TUBERCULOSIS CONTROL

as an integral part of primary health care

WORLD HEALTH ORGANIZATION
GENEVA

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Preface

A tuberculosis programme that is to meet legitimate social demands and have a progressive epidemiological impact must be countrywide and permanent. In developing countries these requirements can be met only when the programme is integrated within the general health services. But while the principle of integration has been readily accepted, its application has encountered many practical problems.

New opportunities for tuberculosis control, but also new problems, arose with the adoption of the concept of primary health care: on the one hand it greatly enlarged the scope for extending tuberculosis control to the whole population; on the other hand it posed additional practical problems with respect to such programme components as planning, training, provision of supplies, and supervision.

To review the practicability of tuberculosis control technology at the different primary health care levels and to advise on technical as well as operational problems in the integration process, a consultation was held by the World Health Organization in Geneva from 22 to 26 September 1986. The meeting brought together experts in tuberculosis and in primary health care.

Although the experts obviously could not produce a universal blueprint for the integration of tuberculosis control, they tackled the key issues and proposed many solutions in the true spirit of primary health care. The ideas they raised, which are reproduced in this book, deserve careful study by all organizers of primary health care programmes and administrators of national tuberculosis programmes.

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1. The concept of tuberculosis control as an integral part of the health services

Almost all developing countries attempting to provide health services for their population have had to rely on limited resources, including funds, facilities and trained personnel, to cope with a vast unmet demand for health care for a variety of serious health problems. A typical response to this dilemma was the establishment—often with external urging and assistance—of special programmes aimed at specific diseases or conditions. The selection of health problems to be tackled and methods to be used was often strongly influenced by external donors and indigenous doctors with specialized interests. Thus, there came into being in many countries a set of vertical single-purpose programmes each with a virtually independent infrastructure responsible for its planning, staffing, supplies and evaluation. These programmes competed with each other, as well as with any existing system catering to the treatment of common illnesses, for scarce local and external resources. All failed to satisfy the needs of the population as a whole, often even in the short term.

Recognition that this fragmented approach was both wasteful of resources and relatively unproductive (the smallpox eradication programme being a noteworthy exception) came gradually and at a different pace in each country.

When WHO and UNICEF convened the International Conference on Primary Health Care at Alma-Ata, USSR, in 1978,[1] commitments to equity and justice in health services

[1] *Alma-Ata 1978. Primary health care.* Geneva, World Health Organization, 1978 ("Health for All" Series, No. 1).

were gaining hold in many countries. Efforts to implement integrated approaches to health care had already begun. Indeed, proclamation of the goal of Health for All by the Year 2000 was a logical outgrowth of these earlier developments.

One such development was the concept of a comprehensive tuberculosis control programme implemented on a countrywide scale through the network of existing health services. This concept was formulated in the early 1960s, in the Eighth Report of the WHO Expert Committee on Tuberculosis,[1] and reaffirmed in the Ninth Report in 1974.[2] The main principles were that a tuberculosis programme should be:

— countrywide, because tuberculosis is usually fairly evenly distributed; for both epidemiological and social reasons the programme should attain a high population coverage from the start;
— permanent, because cases will continue to develop from the large pool of individuals already infected;
— adapted to the expressed demands of the population so as to be both acceptable and accessible to them.

In many developing countries progress in establishing integrated tuberculosis control activities has been very slow. Since tuberculosis continues to attack millions of people every year, particularly in the less developed countries, new, imaginative approaches are badly needed.

Fortunately, progress in implementing primary health care has created circumstances that are favourable to the development of integrated tuberculosis control programmes. In the past, recommendations for tuberculosis control policies

[1] WHO Technical Report Series, No. 290, 1964 (*Tuberculosis:* eighth report of the WHO Expert Committee).

[2] WHO Technical Report Series, No. 552, 1974 (*Tuberculosis:* ninth report of the WHO Expert Committee).

and strategies were formulated mainly by groups of tuberculosis specialists. Although these experts invariably recognized the need for integration, they were unable to provide precise guidelines on how to achieve it. Today it is possible to prepare realistic action plans through collaboration between tuberculosis specialists and primary health care organizers.

The primary health care approach, as embodied in the Declaration of Alma-Ata, recognizes the basic right to health for each individual and rests on the principle of equitable use of health resources, especially with regard to the coverage and effectiveness of health care. Its basic requirements are:

- that there should be total coverage of the population with basic but essential health care, particular attention being given to needy, vulnerable groups;
- that services should focus on the major health problems of the population, should be affordable, and should employ technologies that are locally appropriate as well as acceptable;
- that communities should participate actively in the planning, implementation and evaluation of health services; and
- that health services should coordinate with other sectors involved in development, since progress in health leads to, and at the same time depends on, socioeconomic progress.

Integrating tuberculosis control into a health care system of this kind was initially expected to be an easy task, given the availability of a relatively simple technology, capable of gradual implementation, that could seemingly be applied in almost any setting. Since then it has been realized that good health management is as critical for success as sound health technology, and that managerial skills merit increasing priority in developing countries. Managerial weaknesses have become particularly evident at the intermediate or district levels where, as countries expand their health

services, decision-making and support structures must be built up. It is now obvious that the primary health care approach cannot rely on central planning and management alone. As will be seen later, district-level health planning and management is needed to deal rationally with the organizational requirements of these geographically defined areas.

2. The tuberculosis problem: magnitude and trends

About a million new cases of tuberculosis are officially reported by ministries of health each year, and fewer than 200 000 deaths. These figures greatly underestimate the magnitude of the problem because tuberculosis is now largely concentrated in the developing world, where the means of detecting, diagnosing and reporting the disease are grossly deficient.

Estimates of the true size of the problem are derived from surveys. The incidence or risk of infection is the best indicator. In the absence of bovine infection, the only transmitters of the disease are tuberculosis patients who discharge tubercle bacilli. Thus the incidence of infection reflects to some extent the number of sources of infection in the population. The annual risk of infection can be determined through tuberculin surveys of representative population samples. Although it is difficult to obtain precise prevalence data in countries where BCG vaccination has been extensively practised or where infection with environmental mycobacteria is common, it can be estimated from repeated surveys that in most developing countries from 1% to 4% of the population is newly infected (or reinfected) each year.

The incidence of new infections defines the magnitude of the problem but it is profitably accompanied by an estimate of the trend in past years. Before the 1940s, the risk of infection in northern Europe typically decreased by 3.5–5.5% per year—the so-called "natural decline" in an industrialized society. After the introduction of chemotherapy, the annual decline accelerated to 10.5–14.5%. In the developing countries, both the prevalence and the risk of infection are still high, case-finding is inadequate, case-

holding is often very poor, and coverage of the population is very incomplete. Nevertheless, tuberculin re-surveys in recent years have almost invariably shown significant declines in the risk of infection. The annual decline has been between 5% and 10% in many Latin American, Arab and Western Pacific countries, 6–7% in areas of large Asian countries, and 2–4% in some African countries. This progress could no doubt be hastened by extending tuberculosis control programmes and improving their quality.

There appears to be a constant ratio between the annual risk of tuberculous infection and the annual incidence of sputum smear-positive cases, with every 1% of infection corresponding to 50–60 new smear-positive cases of pulmonary tuberculosis per 100 000 population. Furthermore, for every case of smear-positive pulmonary tuberculosis there is usually at least one case of smear-negative pulmonary tuberculosis or extrapulmonary disease. On this basis it is estimated that in the Third World there are each year 4–5 million new smear-positive cases and another 4–5 million smear-negative and extrapulmonary cases. Prevalence is two to three times higher.

In the developed countries, morbidity declines at a significantly slower pace than the risk of infection because the incidence of new cases depends mostly on endogenous reactivation of old infections. The situation is quite different in the developing countries, where the risk of infection remains high. Here, exogenous (re)infection is important, and the decrease in incidence, in young people, nearly corresponds to the decrease in the risk of infection.

Recent circumstances, especially in Africa, are bound to worsen tuberculosis morbidity, reducing or even cancelling any benefits already gained. Widespread undernutrition, or even famine, and the spread of the human immunodeficiency virus (HIV) responsible for AIDS are likely to result in a higher incidence of clinical disease among the infected population.

In the present chemotherapy era, mortality is less an epidemiological index than an indicator of the efficiency of case management. However, no epidemiological analysis can afford to ignore it. Since the number of both untreated and defaulting patients is very large, there are still 2–3 million tuberculosis deaths annually in the world.