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PROGRESS REPORT ON TUBERCULOSIS CONTROL IN THE AMERICAS

Satisfactory determination of the prevalence and incidence of tuberculosis in the Americas is not possible, due to the lack of complete and accurate information in most countries.

The mortality statistics data available indicates that this disease constitutes one of the principal causes of death in several American countries. Data on annual reported cases of tuberculosis with rates per 100,000 for the period 1955-1961, are provided in Table I and the number of deaths per 100,000 in Table II. These data are incomplete because in many areas without adequate medical facilities, cases are not diagnosed and reported, and likewise, not all deaths due to tuberculosis are certified as such due to incompleteness of medical certification. However, although incomplete, these data are useful in basing estimates with full recognition of the need for a study of the tuberculosis problem in a given country, in order to plan a program to effect a rapid reduction in morbidity and mortality.

The Organization's policy in the field of tuberculosis control, as in other fields of public health, has evolved with the years. Periodic revisions of this policy have been made as new control measures have been introduced, established measures improved, and increasing experience gained in the application of such measures.

As long as there were no means for a direct attack on the etiologic agent, the main goal of tuberculosis control was to increase the resistance of the susceptible individual. Therefore, BCG vaccination was a very important part of the earlier tuberculosis control activities of the Organization, with the assistance of UNICEF.

The introduction of potent anti-tuberculosis drugs made possible a direct attack on the tubercle bacillus in the reservoirs of human infectors.

At present, tuberculosis can be considered as a communicable disease that can be brought under control by methods based on public health practice

applied to communities. Existing and potential sources of infection -the tuberculosis cases- must be found and rendered non-infectious, and susceptible individuals must be protected.

In practice, this means a program of case-finding and treatment and of vaccination and chemoprophylaxis. Case-finding must be based on the simplest diagnostic methods now available: miniature x-ray and laboratory examination, and tuberculin testing. Treatment, in order to be economically feasible must be ambulatory in the majority of cases. It may be stressed that whatever the type of case of pulmonary tuberculosis diagnosed, treatment will have to be limited in practice to chemotherapy, and the drugs given will have to be self-administered.

Thus the elements of tuberculosis control are very simple, but their application to local circumstances will require, in each case, an experimental study of the magnitude of the problem and of methods, in relation to quantitative and qualitative objectives to be attained, and in relation to available and needed resources in both physical facilities and personnel, with due consideration to priorities adopted by the public health authority in its overall public health plans. Only after such an experimental phase has been completed can a rational long-term plan be evolved for a national program of control.

The Organization's policy is that such a study can best be made in a national pilot area that will permit: a) the magnitude of the problem to be assessed in a representative sample of population; b) quantitative and qualitative control objectives to be laid down and achievements over a specified period of time to be measured with particular regard to the administrative efficiency of the methods used; c) an appraisal to be made of the minimal resources required to attain such objectives bearing in mind that, to the greater possible extent, tuberculosis control must be carried out as an integral part of the public health program, and not as a highly specialized and costly service; d) calculation of the cost of achieving the planned objectives.

Once such a pilot phase has been completed, it should be possible for the national health authority to make a long-term plan for the development of a national program, again over a specified period of time. The rapidity with which such a program can develop will depend a) on the priority given to tuberculosis among other health problems considering the resources likely to be available to the health authority; b) on the rhythm at which minimal facilities can be developed and personnel can be trained for such a program.

In planning the extension of tuberculosis control beyond the first pilot experimental phase, the national health authority should bear in mind that a) the administration of the program must rely largely on facilities and personnel of the general public health services; b) the expansion phase of the program should also have quantitative and qualitative objectives and should remain subject to periodic assessments by

the authorities responsible for the pilot area. Orientation and training of the personnel required, can also be carried out in the pilot area as a continuous process during both the experimental and the expansion phases.

At its 36th Meeting (Puerto Rico, 1958), the Executive Committee of PAHO affirmed that tuberculosis "is one of the primary unsolved health problems in many countries of the Americas," and instructed the Director to report to a future meeting of the Directing Council on the financial outlay that would be required to formulate a continental plan to combat tuberculosis.

The problem of tuberculosis was discussed at length during the XIII Meeting of the Directing Council (Washington, 1961). The document CD13/17, Rev. 1, "Financial Outlay Required to Formulate a Continental Plan to Combat Tuberculosis" presented by the Director, estimated that an additional financial outlay for an expanded tuberculosis program was estimated to cost around $63,000,000 per year over a period of ten years for a grand total of $630,000,000, and included the costs of a variety of control measures-therapeutic, preventive, and educational. The discussion that followed the presentation of the document indicated the need for obtaining additional information on the nature and scope of the problem in each country, in order to carry out a detailed study of the problem that will serve as a basis for formulating tuberculosis control programs.

Through Resolution XXXVI the Council recommended to Governments: a) the carrying out of tuberculosis studies in their respective territories in order to gain a better knowledge of the incidence and prevalence of the infection and the disease, as well as the organization of intensive case-finding; b) studies to determine the costs in each country of specific control measures, to aid in drawing up of national plans for tuberculosis control with adequate financing; c) acceptance as ten-year goals of stated reductions in mortality and morbidity rates, and in infection prevalence ratios, and d) review by each government of its present resources and program to make more effective use of presently available resources.

The Directing Council also authorized the Director to attempt to obtain additional financial resources that will make it possible to carry out a continental plan to combat tuberculosis, including the investigations of all problems that bear a relation to the disease, in order to help reach the most rapid solution possible.

In order to assist the Governments in the control of tuberculosis, the Organization is expanding, within the budgetary possibilities, its activities in this field, through a regional project (AMRO-110) and several country projects. This assistance consists (1) in the training of national personnel in the new techniques and procedures for the management of the tuberculosis problem; (2) survey of the tuberculosis situation in the different countries, including the study of present trends in

morbidity and mortality from the disease, the assessment of the available resources in physical facilities and trained personnel that could be used for an effective program, the evaluation of needs and the possible ways to fulfill them, etc.; (3) establishment of national pilot project areas.

In the past, the collaboration of the Organization has been devoted mostly to mass BCG vaccination programs. In 16 countries and territories (British Guiana, British Honduras, Colombia, Chile, Costa Rica, El Salvador, Guatemala, Honduras, Jamaica, Dominican Republic, Leeward Islands, Mexico, Paraguay, Surinam, Trinidad-Tobago, and the Windward Islands), campaigns have been carried out. In addition, assistance has been given to three countries for the organization of BCG producing laboratories.

In the last four years, however, the emphasis has shifted and is now placed on better organization of dispensaries, special attention being given to chemotherapy and chemoprophylaxis, which now rank high among public health measures against tuberculosis. The appointment of a Regional Consultant on Tuberculosis in mid-1960 has stimulated the work in this field. However, difficulties encountered in recruiting suitable tuberculosis consultants has delayed the assistance being provided by the Organization.

Upon the satisfactory completion of a national BCG vaccination campaign in 1958, the Government of Guatemala requested the cooperation of the Organization in carrying out a pilot control project, based on chemotherapy of patients and chemoprophylaxis of contacts. The program started in September 1958 in the Department of Escuintla and was later extended to the Departments of Santa Rosa and Sacatepequez. An evaluation was made in 1961 of the work carried out in the first two departments, with the rearranging of the program and preparations of standards and procedures.

In 1959, the Government of Mexico requested PAHO's assistance in a tuberculosis survey and control program. The training of personnel for this program (Mexico-38) as well as the preparation of the general standards for the control of the disease in the country has been completed. Regrettably, difficulties encountered in recruiting an international consultant and in the provision of the mobile x-ray units delayed the initiation of this program. Fortunately, the consultant was appointed in the second part of 1961 and the equipment arrived in January 1962. The program started in Baja California and the preliminary prevalence survey is now going on, with follow up of all discovered cases and contacts. The laboratory of the Universidad Nacional Autónoma de México continued to receive collaboration and stimulation in the investigation and study of atypical mycobacteria.

In Cuba, the Government has shown itself very interested in carrying out a tuberculosis control program and has requested the cooperation of the Organization. Up to the moment, various hospitals have been enlarged increasing significantly the number of beds for tuberculosis patients.

The BCG vaccination campaign was completed in 1961 in the Dominican Republic. With the cooperation of the Organization a plan of operations has been prepared for a pilot project in San Cristobal, for initiation in 1963, with the cooperation of UNICEF. It is expected that the training of the necessary personnel will be completed during 1962.

In Honduras, a consultant of the Organization assisted in 1961, the Government in the preparation of the plans for a pilot control project in the southern part of the country (Choluteca). UNICEF's cooperation has been requested by the Government for this project.

In Panama, an intensive case-finding program has been carried out during the past several months as part of the Central Area public health project. To assure maximum participation of a predominantly rural population, and maximum cooperation on the part of patients, suspects and contacts under treatment or supervision, a scheme of mobilizing the village leader is being used. The success of this plan is encouraging the government to utilize the same approach in other fields of public health. The tuberculosis control program is assisted by the Organization and UNICEF.

A PAHO tuberculosis consultant is cooperating with the Government of Colombia since 1961, in reorganizing its tuberculosis control service. Particular advances have been made in improving communication, setting up uniform standards and a more effective system of record keeping. A pilot project has been drawn up for the area around Santa Marta and here the methodology of motivation of ambulatory tuberculosis patients and contacts to continue to take the drugs for a long-enough time, will be especially studied. The project will receive UNICEF's assistance.

At the end of 1961 a detailed critical review of the administrative and technical aspect of the activities of the "Liga Ecuatoriana Antituberculosa" was made by a PAHO short-term consultant.

In Peru, tuberculosis is a serious public health problem despite the efforts of official and private agencies to control the disease. Although tuberculosis mortality has diminished, a parallel reduction in number of patients has not been possible and, according to official statistics, the number of these has remained stationary. Surveys carried out in urban communities revealed a prevalence of 2.34 per cent. A similar study completed last year in the Puno area showed a prevalence of active disease of 2.8 per cent.

The Government of Peru has requested the Organization's and UNICEF's cooperation for a pilot tuberculosis control project in the Tacna area. This project is ready to begin operations, awaiting only the arrival of x-ray equipment to be provided by UNICEF, and the PAHO tuberculosis consultant who is being recruited. A PAHO nursing consultant in tuberculosis has been on site since 1960 assisting in both the Puno and Tacna areas.

In Chile a pilot project has been proposed for a suitable population group south of Santiago (Comunas La Cisterna y La Graña), which will emphasize intensive ambulatory and domiciliary treatment and work out the most efficient methods of follow-up which can be applied to the remainder of the country.

Several studies, undertaken in the "Altiplano" of Bolivia, in 1960, indicated that tuberculosis is a serious public health hazard in that area. The Government requested in 1961 the cooperation of the Organization and of UNICEF for the establishment of a pilot project for the study of tuberculosis prevalence and control of the disease, and for training of national personnel in tuberculosis control methods. The Organization will provide the services of a tuberculosis specialist and of a nurse as consultants for this project, which will start in 1963.

The Organization has also cooperated with the Government of Brazil in the preparation of a plan for a pilot project on tuberculosis control to be carried out in the State of Rio Grande do Norte, with the assistance of UNICEF. This program was planned to start in 1961 but difficulties in the provision of the mobile x-ray units had delayed its initiation. It is expected that the project will begin early in 1963.

A survey to determine the prevalence of tuberculosis in several provinces of Argentina started in the second half of 1960, with the cooperation of the Organization, which provided the services of 3 consultants, and also with the assistance of UNICEF. The survey in the province of El Chaco was completed satisfactorily in 1961 and is being extended to the Province of Neuquen, this time carried out only by the national personnel.

The organization of the National Tuberculosis Center at Santa Fe, with the cooperation of PAHO and UNICEF, was cristalized in 1961. The objectives of this center include the development of a demonstration program for the control of tuberculosis in an urban and a rural area of the Province of Santa Fe, the training of physicians and other technicians, the instigation of studies in the field of tuberculosis control and in public health education, consultation to the provinces in their plans of tuberculosis control and, finally, stimulation and coordination of these activities with those developed by other agencies. Considerable progress has been made in the development of the project. The center at Recreo (Santa Fe), which combines a sanatorium, a large pilot dispensary, and a school for tuberculosis control, has been remodeling quarters, receiving equipment, and engaging personnel. Control activities have begun in the project area, and of special interest was the inauguration of the first course in May, 1962. On this occasion only, the course was limited to Argentine physicians. Two short-term consultants of PAHO are serving in the faculty, as well as a staff specialist of the Zone VI Office.

The Recreo center will serve as a technical and research fountainhead for the tuberculosis control program of Argentina, and as an inter-American training center in its teaching aspects.

Under the stimulation of the PAHO field office at El Paso, the activities of the El Paso-Juarez tuberculosis committee are being extended to other twin-city border communities.

At the Pan American Zoonoses Center, expansion of the laboratory facilities is proposed in order to permit large-scale typification of mycobacteria. If financial aid is found for this project, it will be possible to study the extent of the role of bovine infection in human tuberculosis in several countries of Latin America.

Plans are advanced for holding a seminar in 1963 in Argentina, with the objectives to discuss the ways and means to utilize the new technical developments in the prevention of tuberculosis and to stimulate action in country projects. This seminar will be attended by experts on tuberculosis control, epidemiologists, and public health administrators of the South American countries. Another seminar is scheduled for 1964, for the Middle America and Caribbean countries and territories.

Summarizing, it is gratifying to note the surge of increasing interest in tuberculosis control throughout the Continent. From one pilot project in operation four years ago, there are now ten, either operating or soon to begin to operate. Thus, ten countries are following the first recommendation of Resolution XXXVI of the XIII Directing Council.

These ten centers of investigation, training and model operation will have a positive influence in the countries where they are created. The projects will emphasize, above all, that aspect of tuberculosis control which now, beyond any doubt, will dominate the field for the next many years: the ambulatory-domiciliary treatment of cases along with the protection of contacts by vaccine and by drugs. The technical means are available and the new centers will study the methodology of bringing them to all who need them, and explore ways of motivating the populations to cooperate in the faithful long-term use of the drugs. This is a turning point in the history of the world-wide movement against tuberculosis; hospital treatment and vaccination, hitherto so prominent, begin to play secondary roles, and the administration of drugs to ambulatory patients assumes primary importance.

Annexes: Tables I and II

TABLE I

Reported Cases of Tuberculosis, All Forms (001-019) with Rates per 100,000 Population in Countries of the Americas, 1955-1961

Country	NUMBER							RATE						
	1955	1956	1957	1958	1959	1960	[a] 1961	1955	1956	1957	1958	1959	1960	[a] 1961
Argentina	16,577	18,307	19,647	16,508	17,387	18,865	...	86.7	93.9	98.9	81.5	84.3	90.0	...
Bolivia	859	745	596	522	1,779	1,136	1,207	26.6	22.8	18.0	15.5	52.2	32.9	34.5
Brazil (b)	10,883	11,556	13,735	7,986	14,079	9,943	...	120.8	171.7	204.2	115.7	138.2	100.8	...
Canada (c,d)	9,184	8,405	7,979	7,502	6,579	6,345	6,488	58.6	52.3	48.2	44.1	37.7	35.6	35.6
Chile	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Colombia (e)	12,273	11,048	13,787	14,579	13,858	14,392	15,436	110.8	93.0	114.6	119.3	110.1	106.5	111.3
Costa Rica	681	700	605	560	649	624	...	71.6	70.9	58.6	52.0	57.6	53.3	...
Cuba	1,749	1,951	1,838	1,177	1,849	1,856	2,624	28.5	31.2	28.8	18.0	27.8	27.3	37.8
Dominican Republic	1,799	2,149	2,184	2,199	2,189	2,122	...	71.2	82.2	80.8	78.6	75.6	70.9	...
Ecuador	4,542	4,466	4,699	5,463	4,692	5,223	...	123.1	117.5	119.6	134.9	112.0	121.0	...
El Salvador (e)	2,518	2,615	3,011	2,918	3,872	5,251	5,388	243.5	239.0	262.7	231.2	294.0	358.2	355.9
Guatemala	2,721	2,157	1,942	1,153	3,649	3,802	3,362	83.5	64.4	56.3	32.5	99.9	101.0	86.9
Haiti	799	779	1,188	2,218	3,067	2,860	3,332	24.2	23.3	35.1	66.5	88.5	81.6	94.0
Honduras	...	...	...	1,439	1,609	4,566	1,985	...	...	...	78.7	85.3	233.8	98.3
Mexico	8,257	9,421	10,392	11,157	11,348	12,417	11,803	27.8	30.9	33.1	34.5	34.1	35.6	32.7
Nicaragua	964	1,051	1,014	1,330	744	581	707	77.4	81.6	76.1	96.5	52.2	39.3	46.2
Panama	826	1,323	1,878	1,385	1,673	1,487	1,104	89.5	139.6	193.0	138.5	162.9	140.9	101.8
Paraguay (e)	640	1,158	1,381	1,206	1,126	1,113	...	89.4	124.1	135.3	107.6	65.2	63.0	...
Peru (e)	19,408	19,818	22,552	19,336	22,796	19,485	22,053	472.9	450.3	472.8	397.5	425.3	348.4	382.7
United States (d,f)	77,368	69,895	67,171	63,537	57,535	55,494	53,623	46.9	41.6	39.3	36.5	32.5	30.8	29.3
Uruguay	3,705	653	3,164	3,134	2,134	1,928	1,613	141.6	24.4	116.2	113.6	76.4	68.2	56.4
Venezuela (e)	8,699	8,062	7,211	7,494	7,887	8,722	8,658	260.4	232.7	200.3	201.2	204.3	217.7	208.2

... Data not available. * Disease not notifiable.

(a) Provisional data. (b) Federal District and State capitals except: São Paulo 1956-1958; Niteroi, 1955, 1957 and 1958. Incomplete data for 1960.

(c) Excluding Northwest Territories 1955-1958. (d) Newly reported active cases. (e) Reporting area.

(f) Including Alaska and Hawaii.

TABLE II

Number of Deaths from Tuberculosis, All Forms (001-019) with Rates per 100,000 Population in Countries of the Americas, 1955-1960

Country	NUMBER						RATE					
	1955	1956	1957	1958	1959	1960	1955	1956	1957	1958	1959	1960
Argentina	[a] 4,786	3,844	...	...	...	...	[a] 25.0	19.7	...	...	...	...
Bolivia	1,184	...	...	...	...	...	37.2	...	...	...	...	...
Brazil (b)	...	4,026	8,522	7,973	8,434	...	...	67.1	87.4	79.7	84.2	...
Canada	1,382	1,256	1,183	1,027	959	823	8.8	7.8	7.1	6.0	5.5	4.6
Chile	4,530	4,129	4,110	3,776	4,073	4,032	67.0	59.5	57.7	51.7	54.6	52.9
Colombia	3,570	3,487	3,614	3,662	3,841	4,074	28.2	26.9	27.3	27.1	27.8	28.8
Costa Rica	220	198	217	165	163	151	23.1	20.0	21.0	15.3	14.5	12.9
Cuba	...	...	1,175	1,076	1,146	...	...	...	18.4	16.5	17.2	...
Dominican Republic	768	767	614	476	512	...	30.4	29.4	22.7	17.0	17.7	...
Ecuador	1,213	1,313	1,420	1,454	...	...	32.9	34.6	36.1	35.9	...	...
El Salvador	456	363	406	432	384	408	20.8	16.0	17.3	17.7	15.2	15.6
Guatemala	1,311	1,439	1,272	1,306	1,207	1,266	40.2	43.0	36.9	36.8	33.1	33.6
Haiti	...	...	...	...	...	...	...	...	...	...	...	...
Honduras	266	278	286	244	297	265	16.0	16.2	16.2	13.3	15.7	13.6
Mexico	7,708	8,434	9,494	9,399	9,168	9,719	26.0	27.6	30.2	29.1	27.5	27.8
Nicaragua	82	88	72	97	113	123	6.6	6.8	5.4	7.0	7.9	8.3
Panama	203	292	267	266	238	288	22.0	30.8	27.4	26.6	23.2	27.3
Paraguay (c)	242	243	219	220	244	292	...	...	28.6	27.7	28.7	32.4
Peru (d)	2,460	2,582	3,224	2,627	3,182	...	98.3	100.1	118.5	83.6	89.4	...
United States (e)	15,016	14,137	13,390	12,417	11,474	...	9.1	8.4	7.8	7.1	6.5	...
Uruguay	635	...	599	519	507	...	24.3	...	22.0	18.8	18.2	...
Venezuela	1,932	1,723	1,731	1,547	1,466	1,411	32.4	27.8	26.9	23.2	21.2	19.6

(a) 1954. (b) For 1956, State of Guanabara (then Federal District) and seven State Capitals; for 1957-1959, State of Guanabara and Capitals of other States and Territories with exceptions.
(c) Rates for 1957-1960 based on population of information area. (d) Principal cities.
(e) Including Alaska and Hawaii.