

**Part VIII**

**ROLE OF INTERNATIONAL ORGANIZATIONS**

**Partie VIII**

**RÔLE DES ORGANISATIONS INTERNATIONALES**



# THE ROLE OF THE WORLD HEALTH ORGANIZATION IN YAWS CONTROL \*

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It is probable that, in the future, the year 1950 will be remembered as a turning-point in the great evolutionary movements that have permanently affected the health and welfare of mankind.

The decade immediately preceding 1950 gave the medical profession an impressive array of new weapons—antihistaminics, radio-active isotopes, new insecticides, and a whole series of antibiotics. Some of these new weapons owe their prestige to their life-saving qualities, while others have attained distinction because of the large numbers of people on whom they confer a more modest benefit. Simultaneously with the development of more effective remedies, there was being developed the means whereby the benefits of modern medicine could—through international co-operation—be brought to the people most in need of them. In 1950 came the merger of these two important forces, for it was in that year that modern therapeutic methods first began to be applied on a mass scale through international co-operation.

This is not to suggest that international co-operation in the field of health began with WHO, for recognition of the international aspects of public health can be traced back as far as the 14th century. Many other international health organizations have fostered international co-operation and international help. What is new, however, is a significant change in emphasis and objectives.<sup>1</sup> International co-operation began with the setting-up of quarantine regulations to prevent the spread of communicable diseases from one country to another. Today the objective is the control,

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and eventual elimination, of these diseases wherever they occur. From dissemination of information on pestilential diseases, we have progressed to pooling of knowledge, experience, and resources to provide direct assistance to countries in promoting the health of their people.

The techniques for administering such services to governments are still in the formative stage of development and are still imperfectly understood. It was inevitable that mistakes should be made, but it was also inevitable that we should learn and profit from them. This is true of yaws control as it is of many other subjects.

WHO has been particularly interested in yaws because it is a major public-health problem in many tropical countries of the world,<sup>3</sup> and because there has recently been developed a new and effective tool with which to combat it. In repository penicillin we have a form of therapy of both high therapeutic efficacy and negligible toxicity that can be conveniently administered in simplified schedules of treatment to the masses of the people in almost any part of the world. Because of the enormous number of persons who have benefited and who will benefit from penicillin, this antibiotic must take its place among the most significant advances of the pharmaceutically fabulous forties.

The discovery of any new therapeutic agent is generally followed by an orderly sequence of investigations designed to determine the precise scope of its usefulness. These include pilot *in vitro* and *in vivo* studies to determine the mode of action, the toxicity, and the optimal time-dose relationships of administration. Subsequently, clinical trials are carried out and the results evaluated by the application of statistical principles. If the new therapeutic agent is shown to be useful and free from noxious by-effects, a logical next step is consideration by the health administrator of the potential value of the agent in mass application. Rarely has such a pattern unfolded as impressively as has been the case with repository penicillin in the treatment of treponemal diseases.

One occasionally hears the objection that, since no disease has ever been treated out of existence, global control of yaws is unlikely to result solely from the treatment of infected persons.<sup>7</sup> It is true that no disease has so far been eliminated by treatment, but it is equally true that never before have the prospects of doing precisely this been as hopeful as they are today.

There is good reason to believe<sup>12, 13, 14</sup> that, if mass penicillin treatment is carefully planned and systematically carried out, the immediate result will be a significant reduction in the prevalence of infectious cases. At that stage, with energetic action to consolidate these gains, by thorough case-finding methods, and by preventing reintroduction of the disease, one might be able to keep yaws cases to a minimum. Fortunately for the well-being of millions of infected persons throughout the world, many optimistic and competent individual workers,<sup>2, 5, 8</sup> and the WHO Expert Committee

on Venereal Infections and Treponematoses,<sup>11</sup> have considered it well worth-while to explore this new and potentially decisive approach to treponemal-disease control.

With a view to giving as wide an application as possible to the knowledge currently available on the diagnosis, treatment, and public-health aspects of treponemal-disease control, WHO has embarked on a broad programme in support of national health administrations that have requested assistance in the initiation and development of treponemal-disease-control programmes. The nature of these programmes ranges from granting fellowships to establishing teaching and training centres, from small community demonstrations to large-scale case-finding and mass-treatment programmes. In these projects, which have been in operation for less than two years, with substantial help from the United Nations Children's Emergency Fund (UNICEF) in providing equipment and supplies, more than four million people have been examined, and well over one million cases of treponemal disease (syphilis, yaws, and bejel) have been treated with simplified schedules involving the use of repository penicillin. The following tabulation shows the number of persons examined and treated up to November 1951 in five of the larger WHO-supported programmes :

<i>Programme</i>	<i>Number examined</i>	<i>Number treated</i>	<i>Percentage</i>
Haiti (yaws)	—	740,829	—
Indonesia (yaws)	1,112,236	226,170	20.3
Iraq (bejel)	18,000	6,000	33.3
Thailand (yaws)	459,688	80,968	17.6
Yugoslavia (endemic syphilis)	941,563	91,988	9.8

Only time will tell whether yaws control can be permanently effected by mass treatment. Much will depend upon how successful governments are in consolidating the gains and integrating the work into the permanent public-health structure of their countries.

In a recent article by Reynolds, Guthe & Samamé<sup>9</sup> a five-phase approach to yaws control was outlined as follows : (a) orientation and preliminary analysis of the problem; (b) development of methods; (c) demonstration, survey, and training; (d) expansion; and (e) consolidation. The present symposium was developed along these general lines. It may be useful to discuss briefly the role of WHO during each of these five phases.

(a) In the preliminary analysis of the yaws problem in a given area, WHO must depend to a considerable extent on information made available by the local health-authorities. It is important to know not only how widespread the yaws problem is, but also how important it is in comparison with the other problems of the area. In analysing the importance of yaws

as compared with other public-health problems, due recognition must be given to the fact that only certain of those problems are currently amenable to direct action on the international level.

(b) In the development of methods, WHO has an important advisory responsibility, since techniques that prove to be useful in one yaws-control programme may often be applied to others, usually with slight modifications to meet the local situation.

In yaws-control work, the methods required are primarily those designed to overcome difficulties in case-finding. Yaws being a disease of rural populations in areas where transport and communications are difficult, case-finding is an arduous but very essential consideration. WHO is constantly analysing the effectiveness of its field programmes with a view to finding the weak spots and the means for improvement.

The search for new and improved techniques, designed to utilize international assistance with maximum effectiveness, is a continuing one. As one example of this phase of WHO's role in yaws control, one may mention the combined yaws and malaria project that was planned to begin in Liberia towards the end of 1952. There are reasons to believe that this combined approach will prove to be a useful one: yaws and malaria frequently coexist, and in the control of both diseases a house-to-house approach is desirable. Moreover, there are indications<sup>6, 10</sup> that insects may play a part in the spread of yaws and some evidence that effective insect-control contributes to reducing the spread of yaws.

(c) It is during the demonstration, survey, and training phase that WHO can be most useful to governments that desire to bring yaws under better control. The Organization ordinarily sends a team of experienced, internationally recruited specialists: a clinician with administrative experience in organizing and conducting training courses and capable of demonstrating in limited areas how effective yaws-control activities can be carried out under local conditions; a serologist to develop the serodiagnostic aspects of the work; and a public-health nurse to assist with the training of sub-professional personnel and to oversee certain of the epidemiological phases of the project. Of course, the type of assistance needed may, and will be, discussed with the government concerned.

In general, the international, together with the national, health-workers, provide the basis upon which yaws control can be expanded into a mass-treatment campaign: by delimiting the areas to be covered, by working out appropriate techniques, and by training those who will carry out the expanded programme.

(d) During the mass-treatment campaign, the WHO personnel continue to assist in the programme's expansion in the most suitable manner. Moreover, they should carry out control studies in pilot areas to determine the long-term efficacy of the project. The need for supervising the work of

the treatment units is primarily a responsibility of the government, but one which the international team should share.

(e) Consolidation of the results of mass treatment is of necessity a government responsibility, although here again WHO may be called upon for assistance.

WHO can help in the control of yaws in these ways. At no time, however, do the contributions of the Organization exceed those of the country concerned. WHO can stimulate; it can assist; it can support; but there can be no substitute for active work by governments, both national and local, towards the solution of their own health problems.

## SUMMARY

Modern therapeutic methods first began to be applied on a mass scale through international co-operation in 1950. International co-operation in health work is in itself not new, however; what is new is the objective of controlling and eventually eliminating communicable diseases wherever they occur, rather than restricting their spread across frontiers by quarantine regulations.

WHO is particularly interested in yaws because it is a major public-health problem in many countries and because there exists in repository penicillin a simple weapon of high therapeutic efficacy and negligible toxicity with which to combat the disease.

While it is true that no disease has as yet been entirely eliminated by treatment, never have the prospects of so doing been as good as they are today in the case of yaws. It is believed that mass penicillin treatment, if carefully planned and carried out, will result in a significant reduction in the incidence of infectious cases, which can then be kept to a minimum by thorough case-finding and preventive measures.

WHO has embarked on a broad programme in support of national health

## RÉSUMÉ

En 1950, les méthodes thérapeutiques modernes ont été pour la première fois appliquées en grand dans le cadre de la collaboration internationale. La collaboration internationale dans le domaine de la santé n'est pas chose nouvelle en soi; ce qui est nouveau, c'est le souci de combattre et d'éliminer peu à peu les maladies transmissibles, où qu'elles sévissent, plutôt que d'enrayer leur propagation à travers les frontières au moyen de règlements quaranténaires.

L'OMS s'intéresse spécialement à la lutte contre le pian, car d'une part cette maladie soulève un sérieux problème de santé publique dans de nombreux pays et, d'autre part, la pénicilline-retard offre, pour le combattre, un moyen simple, très efficace, dont la toxicité est négligeable.

S'il est vrai qu'il n'a jamais encore été possible d'éliminer complètement une maladie par des moyens thérapeutiques, il est non moins exact que les perspectives d'aboutir à ce résultat dans le cas du pian n'ont jamais été aussi favorables que de nos jours. On pense qu'un traitement systématique à la pénicilline, étudié et conduit avec soin, permettra de réduire considérablement la fréquence des cas infectieux et de maintenir leur nombre à un niveau minimum grâce à des mesures méthodiques de prophylaxie et de dépistage.

L'OMS a entrepris une large action en faveur des administrations sanitaires na-

administrations that have requested assistance in developing treponemal-disease-control programmes. In less than two years, more than four million people have been examined and well over one million cases of treponemal disease have been treated with repository penicillin.

The authors discuss a five-phase approach to yaws control, outlined as follows: (a) orientation and preliminary analysis of the problem; (b) development of methods; (c) demonstration, survey and training; (d) expansion; and (e) consolidation.

In the first phase, it is necessary to know how widespread yaws is in an area and how important it is in comparison with other public-health problems.

In the second phase, WHO has an important advisory responsibility since techniques that are useful in yaws control may be applied, with slight modifications, to other diseases. It is in the third phase, however, that WHO can be most useful to governments. Together with national health-workers, the international staff delimit the areas to be covered, work out appropriate techniques, and train those who will carry out the expanded programme. In the expansion phase, WHO personnel should carry out control studies in pilot areas and share in supervising the work of treatment units. WHO may also assist governments in the consolidation phase.

In conclusion, the authors stress that at no time does the contribution of WHO exceed that of the government. Governments, although perhaps stimulated and assisted by WHO, are ultimately responsible for the solution of their own health problems.

tionales qui lui ont demandé son aide pour la mise sur pied de programmes de lutte contre les tréponématoses. En moins de deux ans, plus de quatre millions de personnes ont été examinées et plus d'un million de cas traités à la pénicilline-retdard.

Les auteurs exposent un programme de lutte contre le pian qui comporterait cinq étapes principales: a) position et analyse du problème; b) mise au point des méthodes; c) démonstrations, enquêtes et formation du personnel nécessaire; d) élargissement des opérations; e) consolidation des résultats acquis.

Au cours de la première étape, il est capital de déterminer la fréquence du pian dans une région donnée et de préciser son importance par rapport aux autres problèmes de santé publique.

Au cours de la deuxième étape, l'OMS a un important rôle consultatif à jouer, puisque les techniques qui permettent de lutter efficacement contre le pian peuvent être appliquées, avec de légères modifications, à d'autres maladies. C'est toutefois lors de la troisième phase que l'OMS peut apporter l'aide la plus utile aux gouvernements. En collaboration avec les agents sanitaires des pays intéressés, le personnel international délimite les zones d'opération, met au point des méthodes bien conçues et forme le personnel qui sera chargé d'exécuter le programme élargi. Dans la phase d'extension des opérations, le personnel de l'OMS doit procéder à des études de contrôle dans des zones d'expérimentation et collaborer à la surveillance des travaux des équipes de traitement. L'OMS peut également aider les gouvernements lors de la phase de consolidation.

Les auteurs de l'article soulignent, enfin, que la contribution de l'OMS ne dépasse jamais celle du gouvernement. C'est en fin de compte aux gouvernements eux-mêmes, parfois stimulés et aidés par l'OMS, qu'il appartient de résoudre les problèmes sanitaires qui se posent sur les territoires qu'ils administrent.

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# THE ROLE OF THE UNITED NATIONS INTERNATIONAL CHILDREN'S EMERGENCY FUND IN YAWS CONTROL

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The reasons why UNICEF is interested in the control of yaws are that the disease affects millions of children and that it can be readily cured or arrested. UNICEF's policy, as part of its basic concern with maternal and child welfare, is to concentrate its assistance on a few diseases which are widespread, which require imported supplies and equipment beyond the present means of local governments, and which promise to yield to mass treatment at relatively low cost.

UNICEF's interest in yaws was not prominent, nor even present, in its early days. When, in 1947, UNICEF took over certain responsibilities for child care from the United Nations Relief and Rehabilitation Administration (UNRRA), the General Assembly of the United Nations, in Resolution 57 (I)<sup>1</sup> establishing UNICEF, laid down certain priorities :

It was to be "utilized and administered . . .

(a) For the benefit of children and adolescents of countries which were victims of aggression and in order to assist in their rehabilitation;

(b) For the benefit of children and adolescents of countries at present receiving assistance from the United Nations Relief and Rehabilitation Administration;

(c) For child health purposes generally, giving high priority to the children of countries victims of aggression."

In 1947 UNICEF was left with a multitude of unfinished tasks in Europe, where UNRRA had spent money for children on a much larger scale than UNICEF could hope to. Everyone knew, in theory, that the needs of Asia were great; but so were the pressures to keep on helping Europe. Every proposed reduction in European programmes was fought vigorously on the ground of the priorities established by the General Assembly. Also, as the Executive Board of UNICEF was constituted in those days, there were few spokesmen for Asia.

<sup>1</sup> United Nations, General Assembly (1947) *Resolutions adopted by the General Assembly during the second part of its first session from 23 October to 15 December 1946*, Lake Success, N.Y., page 91

Except for a small start in China, continuing some phases of UNRRA's work, the beginnings of active interest by UNICEF in the children of Asia began with the visit of Drs. Parran and Lakshmanan early in 1948.<sup>2</sup> Their report recommended three million dollars for a variety of projects, mostly medical, in south-east Asia. The discussion of that report brought to a head such issues as when UNICEF assistance in Europe should end; why the postwar emergencies of Asia could not receive similar attention; and whether the third clause in the charter, "For child health purposes generally", should not be invoked. In these discussions the fact was, of course, emphasized that Asia, South America, and Africa have infant mortality-rates more than double those of many of the countries helped in Europe. Meanwhile, there was also developing in UNICEF a policy of longer-term aid, with less emphasis on food and clothing, on which most of the money in Europe had been spent. The Parran-Lakshmanan report stressed the desirability of medical aid rather than food for south-east Asia, not because food was not needed, but because the problem was too vast for UNICEF to undertake, and because there were other agencies responsible for food. Even for assistance in medical programmes, the question was raised whether the time, effort, and money required to lay the foundation were worth the spending by an emergency organization, whose life might be ended abruptly, as UNRRA's had been.

### **Co-operation with WHO**

The Executive Board of UNICEF, however, did authorize a beginning; then, with the development of WHO, a workable formula was gradually found. WHO was authorized to co-ordinate health programmes throughout the world. It was not authorized, and not financed, to furnish supplies on a large scale. UNICEF, on the other hand, was primarily a supply organization. Thus began a partnership which has grown in the last three years from nothing to a sizeable chain of about one hundred projects in the Asian area alone, in which the two organizations together help governments that want help and that are prepared to revise their health programmes to use the findings of modern medical science to fight old diseases in new ways.

### **Financing and Expenditure**

Since one of the essentials for controlling yaws on a mass scale is a considerable sum of money for penicillin, transport, and equipment, it should be remembered that several years of work must be done by UNICEF before a vial of penicillin or a jeep arrives in the country where it is to be used. The money must first be obtained from governments, or from private

<sup>2</sup> Unpublished document E/ICEF/72.1 July 1948

contributors (about 90% has come from governments). Such contributions are not spontaneous. Ministries of external affairs, and members of parliaments, or their equivalents, must be convinced that the money is urgently needed, that it cannot be raised elsewhere, and that it will not be used for the same purposes as those for which other money has already been voted. It is true that UNICEF has a special appeal in that it is raising money for children. But that does not cancel the necessity for evidence that UNICEF meets obvious and urgent needs, that it tackles problems in a practical fashion, that it gets at least a dollar's worth for every dollar spent, and that the recipient governments show that their intentions are serious by matching UNICEF's contribution at least dollar for dollar. Even when national leaders have been convinced, it still takes many months for the money actually to be appropriated, and sometimes still more months before a cheque is received.

Even when UNICEF has the money there is no assurance that it will be allotted to the Asia region, since other areas also have clamorous needs. Once the money has been allocated to Asia, yaws-control programmes must still compete with other projects from other countries that have no yaws but still want money. Nevertheless, these hazards have been overcome; and enough money has been found to provide the supplies when they were needed.

UNICEF expenditure in Asia has been small by standards of other international expenditure. Of \$160,000,000 allocated by UNICEF in the last five years, including requests now under consideration, to date only 10% has gone to Asia (excluding China, Japan, and Korea). The percentage, however, is growing; in current budgets the figure is 25%. Of the \$16,000,000 dollars already allocated, \$1,610,000 have been assigned to yaws control. Requests under consideration include an additional \$638,000, bringing the total to \$2,248,000. Further requests may be made as funds are needed. It will be recalled that the United Nations has extended UNICEF's life only until the end of 1953, and that any further plans will depend upon the action of the United Nations in that year. Since funds are allocated for several years ahead, however, it can be reasonably assumed that UNICEF will continue to support yaws-control programmes at least until the end of 1955.

### **Programme Problems**

Every credit belongs to the governments for their perseverance in overcoming obstacles to the initiation of yaws-control programmes. I shall illustrate by the case of Indonesia, which had the most difficult problem of all :

(1) At the beginning of the programme, the present government had not been organized : there were still two governments. Working contacts

had not even been established with some of the outlying islands, and certain areas could not be entered because of security risks.

(2) There had not been time to establish normal government budgets. Moreover, often the simplest supplies needed for the programme were not available in the country because the bazaars were bare since the Japanese occupation. The currency was still unstable. As a result of this combination of factors, every step in organizing the campaign was unusually difficult.

(3) There was an acute shortage of qualified personnel, with a very limited number of the male nurses on whom the programme relies so heavily, and with very few doctors. Fortunately, however, there was a very small nucleus of doctors with long experience in yaws, without whose aid the entire programme would have been impossible.

(4) The few teams that had been working on yaws were still using arsenicals and had to be convinced that penicillin was superior and to be retrained in the new techniques.

(5) There was an extreme shortage of competent administrative personnel. Those who were available, like the doctors, usually could not afford to work, in a time of rapidly mounting costs, for the small salaries the Government could pay.

(6) In the early days there were serious difficulties in establishing and maintaining adequate records, obtaining adequate reports, and procuring analysis of the data after collection. In addition to the language difficulty, the simplest office facilities were not available. UNICEF has given some emergency help to meet this situation, and remarkable progress has been made.

(7) Establishing and maintaining supply lines to the remote places where yaws abounds has been a major difficulty. Fortunately, however, there is quite a good system of internal air transport, which alone made it possible to keep the supply line of penicillin unbroken. Jeeps were used for the transport of personnel.

(8) Maintenance of transport under rural conditions is not easy: there are often no garages or repair stations of any kind, and petrol is not always available. In Java itself the roads are relatively good; but, as the programme has moved to other islands, the teams have to go where roads are few and poor, and where the teams must maintain their own transport or walk.

(9) The morale of the field staff at the beginning presented serious problems. In order to reach the yaws cases, they often had to leave their families and to work without any increase in pay in remote jungles under conditions of tropical heat and rainfall. The Government has done what it could under its regulations, and UNICEF has helped occasionally with emergency clothing and equipment; but, in general, the staff has been

working under conditions of real hardship. The greatest credit of all for the work that has been done belongs to these men in the field.

The story of Thailand is essentially the same. The financial position of the Government has been better, and the conditions of the workers have gradually improved, with the grant of double per-diem allowances and, recently, an increase in pay. At the worst, however, the field conditions under which they work match the most adverse conditions in Indonesia.

In comparison with the difficulties faced by governments, those faced by the international organizations have been small. WHO's chief difficulty has been to find the specialized personnel for the international teams and to keep them long enough to give continuity to the advisory services. UNICEF has had considerable difficulty in buying equipment in competition with rearmament programmes. This, however, has, for the most part, merely meant a few months' delay on special items. It has been necessary to order all major items not less than one year ahead in order to have them in position in time. Wherever this has been done, we have been able to obtain what we wanted; and, in general, the supply lines, once established, have not been broken.

Both WHO and UNICEF have had to do a great deal of work to make sure that the penicillin bought kept up with the rapid improvements being made. New specifications have solved this problem for the moment.

### Achievements

In spite of all these difficulties, the record of achievement speaks for itself (see table I).

The schedule of treatment for adults has been 8 ml of penicillin<sup>3</sup> given in two equal doses. Smaller doses were given to children. The average percentage of persons receiving the second injection has been about 80. Approximately 5% have also received a third injection.

By 1 April 1952, approximately 500,000 cases had been treated, and the number is mounting by nearly 40,000 a month. The total progress has been even greater than the figures indicate. Fairly elaborate organizations have been established, central laboratories have been set up, and field laboratories are being added as needed. Most important of all, some 250 workers have been trained and given field experience. Of this number, 137 were added during 1951—about half in each country. Thailand will increase its field staff by another 90 in 1952 (30 sanitary inspectors and lay personnel numbering 60 to give injections), which should double its field teams by August. The advance in Indonesia will be somewhat slower during the remainder of 1952, but the addition of new teams and of 20 to

<sup>3</sup> The preparation used in yaws treatment throughout the Asian region is procaine penicillin G in oil with 2% aluminium monostearate (PAM).—ED.

TABLE I. YAWS-CONTROL PROGRAMMES IN THAILAND, INDONESIA, AND THE PHILIPPINES, 1950-2

Country	1950		1951		1952 *		1950-2	
	Number examined	Number treated	Number examined	Number treated	Number examined	Number treated	Number examined	Number treated
Thailand	235,176	28,300	588,783	82,350	1,014,000	120,000	1,837,959	230,650
Indonesia	256,788	33,724	1,244,236	228,385	2,013,000	283,000	3,514,024	545,109
Philippines	—	—	102,245	9,554	841,000	23,000	943,245	32,554
Total	491,964	62,024	1,935,264	320,289	3,868,000	426,000	6,295,228	808,313

\* The 1952 figures have been revised to show actual numbers for January to November, with an estimate of those for December. — S. M. K., 29 January 1953.

30 doctors, assisted by the nurses from the local polyclinics and by diagnosticians, will, it is hoped, increase the rate of work by perhaps one third in the second half of the year. On the other hand, the areas of heavy incidence in Jogjakarta, where the main work has been done, are being rapidly covered; and the number of cases treated per month will gradually fall. A high percentage of the nurses now engaged on the work come from Jogjakarta, and it is not certain how many of them will be willing to go to other areas, or how many can be spared. Unless they do go, or are replaced, the shortage of personnel will be even greater than it is now.

### Cost per Case

Each treatment to date, on an accounting basis including all expenses, costs slightly more than \$2.50, of which approximately half is paid by the local government. The cost to UNICEF of the Indonesian campaign for the 23 months from May 1950 to the end of March 1952 was as follows :

	<i>US dollars</i>
Penicillin (total amount used)	287,000
Equipment (estimated life—7 years)	26,151
Transport (estimated life of vehicles—4 years)	52,233
Personnel (reimbursed to WHO, up to the end of 1951)	27,000
Freight and field administration	40,000
	<hr/>
Total cost (approximately 328,000 cases)	432,384

The cost to UNICEF per case treated in this first period was thus \$1.32, of which the cost of penicillin was approximately two-thirds. The average cost of penicillin over this period was \$1.38 per vial of 10 ml containing three million units. This cost will tend to fall as the mass programme expands, for the following reasons : essentially the same equipment will serve for a larger number of treatments, WHO is paying the cost of international advisory personnel after 1951, and the price of penicillin is falling. (The present cost is about \$1.10 a vial.) Assuming continuance of the same dosage, the cost per case to UNICEF in 1952 should be in the neighbourhood of \$1.00. If the price of penicillin continues to fall, the cost will drop by about two-thirds of the amount of the savings.<sup>4</sup>

The cost to the Indonesian Government is somewhat more difficult to calculate. On the basis of the Government's rough estimates for 1951, the expenditures were 3,950,000 rupiah for a period in which 223,045 cases were treated. This represents about 17 rupiah 50 cents per case. At the current official rate, this amounts to \$1.53. Some of this expenditure was

<sup>4</sup> By the end of 1952, the cost of penicillin had dropped to about \$0.40 a vial. — S. M. K., 29 January 1953.

for capital costs, but the recurrent costs were probably not less than the \$1.32 spent by UNICEF.

It will be noted that the costs are based, as indicated above, on a treatment schedule of 8 ml of PAM for adults, and that no contacts have been treated. In the light of current WHO recommendations, it seems probable that the dosage for patients with clinical yaws may be lowered; but it is also probable that the treatment of contacts now recommended will require at least as much as the penicillin thus saved. UNICEF is anxious to effect all possible savings, but not at the expense of good results. For the present, therefore, it is being assumed that the requirements of penicillin per thousand persons inspected will not be less than heretofore.

As a guide to UNICEF's budgeting and purchases of penicillin, we need to find answers to a number of questions, such as :

(1) What should be the dosage for patients (by age or by weight) for mass campaigns ?

(2) Should PAM be given in two doses, as at present, or in one dose ?

(3) Should contacts be treated ? If so, with what dosage ?

(4) If contacts are to be treated, how should the category be defined : i.e., should it be limited to members of the same household as patients with open lesions, or extended to include other community contacts ? If the category is extended, who should be included ? Should it be the same for all areas or different for areas of different incidence ?

(5) If not all contacts can be treated, should preference be given to those in communities where follow-up is less likely to take place ?

### **Proposal for a Ten-Year Control Project**

Rein & Kitchen remarked in the conclusion to their paper :

" The cause of yaws is known. A simple, safe, and practical form of ambulatory therapy, based on penicillin-assay investigations and clinical evaluation, is available. It is now possible to control the infectious stage and ultimately to eradicate the disease in a relatively short period of time. There is no reason why millions of people throughout the world should be affected with this crippling and disfiguring non-venereal treponemal disease." <sup>5</sup>

If this conclusion is accepted, certain practical conclusions follow. At least ten million cases of clinical yaws exist in south-east Asia, probably three-quarters of them in Indonesia. It is likely that, in spite of all the difficulties that have to be faced, these cases can be treated within a period of ten years. An average of one million cases a year may sound a bit startling; but, starting from scratch, we already have a rate of treatment of

<sup>5</sup> See page 102.

almost half a million a year. Even if contacts are added, the job can be done; for the time is spent mostly in finding the cases, not in treating them.

The two countries with the most yaws in this area are Thailand and Indonesia. In Thailand, although up to now only 10% of its probable total of one and a half million clinical cases have been treated, a solution to the problem of control is already beginning to appear. The Government has indicated its firm purpose of bringing the disease under control within the next five years, and budgetary plans are being made accordingly, including the provision of one-third of the penicillin. UNICEF has already agreed to provide money for the balance of the supplies and equipment to carry the campaign into 1953, and it is hoped that an additional \$460,000 will become available to carry it through 1954. By the end of that year, if present plans materialize, Thailand will have treated nearly two-thirds of its cases; and by 1955, or 1956 at the latest, it should be moving into the fifth, or consolidation, phase.

The heart of the problem in this area is in Indonesia, where the number of cases is great and where the resources in trained personnel are extremely limited. It must be recognized that the proposal to bring yaws in Indonesia under control in ten years calls for a mass campaign on a scale hitherto unknown in yaws work and that preparations must be made accordingly. We know how to treat yaws; our problems are to obtain the necessary funds and personnel, and to build the organization to use the personnel effectively. The chances for international aid to cover the programme up to the end of 1955 are excellent, and it is probable that money to buy the supplies that must be imported can be made available until the Government can take over full responsibility. The most difficult problems ahead are those of organization.

If such a programme is to be undertaken, a well-conceived organizational plan must be drawn up. Some of the requirements are :

(1) All the methods of approach need to be brought together into one integrated system.

(2) Additional doctors are needed to provide the essential supervision of the mass work. Up to now progress has been hampered by the extreme shortage of qualified physicians, but it is hoped that from among the 250 doctors the Government is attempting to recruit abroad a number can be found either to work on yaws, or to replace local doctors who will.

(3) Additional case-finders must be recruited and trained.

(4) The number of mantris (male nurses) in training should be increased in order that the expansion of the yaws-control campaign can continue without robbing other essential services.

(5) Money needs to be provided in local budgets so that the people trained will have jobs when they are ready. Because of the extreme shortage of medical personnel, the danger of training too many people seems remote.

There will be plenty of work for them when they are no longer needed for yaws, which will not be for ten years. It will be necessary, however, to work out a promotion system so that these workers will not find themselves in dead-end jobs.

(6) A few more administrative persons of the highest calibre are required; this is a major need and should receive proper administrative attention.

(7) Additional funds for all local costs will need to be obtained as the programme expands. Two very good reasons for providing the money are :

(a) that it will ensure a continuance of international aid, which is now readily available but may not always be;

(b) that expenditure now will greatly reduce the cost of treatment later, after further infection, and will more than pay for itself in additional productive manpower.

(8) The control work, hampered by shortage of specialized personnel, urgently needs to be strengthened in order that every possible improvement in procedure and treatment may be applied to make the campaign successful and to effect every possible economy.

(9) The organization of treatment of cases recurring after the mass campaign needs to be improved.

(10) The existing health services must be strengthened in order that, once control is achieved, it can be maintained. Unless this aim is built into the plan of operations from the beginning, the outcome will be failure.

The next step is to translate these aims into a realistic plan of operations, with responsibilities fixed and with time schedules worked out—broadly for the later period but quite precisely for the earlier.<sup>6</sup>

<sup>6</sup> Since March 1952, encouraging advances have been made, in line with the recommendations of a WHO advisory team, in developing a simplified plan making maximum use of existing personnel in polyclinics. The goal of a million cases a year seems possible by 1954. — S. M. K., 29 January 1953.

## SUMMARY

UNICEF is particularly interested in yaws control since the disease affects millions of children and can be readily cured or arrested. The policy of UNICEF is to concentrate on a few widespread diseases which promise to yield to mass treatment at relatively low cost. Its interest in yaws did not begin, however, until 1948, at which time there was a change in policy from

## RÉSUMÉ

Le FISE porte un intérêt particulier à la lutte contre le pian, car la maladie atteint des millions d'enfants et, d'autre part, peut être aisément guérie ou du moins arrêtée dans son expansion. Le FISE a pour idée directrice de concentrer son action sur quelques maladies très répandues, justiciables d'un traitement systématique relativement peu coûteux. Son intérêt pour la

providing mainly food and clothing to providing medical supplies.

In the last three years the partnership between WHO, as the body responsible for co-ordinating health programmes throughout the world, and UNICEF, providing supplies on a large scale, has led to the development of 100 projects in the Asian region alone.

The money used by UNICEF is provided by voluntary contributions, of which approximately 90% comes from governments; this means that it inevitably takes some time for the necessary sums to be voted by the various parliaments. However, in the past, enough money has been found to provide supplies when they were needed. Although the life of UNICEF has been extended only until the end of 1953, the fact that its funds are allocated for some years in advance means that it can be assumed that it will continue to support yaws-control programmes at least up to the end of 1955.

The author discusses the various problems that have arisen in the yaws-control programmes, with particular reference to Indonesia and Thailand, and goes on to consider what has been achieved despite them. It is estimated that more than 6,000,000 persons will have been examined, and more than 800,000 treated, by the end of 1952 in Indonesia, the Philippines, and Thailand. The schedule of treatment has been 8 ml of penicillin given in two equal injections. By 1 April 1952, some 500,000 cases had been treated, and the rate is increasing by about 40,000 cases a month. But there are still considerable problems of staffing and organization to be overcome.

The cost of treating one case of yaws has been approximately \$2.50, one half of which is borne by the local government. The cost to UNICEF per case treated in the Indonesian campaign for the period May 1950-March 1952 was \$1.32, or a total of \$432,384 for 328,000 cases treated.

lutte antipianique ne s'est manifesté cependant que depuis 1948, époque à laquelle il modifia l'orientation de son activité, et fit porter ses efforts sur la fourniture de médicaments et de matériel médical plutôt que sur celle de vivres et de vêtements.

Au cours des trois dernières années la collaboration de l'OMS — responsable de la coordination des programmes sanitaires dans le monde entier — et du FISE — procurant des quantités considérables de matériel et de fournitures — a permis d'entreprendre de nombreux programmes, dont une centaine dans la seule région asiatique.

Les fonds dont dispose le FISE proviennent de contributions volontaires; 90% environ sont assurés par les gouvernements. Or, le vote par les parlements des sommes consenties par les divers États exige inévitablement certains délais. Malgré ces inconvénients, le FISE a pu trouver, jusqu'à maintenant, les sommes nécessaires à l'accomplissement des tâches qui lui incombent. Bien que son activité n'ait été prolongée que jusqu'à la fin de 1953, le fait que les fonds sont alloués pour plusieurs années à l'avance permet de penser que les programmes antipianiques pourront être financés au moins jusqu'à la fin de 1955.

L'auteur examine les divers problèmes qui se sont posés au sujet des programmes antipianiques, en particulier en Indonésie et en Thaïlande, et il met en relief les résultats obtenus malgré les difficultés. A la fin de 1952, plus de 6 millions de personnes auront été examinées et plus de 800.000 traitées, en Indonésie, aux Philippines et en Thaïlande. Le schéma de traitement consiste en 8 ml de pénicilline, répartis en deux injections d'égale quantité. En date du 1<sup>er</sup> avril, quelque 500.000 cas avaient été traités et le nombre des sujets soumis au traitement augmente d'environ 40.000 par mois. De graves problèmes relatifs au personnel et à l'organisation restent à résoudre.

Le coût du traitement s'est élevé à environ \$2,50 par cas, somme dont la moitié a été assumée par le gouvernement local. La somme payée par le FISE pour chaque cas traité au cours de la campagne d'Indonésie, durant la période de mai 1950 à mars 1952, a été de \$1,32, soit un total

Owing to the facts that WHO is now paying the costs of the international personnel, that the price of penicillin is falling, and that, even with programme expansion, the same equipment can be used to treat a larger number of cases, the cost to UNICEF in 1952 should be about \$1.00 per case.

The author believes that the ten million cases of yaws in south-east Asia can be effectively controlled in ten years. The largest number are to be found in Indonesia and Thailand. The Thai Government intends to bring its yaws problem under control in five years and is planning its budget accordingly. UNICEF will provide money and supplies to carry the campaign through 1953; by the end of 1954 Thailand will have treated nearly two-thirds of its yaws cases; and by 1956, at the latest, the campaign should be in the consolidation phase.

In Indonesia, the number of cases is great and trained personnel is in very short supply. However, the chances that international aid will be provided until the end of 1955 are good, and it is hoped that money to purchase supplies can be made available until the Government can assume the full responsibility.

The most difficult problems yet to be solved are those of organization. The author lists ten essential requirements for a successful plan of organization. If these are met, there should be every reason to hope for successful yaws-control in south-east Asia.

de \$432.384 pour 328.000 cas traités. Grâce au fait que l'OMS assume les frais de personnel, et que le prix de la pénicilline a baissé, et que, malgré l'expansion du programme, le même équipement peut être utilisé pour le traitement d'un plus grand nombre de cas, les frais encourus par le FISE en 1952 seront d'environ \$1,00 par cas.

L'auteur pense que les quelque dix millions de cas de pian existant en Asie du Sud-Est pourront être traités efficacement en dix ans. C'est en Indonésie et en Thaïlande que se trouvent le plus grand nombre de pianiques. Le Gouvernement thaïlandais compte maîtriser le problème du pian en cinq ans et il établit son budget en conséquence. Le FISE a prévu l'attribution de fonds et de fournitures pour la campagne de 1953. A la fin de 1954, en Thaïlande, les deux tiers environ des cas auront été traités, et en 1956 au plus tard, la campagne entrera dans sa phase de consolidation.

En Indonésie, nombreux sont les malades et rares ceux qui ont les compétences nécessaires pour s'occuper d'eux. Il y a bien des chances cependant que l'aide internationale soit maintenue jusqu'à la fin de 1955 et l'on espère que les fonds permettant l'achat de fournitures seront assurés jusqu'à ce que le gouvernement puisse assumer cette charge en totalité.

Les problèmes les plus difficiles à résoudre concernent l'organisation. L'auteur énumère dix points dont il importe de tenir compte pour mener à bien une campagne. Si les conditions mentionnées sont remplies, il y a tout lieu d'espérer que la lutte antipianique dans l'Asie du Sud-Est sera couronnée de succès.

## DISCUSSION : PART VIII

*Chairman* : Dr. K. W. C. SINCLAIR-LOUTIT

*Rapporteur* : Dr. N. JUNGALWALLA

It was considered that international organizations—particularly the World Health Organization and the United Nations Children's Emergency Fund—were playing, and would continue to play, important roles in the global elimination of yaws. This disease occurs in areas that have underdeveloped technical resources and limited financial capacities. To carry out successfully an undertaking of such magnitude requires outside assistance in the form of technical guidance and monetary assistance for the purchase of supplies and equipment.

Other international organizations—such as the South Pacific Commission, the Colombo Plan, and the “Point Four” programme of the USA—can also usefully assist countries in their efforts to control yaws, a disease that clearly retards economic development by crippling and maiming millions of people in the underdeveloped rural areas of the tropics.

There was considerable speculation as to whether improving the health of the people in these areas there would result in increasing the population and producing a consequent shortage of food. Factors other than medicine would have to be considered, and improvements in agriculture, education, and the science of human relationships were highly desirable. Nevertheless, physicians and public-health workers could not be deterred by these considerations from healing the sick. The vicious circle of disease, poverty, and hunger must be broken wherever it was possible to do so, and yaws represented one weak link in the circular chain.

The economic implications of yaws are well known and enormous. By controlling the disease, millions of workers will be able to till the soil, or carry out other work more effectively. This cannot fail to have a far-reaching effect on the economic development of vast areas of the world.

**DISCUSSION : PARTIE VIII**

*Président* : D<sup>r</sup> K. W. C. SINCLAIR-LOUTIT

*Rapporteur* : D<sup>r</sup> N. JUNGALWALLA

De l'avis général, les organisations internationales — en particulier l'Organisation Mondiale de la Santé et le Fonds International de Secours à l'Enfance — jouent et joueront encore un rôle important dans la lutte entreprise pour supprimer le pian. Cette maladie sévit dans des régions qui sont techniquement sous-évoluées et disposent de ressources financières limitées. Pour mener à bien une lutte de cette envergure, ces pays ont besoin d'une aide extérieure, d'avis techniques et d'appui financier leur permettant l'achat de matériel et de fournitures.

D'autres organismes internationaux tels que la South Pacific Commission, le Colombo Plan et le Programme du Point IV des Etats-Unis d'Amérique peuvent apporter une collaboration précieuse aux pays luttant contre le fléau qui retarde le développement économique en faisant de millions d'êtres vivant dans les zones rurales des tropiques, des infirmes et des mutilés.

L'amélioration de la santé n'aura-t-elle pas pour conséquence un accroissement de la population et finalement une pénurie alimentaire ? Cette question fut l'une des plus débattues. Il est certain que le problème ne doit pas être envisagé du seul point de vue médical. L'agriculture, l'instruction, les relations humaines doivent être améliorées. Mais les médecins et leurs aides ne sauraient être détournés de leur tâche, qui est de soigner les malades, par de telles considérations. Il faut rompre, en l'un de ses points vulnérables, le cercle vicieux : maladie-pauvreté-famine; or, le pian est précisément l'un des chaînons les plus faibles de ce cycle.

Les conséquences économiques du pian sont considérables; elles sont aussi bien connues. Le mal jugulé, des millions de travailleurs pourront cultiver le sol ou se livrer à d'autres besognes, avec un meilleur rendement. Un tel changement aura, à coup sûr, des répercussions profondes sur le développement économique de vastes régions du monde.

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