

THE TUBERCULOSIS PROBLEM IN THE AMERICAS¹

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There has been a considerable improvement in the epidemiological situation in the Americas in regard to tuberculosis. Mortality rates during the period 1951-1960 fell in North America by almost 70 per cent, in Middle America by 45 per cent, and in South America by 54 per cent. The decrease over the succeeding years from 1960 to 1966 was slower, but there was nevertheless some progress, the three regions recording reductions of 35.4, 16.5, and 19.6 per cent, respectively. Furthermore, it is estimated that during the same period the known rates of new cases fell by 22.7 per cent in North America, 21.0 per cent in Middle America, and 16 per cent in South America. In spite of these impressive figures, tuberculosis continues to be a significant public health problem, and this will be true for many years to come if the factors impeding the forces that cause the decline of epidemiological rates prevail.

The Tuberculosis Situation Today

It is estimated that there are 85 million infected persons, and 1,250,000 active tuberculosis cases in Latin America today. If we accept the premise that out of every 100 persons infected, three contract the disease, and that each of these infects four others, the present epidemiological situation could mean 2.5 million more active cases and another 10.2 million persons infected.

Mortality at the present time is estimated at 28 per 100,000 inhabitants in South America and 20 in Middle America, as compared with four in North America, while the morbidity figures are 118, 46, and 24, respectively, in those three regions. Nevertheless, bearing in mind the number of registered cases, the existence of large numbers of unrecorded cases, and population groups that are at risk, even in

North America tuberculosis is a real problem of greater complexity than the above data, particularly the mortality figures, would suggest.

In the United States of America, for example, approximately 30 million persons are infected. The health departments have 100,000 active cases and 225,000 inactive cases of tuberculosis on their records, and in addition to the 45,000 new cases that occur each year, reactivation of the disease takes place each year in thousands of persons.

These figures are sufficient to give an idea of the extent to which the problem of tuberculosis still persists, and they confirm the fact that in spite of the noteworthy and efficient working instruments at hand, the disease has not been eliminated from the list of health problems in any country of the Americas.

Effectiveness of the Programs

In recent years there has been a tendency to promote tuberculosis control effectively and economically by the rational use of the available knowledge and resources. The aim has been the elimination of tuberculosis as a public health hazard as speedily as possible, always

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provided that this is compatible with concern for the over-all needs of the particular country in the matter of health and social well-being

Analysis of the situation reveals, however, that there is still a wide gap between what is known and what has actually been applied in tuberculosis programs. Unfortunately, it has not been possible to make any really radical change in the traditional approach, which is to maintain a very costly structure in many instances not even capable of coping with the day-to-day demands created by the disease. Reluctance to give up antiquated methods in favor of well-tried scientific advances has been the cause of shortcomings in the formulation of programs and a very serious obstacle to the use of modern methods and techniques.

All in all, some 80 per cent of the total funds for tuberculosis control have been spent on services that cover only 5 to 10 per cent of the problem. At the same time, the concentration of specialized units in the larger cities persists in Latin America, while in the rural areas inadequate use is made of the existing basic health services. Thus only a very tiny part of the population is regularly covered by the programs, and the resources and activities have been largely wasted on groups cared for without appreciable epidemiological results being achieved.

Resources and Their Use

The poor record of tuberculosis control programs in Latin America has been put down to inadequacy of funds. But if we consider that as a result of studies and investigations in countries with basic health services the cost of chemotherapy treatment per case has been reduced to US\$3.00-6.00 and that in the same countries the unit cost of immunization with BCG is between \$0.10 and \$0.20, it is evident that in actual fact any country can afford effective tuberculosis control measures calculated to reduce the problem to one of minor importance over the next 10 to 20 years, whatever the epidemiological, economic, and social circumstances.

As things are at present, countries wishing to intensify the campaign against tuberculosis will have to allocate more funds to it, so as to place greater emphasis on preventive measures, diagnosis and ambulatory treatment, and personnel training.

One solution would be to reduce the high cost of maintaining the existing beds and other unproductive services, and to incorporate tuberculosis control activities into the day-to-day routine of general health services. The cost of hospital treatment is at least 20 times as high as ambulatory or home treatment. In other words, the budgetary resources spent on the treatment of 500 patients in hospital would easily be sufficient to treat 10,000 home or ambulatory patients.

Thus a review of the allocation of resources to hospitals could lead to more efficient use both of funds and of hospital personnel for strengthening external services and creating new ones, as is realized and admitted by a growing number of experts in this field; nevertheless, there continues to be strong resistance. The task is not easy, but it is certainly worth tackling, since it would mean a useful re-deployment of the capital invested to prevent the disease and reduce mortality.

It is estimated that the Latin American countries spend an average of US\$0.50 to US\$1.00 per capita on tuberculosis. If half this expenditure were used for rationally selected priorities such as BCG vaccination and the ambulatory treatment of cases, there would be a more rapid decline in morbidity and mortality and a substantial reduction in the infection indices.

The effectiveness and the low cost of BCG vaccination and ambulatory treatment guarantee a real improvement in the disease situation. Furthermore, the population groups most exposed to the risk of tuberculosis could be given adequate protection by means of chemoprophylaxis.

Scope of the Programs

There is sufficient evidence to show that in

countries where tuberculosis is rampant, the rural population is no less affected than the urban population. Since the population of the Latin American countries is predominantly rural, if efforts continue to be concentrated entirely or mainly on urban areas with a high population density, the desired results will not be forthcoming.

Mobile units working in isolation do not really help, since in the intervals between their visits the reservoir of infection continues to produce cases without interruption. There must be permanent facilities for diagnosis and treatment. Thus, to achieve what is needed and to extend the coverage of tuberculosis control to the entire national territory, the least costly and most effective procedure is to incorporate the relevant activities into the routine work of the permanent existing network of health services. In some countries of the Americas it has already been demonstrated that these services can make a decisive contribution without detriment to the other priorities of the general health programs. In others the idea has been accepted and its adoption is under way. Nevertheless, if this process of gradual utilization of the different grades of health centers is to become effective, it still calls for vigorous effort.

Training and Research

With the knowledge accumulated over the last few years it is possible to make use of the existing resources in an orderly and rational way and to find the best epidemiological solution to the tuberculosis problem. As has been stated, running costs have been cut drastically, so that countries can take effective tuberculosis control measures within the framework of their basic health services. The methods and techniques available for immunization, diagnosis, and treatment are so simple nowadays that they can rapidly be imparted to the auxiliary personnel working in these services. However, the knowledge will be of no great value if it is not used to construct sound national programs, adequately coordinated and

supervised, which take account of the importance of making constant and objective adjustment in the light of the various epidemiological and social-economic factors.

For this reason, tuberculosis control needs administrators and supervisors trained in the methodology of program formulation, coordination, and evaluation, with a knowledge of epidemiology and statistics and of the application of modern procedures and techniques at the local, regional, and national levels. This is what prompted PAHO to award fellowships for participation in the interregional courses in Prague and Rome, and to foster training at the national level. But in view of the need to cope more rapidly with the shortage of technicians qualified to formulate and coordinate programs and to see that the available health services are properly used, steps have been taken to equip Latin America with a training center where practical work can be done under the conditions dictated by the epidemiological structure of developing countries.

Finally, in spite of the findings of the regular surveys which have brought about gradual changes in tuberculosis control policy and techniques, research still needs to be given serious attention.

The social aspect of tuberculosis, for example, needs to be carefully studied with a view to finding ways and means of inducing the population to make the fullest use of the benefits offered by the community through the local health services.

In addition, it is more and more important to measure the effects of the various methods and techniques used. In order to discover better solutions or to revise our approach, it is necessary to find out how far the actual results of a specific operation depart from or approximate the effect intended. This will reveal any operational flaws and help to determine more precisely the nature and extent of operations to be carried out over a given period of time in the light of the human and material resources available.

Consequently, the promotion of operations

research will result in better use of resources and greater benefit to the effectiveness and success of programs.

Summary

There are 85 million infected persons and 1,250,000 active cases of tuberculosis in Latin America. In the United States there are about 30 million infected persons, and each year the disease is reactivated in thousands of persons. At present the estimated mortality rate is 28 per 100,000 population in South America and 20 in Middle America, as opposed to 4 in North America; and the corresponding morbidity rates are 118, 46, and 24, respectively.

Despite the fact that efficient methods of treatment are available, tuberculosis continues to be a significant health problem in the Americas. The goal of eliminating tuberculosis

as quickly as possible is still hampered by reluctance to change outdated ideas and antiquated methods which are both costly and inefficient.

To improve and speed up tuberculosis control, the author advocates spending more on preventive measures and diagnosis and especially on ambulatory treatment, the cost of which is 10 to 20 times less than that of hospital treatment. He advocates permanent facilities rather than mobile units, since in the intervals between visits the reservoir of infection continues to produce cases without interruption.

The article stresses the importance of skilled administrators trained in program formulation and coordination and equipped with a knowledge of the latest techniques. A vigorous, up-to-date approach is essential, the author says, if tuberculosis control programs are to be genuinely effective. □