. The same need for definitions applies to the great amount of valuable information now available in tuberculosis case registers. Current information on B.C.G. vaccination and on bovine tuberculosis is also needed. And what about the definition of a poliomyelitis case or a rheumatic fever case, or a notifiable malaria case for the matter? How can morbidity records from social insurance statistics be utilized on an international scale?

Time allows us here to give only a few striking examples of problems urgently in need of solution. Their number is myriad, and we need a master plan for the strategy to be adopted in their solution. The WHO Committee of Expert Health Statisticians is the logical group to work out such a plan and distribute the tasks. A beginning has been made, and the form of organization adopted is far better than anything attempted in the past. However, as far as morbidity and other health statistics are concerned, the surface has only been scratched.

An attempt to devise a complete system of internationally applicable health indices was published 1936-1938 by the League of Nations Health Section and the Milbank Memorial Fund. The system was to a large extent inspired by the American Appraisal Form, which it subsequently influenced, but it

was far more comprehensive than its ancestor, especially in regard to background elements and statistical treatment. In December, 1937, these health indices were favorably received by the League of Nations Health Committee, but the work in Europe and in the League came to an end with the outbreak of the war. It was continued in South America where surveys based on the health indices system appear from time to time.

A perusal of these monographs may well serve as a guide to subjects awaiting solution, at least as far as the publication of statistics and studies of their comparability are concerned. After some twelve years have elapsed, the treatment of some subjects is out of date, which shows the need for constant revision. Whenever we get the master plan of health statistics, that, too, will need not decennial but annual revisions. The set-up of the WHO committee system is such that the necessary flexibility can be assured.

The present situation of world health statistics may be summarized as follows:

1. Demographic statistics are currently published by WHO and the UN Statistical Office. Problems of comparability are well in hand.

2. Statistics of causes of death will be published annually by the WHO, as they were in the past by the League of Nations Health Section. Their comparability is in course of rapid progress.

3. Epidemic morbidity statistics are published currently by WHO. Problems of comparability have hardly been touched.

4. Statistics of general and non-epidemic specific morbidity (such as from tuberculosis, malaria, certain organic diseases, mental disease, etc.) are not published on an international scale. Problems of comparability remain untouched.

5. Statistics of medical and public health activities and equipment are not internationally published. Problems of comparability have not been studied beyond national frontiers.

As you see, the statistical sun has barely risen over the international highway to health.

Lately, here in America, several vicious attacks against public health work have gained wide publicity. Vogt's *ROAD TO SURVIVAL* (a Book-of-the-Month-Club selection), Guy Burch's *HUMAN BREEDING AND SURVIVAL* (a Pelican Book), and a number of magazine and newspaper articles claim that the world is hopelessly overpopulated. According to these authors, the villains in the piece are the doctor, the health officer, the public health nurse, the malariologist, the TB man, and the laboratory girl. Without their work, the world would still be safe, they say.

Safe for whom? For germs and viruses, for lice and mosquitoes, and all the other causes and carriers of misery. Indeed, there can never be freedom from want, nor freedom from fear, so long as there is not freedom from disease. This is not the fifth, but the all-including freedom to be won. Public health work is now attaining a greater reduction of morbidity than of mortality which has already had some of its most obnoxious tentacles clipped. It tends therefore rather to augment the capacity for work than to increase the number of mouths to be fed.

I'm proud that today we can point to many volumes of international health statistics where there were none when I was young. I'm glad that a comprehensive organization is now set up to improve these statistics and to widen their scope. But we need the complete accountancy of our health work, a master plan of health statistics, which must never become static but always remain dynamic. Then we can confound the champions of disease, of invalidity, and of suffering. Then we shall see more clearly the road toward freedom from disease.