WORLD HEALTH ORGANIZATION

Regional Office for the Western Pacific

FINAL REPORT
ON THE
WHO/JAPAN TUBERCULOSIS COURSE

Tokyo, Japan

1971

Manila, Philippines

WPRO 1202 (0125)

22 May 1972

ENGLISH ONLY

FINAL REPORT

ON THE

WHO/JAPAN TUBERCULOSIS COURSE

Tokyo, Japan

1971

by

Dr. T. Iwasaki
Course Director

Manila, Philippines
World Health Organization
Regional Office for the Western Pacific

TABLE OF CONTENTS

1. OBJECTIVES OF THE COURSE

The general objectives of the course were to give training in the modern techniques and methods of tuberculosis control that can be effectively applied under existing conditions in developing countries.

The specific objectives of the course were to teach participants:

a) how to think and act epidemiologically,

b) how to protect the healthy population from tuberculosis infection,

c) how to detect sources of infection in the community,

d) how to reduce the transmission of infection, and

e) how to plan, organize and assess the control programme within the limit of existing resources.

2. ORGANIZATION

The course was organized jointly by the Government of Japan, as part of its Technical Co-operation Schemes, and the World Health Organization. The former financed the course in Japan and participants' travel to and from Japan; the latter organized the post-course country visits and provided the international lecturers.

The course was conducted by the Research Institute of Tuberculosis of the Japan Antituberculosis Association, Tokyo, during the period 7 June to 1 October 1971. The author of the present report, who is also the Director of the Institute, assumed the direction of the course.

A total of 19 participants joined the course. Six were from the Western Pacific Region, seven from the South-East Asia Region, five from the Eastern Mediterranean Region and one from the European Region. The list of participants is given in Annex 1.

The facilities of the library of the Institute were constantly available to all the participants, and those of the epidemiology and bacteriology sections were put at their disposal when necessary. Inexpensive accommodation was provided in the dormitory of the Institute. Public transport by road, rail and air was used for observation trips and visits.

The teaching staff was provided by the Ministry of Health and Welfare, the National Institute of Health, certain other national institutions, the Research Institute of Tuberculosis and other institutions

of Japan Antituberculosis Association. Four staff members and four temporary advisers were provided by WHO for the teaching programme. A comprehensive list of resource personnel appears in Annex 2.

Addresses were given at the opening session by Mr H. Watanabe, Liaison Officer, Foreign Affairs, representing the Ministry of Health and Welfare; Dr M. Chia, member of the WHO tuberculosis advisory team, on behalf of the World Health Organization; Dr M. Yamaguchi, Director-General, Japan Antituberculosis Association; and by the author in his capacity as Director of the Research Institute of Tuberculosis, Tokyo. Dr Sivaraman Sukumaran spoke on behalf of the participants.

3. TEACHING PROGRAMME

In an effort to improve the teaching programme of the course, discussions were held with the WHO Regional Adviser in Communicable Diseases, the staff of the Research Institute of Tuberculosis and the lecturers provided by WHO. A tentative schedule covering the whole of the four-month course was distributed to the participants at the outset, and any changes that became unavoidable were notified in good time. Annex 3 gives the full schedule of courses.

Classes were held every day from Monday to Friday from 9 to 12 a.m. and from 1.30 to 4 p.m. On Saturdays only morning classes were held. Texts, including WHO publications, were distributed to each participant beforehand.

3.1 General concepts in the field of tuberculosis

A series of general lectures was given on the pathogenesis and clinical course of tuberculosis and the tuberculosis problem in developing countries. These introduced the participants to modern concepts related to the subjects dealt with subsequently.

3.2 Prevention of tuberculosis

The priority to be given to BCG vaccination in tuberculosis control was stressed repeatedly in the course of the teaching programme. The preventive effect of BCG vaccination, its epidemiological impact and its possible side-effects were all discussed. Other subjects covered included tuberculin sensitivity, the necessity for tuberculin testing in the results of BCG vaccination, and the preparation, standardization and maintenance of BCG vaccine and tuberculin. The technical aspects of different vaccination methods were considered. Participants practised the intradermal injection technique by giving each other tuberculin tests. Recording the data obtained from readings of these tests provided a statistical exercise. Lectures were given on the assessment and on

operational aspects of BCG vaccination programmes. The subject of chemoprophylaxis was briefly introduced but its practise was not strongly recommended, since it was considered of limited applicability in the community.

3.3 Tuberculosis case-finding

The importance of the bacteriological confirmation of cases for investigations in the epidemiology of tuberculosis was strongly emphasized. Lectures were given on bacteriological diagnosis considered as a fundamental measure in tuberculosis control. Inquiry into symptoms and X-ray examinations were also discussed as screening methods for the bacteriological examination, and possible sources of error were pointed out. An assessment was made of the efficiency of mass examination methods compared with passive case-finding among voluntary patients presenting symptoms. The techniques and methods of sputum smear examination, fluorescent microscopy and cultivation of mycobacteria were dealt with in lectures, demonstrations and sessions of practical work. Lectures were given on the classification and identification of mycobacteria and on the epidemiology of diseases caused by atypical mycobacteria.

3.4 Treatment of tuberculosis

Chemotherapy was the main subject and its applicability and effectiveness were compared with those of other methods of treatment. The effectiveness, toxicity, cost and applicability of various drugs were discussed. Biological backgrounds, such as the metabolism of anti-tuberculosis drugs in man, the drug-resistant mutation of mycobacteria, etc., were also considered as possible justifications for certain methods and regimens of chemotherapy. The effectiveness of chemotherapy was discussed in terms of bacteriological conversion and of the relapse rate. A thorough study was made of operational aspects, and particularly the question of regularity of treatment. Lectures were given, and demonstrations made on the urine test for various drugs. The superiority of domiciliary to institutional treatment was emphasized and the much wider applicability, efficiency and lower cost of the former were pointed out.

3.5 Statistics and epidemiology

Epidemiology was presented as a fundamental subject of the course, and one which should guide the participants' thinking in all aspects of their work. Not only was this subject introduced independently but its importance was repeatedly emphasized when discussing other subjects. Statistics form part of the basic equipment that participants must possess if they are fully to understand the information provided in the course and to develop powers of scientific thought and of realistic and rational judgement. Epidemiology and statistics were, as usual, the weakest subjects among the majority of the participants. The time allocated to these subjects, especially statistics, was not quite sufficient due to the fact that other parts of the schedule had already

been fixed when the date of the course was decided upon. Although efforts were made to strengthen the teaching in these subjects, it was still felt desirable that more attention should have been given to them.

3.6 Tuberculosis control

All the classes in the subjects mentioned above were intended to equip the participants to think rationally and realistically in planning, assessing and improving the national tuberculosis control programmes in their own countries. That, indeed, was the final aim of the course. The selection of priorities among the various possible tuberculosis control measures was repeatedly discussed from the pathogenetic, epidemiological and socio-economic points of view, in order to provide participants with keys for planning a rational and realistic tuberculosis control programme under given conditions. To promote mutual understanding of each other's background, each participant spoke of the present tuberculosis situation and the national tuberculosis control programme in operation in his own country. Participants were briefed on the national tuberculosis control programme of Japan and were thus enabled to understand and discuss Japanese data. In group sessions, participants practised the planning of a tuberculosis control programme on the basis of a given set of demographic data and information on tuberculosis epidemiology and budget, supposed to represent the prevailing situation in many African and Asian countries. Group sessions of this kind had been planned during the 1970 course, but could not be fitted in due to the tight schedule. They were found to be very useful as they gave all participants an opportunity to apply what they had learnt in a rational way. It is considered desirable that such group sessions should be more widely used in future courses.

3.7 Observation trips

An eight-day observation tour was made to North-East Japan. During visits to three prefectures, Aomoei, Akita and Niigata, government-sponsored tuberculosis control programmes were described and discussed. In Akita and Niigata, visits were paid to the places where multi-purpose mass examinations were being carried out. Discussions were held with members of the Akita Women's Antituberculosis Association on voluntary activities in public health programmes. At the Maki health centre of the Niigata demonstration area, participants were briefed concerning the multi-purpose examination programme and the tuberculosis registration system.

A three-day trip was made to the old capital, Kyoto, where observation visits were paid to the Kyoto branch of the Japan Anti-tuberculosis Association and to the factory of the Shimazu Co., Ltd. which manufactures X-ray and electrical apparatuses.

One day was spent at the Statistics Bureau, Ministry of Health and Welfare, Tokyo, to see the work on vital statistics and on the international classification of diseases and to observe the electronic computer data processing.

Another day was spent at the National Institute of Health, Tokyo, to observe the laboratory operations and to hear explanations of the standardization of tuberculin and BCG vaccine, a smear examination method for the classification of mycobacteria, bacteriophage typing and other interesting matters.

During a visit to Koishikawa Health Centre, Tokyo, a detailed information was obtained on the activities of health centres in the country and on the administrative system of public health services.

A visit was also made to the Meiji Seika pharmaceutical factory to observe the production of antibiotics and other drugs.

4. CLOSING CEREMONY

The closing ceremony took place on 1 October 1971 at the Research Institute of Tuberculosis, Tokyo, where addresses were given by Dr M. Ito of the Tuberculosis Control Section on behalf of the Director of the Public Health Bureau, Ministry of Health and Welfare; Mr G. Goto, Chief, Medical Co-operation Department, the Overseas Technical Co-operation Agency; Dr M. Yamaguchi, Executive Director, Japan Antituberculosis Association; and the author. Dr Sivaraman Sukumaran responded on behalf of the participants, all of whom had received certificates from the Overseas Technical Co-operation Agency and the Research Institute of Tuberculosis, to the effect that they had completed the course.

5. POST-COURSE COUNTRY VISITS

At the close of the course, all but three participants visited the Republic of Korea. Two had to go home directly and one was prevented by illness. From 5-11 October, the group attended the WHO Regional Tuberculosis Seminar in Seoul as observers. After the Seminar, participants were divided into three groups to visit tuberculosis control programmes in different countries. One group went to Singapore and Kuala Lumpur, one to Taipei and Kuala Lumpur and the third to Taipei and Bangalore (see Annex 4).

6. EVALUATION OF THE COURSE

6.1 Selection of participants

A point of difference from the courses held in previous years was that applications for the 1971 course were received and invitations issued by WHO Regional Office. Of the 19 participants, 14 (74%) had administrative or

supervisory duties with the tuberculosis programmes in their home countries. The atmosphere of the class was thus much more public health minded than in other years, although a better selection of the applicants might have improved the quality of the course still more.

6.2 Immediate effect of the course

Unavoidably the class consisted of participants with different backgrounds and levels of knowledge and this resulted in different reactions to the lectures and varying attitudes in discussions and group work. It was not easy to assess, simply by observations during the class, exactly what were the effects produced. The general impression was, however, that most of the subjects were found interesting and that the course helped participants to introduce a degree of flexible rationalism and realism into their thinking. A few examinations were given on the subjects discussed. The marks awarded are shown below:

	Marks											
Subject	0 -10	-20	-30	-40	-50	-60	-70	-80	-90	-100	Total	Average
Statistics	3	2	2	-	1	1	3	1	-	3	16	46.9
Pathology	-	-	-	-	3	2	4	2	3	5	19	72.9
Chemotherapy	-	-	-	-	1	1	2	3	6	6	19	80.8
BCG tuberculin	-	-	-	-	-	1	2	3	4	8	18	83.9
Bacteriology	-	-	-	-	-	1	1	1	5	11	19	87.6

As the examinations were not set in the multi-choice form, the marks given may have been somewhat arbitrary. Furthermore, there could have been a possible bias in the choice of questions. The results should therefore be considered merely as relative indicators. One remarkable feature was, however, the wide dispersion of marks for statistics, one half being in the range 0-50 and the average 46.9, while there were few or no marks below 60 in the other subjects. An increased allocation of hours to statistics is considered necessary in the future, as already mentioned.

6.3 Evaluation of the course by the participants

A form entitled "Report on a fellowship for attending a course in the field of tuberculosis control", was filled in by each participant. Among the 19 replies to 10 questions on administrative aspects, 149 responses (78.4%) were favourable. Of the 15 unfavourable responses, most were concerned with the difficulties in obtaning visas, particularly for the post-course country visits. A total of 203 responses to the 14 questions on technical aspects were favourable (76.3%). Ten of the 19 participants complained of difficulties with the Japanese language or with

English (four participants) or in understanding English spoken by Japanese lecturers (three participants). Among the comments made were recommendations for more work in groups and group discussions, more practical work, more observation visits and additional free study time. These comments are considered very useful for the future planning of the course.

6.4 Long-term evaluation of the course

Long-term evaluation is necessarily very difficult, although it is essential, if the course is to attain its objective. In order to maintain contact with participants and to follow up their activities, a quarterly issue of the Institute News will be distributed to them. Some responses to this publication have already been received. It is hoped that a long-term evaluation of the course will be realized in a few years.

ANNEX 1

List of Participants

Dr Abdul Majid Hamid (Afghanistan) Director, Women's Sanatorium, Ministry of Health, Kabul

Dr Sheng-Chuan Wang (China (Taiwan)) Chief, In-patient Department, Tainan Tuberculosis Control Centre, Tainan

Dr Seyoum Yoseph (Ethiopia) Physician, Princess Tsehay Memorial Hospital, Addis Ababa

Dr Sivaraman Sukumaran (India) Supervising Medical Officer, BCG Campaign, Kelara; Director, State Tuberculosis Centre, Trivandrum

Dr Anton Frederik Lokollo (Indonesia) Chief, Tuberculosis Division, Maluku Health Service, Ambon

Dr Petrus Tjahjadi (Indonesia) Chief, Tuberculosis Division, West Iran Health Service, Djajapura

Dr Rasjid Piara (Indonesia) Assistant, Department of Respiratory Diseases, Persahabatan Hospital, Djakarta

Dr Hadiprajitno Tanojo (Indonesia) Assistant, Chest Clinic, Jogjakarta

Dr Hwa Cho Kim (Republic of Korea) Tuberculosis Supervising Medical Officer, Public Health Section, Pusan

Dr Won Soon Lee (Republic of Korea) Tuberculosis Medical Officer, Tuberculosis Section, Dongdaemoon Health Centre, Seoul

Dr Santiago F. Casin (Philippines) Senior Clinic Physician (Provincial Tuberculosis Co-ordinator), Regional Health Office, Naga, Camarines Sur

Dr Melecia E. Uypuanco (Philippines) Medical Specialist I, Tuberculosis Control Services, Regional Health Office, Davao City

Dr Shafi Mohammad (Pakistan) Medical Superintendent, Government Tuberculosis Sanatorium, Kotri

Dr El-Raya Ahmed El Tereifi (Sudan) Chest Physician, Shaab Hospital for Chest and Heart Diseases, Khartoum

Dr Günay Gürdag (Turkey) Medical Specialist, Refik Saydam, Central Institute of Hygiene, Tuberculosis Research and Reference Laboratory, Ankara

Annex 1 (cont'd.)

Dr Chalor Kupatavintu (Thailand) Chief, Cholburi Chest Clinic (of Tuberculosis Control Division), Cholburi

Dr Saovaros Ruttarasarn (Thailand) Medical Officer, Southern Regional Tuberculosis Headquarters, Yala

Dr Wadie Sobhy Labib (The Arab Republic of Egypt) Assistant Director, Chest Diseases Administration, Ministry of Public Health, Cairo

Dr Nguyên Phu Duyet (Viet-Nam) Médecin Chef du Dispensaire, Vo Tanh, Saigon

ANNEX 2

List of Resource Personnel

Dr M. Aoki, Chief, Clinical Research Section, Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, Tokyo

Dr Y. Azuma, Chief, Department of Education, Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, Tokyo

Dr M. Chia*, WHO Statistician, Regional Tuberculosis Advisory Team, WHO Regional Office for the Western Pacific, Manila

Dr S. Endo, Chief, Mass Examination Section, Hoseien Sanatorium, Japan Anti-Tuberculosis Association, Tokyo

Professor Ag. J. Grosset*, Bactériologie et Virologie, Faculté de Médecin, Pitié-Salpêtrière, Paris-VI

Dr T. Hashimoto, Chief, BCG Laboratory, National Institute of Health, Tokyo

Dr Joh Holm*, Ex-Executive Director, International Union Against Tuberculosis, Paris

Dr J.J. Huang*, WHO Bacteriologist, Regional Tuberculosis Advisory Team, WHO Regional Office for the Western Pacific, Manila

Dr N. Ishikawa, Epidemiology Section, Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, Tokyo

Dr K. Iwai, Chief, Pathology Section, Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, Tokyo

Dr T. Iwasaki, Director, Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, Tokyo

Dr K. Kameda, Chief, Outpatient Section, Attached Sanatorium, Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, Tokyo

Dr C. Kino, Chief, Clinical Department, Attached Sanatorium, Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, Tokyo

Dr G. Kuchiki, Vice-Director, Japan BCG Laboratory, Tokyo

Dr S. Kudo, Chief, Clinical Laboratory Section, Attached Sanatorium, Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, Tokyo

---

*WHO staff member or WHO temporary adviser.

Annex 2 (cont'd.)

Dr D.M. Macfadyen*, WHO Tuberculosis Adviser, WHO Regional Office for the Western Pacific, Manila

Dr T. Murohashi, Director, Department of Tuberculosis, National Institute of Health, Tokyo

Dr K. Misono, Director, Department of Tuberculosis, National Institute of Health, Tokyo

Dr K. Misono, Director, National Institute of Radiological Science, Chiba

Dr S. Morifuku, Statistics Bureau, Ministry of Health and Welfare, Tokyo

Dr K. Nakamura, Epidemiology Section, Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, Tokyo

Dr K. Nakazawa, Statistics Bureau, Ministry of Health and Welfare, Tokyo

Dr T. Ohsato, Chief, Medical Section, Attached Sanatorium, Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, Tokyo

Dr H. Sanada, Biochemical Section, Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, Tokyo

Dr T. Sawada, Director, Japan BCG Laboratory, Tokyo

Dr K. Shimizu, Director, Koishikawa Health Centre, Tokyo

Dr S. Sunahara, Director, National Sanatorium Tokyo Hospital, Tokyo

Dr S. Takahashi, Chief, Bacteriology Section, Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, Tokyo

Dr R. Takai, Chief, Epidemiology Section, Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, Tokyo

Dr A. Takase, Chief, Medical Section, Department of Education, Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, Tokyo

Dr A. Tanaka, Chief, Planning Section, National Cancer Centre, Tokyo

Dr J.C. Tao*, Regional Adviser on Communicable Diseases, WHO Regional Office for the Western Pacific, Manila

---

*WHO staff member or WHO temporary adviser.

Annex 2 (cont'd.)

Dr I. Toida, Chief, Biochemistry Section, Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, Tokyo

Dr T. Tokunaga, Chief, Tuberculin Laboratory, National Institute of Health, Tokyo

Dr M. Toyohara, Chief, Radioisotope Research Section, Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, Tokyo

Dr F. Ueda, Statistics Bureau, Ministry of Health and Welfare, Tokyo

Miss E. Wilhelmsson*, WHO Public Health Nurse, Regional Tuberculosis Advisory Team, WHO Regional Office for the Western Pacific, Manila

Dr K. Yabu, Biochemistry Section, Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, Tokyo

Dr M. Yamaguchi, Director-General, Japan Anti- Tuberculosis Association, Tokyo

---

*WHO staff member or WHO temporary adviser.

ANNEX 3

Schedule of Courses

	A.M.	P.M.
7 June (Monday)	General orientation Dr Azuma	Opening Session Briefing on the course Dr Azuma
8 June (Tuesday)	General concept of tuberculosis Dr Iwasaki	(continued)
9 June (Wednesday)	Statistics Dr Chia	Statistics Dr Tanaka
10 June (Thursday)	Statistics Dr Chia	Statistics Dr Tanaka
11 June (Friday)	Statistics Dr Tanaka	
12 June (Saturday)	Registration at the Kiyose Town Hall	
14 June (Monday)	Statistics Dr Tanaka	(continued)
15 June (Tuesday)	General concept of tuberculosis Dr Iwasaki	Statistics Dr Chia
16 June (Wednesday)	Statistics (continued) Dr Chia	(continued)
17 June (Thursday)	General concept of tuberculosis Dr Iwasaki	(continued)
18 June (Friday)	Statistics Dr Chia	(continued)
19 June (Saturday)	Statistics Dr Azuma	
21 June (Monday)	Examination - Statistics	Microscopy and culture Dr Kudo

Annex 3 (cont'd.)

	A.M.	P.M.
22 June (Tuesday)	General concept of tuberculosis Dr Iwasaki	Microscopy and culture Dr Kudo
23 June (Wednesday)	Briefing on each fellow's national tuberculosis programme	
	Atypical mycobacteria	
24 June (Thursday)	Japanese national tuberculosis programme Dr Shimao	
	Statistics (supplementary) Dr Azuma	
25 June (Friday)	Depart for observation tour in the north-east	Visit to Aomori Prefecture Office
26 June (Saturday)	Depart for Towada Prefecture	Briefing on tuberculosis activities
27 June (Sunday)	Depart for Akita Prefecture	
28 June (Monday)	Visit to Akita Prefecture Office	
	Briefing and discussions on Akita tuberculosis activities	
29 June (Tuesday)	Visit to the working site of multi-purpose case-finding at Oga	
30 June (Wednesday)	Depart for Niigata, visit to Niigata Prefecture Office	
1 July (Thursday)	Visit to Maki Health Centre	Visit to the working site
2 July (Friday)	Final discussions at the Niigata Prefecture Office	
	Depart for Tokyo	

Annex 3 (cont'd.)

	A.M.	P.M.
3 July (Saturday)	Library study	
5 July (Monday)	Microbiological basis Dr Takahashi	Antimicrobial treatment of tuberculosis Dr Macfadyen
6 July (Tuesday)	Microbiological basis (continued) Dr Takahashi	Antimicrobial treatment of tuberculosis (continued) Dr Macfadyen
7 July (Wednesday)	Demonstration Dr Takahashi	Antimicrobial treatment (continued) Dr Macfadyen
8 July (Thursday)	Bacteriology for case-finding Dr Takahashi	Antimicrobial treatment (continued) Dr Macfadyen
9 July (Friday)	Antimicrobial treatment Dr Macfadyen	Classification and identification of mycobacteria Dr Toyohara
10 July (Saturday)	Discussion on the case-finding (excluding three fellows from Indonesia - Registration) Demonstration: Urine tests Dr Toida	
12 July Monday	Antimicrobial treatment Dr Macfadyen	(continued)
13 July (Tuesday)	Antimicrobial treatment Dr Macfadyen	Classification and identification of mycobacteria Dr Toyohara
14 July (Wednesday)	Antimicrobial treatment (continued) Dr Macfadyen	Statistics (supplementary) - Coding Dr Azuma
15 July (Thursday)	Statistics (supplementary), sorting and tabulation Dr Azuma	(continued)

Annex 3 (cont'd.)

	A.M.	P.M.
16 July (Friday)	Visit to the National Institute of Health, Tokyo Identification of myco-bacteria by smear Dr Murohashi	
17 July (Saturday)	Library study (fellows from Indonesia and the Republic of Korea - Dr Iwasaki's X-ray reading)	
19 July (Monday)	BCG side-effects Dr Shimao	Library study
20 July (Tuesday)	Diagnostic techniques Dr Grosset	Practice-smear and culture Dr Grosset
21 July (Wednesday)	Case-finding Dr Grosset	Demonstration: flourescent microbacteria Dr Grosset
22 July (Thursday)	Bacteriological basis of chemotherapy Dr Grosset	BCG trials Dr Azuma
23 July (Friday)	Drug resistance Dr Grosset	Examination: bacteriology
24 July (Saturday)	Discussion: tuberculin, BCG	
26 July (Monday)	Bacteriological assessment of treatment Dr Grosset	Urine test for anti-tuberculosis drugs Dr Toida
27 July (Tuesday)	Practice: tuberculin testing Dr Takai/Miss Wilhelmsson	(continued)
28 July (Wednesday)	BCG Dr Kuchiki	Chemistry of PPD Dr Yabu

Annex 3 (cont'd.)

	A.M.	P.M.
29 July (Thursday)	Statistics (supplementary) Dr Azuma	Vaccination methods Dr Kuchiki
30 July (Friday)	Tuberculin reading and data processing Dr Takai/Miss Wilhelmsson	(continued)
31 July (Saturday)	BCG scar Dr Sanada	
2 August (Monday)	Tuberculin sensitivity in BCG-vaccinated and non-vaccinated populations Dr Azuma	
3 August (Tuesday)	BCG effects in animal Dr Aoki	BCG assessment Drs Takai and Azuma
4 August (Wednesday)	Chest symptoms survey Dr Ishikawa	Simulation model of tuberculosis epidemiology Dr Azuma
5 August (Thursday)	Systems analysis Dr Endo	Test: BCG and tuberculin
6 August (Friday)	Tuberculin Dr Sawada	(continued)
7 August (Saturday)	Test: Bacteriology - 2	
9 August (Monday)	Laboratory examination Dr Huang	Pathology of tuberculosis Dr Iwai
10 August (Tuesday)	Laboratory examination (continued) Dr Huang	Pathology of tuberculosis (continued) Dr Iwai
11 August (Wednesday)	Topographic anatomy Dr Takase	Tuberculosis in the South Pacific Dr Endo
12 August (Thursday)	Radiology Dr Misono	Radiation hazards Dr Misono

Annex 3 (cont'd.)

	A.M.	P.M.
13 August (Friday)	X-ray picture reading and its error Dr Takase	
14 August (Saturday)	OTCA trip to Mt Fuji	
16 August (Monday)	X-ray reading Dr Takase	Discussion on epidemiological survey Dr Azuma
17 August (Tuesday)	Prognosis of X-ray shadows Dr Aoki	Test: Pathology
18 August (Wednesday)	General connotation of tuberculosis Dr Iwasaki	X-ray picture reading Dr Takase
19 August (Thursday)	Chemotherapy Dr Sunahara	Institutional and domiciliary treatment Dr Kino
20 August (Friday)	Preparation for post-course trip	Drug resistance Dr Osato
21 August (Saturday)	Side-effects of chemotherapy Dr Kino	
23 August (Monday)	Comments on BCG-tuberculin test Dr Azuma	Drug resistance of tubercle bacilli found in resected lung specimen Dr Kameda
24 August (Tuesday)	X-ray picture reading Dr Takase	Prognosis of treated patients Dr Aoki
25 August (Wednesday)	Visit to Koishikawa Health Centre Activities of health centre Dr Shimizu	
26 August (Thursday)	Library study	

Annex 3 (cont'd.)

	A.M.	P.M.
27 August (Friday)	Visit to the JATA/HQ Voluntary activities Dr M. Yamaguchi Discussion at the First Dispensary	
28 August (Saturday)	Library study	Preparation for the post-course trip
30 August (Monday)	Tuberculosis programme Dr Toman	(continued)
31 August (Tuesday)	Tuberculosis epidemiology Dr Shimao	Epidemiology of tuberculosis deaths Dr Azuma
1 September (Wednesday)	Tuberculosis epidemiology Dr Shimao	Tuberculosis problem from the bacteriological point of view Dr Holm
2 September (Thursday)	Tuberculosis programme planning practice Dr Holm	
3 September (Friday)	Tuberculosis programme planning Dr Holm	Tuberculosis programme Dr Toman
4 September (Saturday)	Library study	
6 September (Monday)	Visit to the Division of Statistics of Ministry of Health	
7 September (Tuesday)	Tuberculosis programme Dr Toman	X-ray reading errors Dr Nakamura
8 September (Wednesday)	Tuberculosis programme (continued) Dr Toman	

Annex 3 (cont'd.)

	A.M.	P.M.
9 September (Thursday)	Sampling procedures Dr Azuma	Tuberculosis programme Dr Toman
10 September (Friday)	Observation trip to the Meiji pharmaceutical factory	
11 September (Saturday)	Library study	
13 September (Monday)	Tuberculosis programme Dr Toman	(continued)
14 September (Tuesday)	Tuberculosis programme (continued) - Dr Toman	Visit to the BCG Laboratory
15 September (Wednesday)	National holiday	
16 September (Thursday)	Tuberculosis programme Dr Toman	(continued)
17 September (Friday)	Tour to Kansai Visit to Shimazu factory and Kyoto JATA Branch	
18 September (Saturday)	Visit to NARA	
19 September (Sunday)	Return trip to Tokyo	
20 September (Monday)	Library study	
21 September (Tuesday)	Tuberculosis programme Dr Toman	(continued)
22 September (Wednesday)	Tuberculosis programme Dr Toman	(continued)
23 September (Thursday)	Tuberculosis programme Dr Toman	(continued)

Annex 3 (cont'd.)

	A.M.
24 September (Friday)	National holiday
25 September (Saturday)	Library study
27 September (Monday)	Dr Tao - General discussions
28 September (Tuesday)	Dr Tao - General discussions
29 September (Wednesday)	Final discussion
30 September (Thursday)	Preparations for leaving
1 October (Friday)	C L O S I N G C E R E M O N Y

ANNEX 4

Participants in Post-course Country Visits

Participants (listed according to group)	Countries visited by each group
Dr El-Rayah A. El-Tereifi (Sudan) Dr Wadi S. Labib (The Arab Republic of Egypt) Dr Günay Gürdag (Turkey) Dr Seyoum Yoseph (Ethiopia) Dr Abdul M. Hamid (Afghanistan) Dr Chalor Kupatavintu (Thailand) Dr Saovaros Ruttarasarn (Thailand) Dr M. Aoki* (RIT/JATA, Japan) Dr M. Homma* (Department of Health, Niigata, Japan)	Seoul (Republic of Korea), Taipei (China) and Bangalore (India)
Dr S.F. Casin (Philippines) Dr M.E. Uypuanco (Philippines) Dr Nguyen Phy Duyet (Viet-Nam) Dr Shafi Mohammad (Pakistan) Dr Sivaraman Sukumanan (India) Dr Won Soon Lee (Republic of Korea) Dr Hwa Cho Kim (Republic of Korea)	Seoul (Republic of Korea), Taipei (China) and Kuala Lumpur (Malaysia)
Dr Rasjid Piara (Indonesia) Dr Hadiprajitno Tonojo (Indonesia)	Seoul (Republic of Korea), Singapore and Bangalore (India)

Note: Dr Anton F. Lokollo (Indonesia), Dr P. Tjahjadi (Indonesia) and Dr Sheng-Chuan Wang (China) did not join the post-course country visits.

*WHO temporary instructor.