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YAWS AND OTHER ENDEMIC TREPONEMATOSES

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*Treponemal infections*

*Africa*

Report of a Regional Meeting  
Brazzaville, 3-6 February 1986

WORLD HEALTH ORGANIZATION  
Regional Office for Africa  
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The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry, no matter how small, should be recorded to ensure the integrity of the financial statements. This includes not only sales and purchases but also expenses and income. The document provides a detailed explanation of how to categorize these transactions and how to use a double-entry system to ensure that the books balance.

Next, the document covers the process of reconciling bank statements. It explains that this is a crucial step in verifying the accuracy of the cash account. The process involves comparing the bank's records with the company's records and identifying any discrepancies. Common reasons for discrepancies include bank charges, interest, and timing differences. The document provides a step-by-step guide to performing a bank reconciliation and includes a sample reconciliation form.

The third section of the document discusses the preparation of financial statements. It explains that these statements provide a snapshot of the company's financial position at a specific point in time. The primary financial statements are the Balance Sheet, the Income Statement, and the Statement of Cash Flows. The document provides a detailed explanation of how to prepare each of these statements and includes sample formats for each.

Finally, the document discusses the importance of internal controls. It explains that internal controls are designed to prevent and detect errors and fraud. The document provides a list of common internal controls and explains how to implement them. It also discusses the importance of regular audits and how to respond to audit findings.

Note

This report expresses the collective viewpoint of the participants at the Regional Meeting on Yaws and other Endemic Treponematoses and not necessarily the decisions or the official policy of the World Health Organization.

This report is also available in French.



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## INTRODUCTION

1. The Regional Meeting on Yaws and other Endemic Treponematoses was opened by Dr G. L. Monekosso, Regional Director for Africa of WHO at Brazzaville on 3 February 1986. The objectives of the meeting were:

- (i) to determine the present epidemiological situation of endemic treponematoses in the countries of the Region;
- (ii) to consider the current endemic treponematoses control programme and develop an innovative, PHC-oriented, integrated control strategy, designed to interrupt their transmission.

2. In his opening address the Regional Director welcomed the participants and members of the International Advisory Group and recalled the importance of endemic treponematoses control, especially in the eight West African countries most affected. He underlined the harmful effects of these diseases on the population of the Region and consequently the need for the formulation of appropriate strategies for their control. In this regard he stressed the importance of the development of control programmes as part of primary health care strategies if control is to be achieved. He also emphasized the point that where endemic treponematoses occur, their prevalence would constitute a good indicator of the progress of the implementation of primary health care in the affected areas as well as the level of personal hygiene and the quality of health care.

3. He also expressed his appreciation of the initiative and efforts being made by the Fogarty International Centre to focus worldwide attention of the endemic treponematoses and to mobilize resources for their control as a contribution towards the achievement of the social goal of HFA/2000 in those areas where the diseases constitute a public health and social problem.

4. In his opening remarks, Dr J. Burke from the Fogarty International Centre thanked the Regional Office for organizing the meeting. He explained that the Fogarty International Centre had developed a special interest in promoting the control of the endemic treponematoses for three special reasons: firstly on purely humanitarian grounds because humanitarianism was one of the basic principles on which the Centre had been founded: secondly a simple, highly effective and affordable technology for the control of the diseases exists and thirdly because delay in eradicating the diseases might lead to the emergence and spread of drug resistance with disastrous consequences on any future efforts at control.

5. The participants elected the following officers:

Chairman : Dr (Mrs) M. O. Alli, Nigeria  
Vice-Chairman : Dr Anoumou A. Edoth, Togo  
Rapporteurs : Dr I. Ndoye, Senegal  
Dr M. K. Galakpai, Liberia.

6. The objectives of the meeting and the provisional programme of work were adopted.

#### THE RESURGENCE OF ENDEMIC TREPONEMATOSES

7. Prior to mass treatment campaigns, the overall prevalence of yaws was between three and five percent in sub-Saharan Africa; that of endemic syphilis was over 10 percent. National yaws programmes were frequently combined with leprosy, trypanosomiasis and other disease control activities. By the mid-1960s, the world-wide incidence of yaws had rapidly declined. In most of Africa the prevalence of active cases of yaws fell below one-half of one percent. Following these successes there was a general decline in yaws control activities.

8. Since 1976, over half of the 45 countries of the African Region of WHO have reported cases of yaws. There are cases of yaws in Central and Eastern Africa - primarily in the pygmy populations of Cameroon, Congo, Central African Republic and Zaire - however, most of the reported yaws cases are from the following West African countries: Benin, Ghana, Ivory Coast and Togo. These countries accounted for over 90 percent of the cases reported to WHO in 1982. The following Sahelian States: Burkina Faso, Mali and Niger, and to some extent, Senegal, are reporting dramatic increases in the number of cases of endemic syphilis. Prevalence rates of 10 to 15 percent in affected areas have been reported.

9. In 1979, USAID supported teams from CDC to evaluate the current levels of yaws in five West African countries. The teams found 10-fold increases in the number of cases of yaws reported in Ghana, Ivory Coast and Togo compared to the number reported in the 1960s. Those children born after 1965 - the year that many African yaws control programmes ceased field operations - were found to have the greatest number of active cases of yaws. It was also found that surveillance data for yaws underestimate the actual number of active cases of disease. Over 97 percent of the active yaws cases in Ghana were in children under 15 years of age.

10. The resurgence of yaws is due to several factors, including failure to establish effective monitoring, surveillance and control measures as part of the general health services, shortage of laboratory facilities, inadequate penicillin supplies, and inadequate health education activities as well as little or no change in the hygienic and socioeconomic conditions which favour the transmission of yaws especially in the rural areas.

11. To be successful a yaws control should be developed and implemented as part of primary health care with emphasis on the four essential elements of yaws control: (i) examination of at least 90% of the target population; (ii) treatment of cases with a long acting penicillin; (iii) mass treatment of the entire treponemal reservoir, and (iv) resurveys at intervals of between six months to one year at most, depending on the prevalence of infectious cases detected in the preceding survey. The training of all cadres of health personnel should include yaws. The community health worker should be responsible for the surveillance of active yaws. He should be supported at the referral level for follow-up of cases and the treatment of contacts. In areas where treponematoses are not considered a public health problem, surveillance should not be abandoned.

#### LABORATORY TESTS AND SEROLOGICAL SURVEILLANCE

12. In the field, diagnosis of yaws, in most instances, can and should be made on the appearance of the lesion. However, when lesions are atypical, serologic tests are extremely important for establishing diagnosis. Serology also plays essential roles in surveillance to: (i) define the magnitude of the problem; (ii) identify target populations, and (iii) monitor new infections in periodical follow-up surveys. Serologic surveys for yaws can easily be integrated into other survey programmes. Collection of finger-prick blood on each of two circles on Ropaco No. 1023.038 filter paper can provide samples for testing not only for yaws but for amebiasis, malaria, toxoplasmosis, leishmaniasis, African trypanosomiasis, schistosomiasis, arbovirus

infections, and any number of other diseases or conditions where the initial serum dilution is 1:20 or greater. When integrated surveillance programmes are established, the selection of the tests to be used should include: (i) a cost analysis to determine the benefit for testing for a particular disease, i.e. the disease of public health importance to the population being surveyed; (ii) consideration of the use of the test, i.e. case confirmation or general epidemiologic surveillance, and (iii) the skills available either in the field or in the laboratory. Each country may wish to develop a reference serology laboratory or countries within the African Region may wish to establish a regional reference laboratory for all to share.

#### INTERPRETATION OF LABORATORY TESTS AND SEROLOGICAL RESULTS

13. The important role of accurate surveillance in a campaign against the treponematoses was emphasized. This is necessary at the beginning to define the magnitude of the problem and to identify target populations. Continued accurate follow-up surveillance is required after the treatment stage in order to identify missed cases, treatment failures and new outbreaks.

14. Several tools are available for use in surveillance programmes:

- (i) physical examination;
- (ii) microscopic examination of material from suspicious lesions, and
- (iii) serologic testing.

Physical examination is essential for identifying early active lesions; however, it should be remembered that a lack of lesions does not mean that yaws is absent. The patient may have incubating or latent disease in which clinical manifestations may recur.

15. Darkfield microscopic examination is the most widely used method for identification of treponemes in lesions. The specificity of this method is dependent solely on the skill of the microscopist in distinguishing pathogenic from non-pathogenic spirochetis. For initial surveys, it may be preferable to send specimens collected on slides to a central laboratory for definitive identification of L. pallidum using the DFATP or a specific monoclonal antibody. Three recent studies have shown that monoclonal antibody staining is very specific (97%-100%) and sensitive (84%-100%). New methods for identification of L. pallidum in lesion exudate collected on filter paper using monoclonal antibody or homologous DNA are being examined. Serologic testing is a very valuable tool for identifying persons who have been infected with treponemal infections.

16. It should be remembered that the simple, inexpensive reagin tests (RPR, VDRL) may be falsely positive in a low percentage of individuals or more importantly falsely negative (insensitive) in persons with very early or latent disease. The treponemal tests (MHA-TP, TPHA) may also be insensitive in very early infection, but are very sensitive in established infection. These tests can be used with serum specimens which have been collected on filter paper for ease of transportation.

17. None of the available tests can be accurately differentiated between current and past infection, however the loss of specific 1 gm antibody may be a useful indicator of cured infection. Techniques for detecting 1 gm are difficult and are available only in research laboratories.

18. Reliable methods for distinguishing the treponemal subspecies do not exist, however recent evidence for differential reactivity of certain monoclonal antibodies with the treponemal subspecies indicates that serological differentiation may be possible in the future.

#### PRESENT SITUATION

19. Surveillance data for yaws and endemic syphilis in all of the endemic countries underestimate the actual number of active cases of the disease. In the Ivory Coast, some 10% of the actual number of cases are reported; in Togo, about 20% of the cases of yaws are thought to be reported. Although reported in nearly all health districts throughout each country, most of the yaws and endemic syphilis cases are reported from only some of the districts. For example, 75% of all cases of yaws in Togo are reported from six maritime prefectures, 90% of all cases in Gabon are reported from Woleu-Ntem region and 70% of cases in Ghana from three regions.

20. Yaws and endemic syphilis are childhood diseases; at least 75% of all active cases are found in children under the age of 15. It is estimated that at least 1 200 000 children in six most affected countries have active infectious yaws or endemic syphilis. For planning purposes a ratio of one infectious case requires penicillin therapy for approximately 10 additional contacts.

21. No current data were available to quantify the present amount of crippling and mutilation caused by yaws and endemic syphilis. Data estimating the economic costs and productivity losses due to these diseases were also not available.

22. The incidence of endemic syphilis in the Sahel region approaches that of yaws in West Africa. It is estimated that 2.8 million of the Sahel's 30 million inhabitants are at risk of infection. In high endemic areas of Burkina Faso, Mali and Senegal, 15%-40% of children gave serological evidence of past or present infection and 2%-10% showed active clinical lesions of bejel. The present epidemiological situation per participating country is given in Annex 4.

#### STRATEGY FOR ENDEMIC TREPONEMATOSES CONTROL

23. A major objective of any national endemic treponematoses control programme is the prevention of their devastating consequences, which arise particularly in situations where infected individuals are not identified and/or are treated inappropriately in the course of their disease. This underlines the need to increase the competence of health services close to the community to deal more effectively with the endemic treponematoses problem.

24. Within this context and the objectives of the strategy of "Health for All by the Year 2000", the Member States of WHO have given priority to the development of methods and technologies to enable health care units with minimal or no laboratory diagnostic support to provide effective treatment to endemic treponematoses cases and their contacts. In such a simplified ET control approach simple patient management instructions should be provided to physicians, practitioners and other community health workers to guide them in the management of patients with suspected endemic treponematoses and their contacts.

25. In order to bring about a significant reduction in disease transmission and the development of sequelae, these clinical activities will have to be supplemented by other control strategies (e.g. screening for asymptomatic cases, promotion of changes in health and illness behaviour, etc.), and should receive the support of the community.

26. The main aims of endemic treponematoses control are:

- (a) to interrupt the transmission of the disease, and
- (b) to prevent the development of complications and their consequences.

This is accomplished by:

- (a) improved standards of living and health education;
- (b) preventing infection by promoting the individual and collective hygiene;
- (c) detecting and curing disease by implementing disease detection activities, providing effective and efficient diagnostic and treatment facilities, and promoting health-seeking behaviour;
- (d) limiting complications of infection by providing early and appropriate treatment for both symptomatic and asymptomatic infected patients and their contacts, and
- (e) limiting disease transmission within the community with the above efforts.

27. These efforts are translated into the following endemic treponematoses control strategy:

Disease detection

27.1 This strategy is accomplished by applying the following three tools:

- (a) screening: ascertainment of probability of disease in populations or individuals not directly seeking health care, e.g. clinical, serological or mixed screening in selected groups in the community;
- (b) case finding: use of clinical and/or laboratory tests to detect any stage of infection, individuals seeking health care for other reason, e.g. VDRL to detect endemic treponematoses in patients admitted to hospitals, and
- (c) diagnosis: application of clinical and laboratory procedures to confirm the cause of disease in individuals presumed ill, e.g. VDRL in an individual with lesions suggesting treponemal disease.

Treatment of cases and contacts

27.2 Current treatment protocol of endemic treponematoses is characterized by:

- (a) efficacy;
- (b) acceptability;
- (c) convenience;
- (d) low cost and availability of long acting penicillin in a simple dose.

Recommended regimen: single injection of Benzathin Penicillin G, 1.2 million units for all cases and contacts and half that dose for children under 10 years of age.

According to prevalence of clinically active endemic treponematoses in the community the following is recommended:

- (a) Hyperendemic (over 10%) zone: Total mass treatment (TMT).
- (b) Mesoendemic (5%-10%) zone: Juvenile mass treatment (JMT).
- (c) Hypoendemic (under 5%) zone: Selective mass treatment (SMT).

Health education

27.3 This should consist of:

- (a) activities which increase individual and community awareness and knowledge of endemic treponematoses;
- (b) efforts which produce positive changes in their attitudes and health and illness behaviours in endemic treponematoses and their prevention.

## INTEGRATED APPROACH FOR ENDEMIC TREPONEMATOSES CONTROL

28. Participants stressed the need for adoption of approach according to the level of endemicity. Most countries preferred establishing a "flexible - fixed" strategy that would concentrate diagnosis, treatment and health education efforts at the fixed health centre level, adopting an outreach strategy for the treatment of latent cases and contacts. In addition, there was a desire by each of the interested countries to take advantage of economies of scale and combine outreach activities for yaws and endemic syphilis with other public health programmes such as immunization, malaria prophylaxis and diarrhoeal disease control. Emphasis would be placed on integrating yaws and endemic syphilis control plans with other primary health care activities such as health education, maternal and child health, provision of essential drugs and sanitation improvements. It has been stressed that integrated approach will also directly promote control of congenital syphilis, especially in affected countries of East Africa like Ethiopia and Zambia.

29. Introduction of yaws and endemic syphilis control to the content of essential elements of PHC is necessary in the countries with existing pockets of yaws and this is independent of adopted approach (e.g. even if attack phase has to be performed by specific mobile teams, the consolidation and maintenance phase have to be integrated in PHC). The approaches adopted by each participating country are given in the Annex 5.

### CONTROL REQUIREMENTS

30. Most countries expressed a desire to intensify yaws and endemic syphilis control programmes. Although each of the countries has different needs, in general, the following resources were universally needed to undertake control programme.

#### Technical collaboration

31. It was concluded that in countries with situation not precisely known the collaboration will be needed in the following fields:

- (a) epidemiological - to help quantify disease distribution patterns and the interaction of the endemic treponematoses with other infectious diseases such as venereal syphilis; in most countries there is a need for initial sero-epidemiological surveys to assess magnitude of the problem;

- (b) operational - programme management, material distribution, training and operational plans and evaluation efforts;
- (c) training - to teach diagnostic, epidemiologic and treatment skills to health workers.

#### Supplies

32. Most of affected countries will need the following supplies for control programmes:

- (a) provision of sufficient quantities of long-acting penicillin, needles and syringes to treat the estimated number of cases and contacts in each country;
- (b) transportation assistance to help to answer wide coverage of desired population; such assistance could include four-wheel drive trucks, spare parts and fuel;
- (c) educational materials;
- (d) laboratory supplies and equipment.

Detailed list of requirements, including preliminary costing by each participating country is presented in Annex 5.

#### RECOMMENDATIONS

33. Recognizing the recent resurgence of yaws and other endemic treponematoses, and taking into consideration that the foci of these diseases are widely distributed throughout the continent, participants at the Brazzaville regional meeting expressed their concern at the spread of these diseases to countries with present or past experiences and hereby recommend that:

- (i) Health authorities and governments of countries with yaws and other endemic treponematoses should take special steps for the continuous assessment of the disease problem and report to WHO.
- (ii) Those countries that are not presently affected by yaws or endemic treponematoses should develop surveillance to prevent their resurgence or importation. In this respect, surveillance for yaws should be integrated with control efforts on other major communicable diseases prevalent in each country.

- (iii) Affected countries of the Region should resolve to interrupt transmission of these diseases by vigorously implementing World Health Assembly resolution WHA31.58, utilizing technical and financial collaboration where appropriate, from external agencies. This may require different combinations of integrated and specific disease control efforts according to the needs of individual nations.
- (iv) In affected countries yaws and endemic treponematoses control activities should be integrated into primary health care programme and activities in border areas be carried out in coordination with neighbouring countries.
- (v) Recent innovations in sero-diagnostic tests reported at the meeting should be transferred to interested countries with support from governments, WHO and other external agencies.
- (vi) Updating the knowledge and skills of health personnel in affected countries is recommended through formal training and special courses to stimulate awareness and reporting.
- (vii) Posters and other teaching materials on endemic treponematoses, including differential diagnosis and treatment should be widely distributed to health workers and training institutions.

ANNEX 1

WELCOME ADDRESS OF DR G. L. MONEKOSSO, REGIONAL DIRECTOR

Dear Participants,

Dear Members of the Advisory Panel and Observers,

On behalf of WHO I welcome you all to this important Regional Meeting on Endemic Treponematoses.

Yaws and bejel are still an important public health problem in many countries in this Region. In many others, following successful mass treatment campaigns and better education and sanitation, transmission ceased or is now under control.

However, an estimated 1 000 000 children are infected in six countries of West Africa where the resurgence is most evident. Of all possible primary health care interventions in West African countries, efforts to halt the resurgence of yaws and endemic syphilis are among the most important in affected countries. Moreover, any assault launched on these problems is an attractive wedge by means of which primary health care can be started or enhanced in the affected areas, since the results are so visible, rapid and appreciated. Failure to do something soon will mean condemning another generation of children in those areas to preventable scarring and crippling, an unfortunate situation that is now occurring - 40 years after the discovery of long-acting penicillin. Further delay also increases the risks of the emergence of penicillin-resistant strains of treponemes which would make subsequent control measures far more difficult and expensive. That is why, the FOGARTY International Center's efforts to focus world attention on the potential for eradication or at least control of endemic treponematoses were welcomed by WHO as being in line with a number of WHA resolutions.

The present meeting follows other global and regional conferences organized jointly by FOGARTY International and WHO.

WHO is co-sponsoring this meeting which brings together public health decision-makers from all over the world. It is most important at this juncture to determine the present epidemiological situation and to propose an integrated control programme to interrupt transmission of endemic treponematoses.

Annex 1

I am happy to note that the meeting intends to plan an innovative and integrated approach to yaws control in the framework of PHC services for the affected populations. I sincerely hope that such an integrated control approach will be advantageous in terms of cost-effectiveness, socioeconomically acceptable and likely to promote active and continuous community participation.

It should be recalled that the collaborative efforts of Member States, in cooperation with WHO and UNICEF have yielded significant results in controlling yaws in the past. However, it has not been possible to sustain these for various reasons. One of the principal causes of the resurgence of yaws has been the failure on the part of many countries to integrate control measures into local health services following the mass campaigns.

Existing appropriate technology applied through primary health care at an affordable cost and with a high degree of community involvement will, I am sure, facilitate this type of integration nowadays.

It would be unethical to keep affected populations waiting until universal progress and improved hygiene have eliminated endemics.

We should now intensify our efforts to achieve the goal of Health for All by the Year 2000. As far as endemic treponematoses are concerned, we do have efficient and very low-cost antibiotherapy and antibioprohylaxis. Failure to control endemic treponematoses simply reflects the absence or ineffectiveness of health services in the area and is one of the most accurate indicators for monitoring progress towards achieving the HFA goal.

Clinical experience with antibiotics has shown that resistance can develop overnight after decades of sensitivity.

Although antibiotic resistance is not yet regarded as a problem, it behoves us to renew our efforts and to bring endemic treponematoses fully under control while we still have a simple, inexpensive and highly effective cure.

Annex 1

The test of civilization is how well it takes care of its less fortunate members. Yaws and other endemic treponematoses pose a considerably greater threat to developing nations. The possibility that these diseases can be imported and flourish in industrialized nations is remote. Here is an opportunity for the latter to join hands in order to bring endemic treponematoses fully under control. The main need is not financial; what is called for is a firm commitment on the part of both the affected nations and those that are willing to help. There can be no doubt that the interruption of human transmission of yaws and endemic syphilis are scientifically and technically feasible. It is clear therefore, that these diseases are a challenge to us to master all the resources we possibly can summon.

Thank you all for your kind attention and I wish you every success in your work.

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Annex 2

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Dr G. L. Monekosso  
Regional Director

Dr E. G. Beausoleil  
Programme Manager, Disease Control

Dr R. Yang  
Regional Officer, CDB/AFRO

Dr R. Widy-Wirski  
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Dr R. Molouba  
Epidémiologist /AFRO

Dr J. Ridet  
STC/AFRO

Dr G. M. Antal  
Programme Manager  
Sexually Transmitted Diseases and Endemic Treponematoses  
WHO/HQ  
Geneva

Dr John P. Burke (Executive Secretary)  
Forgarty International Center  
National Institutes of Health  
Bethesda, Maryland 20892

ANNOTATED PROGRAMME OF WORK

Monday, 3 February 1986

- 9H00      Opening ceremony
- Address by the Regional Director
  - Introductory comments: Dr J. Burke, Fogarty International Centre N.I.H/USA
- 9H40      Method of work
- Introduction and election of Chairman and Rapporteurs
  - Adoption of the provisional programme of work
  - Constitution of working groups
- 10H30      Intermission: Group photograph
- 10H45      Coffee break
- 11H00      Global report on Yaws and other Endemic Treponematoses (document YET/WP/02) Dr G. Antal, WHO/Geneva
- 11H15      Yaws control in African Region (document YET/WP/03)
- 11H30      Discussion
- 12H00      Laboratory tests and serological surveillance: Dr Sandra Larsen, CDC/Atlanta/USA
- 12H15      Interpretation of Serological results: Dr Sheila Lukehart, University of Washington, Seattle/USA
- 12H30      Discussion
- 13H00      Adjournment.

Annex 3

Tuesday, 4 February 1986

- 8H00 Working Group Sessions related to Objective 1  
Four working groups will be formed to discuss issues raised  
by the documents YET/WP/03 and YET/WP/05
- 10H45 Coffee break
- 11H00 Presentation by Group 1
- 11H15 Presentation by Group 2
- 11H30 Presentation by Group 3
- 11H45 Presentation by Group 4
- 12H00 Discussion
- 12H15 Integrated Disease Control for Yaws affected populations  
(document YET/WP/04)
- 12H30 Discussion
- 13H00 Adjournment.

Wednesday, 5 February 1986

- 8H00 Workshop:
- to formulate integrated strategy and plans for action of each country
  - to estimate resources required at national level
  - to formulate expected international cooperation
- 9H00 Working Group Sessions related to Objective 2 (working documents YET/WP/04, YET/WP/05 and YET/WP/06)

Annex 3

- 10H45 Coffee break
- 11H00 Presentation by Group 1
- 11H15 Presentation by Group 2
- 11H30 Presentation by Group 3
- 11H45 Presentation by Group 4
- 12H00 Panel discussion on Integrated Regional Control Strategy  
(working documents YET/WP/04, YET/WP/05 and YET/WP/06)
- 13H00 Adjournment.

Thursday, 6 February 1986

- 8H00 Concluding plenary session
- 10H45 Coffee break
- 11H00 Presentation of Draft Report
- 12H00 Conclusions and Recommendations
- 12H30 Adoption of the Report and Recommendations and Closure.

ANNEX 4

REPORTS OF WORKING GROUPS ON OBJECTIVE 1

GROUP 1

Chairman : Dr M. Oughanem (Algeria)  
Rapporteur : Dr Alzouna Yada (Burkina Faso)

A. Epidemiologic situation by country

1. CHAD

The extent of the problem of endemic treponematoses is uncertain. An epidemiological survey carried out in 1956 showed that, out of a sample of 248 354 persons surveyed, 161 clinical cases of endemic treponematoses were identified.

2. GUINEA

When surveys were first carried out, five sectors of the Major Endemic Disease Control Service were identified as hyper- and meso-yaws-endemic areas (N'Zerekore, Macenta, Kissidougou, Mamou and Dubreka) corresponding to the humid forest zone. Systematic case-finding is no longer carried on, so that screening is only passive and therefore limited.

Cases of active yaws in 1983 :	1652
Cases of active yaws in 1984 :	1174.

Since endemic syphilis is not reported in the country, it is essential that a sero-epidemiological survey be made in order to ascertain the scope of the problem and determine the priority it should receive in communicable disease control planning.

3. SENEGAL

3.1 Endemic syphilis: Survey of two endemic regions.

(a) Saint-Louis Region: estimated population: 450 000.

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Children under 15 years: 2.1% early clinical cases;  
: 14-15% sero-positive.

Adults : 1.5% late active clinical cases.

Adults : 39-43% specific serological tests: TPHA, TPI and FTA  
and 15.8% VDRL.

(b) Louga Region (Linguère département): estimated population:  
50 000.

- children under 15 years:
  - 0.3% early clinical cases;
  - 2-10% sero-positive.
- Adults: as above, although to a lesser degree than in the Saint-Louis region.

### 3.2 Yaws

According to the WHO Team Report for 1972-1975, yaws was then being eradicated. However, later reports show that there were 144 cases of the disease in 1982 and 70 in 1983; "most cases have not been notified", said the report, particularly in Basse Casamance.

## 4. BURKINA FASO

### 4.1 Endemic syphilis

A survey was carried out in 1981 in Oudelan Region (in the north).

Annex 4

Clinical prevalence

Children aged 5-14 years	All ages	Adults over 15 years
5.7%	<u>Clinical cases</u> 5.6%	5.5%
5.6%	<u>Early cases</u> 3.9%	1.8%
0.1%	<u>Late cases</u> 1.7%	3.7%
	<u>Serologic prevalence</u>	
18.6%	27.9%	38.8%

In the country as a whole, 5134 clinical cases were recorded in health care units.

4.2 Yaws

Global clinical prevalence in Gaoua region in 1981 was 1.5%, particularly among children (only 0.6% in 1960), and serologic prevalence (Kline's reaction) was 7.9% in Gaoua region.

Annex 4

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Annex 4

Historical data on yaws (Gaoua region):

- 1956: clinical prevalence: 8%)  
serological prevalence: 24.7%) meso-endemic zone  
)
- 1985: 578 clinical cases of yaws notified.

5. MALI

5.1 Yaws

Sikasso Region (No.3), which used to be a yaws-endemic area, is now free of the disease since no clinical cases have been notified and no child under 10 years is sero-positive.

5.2 Endemic syphilis is meso-endemic in the north of Koulikoro region (No.2) where 19% of children aged 5-9 years are sero-reactive. All of Gourma, Tombouctou (No.6) and Gao (No.7) regions are hyper-endemic: 85% of children aged 5-9 years are sero-positive; early clinical lesions are also reported. There is a resurgence of treponematoses among the nomad populations.

Locality	% of TPHA <sup>+</sup>
Tombouctou	39.13
Dire	20.12
Binta Boubou	54.42
Mbouna	28.94
Bas-Elma	59.05
Ton Didarou	24.00

Annex 4

6. GUINEA BISSAU

- 1979-1981: 218 cases of yaws were notified in the south.
- No sero-epidemiological survey of endemic treponematoses has been carried out.

B. Proposals following the epidemiological approach

B.1 Divide the Sahel countries into 3 Groups:

Group I

Countries in possession of precise recent sero-epidemiological data and having localized operation zones: Burkina Faso, Mali and Senegal which are prepared to organize mass campaigns.

Group II

Countries requiring additional clinical and serologic surveys prior to launching mass campaigns: Chad, Guinea, Guinea-Bissau and Mauritania.

Group III

Consists of countries where no cases have been notified or suspected: Algeria is the only country in this Group.

- B.2 Standardization of diagnostic, clinical and serologic methods in order to evolve a simple and practical dermatological and epidemiological classification for use by medical and paramedical personnel.

Use of a simple, low-cost and appropriate method in the field.

GROUP 2

Chairman : Dr Mahommadou K. Cham (Gambia)

Rapporteur: Dr (Mrs) M. O. Alli (Nigeria)

PRESENT SITUATION

1. From the country reports of the Anglophone West African countries, it was felt that the essential "soft-ware" data presented were unreliable, and even in some areas unavailable. Detailed country reports from Gambia, Ghana, Ivory Coast, Liberia and Nigeria were analysed. The only study made on yaws in the Gambia was published in 1956 and the findings indicated that yaws and other endemic treponematoses were not a public health problem; and at present there is yet no indication that the situation has changed dramatically. But it was pointed out that venereal syphilis with hospital-based prevalence rate ranging from 11-13.6% is becoming a public health problem. In Liberia, an endemic focus has been identified on the border of Ivory Coast in the "Grand Bed" County which is a neglected area with no existing primary health care infrastructure. The available statistics at Headquarters on VDRL tests in adults is based on hospital laboratory figures throughout the country as follows:

NUMBER OF POSITIVE VDRL RESULTS IN ADULTS IN LIBERIA  
(Based in hospital laboratory findings)

1980	1981	1982	1983	1984
218	602	533	300	261

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2. In the Ivory Coast about 20 000 cases of yaws were reported in 1983, but it is estimated that the actual figure could be as high as 200 000, since 75% of cases in children are under 15 years; this means that about 166 000 children are actually infected with yaws in this country. The overall prevalence rate for yaws is between 3%-5% for 1979-1982. There was hyperendemicity of yaws in Ghana from 1979-1983 with estimated incidence rates of 400 to 500 cases per 100 000 population during that period, which indicates a resurgence. After a yaws/yellow fever campaign programme, the incidence rate came down to 62 per 100 000 representing some 41 000 cases reported each year since 1982. The foci for yaws are in three southern regions: Ashanti, Eastern and Central. Over 97% of infectious cases are in children under 15 years. The picture is unclear in the case of Nigeria because yaws is being reported in States such as Bauchi and Borno, areas where it has never been known to exist, while from the middle belt and Eastern States with riverine areas known to have officially reported rising incidence of yaws in 1982, the available statistics has not reflected the same. There is evidence that there may have been a resurgence of yaws in Bendel and Cross Rivers States in 1982, which was responded to by a massive treatment with penicillin but it is not sure to what extent was the control.

NEED FOR PROPER ASSESSMENT

3. The general consensus was that the non-availability of dependable "soft-ware" data on yaws at grassroots level is indicative of a major deficiency in the existing health system and should be tackled in such a way that minimal resources will be expended to quantify not only the yaws situation, but also to provide an opportunity to quantify more accurately the epidemiology of other priority diseases in geographical areas already identified in the situational analysis as being possible foci of yaws in the West African countries discussed. To this end, the basic needs for proper assessment include:

- (i) evolution of a quick and dirty method of epidemiological scouting (i.e. shoe leather epidemiology) that is multipurpose could be clinical, serological or sero-clinical, depending on whatever other disease problems are being assessed;

Annex 4

- (ii) training of specific cadres of health workers in clinical recognition of yaws among other prevalent skin conditions;
- (iii) provision of means of transportation and serology kits including promotion of filter paper methodology.

4. It was concluded that having set the baseline through this assessment, a plan of action should be drawn up so that, from the outset, commitment from UNICEF, WHO, etc., will be sought and obtained for continuity of a yaws surveillance programme.

Annex 4

GROUP 3

Chairman: Dr Kabangu-Tambua, Zaire

Rapporteur: Dr Gabriel Madzou, Congo.

1. Almost all the countries in this Group reported a resurgence of yaws, although endemic syphilis is not reported there.
2. Endemic yaws is limited to certain areas or reservoirs, often on either side of State borders.
3. Some ethnic groups (Pygmies) are more seriously affected because of their way of life and the ecological conditions in which they live.
4. The endemic affects children aged 0-15 years above all, except in Zaire where there are as many yaws cases among adults as among children.
5. The exact prevalence and incidence of the disease are not known, thereby indicating the need for sero-epidemiological surveys. These could be carried out jointly with surveys already programmed for other diseases and as an OCEAC activity (for the Member States of that Organization).
6. The Central African Republic is the only country in which a clinico-serological survey has been carried out.
7. In the Central African Republic, prevalence of sero-positivity is 15% in urban, 21% in rural and 90% in forest areas, where 85% of Pygmy children under 15 years were sero-positive.

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8. Endemic treponematoses have not been reported in Angola.

9. It was pointed out that the number of cases of yaws notified was more an indication of screening activities than of the actual prevalence of the disease.

NUMBER OF CASES OF ACTIVE YAWS REPORTED:

Country	1983	1984
Angola	-	-
Benin	6.348	3.327
Burundi	117	102
Cameroon	8.041	4.169
Chad	-	629
Central African Rep.	779	1.188
Congo	201	1.642
Equatorial Guinea	-	283
Gabon	223	257
Rwanda	408	225
Togo	4.382	2.956
Zaire	380	111

Annex 4

GROUP 4

Chairman : Dr Zergabachew Asfaw, Ethiopia

Rapporteur: Dr A. Masawe, Tanzania

The group critically examined the current status of endemic treponematoses in East Africa and noted that:

- (a) There is no report in any of the countries in East Africa which shows that endemic treponematoses exists. However, these countries are known to have been highly endemic for these diseases in the past.
- (b) Crude data from different sources in Ethiopia shows that syphilis is highly prevalent especially amongst children. One percent of patients attending health centres in Ethiopia have clinical features of syphilis. Of these, 12.6% were children under 15 years. Secondly, 13%-20% of sera analysed for the treponemal antibodies from different sources were sera positive. In other countries in East and southern Africa, available data shows that the prevalence of syphilis amongst children is also high (approx. 8%-12% of patients).
- (c) Countries bordering Tanzania and Uganda have already documented foci of resurgent endemic treponematoses. These countries are Burundi, Rwanda and Zaire. As diseases do not observe borders, it is very likely these diseases have crossed over to non-reporting countries.
- (d) Socioeconomic upheavals which have taken place in East Africa in the last decade provide a rich medium for spread of endemic treponematoses.

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These observations tied together strongly suggest that treponematoses are endemic in East Africa. Whether the cases of syphilis noted in children are due to endemic syphilis or congenital venereal syphilis is difficult to tell. However, it is noteworthy that venereal syphilis is highly prevalent amongst urban populations in East and southern Africa.

To ascertain the magnitude of this problem, there is a very great need to carry out a coordinated epidemiological survey of treponemal disease in Ethiopia, Kenya, Tanzania, Uganda and Zambia. These surveys will provide factual data which can be used to convince funding agencies of the need to support control programmes for the diseases in these countries. Such data will also be useful in persuading Member countries to embark on control programmes.

Methodology

- (a) Epidemiological surveys of selected areas in the stated countries preferably areas bordering countries with existing yaws, should be carried out.
- (b) Workers in peripheral areas should be contacted through the auspices of WHO and Member countries to assist in these surveys.
- (c) A local member in each country should be identified to supervise the assessment and train local health workers.
- (d) An interregional team consisting of local and international experts should evaluate the results and coordinate activities. This team should preferably be based at the Nairobi WHO Office.
- (e) A reference laboratory for serological support of the surveys should be identified.
- (f) Two to three persons from the zone should undergo training on serological techniques at the reference laboratory.

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- (g) Logistics requirements should be clearly worked out taking into consideration that:
- (i) a sample cluster of 200-300 people shall be clinically screened in every identified village;
  - (ii) 10% of every screened population shall be tested serologically;
  - (iii) 5-10 villages shall be selected at random in every district identified;
  - (iv) the survey shall be integrated with other PHC activities wherever they exist.
- (h) Sample populations should consist mainly of schoolchildren, MCH/family planning clinic consultants and villagers.

Integration of yaws control into primary health care

Yaws control should be incorporated into primary health care (PHC) systems whenever possible. This should include the planning and attack phases of a control campaign, resurveys and surveillance. In areas where large foci of yaws or endemic syphilis are present, mobile treatment teams may be the most cost-effective way of interrupting transmission and rapidly decreasing the reservoirs of infection. These campaigns should include other PHC activities such as vaccination against childhood diseases, health education and training. The PHC system has the principal responsibility for yaws surveillance, including notification, and treatment or referral of new cases of yaws or endemic syphilis.

REPORTS OF WORKING GROUPS ON OBJECTIVE 2

GROUP I

Chairman : Dr M. Oughaneme (Algeria)  
Rapporteur : Dr A. Alzouma Yada (Burkina Faso)

STRATEGY FOR AND EVALUATION OF THE YAWS AND  
OTHER ENDEMIC TREPONEMATOSES CONTROL PROGRAMME

A fundamental condition for the success of any treponematoses control programme is multipurpose, medical and paramedical training, namely:

- multidisciplinary training of community health workers who, in addition to knowledge of yaws and endemic treponematoses, should be able to identify STDs, leprosy and onchocerciasis and give injections;
- adequate specialized training of medical officers who will operate in capital institutions such as district, regional or provincial hospitals, i.e. wherever there is a diagnostic problem regarding a particular disease (yaws, syphilis, leprosy, etc.); these doctors are responsible for making precise diagnoses and prescribing adequate treatment to community workers who then carry out their recommendations.

Group I adopted a control strategy based jointly on primary health care (PHC) and mobile teams, giving priority to one or other according to the infrastructure existing in each country and ultimately, in the medium- and long-terms, adopting PHC in toto. Subregional coordination is also necessary.

The evaluation of the treponematoses campaign will be made for the short-, medium- and long-terms and will be adapted to each country. This explains why the reports will be prepared by each country representative in line with existing infrastructures.

The following are the reports of the different countries in Group I:

Annex 5

SENEGAL

1. Strategy for control of endemic treponematoses in Senegal

Duration of programme - six years:

- In Senegal, following WHO's sero-epidemiological survey and mass campaigns, endemic syphilis persists in three regions (Saint-Louis, Kaolach and Kolda) and in two départements (Linguère and Kédougou) and a few cases of yaws are notified in Basse Casamance.
- The strategy will consist of screening, diagnosing, treating and monitoring endemic treponematoses. The existing infrastructures are adequate and the whole population has appropriate coverage.

The treponematoses control programme is part of a national STD and treponematoses control programme which, like EPI and MCH, is integrated into PHC.

Central level

A central team is responsible for orientation, coordination and evaluation of treponematoses control activities. Two reference laboratories and two dermatology clinics will offer training to workers responsible for treponematoses control in regions where these diseases are endemic and resurgent.

Regional level (health centre and regional hospital):

- a supervisor will coordinate activities at peripheral level;
- the regional laboratory will provide retraining for workers and training in screening methods;
- a health educator will be responsible for information at peripheral level;
- a specialist (doctor) will be charged with performing clinical diagnosis, and particularly differential ones.

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Peripheral level (health post and hut):

- the worker responsible for integrating the various national health programmes will carry out activities relating to screening, diagnosis, treatment, information and monitoring of treponematoses in the same way as activities such as EPI and MCH;
- in particular, there is a need for mobile operation teams to carry out screening at peripheral level for coordination and monitoring of treponematoses control.

2. Budgetary estimate for treponematoses control programme (duration: six years).

1. Training:

(10 nurse supervisors  
10 doctors, 10 health educators  
10 laboratory technicians,  
10 social workers) ... 20 000 000 F CFA

2. Health education:

Film projectors plus other audio visual  
aids 6 000 000 F CFA

3. Sero-clinical surveys:

- monitoring equipment 15 320 000 F CFA  
- servicing and fuel (six years) 63 060 000 F CFA  
- laboratory equipment (microscopes, etc.) 13 300 000 F CFA  
- blood sampling equipment (blades,  
isothermic boxes, etc.) 946 000 F CFA  
- operating equipment for laboratories (vacu-  
tainers, filter papers, VDRL and TPHA kits) 16 730 000 F CFA  
per year, i.e. in six years 100 380 000 F CFA  
- Evaluation of printing and paper 3 000 000 F CFA  
i.e. in six years 18 000 000 F CFA

Annex 5

4. Treatment of 10 000 endemic treponematoses victims per year	7 117 000 F CFA
i.e. in six years	42 602 000 F CFA
Syringes and needles (disposable type)	5 000 000 F CFA
<u>Total cost of materials and operations for a period of six years is estimated at</u>	284 903 000 F CFA

This figure is the budgetary estimate for resources needed to implement the national endemic treponematoses control programme in Senegal and its identification defines the type of international cooperation being sought.

BURKINA FASO

ESTIMATED COST OF ENDEMIC TREPONEMATOSES CONTROL

Introduction - Strategy

The programme covers five years and the strategy will be based on the use of existing operational structures:

The CHP-PHCC-MC-EPI teams and leprosy control team in provincial health administrative centres.

In the first year, a mobile strategy will be employed using EPI and leprosy control teams retrained in screening and treating yaws and endemic syphilis.

In the other years, the programme will rely on existing regular structures, particularly PHCC and MC.

The CHPs will act as sentinel posts and any suspected cases will be referred to the PHCCs.

In the first year of the programme, VHWS will participate in control activities following adaptation of the team either for screening or for mass treatment purposes. They will be given on-the-spot training.

The programme will comprise:

- one training component;
- one sero-clinical and epidemiological survey component;
- one health education component;
- one treatment component.

An estimated 800 000 persons will need treatment, particularly children under 15 years.

ESTIMATE OF COST

YEAR I OF PROGRAMME

1. Training:

- (a) All provincial health officials plus three officials from central level (EPI, DESA). Total 33 persons.  
Cost: 2 000 000 F CFA.
- (b) Training of paramedical personnel in each province:  
10 persons/province, i.e. 300 persons.  
Cost: 300 000 F CFA/province x 30 = 9 000 000 F CFA.  
Total cost of training: 11 000 000 F CFA.

2. Sero-clinical survey

This will be carried out by two teams on a sample of 5000 persons:

- two 4-wheel drive vehicles;
- materials;
- office supplies.

The cost of the survey per person is estimated at 2000 F CFA, i.e.:  
 $2000 \text{ F} \times 5000 = 10\,000\,000 \text{ F CFA}$ . Total cost of sero-clinical survey  
20 000 000 F CFA.

Annex 5

3. Health education

- production of leaflets, posters and books on yaws and endemic syphilis;
- information/sensitization campaign throughout the country. Total cost: 5 000 000 F CFA.

4. Treatment

No mention is made of the purchase of all-purpose vehicles since the EPI teams already have these:

- fuel;
- injection instruments, cotton wool, alcohol and first-aid kits: 800 000 x 62.8 F CFA;
- cotton wool, alcohol, kits;
- long-lasting penicillin: 800 000 x 230 F CFA (230 F CFA = tax-free price of a 10 cc syringe and needle in Burkina Faso).  
Total treatment

5. Total cost of Year I of programme:

- training	11 000 000 F CFA
- survey	20 000 000 F CFA
- health education	5 000 000 F CFA
- treatment	<u>259 240 000 F CFA</u>
Total	295 240 000

The overall cost of Year I of the programme is 295 240 000 F CFA.

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YEAR II OF PROGRAMME

- Starting with Year II of programme, treatment will only be provided in regular health care units (health and social welfare centres and medical centres).
- The sero-clinical survey is to recommence.

It is estimated that there will be an additional 10% of patients, i.e. 8000, requiring treatment:

(i) Sero-clinical survey	10 000 000 F CFA
(ii) Treatment	<u>20 000 000 F CFA</u>
(iii) Total: <u>Year II</u>	30 000 000 F CFA

YEAR III OF PROGRAMME

10% of cases for treatment, i.e. 8000 cases:	
Cost of treatment	2 840 000 F CFA
Total cost of programme in Year III	2 840 000 F CFA

YEAR IV OF PROGRAMME

(i) Sero-clinical survey of 5000 persons	10 000 000 F CFA
(ii) Treatment of 800 persons	<u>284 000 F CFA</u>
(iii) Total Year IV	10 284 000 F CFA

YEAR V OF PROGRAMME

- Programming of education	3 000 000 F CFA
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Total cost of programme for five years:

- First year	294 240 000 F CFA
- Second year	30 000 000 F CFA
- Third year	2 840 000 F CFA
- Fourth year	10 284 000 F CFA
- Fifth year	<u>3 000 000 F CFA</u>
	340 364 000 F CFA

The overall cost of the programme for five years is three hundred and forty million three hundred and sixty-four thousand F CFA.

Annex 5

MALI

BUDGETING OF ENDEMIC TREPONEMATOSES CONTROL PROGRAMME

- Regions that have been evaluated: 5
- Regions to be evaluated : 8

Legou Region

The programme will last five years.

I. Pre-evaluation and evaluation surveys

We will contact some 6000 persons for pre-evaluation and slightly more for evaluation.

We plan to make two evaluations over the five years, the first of which will be in Year II of the programme.

Total US \$56 756 = CFA21 000 000

II. Training

1. Retraining of field staff in affected areas.

Per district: 2 doctors + 7 SRNs + IPCs + 1 laboratory technician  
= 150 persons/5 years.

Per Region: 3 laboratory assistants in regional hospital.  
3 x 7 = 21. Total: 150 + 21 = 171.

2. National seminar on treponematoses.

3. Give emphasis to treponematoses in medical/paramedical programmes. Total: .. .. .. US \$100 000 = CFA31 000 000

Annex 5

III. Support to laboratories, reagents and equipment:

- 7 district health centre laboratories;
- 7 regional laboratories;
- 1 national laboratory. (IMRSP) Total US \$61 567 = F CFA25 000 000

IV. Support to health centres:

- repair/servicing of vehicles = 47;
- fuel for operations teams.  
Total US \$62 162 000. = F CFA23 000 000.

V. Treatment:

- drugs;
  - materials (disposable syringes, alcohol,  
- cotton wool, etc.).
- Total US \$86 486 =F CFA32 000 000.

VI. Support to central structures:

- division of epidemiology and prevention;
- health education;
- national section = 1;
- regional section = 7;
- district health centre = 47. Total US \$27 027 = F CFA10 000 000.

Annex 5

VII. Monitoring:

1. An all-purpose vehicle for countrywide monitoring;
2. Fuel US \$94 594 = F CFA35 000 000;  
i.e. an overall cost of 189 000 000 F CFA for the five years:

Year A1	F CFA63 000 000
Year A2	F CFA42 000 000
Year A3	F CFA28 000 000
Year A4	F CFA28 000 000
Year A5	F CFA28 000 000.

GUINEA

I. NATIONAL COMMUNICABLE DISEASE CONTROL PROGRAMME

It will not be possible to implement the integrated communicable disease control programme as long as there are constraints such as:

- unreliability or inexistence of logistic resources;
- inadequacy or lack of funds.

The present infrastructures would be adequate for the communicable disease control programme if solutions were found to those problems. Those infrastructures can be set out in three parts:

- (a) Provincial mobile preventive care teams (one for each of the eight (8) provinces) headed by a doctor of public health and consisting of fifteen (15) members (public health technicians, operators and workers). These teams cover and monitor the activities in all the préfectures in the province. They visit the préfectures in their geographical health zone every 45 days for purposes of screening and treatment, administering single-dose vaccines against tuberculosis, yellow fever and measles, and giving health and nutrition instruction.

Annex 5

- (b) A prefectural preventive care division whose activities focus exclusively on the PHC components (EPI, health education, nutrition, etc.). There are 33 in the country; they too are run by doctors and have six members.
- (c) There are now very many PHCCs in the country; these are genuine community health posts charged with following-up the efforts of prefectural mobile teams to which they are responsible in their work.

On the basis of previous surveys, it can be assumed that 10-20 sample survey points will be necessary in rural areas and that further investigations may be carried out in urban schools.

A survey team will consist of:

- a WHO epidemiologist;
- a WHO laboratory technician.

Their two national counterparts will be able to take over responsibility for the subsequent campaign: two assistant nurses and a driver. It will be materially and financially independent.

A simple serological technique calling for a minimum of material and which can be applied in the field would be extremely useful. The OPR Test Card is a case in point.

## II. BUDGETARY ESTIMATE

### 1. Training of cadres by WHO:

- senior: 10;
- middle-level: 25.

### 2. Campaigns:

- survey of prevalence;
- evaluation (identification of zones);
- treatment.

Annex 5

3. Materials:

- Logistic;
  - 4-wheel drive vehicles: 10;
  - autocycles: 40;
- Drugs for WHO survey:
  - long-lasting penicillin 1 200 000 (2 000 mg pills);
- Syringes + needles (2000 disposable ones);
- Laboratory equipment;
  - microscopes;
  - blood sampling equipment.

4. Equipment for prefectural laboratories (33) and public health laboratories: serology testing equipment for malaria control projects.

5. Office supplies.

6. Fuel.

CHAD

CONTROL STRATEGY

National PHC network	(System of preventive medicine)
	(System of curative medicine )
	(National PHC programme. )

Potential strategy for proposal to health authorities:

- (i) utilization of (sectoral) endemic disease control services for mass activities: surveys, mass campaigns, monitoring;
- (ii) integration into NPHC programme.

In other words, existing mobile teams to be used in the short-term, and, later on, regular health units.

Annex 5

A national epidemiological team is needed to coordinate these activities

Obviously there is no question of a national programme for the control of yaws alone; it is necessary therefore to persuade those responsible for different vertical programmes (EPI, MCH, PHC) at national level to agree on a global integrated control programme.

Estimated needs:

1. Training of: 10 doctors; 50 nurses; 6 senior public health technicians; 6 health educators.
2. Health education: audiovisual equipment.
3. Sero-clinical survey of 5000 persons and more.
4. Treatment of 300 000 persons.
5. Equipment:
  - vehicles;
  - laboratory techniques.

At all events, Chad will require a consultant to evaluate the campaign.

GUINEA BISSAU

Strategies:

- manpower training;
- health education;
- clinical and serologic surveys for epidemiological evaluation.

Annex 5Budgetary estimate:

- Monitoring equipment	F CFA10 000 000
- Laboratory equipment	F CFA10 000 000
- Blood sampling equipment	F CFA 2 000 000
- Drugs	<u>F CFA 5 000 000</u>
Total cost	F CFA27 000 000

## ALGERIA

1. No cases of yaws or endemic treponematoses have apparently been identified. A one-off evaluation survey should be made, particularly in the south of the country on the border with Niger and Mali. There is no other way of obtaining a precise view of the situation.

2. The strategy for disease control is based largely on the regular PHC centres.

GROUP 2

Chairman : Dr M. K. Cham (Gambia)

Rapporteur: Dr (Mrs) M. O. Alli (Nigeria)  
Dr Moses K. Galakpai (Liberia)

Formulation of integrated strategy for yaws  
Control and plans of action for each country

1. The countries in Anglophone West Africa may be classified into two categories namely those with confirmed problem of yaws and those with suspected problem of yaws. The formulation of strategy for integration and plans of action have been based along this consideration.

NIGERIA

Strategy

2. Nigeria falls into the category of a country with suspected yaws problem with possible foci in riverine areas East of the Niger River, probably Cross Rivers and Bendel States. It is recommended that within the existing health infrastructure, the specific local government areas affected in these States do preliminary surveys to define the magnitude of the problem so that eventually the elements of pilot project, mass treatment campaign and surveillance can be built on as and when necessary, using resources from primary health care. For the rest of the country, in order to ensure surveillance in areas where these yaws may or may not exist, training modules should be designed for tutors of primary health care workers at the teaching hospitals, including training of medical students and nurses of various public health schools. To ensure this, it is suggested that the design of training modules on yaws for all cadres of health workers be assigned to the National STD Committee who will then ensure their circulation to all the authorities concerned.

Annex 5

3. Health education posters will be widely circulated for community mobilization and awareness such that early case detection at the periphery will be facilitated and the peripheral staff will be sensitized to "alert" the State Epidemiology Unit as soon as a case is detected. Yaws surveillance is therefore a function of the State Epidemiology Unit and since the unit already makes repeated visits to the periphery for EPI diseases surveillance it is recommended that they expand to do yaws surveillance also.

Plan of Action

4. WHO Short-term Consultant (STC) to visit Cross Rivers and Bendel States for serological assessment of treponematoses including testing for sero-conversion for measles vaccination to take place between April and May 1986.

5. A WHO STC should assist local personnel to design workshop programme and set date for a national workshop on yaws to be held for participants comprising project managers of primary health care at State and Federal levels, Principals of schools of health technology, Directors of clinical programmes at the teaching hospitals and trainers of public health nurses between April and May 1986.

6. Invitations should be sent to teaching faculty participants for the National Workshop on Yaws - June 1986.

7. National Workshop on Yaws Control should be held in November 1986. Objective: "Issue of resurgence of yaws in West Africa, need for surveillance in Nigeria towards Health for All by the Year 2000".

Annex 5

Costing (stated in local currency Nigeria N, but summarized in US \$).

(i) Sero-clinical survey in Bendel and Cross Rivers States

Clinical survey for yaws and lameness survey, including pre-survey training N25 per diem local allowance x 100 days for 100 schools	...	...	= N25 000
Serology survey for treponematoses and measles: 500 sera x N1 incentive	...	...	= N 5 000
*2 Landrover vehicles	...	...	= <u>N50 000</u>
	...	Sub-total	= <u>N80 000</u>

(ii) Training at national workshop

Per diem for about 120-150 participants at N100 per diem (hotel bill)...	...	...	= N20 000
*Cost of local design of training modules			= N10 000
Transport allowance for all participants			= N10 000
Stationary and out of pocket expenses	...		= N 5 000
*Atlases, health education aids, etc.	...		= N10 000
Follow-up to national workshop, including field visits and cost of local training programmes for peripheral workers at grassroot			= <u>N30 000</u>
		Sub-total	= <u>N85 000</u>

(iii) \*Cost of PAM to be carried by survey team = N10 000

(iv) Cost of drugs for treating other skin diseases detected ... .. = N10 000  
Sub-total = N20 000

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\* May be provided from abroad so that local cost will come down to US \$238 000.

Annex 5

(v) Cost of 2 STC consultants ...	...	= US \$10 000
Cost of local teaching faculty honorarium N100 each for 10	...	<u>= N1 000</u>
	Sub-total	<u>= US \$10 000 + N1 000</u>
(vi) Grand total cost	...	N195 000 + US \$10 000
(at rate of N1 = US \$1.2)	...	<u>US \$334 000</u>

GAMBIA

8. The Gambia's National Health Care Delivery System is divided into five levels: village, key village, intermediate, regional and central. For yaws and other endemic treponematoses control and surveillance, the existing health infrastructure may be effectively and efficiently used.

9. At the village level, the Village Development Committees (VDCs) and Community Health Workers (CHWs) will be involved in case finding and surveillance. If any case is detected, the key village level will be notified.

10. Treatment will be undertaken by the intermediate level together with the key village level and both the regional and central levels will be notified, using the existing health information system.

11. There is a need to have a clearer picture of yaws or endemic syphilis in the Gambia by undertaking an initial sero-epidemiological assessment of the areas in which yaws and endemic supplies were found in a study reported in 1956.

12. In addition, there is a need for training and retraining of staff at all the levels of the health care system.

13. Case detection, treatment and surveillance will concurrently be undertaken with health education.

Annex 5

External resources needed

(1) Training

(a) Central level (CHWs, CHNs)	...	= US \$ 1 000 00
(b) Regional level (RHIS)	...	= US \$ 500 00
(2) Atlas	... ..	= US \$ 1 500 00
(3) Health education nationals	...	= US \$ 1 000 00
(4) Slides	... ..	= US \$ 1 000 00
(5) RPR kits	... ..	= US \$ 5 000 00
		= US \$ 9 500 00

LIBERIA

14. Liberia falls into the category of countries with suggested yaws problem, especially areas near the Ivory Coast border, namely Nimba, "Grand Bed" and Maryland countries. It is suggested that initial sero-clinical surveys be conducted among children 0-15 years. Training of yaws should be incorporated into the curriculum of PHC workers, while as being implemented in these areas. Training should also be included in the curriculum of paramedical and medical training institutions to ensure interest for continuous surveillance.

External resources required

(a) A consultant for the workshop and the survey (for 10 days in October)		
(b) <u>Survey and training materials</u>		
1. Training of 13 health personnel for field work of the survey for 5 days		
13 x US \$10.00/day x 5 days		= US \$650 00
2. Sero-clinical surveys - 10 x US\$ 10.00 x 14 days		= US \$1 400 00
3. Three supervisors at US\$ 20.00 per day x 14		= US \$ 840 00
4. Supplies, equipment, serological research		= <u>US \$6 000 00</u>
	Sub-total	= US \$9 000 00

Annex 5

(c) <u>Workshop for 50 medical and paramedical personnel from every country</u>	
15 medical officers (US \$20.00/day x 2)	= US \$ 600 00
35 paramedical personnel at US \$10.00	= 1 300 00
Transportation by public transport (at US \$20/person)	= <u>1 000 00</u>
Sub-total	= US \$2 900 00
(d) <u>Educational materials, cost of publications</u>	= 6 000 00
Contingency	= <u>2 000 00</u>
Grand total	= <u>US \$ 20 000 00</u>

GHANA, IVORY COAST AND SIERRA LEONE

15. Because of resurgence of yaws in Ghana and possibly Ivory Coast, the group strongly recommends that since no participants came from these countries, two WHO STCs be employed immediately to visit these areas and have a cursory look, so that after meaningful dialogue with policy-makers, a strategy and plan of action including costs can be formulated.

16. It was felt that the STCs should go out within two to four weeks after this meeting because Ghana and Ivory Coast have emerged as a "reservoir" of yaws in English-speaking West African countries. To this effect the group felt that Professor Antal and Professor Osoba who served as advisers in this group and are adequately briefed be approached, as they can proceed almost immediately.

Costing

17. Two Short-Term Consultants should visit Ghana and Ivory Coast and, possibly Sierra Leone by the end of March 1986 (approximately US \$10 000 00).

Annex 5

18. Overall resources required at national level including expected international cooperation needed in the initial yaws control efforts for the years 1986/1987 has been costed for Anglophone West African countries namely:

*Nigeria	= US \$334 000
Gambia	= US \$ 9 500
Liberia	= US \$ 20 790
Ghana/Ivory Coast/Sierra Leone to visit and cost)	= US \$ 10 000 (2 STCs)
Overall total	= <u>US \$375 290</u>

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\* Because local costs are especially high in Nigeria, it has been recommended that certain items be supplied from abroad to bring cost down.

Annex 5

GROUP 3

Chairman : Dr Kabangu Tambua (Zaire)

Rapporteur : Dr MBitsi Antoine (Congo)

The representatives of the various countries considered that, in view of the fact that the rates of prevalence are unknown in most of those countries, preliminary epidemiological surveys are required; these can only be carried out by mobile teams.

According to the results obtained, treatment of cases could be administered by mobile teams or regular units; in other words, control activities can only be integrated into regular health units wherever the prevalence rate is less than 5%.

Three strategies arose out of the Group's discussions:

- that of mobile teams for certain countries;
- that of integration into regular units for other countries, and
- that of combining the two foregoing strategies for others.

Similarly, all agreed to emphasize the need for specific drugs (penicillin) and logistic resources, for the purpose of operating mobile teams.

(1) The endemicity level should be identified by means of a preliminary evaluation in high-risk foci, i.e.:

- national sero-epidemiologic surveys, and
- regional clinical surveys in high-risk foci.

It is necessary to identify mass treatment taking account of the endemicity level (blanket mass treatment (BMT), mass treatment of children (MTC) or else selective mass treatment (SMT)).

Annex 5

- (2) Technical training of manpower with maximum decentralization:
- (a) training of trainers: doctors in high-risk areas; doctors in other areas, and doctors in training;
  - (b) in each health district, training of auxiliary staff:
    - nurses in service;
    - nurses undergoing preliminary training.
- (3) Increasing public awareness through:
- through the mass media;
  - through community health workers;
  - through schools.
- (4) Screening/treatment campaigns:
- (a) screening through clinical tests and, if adequate resources are available, additional serologic testing;
  - (b) treatment according to level of endemicity:
    - for BMT and MTC: mobile teams with a distinct programme;
    - if SMT: passive screening by regular health units and PHC services and additional screening programmes in some communities;
  - (c) periodic evaluation by:
    - sentinel hospitals;
    - clinical/serologic surveys.

The following operations were proposed by the representatives of the different countries in the Group:

Annex 5

ZAIRE

Information available on the current situation regarding yaws in the Republic of Zaire is not complete at present. It is necessary therefore to carry out epidemiological surveys, particularly in the four regions affected (Bas-Zaire, Nord-Ubangi, Nord-Est and Sud-Est).

Such surveys will make it possible to:

- (i) identify the endemicity level;
- (ii) situate high-risk foci geographically;
- (iii) specify the rate of prevalence, an essential datum for determining mode of treatment.

Subsequently, it will be necessary to train medical and paramedical personnel.

Depending on the prevalence rate, treatment could be administered either by mobile teams or by regular health units. In the latter case, control could be integrated into PHC while, in the former, operations will always have to be carried out by mobile teams.

Zaire is an enormous country with vast distances to be covered. Epidemiological surveys call for appropriate means of transport. We therefore require four all-purpose vehicles (e.g. Land Rovers) for the four Regions mentioned.

As well as these logistic resources, contributions in the form of sero-diagnostic materials and penicillin are also needed in order to train manpower locally.

CONGO

The country is divided into nine regions apart from the Brazzaville area. There are 10 operational sectors for the epidemiology and major endemic disease services.

Yaws control has already been integrated into the activities of the operational sectors; it is necessary therefore to request strengthening mobile teams and logistic resources.

Annex 5

PHC structures are gradually being installed throughout the country and it may be possible in the immediate future to integrate yaws control into their tasks.

We propose the following strategy:

- (i) organization of epidemiological surveys (screening in high-risk areas: Sangha, Likouala and Lekoumou regions, and one-off activities);
- (ii) training/retraining of community health workers in order to enhance their skills in the diagnosis, treatment and prevention of yaws;
- (iii) treatment of patients;
- (iv) health education;
- (v) epidemiological surveillance: creation of regional sentinel posts.

Timetable of activities:

- duration of project: five years;
- starting date: June 1986;
- year by year staggering of activities.

We should like:

- (1) to obtain logistic resources in order to strengthen screening and treatment activities:
  - (a) purchase of non-renewable equipment:
    - an all-purpose vehicle;
    - two outboard engines for surveys in villages on the River Congo;
    - four microscopes;
    - laboratory equipment, etc.;

Annex 5

- (b) purchase of renewable material:
  - specific drugs;
  - technical products and other laboratory material;
  - medical kits.
- (ii) request services of an international consultant for initial evaluation of the magnitude of yaws problem;
- (iii) to carry out control jointly with neighbouring countries (Cameroon, Central African Republic and Zaire).

RWANDA

Rwanda: yaws control

- (1) Strategy: we favour an integrated (horizontal) strategy.

Justification:

- low prevalence (3-4 per 100 000 inhabitants)
- excellent health care coverage.

- (2) Specific activities:

- (a) retraining of personnel, particularly those operating in the most seriously affected regions in order to obtain more accurate diagnoses;
- (b) case/contact treatment;
- (c) health education;
- (d) planning of joint control with Burundi, since the most affected region borders on that country;
- (e) monitoring.

- (3) Cost: US \$120 000 for two years.

Annex 5

ANGOLA

Yaws is not a public health problem. At all events, I feel that we should turn our attention to countries where it is mesoendemic or hyperendemic and which should have a special control programme. In Angola, we favour programme integration. However, trepanosomiasis, tuberculosis and leprosy control involves emerging programmes to which the Party attaches special importance. The problems of sleeping sickness are such that it is the only disease for which there is a vertical programme; we plan to integrate it at some future time. I feel that yaws should be "vertical" at the outset, becoming integrated into PHC at a later date for monitoring purposes.

In our country we should carry out a survey of this disease because the data inherited from colonial times are unacceptable and we have no experience of the disease.

CENTRAL AFRICAN REPUBLIC

WHO carried out a sero-clinical survey of yaws in 1978-1979. Mass treatment was administered in the course of the survey, and recommenced in 1981.

Since the hyperendemic reservoirs in the Central African Republic are of limited extent, we should like to receive a supply of long-lasting penicillin and disposable materials so that existing mobile teams may follow up mass treatment at base level in five health regions. Monitoring and control of treatment can be ensured by regular peripheral units and village health committees (PHC integration) which will organize health education sessions.

TOGO

The yaws prevalence rate is 1.88-3.44% in the five worst-affected préfectures. (LACS, VO, YOTO, KLOTO, and BESSAR).

What can be done to reduce the rate to 0.2%?

Difficulties stand in the way. Inevitably, regular structures will eventually have to become mobile.

Togo is requesting aid for logistics, diagnosis, treatment and monitoring, and wishes WHO to act in order to ensure that control is exercised simultaneously in Benin, Togo, Ghana and Ivory Coast.

Annex 5

CAMEROON

The country is divided into 10 provinces; however, the problems I wish to describe for Est Province are the same as in the other regions.

For instance, we have made efforts to sensitize 176 villages, and 91 are now operational with 284 community health workers and 53 traditional birth attendants.

Implementation of PHC is encountering difficulties;

- shortage of logistic resources for monitoring;
- reticence on the part of the population (Pygmies, stockbreeders);
- the problem of following up drug supply;
- pharmaceutical depots in regional capitals non-operational;
- widespread abandoning of posts by community health workers and birth attendants.

In 13 000 health consultations at village level, no cases of yaws were notified due to inexperience or lack of training of health workers.

We propose that the strategy should:

- focus on mass campaigns;
- seek to train community health workers;
- relaunch health education activities;
- provide specific drugs;
- set up mobile operations teams.

These objectives can only be attained by strengthening logistic and operational resources. Mobile operations teams are therefore required.

BENIN

I. Strategies

Mobile teams from communal health structures and district health centres to visit villages and schools.

Such mobile teams to make periodic use of similar teams from technical operations sectors.

II. Needs

- (1) Preliminary evaluation of the actual epidemiological situation.
- (2) Initial training/retraining of 605 health workers.
- (3) Technical equipment for laboratories:
  - microscopes;
  - tubes;
  - slides;
  - blades;
  - filter paper.
- (4) Logistic resources:
  - 4-wheel drive vehicles;
  - 2-wheeled vehicles.
- (5) Drugs: long-lasting penicillin.
- (6) Monitoring by regular centres.
- (7) Start of the programme: June 1986.

Annex 5

GROUP 4

Chairman: Dr Zergabachew Asfaw

Rapporteur: Dr P. Perine, USA

A work plan for each of the countries represented by Group 4 is incomplete because representatives from Kenya, Uganda and Zambia were absent. Mozambique, which reported 251 cases of yaws in 1984, was also not represented. We suggest that our report be sent to the Ministry of Health of these countries for their data and comments which should be included in the final report. Few countries in East and southern Africa report yaws cases but bejel (endemic syphilis) is highly prevalent in most. Because recent prevalence data about yaws is so limited, new epidemiological surveys are indicated in all countries.

TANZANIA

The populations bordering Burundi, Mozambique, Uganda and Zaire should be resurveyed for yaws. The assessment team composed of a physician, epidemiologist, community nurse, laboratory technician, recorder, driver and a PHC worker will conduct clinical and serological surveys in one border area near Uganda, one with Burundi/Zaire, one near Zambia, and one along Mozambique. The areas selected for assessment will be chosen based on the recommendation of the medical officer responsible for the people living in each of these areas. All children under 15 will be examined and a random sample of 30 children in each of 10 villages in each of the four border areas will be serologically tested (total 1200).

Resource requirements:

Teaching aids, posters	US \$8 000
Transportation:	
Vehicle	\$10 000
Petrol	10 000
Air fares	4 000
Per diem (56 days)	7 400
Reagents and equipment	
Microscope (Clarkfield)	6 000
Rotator	400
Filters	100
Reagents	500
Training sessions	6 000
*Penicillin, syringes (20 000 doses)	20 000
Secretarial, etc.	2 000
	<hr/>
Total	<u>US \$75 400</u>

ETHIOPIA

Those areas formerly hyperendemic for yaws in the south and south-west of the country should be surveyed for new cases. All children and a random sample of 400 of the estimated 400 000 resettled people and 200 of the estimated 50 000 indigenous people from 10 villages will also be serologically tested. The yaws assessment team will include a physician, an epidemiologist, a laboratory technician and nurses as well as local health workers.

\* depends on prevalence of yaws.

Annex 5

External resource requirements

Teaching aids, posters	US \$7 000
Transportation	
- Vehicle	10 000
- Petrol	3 000
Per diem (21 days)	6 000
Laboratory	
- Equipment (microscope)	6 000
- Reagents	2 000
Penicillin, drugs, etc.	5 000
Secretarial, etc.	<u>2 000</u>
 Total	 <u>US \$38 000</u>

KENYA

The border areas with Uganda and western Ethiopia should be surveyed for yaws. The WHO regional laboratory should provide training and support to countries of the region when requested.

UGANDA

Yaws is probably present in formerly hyperendemic areas but current socioeconomic problems make epidemiological assessment difficult if not impossible. The Ministry of Health should be informed about the concern of this group and offer the assistance of expert advisers, etc., to conduct new surveys for yaws.

ZAMBIA

The Ministry of Health should be informed about the possibility of yaws in areas bordering Zaire. Assistance in the form of technical advisers and laboratory reagents should be made available for surveys in these areas if assistance is requested.

## MOZAMBIQUE

Because of yaws cases reported to WHO in 1984, it is recommended to perform sero-epidemiological surveys in order to assess present situation and formulate control strategy. It is not possible to estimate the resources required to conduct limited surveys for yaws in Mozambique, Uganda and Zambia. In the latter two countries, the financial costs of yaws surveys are likely to be dependent entirely on external support.

Group 4 believes that some of the components of yaws control programmes should be requested for control of congenital syphilis by serological screening of pregnant women and penicillin treatment of those who are sero-positive. This condition is highly prevalent in most of the countries of the region and is a significant cause of infant mortality and childhood morbidity.

