WORLD HEALTH ORGANIZATION

ORGANISATION MONDIALE DE LA SANTE

COURSE ON FREEZE-DRIED SMALLPOX VACCINE PRODUCTION

Bangkok, Thailand, 6-17 November 1961

WHO/Smallpox/18
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ENGLISH ONLY

FREEZE-DRIED SMALLPOX VACCINE PRODUCTION

by

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WHO Consultant, 1961

Introduction

From 6-17 November 1961 a training course sponsored by WHO was held in Bangkok (Thailand) on the production of freeze-dried smallpox vaccine. There were 17 participants drawn from fourteen countries of the European, Eastern Mediterranean, South-East Asian and Western Pacific Regions. Fourteen of the participants had been awarded WHO fellowships; one (from Japan) was privately sponsored by his own government; there were two local participants, and one who attended as an observer. Of the 17 participants, 16 were persons who were actively engaged in smallpox vaccine production, or were in charge of institutes where smallpox vaccine was being prepared. Several had previous experience in the production of freeze-dried vaccines, and some in the preparation of freeze-dried smallpox vaccine.

The purpose of the course was to teach a method for the preparation of a stable smallpox vaccine by the desiccation of a partially purified vaccinia virus suspension. The method taught was the one currently employed at the Lister Institute of Preventive Medicine, Elstree, Herts., England. The host country (Thailand) provided the laboratory facilities of the Biological Products Building of the Government Pharmaceutical Laboratories. These are administered by the Department of Medical Sciences of the Thai Ministry of Public Health.

An opening ceremony was held, at which His Excellency the Minister of Public Health of Thailand welcomed the participants. At this ceremony the freeze-dried smallpox vaccine production equipment provided by UNICEF to the

Government of Thailand was formally handed over to the Minister by Mr S. Polak, Resident Representative, UNICEF Thai Area Mission, Bangkok. The Ministry of Public Health provided a small bus to convey participants to and from the laboratory buildings where the course was held.

Administrative facilities

A generous allotment of staff was made by the South-East Asian Regional Office to cover the administrative arrangements for the course. Mr J. Unger, Administrative Services Officer, acted as conference officer, and Mr M. C. Verma and Mrs Saichan Lapha provided secretarial assistance. The services of these staff members were greatly appreciated by the participants and by the writer.

Laboratory facilities

The Biological Products Building of the Thai Government Pharmaceutical Laboratories, which houses the Smallpox Vaccine Production Centre, contains a large, airy room (containing a black-board), which was converted into a most satisfactory lecture theatre. Demonstrations and practical work were carried out in the Smallpox Vaccine Production Laboratories. Considering the large number of participants, these proved very adequate for the purpose, though routine vaccine production had to be halted during the period of the course. Dr Prakorb Tuchinda, Chief of the Division of Medical Research, under whose supervision dried smallpox vaccine is prepared in Bangkok, and his assistant, Dr Sutas Kuptarak, without whose active and unstinted co-operation the course could not have been held, kindly acted as demonstrators and assisted the participants in the practical work.

Design of the course

As with the course which was held in Nigeria in November 1960 (see document WHO/Smallpox/16), it was felt that practical experience was of the first importance and consequently the course was designed to give as much time as possible for each of the participants to carry out himself the techniques described. For this reason the whole process was gone through, stage by stage, by means of lectures, demonstrations and practicals, in such a way that each participant was able to take away at the end of the course a sample of vaccine prepared by himself. Each participant was provided with copies of WHO Technical Report Series Nos.178 and 180 and with documents WHO/Smallpox/16 (pages 8-12) and WHO/Smallpox/7 Rev.2. These publications cover in

summary form, the range of material taught, with the exception of freeze-drying technique and the potency titration of vaccine by pock counting on the chorio-allantoic membranes of embryonated eggs, which were also dealt with as fully as possible.

Conclusions

The average of ability and knowledge amongst the participants in this course was high. Thus it was that both formal and informal discussion periods were stimulating and valuable: indeed, the interchange of information among so many smallpox vaccine producing centres was probably of as much value to the individual participants as was the formal part of the course. Language difficulties presented a very minor problem, as most of the participants were able to follow lectures in English easily, and the two or three who had any real difficulty were able to find interpreters amongst the others. The assistance given by local professional and technical staff was of a high order and was invaluable. This, combined with the work of the administrative group and of the WHO Area Representative, Dr J. B. Petrie, allowed the writer to spend more time in attending to the main purpose of the course than had previously been possible.

LIST OF PARTICIPANTS AT THE WHO INTER-REGIONAL TRAINING COURSE ON FREEZE-DRIED SMALLPOX VACCINE PRODUCTION HELD IN BANGKOK FROM 6-17 NOVEMBER 1961

WHO FELLOWS

Australia	Mr Leo James Davis Controller, Production & Development - Virology Commonwealth Serum Laboratories Melbourne (Australia)
Cambodia	Dr Goueffon Director, Pasteur Institute P.O. Box 174 Cambodia
China	Dr Eugene Chen Chief, 1st Division Taiwan Serum Vaccine Laboratory Shihlin, Taipei, Taiwan (Republic of China)
Federation of Malaya	Dr Ranjeet Bhagwan Singh Senior Bacteriologist Institute for Medical Research Kuala Lumpur (Malaya)
Iraq	Dr Zaki Hashim Dadah Medical Officer in Charge of Smallpox Vaccine Production Institute of Bacteriology Baghdad (Iraq)
Japan	Dr Takashi Kitamura Chief of the National Assay Division for Smallpox Vaccine Department of Virology National Institute of Health 284 Kamiosaki-Chojamaru, Shinagawa-Ku Tokyo (Japan)
Jordan	Dr Haidar R. Husseini Director-General of Government Laboratories Central Government Laboratory Amman (Jordan)
New Zealand	Dr J. D. Manning Director, National Health Institute 52-62 Riddiford Street Wellington, S.I. (New Zealand)

Pakistan	Dr Mohammad Ataur Rahman Director, Public Health Laboratory Institute of Public Health, Mahakhali Tejgaon P.O. Dacca (E. Pakistan)
	Dr Mian Aziz Ahmad Superintendent West Pakistan Vaccine Institute Birdwood Road Lahore (W. Pakistan)
Philippines	Dr Alejandro A. Jose Chief Production Bacteriologist Smallpox and Cholera Vaccines Serum and Vaccine Laboratories Alabang, Muntinlupa Rizal (Philippines)
Republic of Korea	Dr Chang Hong Min Chief, Production Division c/o National Institute of Health P.O. Box 114 Kwang Wha Moon Seoul (Korea)
Republic of Viet Nam	Dr Nguyen-van-Ba Chief, Laboratory Institute Pasteur Nhatrang (Viet Nam)
Turkey	Dr Elhan Ozluarda Specialist in the Virology Department Refik Saydam Central Institute of Hygiene Ankara (Turkey)

PARTICIPANT AT GOVERNMENT EXPENSE

Dr Masatoshi Suzuki
Chief, Third Research Department
Japan Lyophilization Laboratory
Kiyose, Kitatamagun
Tokyo (Japan)

LOCAL PARTICIPANTS

Dr Pairoj Oonsombati
Instructor, Department of Medicine
Faculty of Medicine
Siriraj Hospital
Bangkok (Thailand)

Dr Somchai Mamanee
In charge of the Smallpox Vaccine Section
Queen Soababha Institute
Thai Red Cross
Bangkok (Thailand)

OBSERVER

Dr Sophon Kongsamran
Department of Pathology
Siriraj Hospital
Bangkok (Thailand)

FACULTY

Dr P. D. Meers
WHO Consultant
Inter-Country (Production of
Freeze-Dried Smallpox Vaccine)

Dr Prakorb Tuchinda
Chief, Division of Medical Research
Department of Medical Sciences
Ministry of Public Health
Bangkok (Thailand)

Dr Sutas Kuptarak
Medical Officer
Department of Medical Sciences
Ministry of Public Health
Bangkok (Thailand)

WORLD HEALTH ORGANIZATION

MINISTRY OF PUBLIC HEALTH
THAILAND

INTER-REGIONAL TRAINING COURSE ON FREEZE-DRIED SMALLPOX VACCINE PRODUCTION

6-17 November 1961

BANGKOK, THAILAND

Training programme and time-table

The Training Course will take place in the Biological Products Building, Government Pharmaceutical Laboratories, Phya Thai.

Transport will arrive at the hotel to collect fellows every morning at 8.30 a.m. Fellows are particularly requested not to delay the transport.

First week

Date	Time	
6 November Monday	9.30 a.m.	Opening Ceremony at the Department of Medical Sciences, Bumrungmuang Road, Yod-se
	11.00 a.m.	Participants are taken to the Government Pharmaceutical Laboratories, Rama VI Road, Phya Thai
		Coffee
	11.30 a.m.	Lecture: Introduction
		Tour: Government Pharmaceutical Laboratories especially the Smallpox Vaccine Section
	2.00 p.m.	Return to hotel
	6.30 p.m. to 8.00 p.m.	Cocktails at the Government Pharmaceutical Laboratories

Date	Time	
7 November Tuesday	9.00 a.m.	Lecture: The preparation of the vaccine-I "The 10% extract"
	10.00 a.m.	Demonstration: do
	11.00 a.m.	Coffee
	11.30 a.m.	Practical: do
	2.00 p.m.	Return to hotel
8 November Wednesday	9.00 a.m.	Lecture: The preparation of the vaccine-II "Dealing with the 10% extract"
	10.00 a.m.	Practical: The EBS
	11.00 a.m.	Coffee
	11.30 a.m.	Lecture: Freeze-drying-I
	12.30 a.m.	Demonstration: The Edwards machine
	2.00 p.m.	Return to hotel
9 November Thursday	9.00 a.m.	Lecture: Freeze-drying-II
	10.00 a.m.	Demonstration: Freeze-drying
	11.00 a.m.	Coffee
	11.30 a.m.	Practical: Using the primary freeze-dryer
	2.00 p.m.	Return to hotel
10 November Friday	9.00 a.m.	Lecture: The secondary freeze-dryer
	10.00 a.m.	Demonstration: The secondary freeze-dryer
	11.00 a.m.	Coffee
	11.30 a.m.	Discussion period
	2.00 p.m.	Return to hotel
11 November Saturday		Sight-seeing tour

Second week

Date	Time	
13 November Monday	9.00 a.m.	Lecture: Potency Testing of vaccine-I
	10.00 a.m.	Demonstration: do
		Practical: Ampouling Fellows' vaccine
	11.00 a.m.	Coffee
	11.30 a.m.	Practical: Freeze-drying of Fellows' vaccine-I
	2.00 p.m.	Return to hotel
14 November Tuesday	9.00 a.m.	Practical: Freeze-drying of Fellows' vaccine-II
	10.00 a.m.	Lecture: Potency Testing of vaccine-II
	11.00 a.m.	Coffee
	11.30 a.m.	Practical: Titration of vaccine
	2.00 p.m.	Return to hotel
15 November Wednesday	9.00 a.m.	Lecture: Bacteriology of Vaccine
	10.00 a.m.	Practical: Freeze-drying of Fellows' vaccine-III
	11.00 a.m.	Coffee
	11.30 a.m.	Practical: Bacteriology-Plate Count etc.
	2.00 p.m.	Return to hotel

Date	Time	
16 November Thursday	9.00 a.m.	Lecture: Testing, storing and issuing vaccine Reconstituting fluid
	10.00 a.m.	Demonstration and practical: Harvesting of eggs, pock-counting
	11.00 a.m.	Coffee
	11.30 a.m.	Demonstration and practical: do
	2.00 p.m.	Return to hotel
17 November Friday	9.00 a.m.	Recapitulation of complete method Discussion of laboratory facilities and apparatus Discussion of difficulties experienced or expected by fellows
	11.00 a.m.	Coffee
	11.30 a.m.	do Course closes
	2.00 p.m.	Return to hotel
	6.30 p.m.	Farewell Party to be held within the compound of the Government Pharmaceutical Laboratories, Rama VI Road, Phya Thai