SECOND MEETING ON STRATEGY OF LEPROSY CONTROL

Mogadishu, Somalia

30 October - 5 November 1982

WORLD HEALTH ORGANIZATION
EASTERN MEDITERRANEAN REGION

EM/LEP/33
EM/SND.MTG.STR.LEP.CNT./17

June 1983

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The views expressed in this report do not necessarily reflect the official policy of the World Health Organization

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I OPENING OF THE MEETING

The meeting was opened by H.E. Mr Abdil Rashid Sheikh Ahmed, Vice-Minister of Health, Somalia. He welcomed the participants and outlined the objectives of the meeting and the leprosy control policies adopted by the Somali Government (Annex I). Dr M.K.Al Aghbari, WHO Representative and Programme Coordinator, Somalia, read the message from the World Health Organization (Annex II). The programme of the meeting is given in Annex III, and the list of participants in Annex IV.

II ELECTION OF OFFICERS AND ADOPTION OF AGENDA

The following officers were elected to serve the meeting, Dr A. Sharif Abbas as Chairman, Dr Haidar Abu Ahmed as Vice-Chairman and Dr Rushdy Mohareb and Dr Faquir M.Amin as Joint Rapporteurs. The provisional agenda was then adopted.

III OBJECTIVES

The objectives of the meeting were identified as follows:

1. To review the leprosy situation in the countries of the Region.
2. To review the implementation of multi-drug chemotherapy as recommended by WHO in the different countries.
3. To plan for the future strategy of multi-drug chemotherapy in leprosy control.
4. To review Research needs and recent research advance in Leprosy
5. To develop recommendations for the promotion of leprosy control and research within the Region.

IV REVIEW OF THE LEPROSY PROBLEM IN THE REGION

AFGHANISTAN

Leprosy is not a major public health problem, but it is still important owing to the serious complications that follow the disease. Combined treatment was started for multibacillary cases in 1980. The results of these combined regimens involving rifampicin, clofazimine, dapsone, and isoprodian are under study Rifampicin is given for the first 2-3 weeks only. The defaulter rate is 12-25%. The programme is run with aid from German Initiative Assistance Overseas.

DEMOCRATIC YEMEN

Leprosy is not a major public health problem There is a strong stigma attached to it There is one leprosy settlement in the country According to a WHO consultant who visited the country in 1975, the prevalence in most governorates (except Aden) is 5 - 10 per 10 000 in children and 20 - 50 per 10 000 in adults Combined therapy involving the addition of rifampicin to dapsone in the first month was introduced recently Only 25 patients are under treatment.

EGYPT

Within the last two years marked changes have taken place in the leprosy programme in Egypt. Abu Zabal, the main leprosy settlement, which has a capacity of 1 200 beds, is now being changed into a centre for training, research, and treatment. Plans are under way to establish a laboratory for the mouse foodpad test, a laboratory for histopathology, and surgical and ophthalmology departments A modern clinic has been established for the treatment of leprosy and skin diseases Most of these efforts have been supported by WHO, the German Leprosy Relief Association (GLRA), and the Father Damien Foundation An epidemiological study is under way in Gharbia Governorate

Fifty-one medical doctors have joined the leprosy department and 10 of them have been given specific training in the All-African Leprosy Research and Training Centre (ALERT)

Combined therapy according to the recommendations of the WHO Study Group has been under trial at Abu Zabel since February 1982, with promising results A more intensive regimen, involving the addition to the WHO Study Group regimen of a daily rifampicin component during the first three months, is being tried out among multibacillary patients detected in the epidemiological study in Gharbia Governorate

SOMALIA

The leprosy programme was reorganized recently and three main centres were established in the country. The total number of patients registered is 2 601, of whom 320 are in Jilib sanatorium.

Dapsone is the main drug used, in a dose of 100 mg daily. Combined therapy for multibacillary cases has recently been introduced in a limited way.

There is a full training course on leprosy in the National University for students of the fourth semester in the medicine and surgery departments. The programme is receiving aid from WHO, the Order of Malta, and World Vision International.

SUDAN

The disease is a public health problem and shows a characteristically focal distribution. The total number of patients was estimated by WHO in 1966 to be 100 000. The total number of registered cases is 9 000. It is planned to integrate the leprosy programme into the primary health care programme. Dapsone is still the main drug used. Combined therapy is limited to a few centres where there are trained personnel The new regimen is used on a limited scale. Training is carried out at the University and at the National Leprosy Training Centre (built and run by GLRA) in Wau. Research in the field of therapy and drug sensitivity testing by the mouse footpad technique are being planned in collaboration with WHO. The programme is receiving aid from several organizations

YEMEN ARAB REPUBLIC

Leprosy is a major public health problem because of the disability it causes. The total number of registered cases in 1974-1978 was 1 075. Patients receive medical care in a settlement with 130 beds.

Dapsone is the main drug used for the treatment of paucibacillary cases Rifampicin is used in addition daily for the first 15-30 days for multibacillary cases. Chemoprophylaxis with dapsone is given to people living within the leprosy settlement

The programme suffers from lack of trained personnel and from the stigma attached to the disease

PAKISTAN

The Government of Pakistan has shown increased interest in the leprosy programme A National Leprosy Board was established in 1981 and the number of national staff in leading positions increased

The total number of patients in the national register is 21 533, of whom 17 058 are still under treatment. The annual number of cases detected is approximately 1 600 (1 641 in 1981)

The disease shows a focal distribution, but no part of the country is free from it. There are difficulties in examining females because of religious and traditional attitudes.

Multibacillary cases form 41% of the total number of patients (against 34% among the newly detected cases in 1981) The deformity rate in 1981 was 25% Paucibacillary leprosy is treated with dapsone alone. Multibacillary cases in general receive clofazimine in addition to dapsone during the first six months

Pakistan has specific problems because of refugees with leprosy coming from neighbouring countries.

The programme is funded mainly by the GLRA, with a substantial contribution from the Government and local fund-raising efforts.

V EPIDEMIOLOGICAL ASPECTS

1. Population screening for early detection of leprosy

The main objective in studying the epidemiology of leprosy is to obtain the information required for the correct planning, implementation, and evaluation of a leprosy programme. It is important to identify the population at risk in order to undertake screening. The focal distribution of the disease makes it necessary to define the size of the population harbouring the cases. Using the first level of contact (household), the second level (working environment), and the third level (community) and estimating the size of the total population, the risk can be calculated and the number to be selected from each level can be worked out.

Research is needed to identify the risk factors in the different communities It is also important to quantify the rate of transmission of the disease as a basis for future evaluation, but this needs at least 5-10 years to show results.

2. Dermatological survey for detection and treatment of skin affections in Gharbia Governorate, Egypt

To establish the actual prevalence of leprosy in an area known for its high endemicity, the Egyptian leprosy programme authorities, in cooperation with WHO, undertook a survey in the Gharbia Governorate. Gharbia was selected because of its good health facilities and easy communications with Cairo. To avoid any complications that might arise from use of the name leprosy, it was called a dermatological survey. Two villages (known for their high endemicity) with a population of 31 897 were selected and a population survey was carried out.

As well as leprosy other skin diseases were recorded and treated. A social and economic survey was carried out at the same time in the two villages Training was given to all the dermatologists in the area and to paramedical personnel. Laboratory workers were involved in the survey. Fixed teams consisting of a dermatological social worker, nurses, a laboratory technician, a clerk, and an orderly were formed and stationed in the health centre. A mobile team was formed to cover the population living away from the centre.

A special form was used to refer cases for computer analysis. Patients were followed up by the health units in the area. After two years of regular treatment 22 897 people in the population had been examined, 9 089 had not been. The total number of cases detected was 97 (intermediate one, tuberculoid 5, borderline 77, lepromatous 14), a prevalence of 4.27 per 1 000 The total number of dermatological cases was 692.

Plans are under way to survey another two villages with an unknown prevalence that are similar in their social and economic conditions and in population size.

VI OCULAR LEPROSY

In the world 6-90% of the estimated number of leprosy patients have ocular involvement and of these half to three-quarters are blind Blindness occurs less in African countries than in Asian countries Most ocular involvement can be prevented or treated, or blindness can be delayed

Different parts of the eye (e.g the eyebrow, eyelid, eyelashes, cornea and uveal tract) may be affected. Lagophthalmos occurs most frequently in tuberculoid leprosy. Both eyes may be affected

If the lacrimal apparatus is involved, decrease or absence of tears may cause dryness of the conjunctiva and cornea, which may lead to severe corneal and conjunctival involvement.

The direct effects of *Mycobacterium leprae* include:

(a) Corneal involvement

Punctuate keratitis (a common effect), vascular interstitial keratitis, leprotic pannus, giant leproma, beading and thickening of the corneal nerves, and loss of corneal sensation may occur.

(b) Scleral and episcleral involvement

The episclera is usually affected in lepromatous cases. The lesions occur in the superior temporal area and are usually associated with erythema nodosum leprosum.

(c) Uveal involvement

Low grade uveitis and leproma may develop. Chronic low grade iridocyclitis may occur many years after the onset of the disease.

In erythema nodosum leprosum acute exudative iridocyclitis may be evident and lead to acute glaucoma If recurrent it may cause phthisis bulbi.

Iris pearls are pathognomonic of leprosy and may be single or multiple. The ciliary body may be involved, but posterior uveal involvement is rare

(d) Lens involvement

Complicated cataract associated with acute exudative iridocyclitis and senile cataract may appear at an earlier age.

With the cooperation of leprosy workers and patients, blindness from leprosy can be prevented. Regular careful eye examinations and adequate and timely treatment are important in the prevention of eye complications.

VII COMMUNITY PARTICIPATION AND SOCIAL ASPECTS

Leprosy is unique among diseases because of the social and behavioural problems associated with it The disease carries a very marked stigma, even among the medical profession. Knowledge of the disease is limited and this is the main obstacle to its effective control. There is a need to increase such knowledge, as well as to

study the nature and reasons for the prejudice against the disease so as to reduce the fear it inspires and bring about the acceptance of leprosy patients in countries.

For that purpose, the ending of isolation, the establishment of a peripheral primary health care delivery system, and demonstration of the efficacy of combined therapy are likely to be of great help.

VIII RECENT ADVANCES IN THE THERAPY OF LEPROSY

The WHO Expert Committee on Leprosy in its fifth report[1] emphasized the need for the prevention of drug resistance and recommended multidrug therapy for all active cases of multibacillary leprosy (LL, BL, and BB in the Ridley & Jopling classification). Few countries and individual centres introduced multidrug therapy as a routine practice and there were doubts about the efficacy and the operational feasibility of the regimens.

In October 1981 a WHO study group on chemotherapy of leprosy for control programmes[2] reviewed the information on problems related to chemotherapy and chemotherapeutic regimens It considered, for use in leprosy control programmes, appropriate multidrug regimens for multibacillary cases (including new,treated, and drug-resistant cases) and paucibacillary cases. The Group also recognized the need for further laboratory, clinical, and operational research

1 The problem of dapsone resistance and microbial resistance

The progressive increase in secondary dapsone resistance reported from some 25 different countries, its high prevalence in some countries (Ethiopia and Malaysia), and the detection of primary dapsone resistance in several other countries have made dapsone resistance and microbial persistence two of the major problems in the treatment of leprosy With the appearance of resistance to rifampicin and ethionamide, clofazimine remains the only antileprosy drug to which resistance has not yet been

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[1] WHO Technical Report Series, No. 607, 1977.

[2] WHO Technical Report Series, No. 675, 1982 (Chemotherapy of leprosy for control programmes report of a WHO Study Group)

reported. The role of multidrug therapy in dealing with the well-recognized problem of microbial persistence and the significant part it plays in relapses in lepromatous leprosy are likely to be elucidated by THELEP's studies on chemotherapy.
Dapsone resistance is associated to a greater extent with irregularity in taking the drug, stopping treatment during drug reactions and, occasionally, the low dosage used. Fear of relapse has led to treatment being continued over unnecessarily long periods and this has in turn led to overloading of the leprosy therapy services and poor compliance by patients. In many control programmes it has been difficult to carry out combined therapy because of the more potent and somewhat toxic and expensive drugs needed and the burden of supervision it entails.

2 Multidrug therapy

The objective of chemotherapy in multibacillary leprosy is to interrupt transmission, cure the patient, and prevent the emergence of drug-resistant strains.

The proposed multidrug regimen is designed for the treatment of all multibacillary patients, including:

(a) freshly diagnosed previously untreated patients;
(b) patients who have responded satisfactorily to previous monotherapy with dapsone;
(c) patients who have relapsed while on dapsone or after cessation of treatment; and
(d) patients who have relapsed with mouse footpad test as proved by the dapsone-resistant leprosy

The following regimen was recommended by the WHO Study Group for multibacillary leprosy:

- Rifampicin 600 mg once monthly, supervised
- Dapsone 100 mg daily, self-administered.
- Clofamizine 300 mg once monthly, supervised, and 50 mg daily, self-administered.

When clofazimine is not acceptable ethionamide or protionamide should be considered.

3 Treatment of paucibacillary leprosy

The low bacterial load of paucibacillary leprosy makes it feasible to give a short course of chemotherapy with the potent, rapidly bactericidal drug, rifampicin. Short courses will also help in overcoming the problem of primary dapsone resistance This regimen will reduce the workload on health workers and improve compliance by the patient

The following regimen was recommended by the Study Group·

- Rifampicin 600 mg once monthly for 6 months
- Dapsone 100 mg (1-2 mg/kg body weight) per day for 6 months

Priority should be given to newly diagnosed patients, dapsone-treated patients who relapse, and patients who have not yet completed two years of treatment

4. Operational aspects

There is a need to improve the operational aspects, especially case detection, the delivery of treatment and case-holding. In the new era of multidrug therapy it is imperative that laboratory facilities for the bacteriological examination and monitoring of patients should be improved. It is also necessary to train and re-train personnel and to provide adequate logistic support to ensure regular delivery of drugs to peripheral areas.

IX RESEARCH NEEDS AND RECENT RESEARCH ADVANCES IN LEPROSY

About 1 400 million of the world's population are exposed to the risk of leprosy, and more than a third of the 6-10 million leprosy patients face the threat of permanent physical and social disability.

Primary prevention has always been of great relevance to leprosy control The increasing prevelance of primary and secondary dapsone resistance has made it urgent to develop methods of primary prevention. BCG has been tested for its preventive effect against leprosy in large-scale prospective studies in Burma, India, Papua New Guinea and Uganda, with varying results (30 to 80% protection).

Recently a goal-oriented research programme has been instituted - the UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases. The programme includes two important components on leprosy: one on immunology (IMMLEP) and the other on chemotherapy (THELEP).

1 Immunology

The objectives of the IMMLEP Scientific Working Group are.

(a) to develop an antileprosy vaccine,
(b) to develop immunological methods for the detection of an immune response to *M. leprae*, and
(c) to increase understanding of the immunopathological mechanisms involved.

IMMLEP has succeeded in expanding the supply of armadillo-derived *M. leprae* by establishing a bank of infected tissue, developing a method of purifying *M. leprae* from infected tissue, and producing purified killed *M. leprae* of acceptable standardized potency and toxicity for use in man. IMMLEP has also succeeded by applying skin and serological tests in obtaining basic information on the extent and distribution of *M. leprae* in infectious and endemic areas. It is making efforts to develop a vaccine. Elsewhere a study has investigated the possibility of immunotherapy with a mixture of live BCG vaccine and killed purified *M. leprae* in Mitsuda-negative persons. Histological and clinical evidence of increased immunological competence against *M. leprae* has been found

Another important development outside IMMLEP is the identification of a natural leprosy-like infection in the sooty mangabey monkey that responds to conventional antileprosy therapy.

2 Chemotherapy

The information accumulated by THELEP has highlighted the urgent situation as regards primary and secondary dapsone resistance and has resulted in the development of multidrug regimens for leprosy control programmes.

Two clinical trials to study combined drug regimens and their effect on persisters have been initiated, and two field trials are under way to measure the relapse rate among patients treated with multidrug regimens The detection of persisters requires the use of immunosuppressed rodents; neonatally thymectomized rats (NTR), congenitally athymic rats, and nude mouse models have been introduced.

A simple kit for the testing of dapsone and its metabolites in the urine has been developed to ascertain the extent of compliance by patients

For the screening of new chemotherapeutic compounds surrogate mycobacteria have been used.

Apart from immunity and chemotherapy, there are areas of research where progress is badly needed These are specifically: the *in vitro* cultivation of *M leprae*, mechanisms of transmission, epidemiological, social and economic factors favouring the spread of leprosy, and operational problems.

3 Clinical, epidemiological, and operational information

A recording system providing clinical, epidemiological, and operational information in standardized form would permit evaluation of the control measures taken by health services and provide baseline data for field trials.

The OMSLEP system provides for the registration of the leprosy patient on an individual form, on which the status of the patient at detection and after each year of treatment is recorded. Two statistical forms sum up the data for all the patients detected and all the patients registered and enable the leprosy programme to be evaluated

The OMSLEP system is based on a study of the systems at present in use for leprosy. The data necessary for evaluation were determined, and field trials were carried out to test the system The basic principles of the system are

(a) Information should be restricted to the essential
(b) The information should be decision-oriented.
(c) The terminology should be unambiguous
(d) The system should be easy to use in the field.

(e) The data should be easy to retrieve.

(f) The indices should be directly geared to decision-making.

(g) The system should be convenient for primary health care workers.

(h) The data should be adaptable for computer use.

A booklet has been published setting out the precise information required, the method of completing the individual form, and the definition of the indices to be calculated. The form needs to be revised now that multidrug regimens are being introduced.

X MANAGEMENT OF LEPROSY CONTROL PROGRAMMES

The implementation of the new strategy of multidrug therapy requires the training and retraining of personnel, supervision, community participation, financial resources, and careful attention to operational details.

The new regimen is more convenient to patients and is expected to result in better compliance, a lower consumption of drugs, and less risk of toxicity It is also expected to reduce the workload on leprosy workers and be more cost-effective.

It is important to supervise the administration of the drugs, record any complications that may occur and monitor treatment by regular bacteriological assessment. To ensure wide coverage the delivery system should be expanded, patients should be followed up regularly, referral facilities should be provided for patients with complications. For compliance by patients to be good there needs to be extensive health education to promote social and personal awareness of the disease and the effectiveness of treatment. Drugs for the treatment of complications should be made available in addition to those used against leprosy Finally, continuous evaluation should be carried out, based on the numbers of patients detected, treated regularly, showing side-effects, needing hospitalization, etc.

Aid from WHO and other governmental and nongovernmental organizations is needed to enable such a programme to be undertaken.

Integration of leprosy control activities into primary health care

The magnitude of the leprosy problem varies from country to country. The health delivery system also varies widely in the countries of the Region. Integration of the leprosy services into primary health care therefore needs different approaches in different countries

To ensure success in the integration of leprosy care into primary health care the following steps are needed·

(a) The relevant information about the facilities available and the requirements should be collected.
(b) A training programme should be established.
(c) Antileprosy drugs should be supplied to the health facilities.
(d) Nationwide health education programmes should be developed to facilitate the work of the programme and make it acceptable.

Although the meeting in 1980 recommended integration of leprosy control programmes into primary health care, little progress has been noted. Primary health care units are expected to carry out curative activities as well as epidemiological surveillance. This becomes more important with the introduction of multidrug regimens. There is a need to define the responsibility of primary health care schemes at different levels and improve laboratory and rehabilitation services at the appropriate level. It is also necessary to establish in primary health care a system for the reporting, follow-up, and evaluation of the leprosy services. Groups such as nomads may need special consideration.

Governments are firmly committed to primary health care; they need to be similarly committed to the combined treatment of leprosy. This entails a wide coverage by the primary health care services, a continuous and regular supply of drugs, and continuous evaluation.

Minimum laboratory requirements for the conduct of a leprosy control programme, including training needs and laboratory facilities

1. Objectives

The objectives of bacteriological examination in leprosy are:

(a) To support the clinical diagnosis.
(b) To distinguish between paucibacillary and multibacillary cases, a distinction that is important in multidrug therapy.
(c) To assist in the diagnosis of relapse and deterioration.

Since the leprosy control programme is run by different units with different levels of activity, the laboratory requirements are not the same for all of them. The most peripheral leprosy clinics may not require laboratory facilities, but central units do for bacteriological examination. The minimum requirements are microscope slides, staining equipment and supplies, and a well-trained person. For histopathological examination of specimens at the central level, a good binocular research microscope and an appropriately-trained histopathology technician are required in addition to laboratory equipment for histopathology. A laboratory of this kind is of particular importance for the early identification of relapses and reactions and assessment of the clinical progress of patients

2. Training of personnel

Personnel need to be trained to carry out Ziehl-Neelsen staining, examine the stained specimen, and interpret the results.

For histopathological training cooperation and collaboration are needed with other histopathology departments inside or outside the country. Trainees should learn how to handle and effect minor repairs of equipment.

Mouse footpad technique for the verification of resistance to *M. leprae*

There is an increasing interest in many developing countries in establishing mouse footpad laboratories to perform dapsone sensitivity tests for *M. leprae*. Before doing so, the need for such a laboratory should be carefully considered.

An appropriate building is needed for the animal house. It should be air-conditioned, rat-proof, and mosquito-proof, and have all the necessary equipment for breeding mice. An office for the administration and for other services such as sterilization is required. One trained technician and two helpers are needed.

Such a laboratory is required when there is a need to study the sensitivity and resistance to drugs of the local strains of *M. leprae*. At present primary and secondary resistance to dapsone should be studied In future other drugs may need to be studied.

It takes at least six months to have the results, thus dapsone resistance testing is of value for epidemiological studies, not for individual cases. Any patient treated for five years with dapsone alone is at risk of dapsone resistance, consequently mouse footpad laboratories are not necessary in every country or even every region. Collaboration should instead be established with existing laboratories, possibly at the regional level.

Monitoring of drug intake

Rifampicin can be detected in urine by simple visual inspection. The presence of dapsone may be revealed by tests such as enzyme-linked immunosorbent assay (ELISA) and haemagglutination.

Drug quality control is essential in view of the large quantities of drugs needed, probably originating from different sources. As quality control laboratories may not exist for all the drugs the services of reference laboratories may be required, particularly when there is clinical evidence of the failure of the drugs to act.

XI REVIEW OF THE REGIONAL MEETING ON LEPROSY IN SOMALIA ON 25-28 FEBRUARY 1980

Some of the recommendations of the meeting have not been followed. Others have been followed in part only. The following additional points may be made:

(a) WHO should assist or participate in training.

(b) People previously trained should be retrained.

(c) A simple atlas with good clear pictures of leprosy and skin diseases for training purposes should be prepared and distributed to participant countries by WHO.

(d) Communication between countries in relation to leprosy and the recording of cases should be established, perhaps with the help of WHO.

The plan of operation in some countries, which has been prepared in cooperation with WHO, needs to be revised to take account of the existing situation in countries.

XII RECOMMENDATIONS

1. Epidemiological studies should be encouraged to define the prevalence of leprosy at the focal level and so enable its geographical distribution to be mapped.

Special studies should be made of leprosy in refugee and other special groups such as nomads and of their impact on the overall endemicity of leprosy.

2. Careful attention should be paid to the collection of information through the OMSLEP system and to its analysis, possibly through automatic processing. So as to obtain the information, the epidemiological staff should be given the necessary mobility.

3. Studies should be carried out of the conditions of the communities affected in relation to transmission of the disease.

4. To ensure precision and accuracy in the diagnosis, classification, and follow-up of leprosy patients, laboratory facilities should be made available to all programmes in appropriate locations at the intermediate and central level, with the objective of correlating the clinical findings with the laboratory results. For this purpose the following action is recommended:

(a) Leprosy field workers should be trained in standardized smear-taking and laboratory assistants and technicians in standardized smear-taking, staining, and reading, using the Ridley scale.
(b) Laboratory procedures should be standardized.
(c) Essential equipment should be provided, standardized, and adequately maintained, and a regular supply of reagents should be ensured.
(d) Reference slides should be provided.
(e) Smear readings should be evaluated regularly, particularly around the 2+
(f) A national histopathologist in leprosy should be trained
(g) Mobile simple laboratory equipment should be supplied where indicated.
(h) All medical staff involved in the diagnosis of leprosy should have easy access to laboratory facilities for confirmation and follow-up of the diagnosis

5 Standardized simple techniques for monitoring drug intake should be established. WHO should encourage the establishment of facilities for mouse footpad techniques in a few laboratories on a regional basis to serve all countries.

6 The integration of all vertical programmes into primary health care is the ultimate goal and serious consideration should be given to its implementation in relation to leprosy The process of integration should be carried out progressively and carefully to avoid weakening of the present services rendered to patients.

7 All medical and auxiliary personnel should be given an opportunity to receive appropriate training In this connection the meeting endorses the recommendations made at the 1980 meeting concerning the inclusion of leprosy in education curricula Opportunities should be given to nationals from countries of the Region to participate in national training courses in other countries Appropriate career opportunities and other incentives should be offered to non-medical staff as an encouragement to efficiency.

8. In relation to multidrug regimens, there should be

(a) National commitment to the new strategy.
(b) Training and retraining, as appropriate, of the necessary personnel.

(c) Reorganization of the services to meet the revised needs.

(d) Upgrading of laboratory facilities to permit proper smear examination.

(e) Intermediate-level and central-level facilities for the treatment of complications such as leprosy reactions and side-effects from the drugs.

(f) Preparation of a manual on the subject, possibly also in Arabic.

(g) Logistic support to ensure the regular supply of drugs.

Multidrug regimens should be introduced in a phased manner, and the relevant operational problems and clinical and bacteriological results should be studied concurrently.

Appropriate strategies should be developed for supervision of the administration of multidrug regimens in areas where monthly contact with the patients is not possible.

A colour atlas and other audiovisual aids on leprosy and other cutaneous manifestations should be published to help in the differential diagnosis of the disease. Such an atlas and aids should also be made available in Arabic.

9. The following research should be carried out:

(a) Studies on risk factors favouring the transmission of leprosy.

(b) Skin test studies on populations exposed to leprosy.

(c) Studies on social and economic factors in leprosy, in particular the extent to which a stigma is attached to the disease.

(d) Operational studies on the acceptability of multidrug regimens and on their side-effects.

(e) Studies on the cost-effectiveness of different methods of case detection.

(f) Studies on the frequency of eye involvement in leprosy.

(g) Research facilities should be strengthened and leprosy staff trained to undertake more complex research work, particularly in the epidemiology, bacteriology, and immunology of leprosy.

10. Because of the magnitude of eye complications in the Region, leprosy cases should be detected and treated early to prevent the occurrence of eye problems.

(a) Patients should be educated to recognize even mild eye problems and seek treatment

(b) Eye problems and their management should be a component in training for ophthalmologists and for all other staff engaged in leprosy activities. A manual with illustrations should be produced.

(c) A manual on eye problems and their management should be distributed to health personnel and ophthalmologists at all levels to enable them to recognize and treat leprosy eye problems in time.

(d) Referral facilities should be established for the treatment of major eye complications by appropriately trained ophthalmologists.

11. Inter-country collaboration should be initiated in the training of medical and auxiliary staff and the exchange of teaching aids and materials WHO should provide lists of training aids to the countries interested. Educational material for the general public, with the objective of obtaining community participation and collaboration, should also be prepared at country level and disseminated.

ANNEX I

OPENING ADDRESS BY H.E. MR ABDIL RASHID SHEIKH AHMED, VICE-MINISTER OF HEALTH

I wish to welcome you all to Mogadishu, and in particular those who have travelled long distances to attend this meeting on the strategy of leprosy control We in Somalia are greatly honoured that the Regional Director of EMRO, Dr Hussein Gezairy, should request us to host this meeting

The purpose of this meeting is to exchange information on the status of the leprosy control programme in your countries and in the Region, the most recent advances on the conduct of control operations, including the screening of new cases, combined therapy, diagnostic techniques, and leprosy research. It is to be expected that all the participants, the national directors of leprosy control programmes, the WHO short-term consultants, and the representatives from international and other organizations will have learnt much and gained knowledge and field experience from which all will benefit during your discussions on the control of leprosy and the prevention of deformities and blindness.

The situation in Somalia regarding leprosy control and our activities and experience will be presented by the Somali participants to this meeting. However, I should like to say that our approach to the control of leprosy is based on prevention, that is, active surveillance and ambulatory treatment of cases. Our leprosy control programme will be integrated into the other disease control programmes, all which will lead to the integration of such services into primary health care at all levels, the policy and strategy to which we have committed ourselves as the key to Health for All by the Year 2000 for all the Somali people

WHO recently announced that over 12 million cases of leprosy had been reported in the world. Taking into consideration the unreported cases this figure may be doubled. This is a fearsome situation for many developing countries, as leprosy is not a killing disease like tuberculosis, for example, but it cripples and thus causes grave economic loss to such countries. The crippled victim of leprosy makes demands on society for food, shelter, and health care rather than producing and

contributing to his community We feel strongly that the efforts of WHO and the international organizations should be supplemented and strengthened by a worldwide effort to mobilize the necessary funds to meet the high cost of drugs and control operations in the developing countries.

I am quite confident that your discussions and deliberations during the coming six days will result in the formulation of practical measures for the successful control of leprosy.

On this occasion I would like to thank Dr Hussein Gezairy, Regional Director of EMRO, for all the assistance furnished in organizing and conducting this meeting in Mogadishu, and Dr Al Aghbari, WHO Representative and Programme Coordinator in Somalia, for his valuable assistance in the preparation of this meeting

Finally, I hope that you all find your short stay with us enjoyable and advise you to take advantage of whatever free time you may have to sample what Mogadishu can offer.

ANNEX II

MESSAGE FROM THE WORLD HEALTH ORGANIZATION

On behalf of the World Health Organization, I express thanks to the Government of the Somali Democratic Republic for having kindly accepted to host this meeting and provide the necessary facilities, and to the officials who have made it possible.

Our thanks also go to the voluntary agencies who are assisting the leprosy control programme in the countries of the Region, and in particular to the Japanese Shipbuilding Industry Federation, whose contribution has permitted the funding of this meeting.

The situation since the last Regional consultation in 1980 has changed in view of the new strategy for the control of leprosy, which has been agreed upon by experts who have discussed optimal treatment schedules for multibacillary and paucibacillary leprosy cases. This new strategy implies special efforts to reach the majority of multibacillary cases and administer regularly a well-supervised multidrug regimen over a limited period of time.

It is expected that this new strategy will result in a significant reduction in the transmission of leprosy, to a point below the critical level for the persistence of endemicity.

The implementation of this strategy is expected to be the responsibility of the primary health care network, and the ultimate objective will be to render the multi-drug regimen available to all leprosy cases, irrespective of their classification.

This is a considerable advance in the control of the disease, and it requires a firm commitment on the part of governments and assisting agencies to provide a continuous and regular supply of the drugs needed, for at least a decennium from the start of its implementation.

We are confident that during the coming week you will draw benefit from the presentations and will undertake intensive discussions concentrating on the use of combined therapy for leprosy control programmes in order to achieve the challenging goal of improving the condition and quality of life of leprosy patients in your respective countries More important still is prevention of the disease, or at least its detection and treatment in its very early phase before it reaches the stage of irreversible disability

We wish this meeting every success and look forward to the results of your deliberations and to the further development of activities and research in this important area of public health. Wishing you a pleasant stay in Mogadishu.

ANNEX III

PROGRAMME OF MEETING

Saturday, 30 October 1982

08.30 - 09.00	- Registration
09.00 - 09.30	- Opening of the meeting by H E Vice-Minister of Health, Somalia
	- Message from the World Health Organization
09 30 - 10.00	- Recess
10 00 - 13.30	- Election of officers
	- Adoption of the agenda
	- Review of the leprosy problem in the Eastern Mediterranean Region Presentations by participants (agenda item 4)

Sunday, 31 October 1982

08.30 - 13.30	- Epidemiological aspects (agenda item 5) Population screening for early detection of leprosy, by Dr V. Parisi
	- An epidemiological study in Gharbia Governorate, by Dr R. Mohareb

Monday, 1 November 1982

08.30 - 13.30	- Community participation and social aspects (agenda item 6) by Dr V. Parisi/Dr R. Mohareb
	- Recent advances in therapy of leprosy (agenda item 7) by Dr S K. Noordeen
	- Special problems in leprosy - ocular complications (agenda item 7) by Dr B. Ostler

Tuesday, 2 November 1982

08.30 - 13.30

- Recent advances in research on leprosy (agenda item 8)
  by Dr S.K. Noordeen
- Integration into primary health care (agenda item 9)
  by Dr V Parisi/Dr F.M. Amin
- Minimum laboratory requirements for the conduct of a leprosy control programme, including training needs and laboratory facilities (agenda item 9)
  by Dr S.R. Pattyn
- Mouse footpad technique for verification of resistance of Mycobacterium leprae (agenda item 9)
  by Dr S.R. Pattyn

Wednesday, 3 November 1982

08.30 - 13.30

- Management of leprosy control programmes (agenda item 10)
  by Dr R. Mohareb
- WHO LEP recording system (agenda item 10)
  by Ms C.B. Misson

Thursday, 4 November 1982

08 30 - 13.30

- Revised programme for leprosy control (agenda item 11)
  by Dr V. Parisi

Friday, 5 November 1982

08.30 - 12.00 noon

- Summary report and recommendations by the rapporteur (agenda item 12)
- Closing session

ANNEX IV

LIST OF PARTICIPANTS

AFGHANISTAN	Dr Faquir M. Amin Director, Leprosy Programme Ministry of Public Health Kabul (Joint Rapporteur)
DJIBOUTI*	
DEMOCRATIC YEMEN	Dr Waheeb Mohamed Jaffer Director, EPI Ministry of Public Health Aden
EGYPT	Dr Rushdy Mohareb Director, Leprosy Department Ministry of Health Cairo (Joint Rapporteur)
PAKISTAN	Dr Ruth Pfau Medical Director, Marie Adelaide Leprosy Centre Mariam Manzil A.M. 21 off Shahrah-e-Liaqat Frere Road, Karachi-03
SAUDI ARABIA*	
SOMALIA	Dr A. Sharif Abbas Ministry of Health Mogadishu (Chairman)

*Unable to attend

SOMALIA (cont'd)	Dr Abdullahi Hassan Farah Director, Public Health Ministry of Health Mogadishu
	Dr Omar Hashi Director, Leprosy Control Programme Ministry of Health Mogadishu
	Dr Aden M. Ajab Leprosy Control Jilib District Jilib
	Professor G. Tarabini Leprosy Control Laboratory Faculty of Medicine University of Somalia Mogadishu
SUDAN	Dr Haidar Abu Ahmed Director, Leprosy Control Programme Ministry of Health Khartoum (Vice-Chairman)
YEMEN ARAB REPUBLIC	Dr Yassin Abdul Aleem Dermatologist El Gumhoriah Hospital Taiz
OBSERVERS FROM HOST COUNTRY	
	Dr Mohamed A. Hassan Director-General Ministry of Health Mogadishu
	Dr Yassin Ismail Director, Planning Ministry of Health Mogadishu

Dr Abokar Hassan Gulaid
Director, Statistical Unit
Ministry of Health
Mogadishu

Dr M.A. Munasar
Director
Digfer Hospital
Digfer

Dr Musa Yusuf Sherwa
Director
Forlanini Hospital
Mogadishu

Dr M. Haji Hussein
Infectious Diseases Hospital
Mogadishu

UNITED NATIONS

UNDP	Mr Olav Svennevik Resident Representative United Nations Development Programme Mogadishu
UNICEF	Mr Per Engebak Acting UNICEF Representative Mogadishu

OTHER ORGANIZATIONS

INTERNATIONAL FEDERATION OF ANTI-LEPROSY ASSOCIATIONS (ILEP)	
SASAKAWA MEMORIAL HEALTH FOUNDATION	Dr Yo Yuasa* Medical Director Sasakawa Memorial Health Foundation Tokyo JAPAN
GERMAN LEPROSY RELIEF ASSOCIATION (GLRA)	

*Unable to attend

ORDER OF MALTA	Médecin-Général Jean Languillon Expert léprologue Conseiller technique Route du Salario Ajaccio 20000 FRANCE	
SISTERS OF CHARITY*		

WHO SECRETARIAT

Dr V. Parisi	Acting Director, Disease Prevention and Control (Secretary)	Eastern Mediterranean Regional Headquarters
Dr S.K. Noordeen	Secretary Steering Committee of the Scientific Working Group on Leprosy	Leprosy Unit WHO, Geneva
Dr S.R. Pattyn	WHO Consultant	Institut de Médecine tropicale Prince Léopold Antwerp, Belgium
Dr Bruce Ostler	WHO Temporary Adviser	Francis I. Proctor Foundation for Research in Ophthalmology, University of California, San Francisco, USA
Ms C.B. Misson	Resource Person	Research Associate, Department of Epidemiology Ecole de Santé publique Bruxelles, Belgium
Mrs C. Cartoudis-Démétrio	Conference Officer	Eastern Mediterranean Regional Headquarters
Mrs F. Adib	Secretary	Eastern Mediterranean Regional Headquarters

*Unable to attend