TUBERCULOSIS CONTROL IN THE PEOPLE'S REPUBLIC OF YUGOSLAVIA

Report submitted by the Government of Yugoslavia

It is not intended to give in this document the full history of the Fight against Tuberculosis in Yugoslavia. Following mainly the Outlines for Technical Discussions as proposed by the Director-General of WHO we want here to give a brief account of the measures taken in Tuberculosis control in this country.

THE EXTENT OF THE PROBLEM

Since the end of the Second World War tuberculosis was given high priority amongst the many health problems that faced this country so heavily damaged by the war. From the very beginning it was felt that intelligent planning of tuberculosis control, like the planning of any other activity, can only be based upon reliable data on the extent of the problem though the general impression of health workers all over the country indicated a high prevalence of the disease and a disturbing increase of its most acute forms especially in children and young people.

The means for obtaining such data were seen in:-

(a) Tuberculin testing,
(b) Compulsory notification of all cases of tuberculous disease and death by tuberculosis,
(c) Mass X-ray surveys,
(d) Registration by anti-tuberculous dispensaries.

(a) Tuberculin testing, carried out before the war only on a small scale, was made compulsory, together with BCG vaccination of non-reactors, for army conscripts in 1946 and for the whole population from 0 to 25 years of age since
1949. The most valuable work, however, was done during the BCG mass campaign under the auspices of ITC, between 1948 and 1950.*

Significant differences in the percentage of reactors have been found between the northern and southern parts of the country as well as between rural and urban areas, with much lower figures for the north and for most of the rural areas. The per annum infection rate was calculated by Dr. Guld, Tuberculosis Research Office, Copenhagen, with 10% in the average, ranging between 5 and 15%.

As the BCG mass campaign has practically covered the whole country, this valuable and inexpensive epidemiological technique cannot any more play an essential role in the future.

(b) The official figure for the tuberculosis mortality (all forms) was 198 for 100,000 inhabitants in 1939. Since the war Slovenia, the north-western province of the country, has developed a rather reliable registration of deaths, whilst figures from other parts of the country, except some larger towns, cannot be regarded as a satisfactory epidemiological index. From the few figures regarded as more or less reliable, however, one can conclude that the tuberculosis mortality is still extremely high (in the average between 150-200), but is dropping rapidly in the north and north-west of the country (lowest in Slovenia, with 55 in 1950).

The compulsory registration of tuberculous disease as well as of death by tuberculosis has, so far, given only few results and cannot be recommended for countries which have not yet reached a rather high standard of public health.

(c) Mass X-ray surveys. All army conscripts are examined before entering service. Amongst the civil population surveys are carried out, especially in groups of industrial workers, students and rural populations. 273,873 examinations of this type were made in 1950.

This kind of work is limited by the lack of X-ray apparatuses and still more by the lack of trucks for their transport to the more remote areas.

With very few exceptions the 70 mm type of film is used. The X-ray machines, mainly gifts from Yugoslav Americans or from international organizations (UNRRA, UNICEF),

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have not proved too satisfactory for conditions in the country; they are too heavy (difficulties of transport), too complicated (frequent breakdowns) and need too heavy types of power generators. The development of simpler, cheaper and more reliable machines for this purpose would be highly welcomed.

The response of the population after thorough preparation of the survey is very satisfactory almost everywhere and was especially excellent in some rural districts of Slovenia where 99.8% of the population attended. The costs of the survey are relatively low and have been calculated with 430 dinars (ca. 1.50 dollars) for one pathological case found in the survey.

The follow-up of individuals with pathological findings, carried out by the anti-tuberculosis dispensaries creates some difficulties. This problem, as well as the question that groups of the population should be given priority in such surveys, is still under study.

(d) The work of anti-tuberculous dispensaries, particularly the examination of contacts, is certainly not less important than mass surveys. This work is done mainly by fluoroscopy, only three dispensaries in the country are using fluorography.

In 1950, 96,270* cases of "active" tuberculosis have been registered by dispensaries, amongst them 58,285** detected during the year (724,375 first examinations in all dispensaries).

It is planned to concentrate the registration of cases of disease and death in one centre in each republic.

Summarizing briefly, one can say that all the data available indicate a high prevalence and incidence of tuberculosis amongst the Yugoslav people, though big differences exist between the different parts of the country.

A special feature is the high prevalence of extra-pulmonary forms, particularly tuberculosis of the bones and joints, estimated by experts to be between 20 and 30,000.

* In three republics with 11,676,649 inhabitants
** In the whole country (15,772,107 inhabitants according to 1948 census, now estimated about 16,500,000).
TUBERCULOSIS AN INFECTIOUS DISEASE

For the diagnosis of the disease clinical methods, including X-ray (mostly fluoroscopy) are used.

The importance of introducing more advanced bacteriological methods has been felt a long time and has led to the establishing of, with the help of UNICEF, two central bacteriological laboratories for the diagnosis of tuberculosis in Belgrade and Zagreb. Both laboratories have started their work only recently. Besides, cultural methods are used in the bigger TB hospitals for their own purpose.

A close co-operation of the anti-tuberculous with the veterinary service is established in many parts of the country. A widely varying infection rate of cattle, in some places very high, is reported. On the other hand, typization of sputa and pathological excreta, systematically carried out, in a few institutions has given contradictory results, indicating that the bovine type of the microbacterium does not play a significant role in human infection.

TECHNIQUES OF PREVENTION

(a) For the handling of infectious material the usual methods of disinfection are used.

(b) As far as isolation in institutions is concerned, see under treatment.

Here it will be mentioned only that the attempt at isolating incurable cases in special institutions was an absolute failure and such institutions were quickly transformed into the usual type of hospital or abandoned.

A big and still unsolved problem is the migration of a large number of patients with open tuberculosis during summertime to the health resorts and spas of the country. The establishment of "reservations" for such patients was tried and again abandoned.

It is clear that, due to the lack of hospital beds, the majority of patients have to stay at home. Home-isolation and home-treatment are, therefore, the logical steps to be taken, but are still, as a system, in a planning stage, the greatest difficulty being the lack of trained personnel and of means of transport in
A country with the big majority of the population living in villages, partly in mountainous areas with difficult communications.

(c) Anti-tuberculous dispensaries must be regarded as the backbone of any anti-tuberculous service. This is fully recognized in Yugoslavia where the number of such institutions increased from 49 to 199 between the years of 1939 and 1951.

Dispensaries are divided into three groups: central, district and branch dispensaries.

Central dispensaries serving an average population of ca. 300,000 are staffed with highly qualified personnel and are fully equipped for all their tasks.

District dispensaries, serving an average of 50,000 inhabitants are mostly under the supervision of a general practitioner who has had a few months special training in the diagnosis and treatment of tuberculosis.

Branch dispensaries in more remote communities are visited by a doctor once a week or a fortnight and mobile x-ray units are mostly used for this type of institution.

For the whole country about 50 central and 300 district dispensaries would be needed and their number is increasing from year to year.

Besides preventive work, all dispensaries are engaged in ambulatory treatment. The biggest handicap in the quicker development of this type of institution is the lack of trained personnel, although auxiliary personnel are trained in short courses in many dispensaries, particularly for home-visiting. One of the most necessary tasks is the better training of doctors for preventive work, as most of them had their whole education in hospitals and are, therefore, more inclined to direct their work toward clinical rather than preventive methods.

(d) Case-finding. The methods used are mentioned in the first chapter of this report.

(e) BCG vaccination was used on a small, clinical scale since 1927. Immediately after the war a BCG committee was established with the task of introducing BCG on a large scale throughout the whole country. In October 1948 a big nation-wide campaign, under the auspices of ITC, began, during which, up to the end of 1950, 1,618,702
children and young adults were tested and 879,699 vaccinated. Since then, this campaign has continued. The total number of tests increased until at the end of 1952 they numbered 4,305,706 with 1,944,553 vaccinated.

The rather low percentage of post-vaccinal allergy reached in some regions, the reasons for which are not yet clarified, made extensive revaccination necessary.

Since April 1949, BCG vaccination, as mentioned before, has been compulsory for all age groups between 0 and 25 years.

Although it is extremely difficult to talk about the results of BCG vaccination other than in terms of allergy, there is, nevertheless, some good evidence that the incidence of generalized forms of tuberculosis amongst children has decreased throughout the country.

To-day BCG vaccination is well–accepted by the Yugoslav people and the formerly rather strong opposition encountered mostly in doctors is nearly entirely overcome.

The costs of tuberculin testing and BCG vaccination, calculated at 30 dinars (10 dollars), make this technique certainly the least expensive of all.

BCG vaccine is produced in the BCG laboratory in Belgrade.

GENERAL MEASURES

Yugoslavia is an autonomous federation of six republics. During the last two years decentralization of all government activities has taken place and, in public-health as in any other matters, the full responsibility lies with the districts and communities. Legislative measures can, therefore, be taken only to give a framework of minimal requirements to be carried out after adaptation to local needs and possibilities, by the districts and communities.

The following legal regulations were introduced after the war:

compulsory notification of tuberculosis (1948)

grant of free treatment of all cases of active tuberculosis (1948)

the construction, organization and functions of anti-tuberculous dispensaries (1948) and
compulsory BCG vaccination and revaccination of all non-reactors to tuberculin from 0 to 25 years of age (1949),

obligatory examination of certain groups of profession is included in the Communicable Diseases Act (1948);

a Tuberculosis Law is in preparation.

Health Education. Propaganda activities have, since the war, occupied a prominent place in the campaign against tuberculosis. An enormous number of pamphlets, leaflets, posters, brochures, etc. have been distributed not only in all four Yugoslav main languages, but in the minor languages as well (Macedian, Albanian, Hungarian, etc.) This work is done partly by the educational divisions of the Public-Health Services of the republics, and partly by the Yugoslav Red Cross Sections for the Fight against Tuberculosis.

One week each year is dedicated to concentrated educational efforts in the field of tuberculosis (Tuberculosis Week), besides other aims clearly defined for each year separately. BCG vaccination and a campaign against spitting are items repeatedly brought up during these weeks.

Radio, cinemas and newspapers are, of course, widely used for health education. Short films have proved the most efficient means of health propaganda, particularly during the BCG campaign.

During the Tuberculosis Week, schoolchildren are invited to write short articles on tuberculosis, the best being awarded by the Red Cross Sections.

The role of voluntary agencies in the Fight against Tuberculosis cannot be over-estimated. Since the war the Yugoslav Red Cross, through its Section for the Fight against Tuberculosis, has taken over the tasks of a National Association.

The important work of this Section in the field of health education is mentioned above. This Section, through its republican and district branches, also organizes courses for auxiliary tuberculosis workers (home-visiting nurses and social workers), provides beds and other material for isolation of patients in their homes and takes care of children from tuberculous families.
CURATIVE MEASURES

There remained, after the war, a clear tendency to see the only solution of the tuberculosis problem in treatment or, in other words, the increasing number of beds. Only during the last few years realization has grown that this problem can never be solved by the construction of hospitals. Preventive measures come first, while the preventive value of treatment with the aim of closing sources of infection - as far as this can be done under existing circumstances - is recognized.

The number of beds for the treatment of tuberculous patients has increased from 2,870 in 1940 to more than 13,000 in 1951. Besides middle-sized sanatoria (called tuberculosis hospitals) and many tuberculosis divisions in general hospitals, small hospitals of 20 to 40 beds, belonging to dispensaries in areas where there is no other hospital, are a special feature in this country and are giving good results in emergency cases, for initiating collapse treatment and for isolation.

The tendency is to transform the bigger tuberculosis hospitals more and more into centres for surgical treatment.

Three tuberculosis institutes exist in the country, one of them for tuberculosis of the bones and joints. Although this form of tuberculosis does not represent an epidemiological problem, it is, nevertheless, an important social and economic problem which deserves full attention.

The question of rehabilitation of tuberculous patients cannot, for the moment, be considered as one of the most important problems in tuberculosis control. An experimental station for this purpose is, nevertheless, to be established in the near future with one of the bigger TB hospitals.

Occupational therapy is being introduced in hospitals for tuberculosis of the bones and joints, with material assistance from the Section for the Fight against Tuberculosis.

TRAINING OF PERSONNEL

The lack of qualified personnel was mentioned several times as one of the most important problems.
In this connexion, it is worth while mentioning that there is a Chair for tuberculosis on all five medical faculties in the country.

Postgraduate courses in tuberculosis are held at least in three places every year.

The Tuberculosis Section of the Yugoslav Medical Association is holding a Congress every second year, dealing always with at least one preventive or organizational problem. The republican sections are holding their meetings once or twice a year.

A special journal "Tuberkuloza" is dedicated to all questions relating to tuberculosis.

To stimulate the interest for the service in tuberculosis institutions, a special allowance amounting to ca. 20% of the salary is granted to all tuberculosis workers.