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CONTROL AND PREVENTION OF LEPROSY IN THE CONTEXT
OF PRIMARY HEALTH CARE

WORKING PAPER FOR THE TECHNICAL DISCUSSIONS

REGIONAL COMMITTEE DOCUMENT

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1. INTRODUCTION

The Regional Committee, at its thirty-fourth session, selected the topic "Control and prevention of leprosy in the context of primary health care" (resolution SEA/RC34/R10) as the subject for the technical discussions at the thirty-fifth session.

The selection of this topic is particularly appropriate, since leprosy continues to remain an important public health problem in the South-East Asia Region. Traditional parameters have been insufficient to assess and quantify the magnitude and seriousness of the public health problems posed by this disease, owing to its peculiar psychological, social and economic dimensions. The antiquity of the disease, its protracted course and its disabling sequelae have given it an aura of dread, with social and economic implications which are often unique and tragic.

Several resolutions of the Executive Board and the World Health Assembly have repeatedly emphasized the seriousness of the situation in regard to leprosy and have stressed the need to develop effective control programmes, for early detection of patients and closely supervised treatment.

The primary health care approach has now been adopted in the global strategy for the attainment of the social objective of health for all (HFA) by the year 2000. It is, therefore, imperative to reorient the implementation of leprosy control programmes, using the most appropriate and effective technology which can be incorporated into the primary health care system.

2. SITUATION ANALYSIS OF LEPROSY IN THE REGION

Leprosy is a public health problem of considerable magnitude in 8 of the 11 countries in this region. It has not been reported from the Democratic People's Republic of Korea and Mongolia, while in Sri Lanka the prevalence of the disease is low.

Despite commendable efforts made by the governments in the Region for the control of leprosy, only 3.19 million patients (60%) of the estimated 5.3 million cases have been detected and registered for treatment over the past two decades. The intensity of case-detection activities varies considerably in different countries (see Annex 1). In Bangladesh, only 17.1% (34 328) of the total estimated caseload of 200 000 patients had been detected and registered for treatment till 1981. In Maldives, however, nearly 84% (1677) of the 2000 estimated cases have been registered for treatment in the various islands/atolls. In Burma, 39.3% of the estimated 700 000 patients have been registered for treatment, while, in India, Indonesia and Nepal, the percentage of case-detection is 65, 49.6 and 33.1 respectively. In Bhutan, of the estimated 10 000 cases, approximately 50% (5000 patients) have been detected and registered for treatment since the inception of the leprosy control programme in 1966. At present, 2927 patients are undergoing treatment at the three main centres in Gidakom, Riserbo and Mongar.

The percentage of registered patients on regular treatment also varies considerably ranging from 30 to 90. The risk inherent in irregular

treatment with dapsone monotherapy is the occurrence of dapsone-resistant strains of M.leprae. This is now being reported with increasing frequency from six out of eight endemic countries in the Region. In India, where multi-centred studies have been undertaken, the prevalence of secondary dapsone resistance varies between 20 and 90 per 1000 in areas where dapsone monotherapy has been extensively used for more than 20 years. If this information is extrapolated to other countries in the Region, the significance and magnitude of the problem can be better appreciated.

Though control programmes for leprosy initially commenced as unipurpose vertical projects, in most countries, they are now in the process of integration with the general health services. The mode of integration and the pace of activities, however, varies considerably.

Some important operational constraints to the successful implementation of the existing strategy for leprosy control are the poor coverage, low case-detection rate, irregular treatment and inadequate case-holding. Major technical constraints include the emergence on a wide scale of dapsone-resistant strains of M.leprae and microbial persistence. An important technical requirement for successful implementation of the programme is the prescription of adequate regimens containing effective drugs, while an almost axiomatic operational pre-requisite is the regularity of drug intake. It is in this perspective that the current strategy must be reviewed in order to:

- identify optimum therapeutic regimens for field use,
- ensure regular drug intake, and
- minimize default.

There is an imperative need therefore to diversify the methods of treatment delivery to leprosy patients within the framework of the primary health care delivery system. The programme will have to be responsive to human sensibilities and behavioural variations in the community. Governments will have to show greater political commitment, and ensure maximal utilization of available resources, to permit innovative operational strategies in restructuring drug delivery systems, to meet local conditions and needs. Details pertaining to the number of cases registered for treatment, percentage of case-detection, reported prevalence of dapsone resistance and the nature of the control programme in the various countries of this region can be seen in Annex 1.

3. SITUATION ANALYSIS OF THE PRIMARY HEALTH CARE SYSTEM

The Alma-Ata Conference in 1978 affirmed that the primary health care approach was essential for achieving an acceptable level of health throughout the world, as an integral part of social development, in the spirit of social justice. The conference emphasized the importance of organized community participation and ultimate self-reliance, with individuals, families and communities assuming more responsibility for their health.

Primary health care requires the definition of a kind of programme suited to existing community resources, which can be expanded when additional resources become available and when community organization improves. This initial programme should give high priority to the family,

and must aim at providing maximum protection through appropriate technologies that are easily available. There is an obvious need, therefore, for the community itself to tailor its programmes according to its problems and the resources that it can in reality make available. This planning from the peripheral level changes the problem of "how to deliver services" into "how the populace can reach out" to the appropriate health service. The most obvious obstacle to the delivery of such a programme is the lack of manpower to perform the simple activities involved. The basic approach should be to rely on local people who are chosen by the community and are specially trained to carry out the activities of the programme and can act as promoters of community organization around the banner of "better health for all". It is this capacity of the community to organize itself, breaking out of its own passivity, that is fundamental to primary health care.

In the South-East Asia Region, all countries have accepted the policy of developing integrated primary health care services by augmenting the number of health centres, sub-centres and primary health care workers at the peripheral level.

4. TECHNICAL POLICY AND PRESENT APPROACH TO LEPROSY CONTROL

During the past 50 years, measures for leprosy control have passed through various phases related to the extent of knowledge pertaining to the epidemiology of the disease and the progress of chemotherapy. Prior to 1943, when therapeutic agents were virtually unknown, preventive measures were carried out by isolating patients in sanatoria often for life, and preventing the disease in child contacts by placing them in preventoria. The introduction of sulfones in the therapy of leprosy in the early fifties heralded a new era in the control of the disease. Out-patient clinics then acquired the primary role in leprosy control. Since primary prevention is still not a reality, the thrust of the strategy for control continues to be based on early detection of patients, and in continuous and regular ambulatory treatment with dapsone monotherapy, to interrupt the chain of transmission of the disease in the community. The objectives of this approach are:

- to reduce the infectivity of multibacillary patients as rapidly as possible,
- to prevent indeterminate patients from becoming infectious cases, and
- to prevent deformities in tuberculoid patients.

5. IDENTIFICATION OF CONSTRAINTS AND LIMITATIONS OF THE PRESENT STRATEGY

5.1 Dapsone Resistance and Persisters

The twin threats to the successful implementation of the current strategy for leprosy control are the widespread emergence of dapsone-resistant strains of M.leprae and the problem of persistence of the bacilli in the deeper tissues. They are indeed the major cause for anxiety in the management of leprosy control programmes today, and, if containment

measures are not initiated immediately, they threaten to set at naught the limited achievements of the past three decades. These limitations of dapsone monotherapy have recently become more obvious. Secondary dapsone resistance is now being reported with increasing frequency from Burma, India, Indonesia, Nepal and Thailand. Wherever it has been sought among treated and relapsed patients in the BB-LL spectrum, it has been found. Primary dapsone resistance is also being reported with increasing frequency from India and other regions, e.g., Malaysia and the USA. It is possibly occurring in a high proportion of tuberculoid patients who do not show the expected clinical response to conventional dapsone monotherapy.

Bacterial persistence is also a phenomenon of special pathogenic and therapeutic importance related to leprosy control activities. This explains why conventional treatment with dapsone monotherapy in patients in the BB-LL spectrum, needs to be of long duration. In order to avoid relapse, persisters must be eliminated or treatment will have to be continued for several years, placing a heavy strain on the overburdened treatment delivery system and its concomitant activities.

5.2 Case-detection and Coverage

Despite the high endemicity of leprosy and its public health and socio-economic importance in eight out of eleven Member countries in the Region, neither case-detection nor reporting has attained the desired level of efficiency.

5.3 Treatment Services

Treatment facilities have also largely remained meagre, rudimentary and restrictive, owing to the peculiar social dimensions of the disease, its changing profile and the associated stigma and cultural traditions of society. The main thrust of the programme so far has been to provide treatment to the maximum number of patients possible. The emphasis has been on quantitative rather than qualitative care without a logical sequence of priorities related to control.

5.4 Case-holding

Treatment default is the crux of the problem in chemotherapy. The most common reason for this unsatisfactory situation is irregularity of drug intake, e.g., gross interruptions and premature termination of treatment, mainly by self-discharge. Lack of health education among patients and their families, the protracted course of treatment with unsupervised self-administered dapsone monotherapy, and the restricted treatment delivery points, have resulted in high defaulter rates and poor patient compliance in service programmes. Whatever the cause, irregularity or premature cessation of chemotherapy have serious consequences not only for the patient but for the community as a whole.

5.5 Organizational Defects

The unsatisfactory achievements of the current strategy can be attributed to the limited coverage of the rural population and the restrictive vertical approach. It must be remembered that the principal reason for treatment failure with dapsone has been irregularity of drug

intake. Unless this operational factor which is of paramount importance is rectified, the best of drug combinations will be doomed to failure. The key to success is in the organization of the delivery of treatment services.

5.6 Lack of Appreciation of the Situation

The shortcomings of the present strategy and the urgency of the situation do not appear to have been fully appreciated by medical scientists and health administrators. They have therefore failed to take the necessary measures required for implementation of the revised strategy, based on recent advances regarding the chemotherapy of leprosy and the primary health care approach.

6. RECENT ADVANCES

In view of the inherent difficulties in the control of leprosy, the development of a tool for primary prevention, i.e., a vaccine of good immunogenic potency will be an invaluable asset. This is the main objective of IMMLEP, and work on such a vaccine is proceeding satisfactorily. The other alternative is to develop new drugs which are more rapidly effective against *M. leprae*. This objective is also proceeding satisfactorily under THELEP. Nevertheless, it will take at least a decade before any significant results can be achieved on both these fronts.

Because of these limitations, the classical strategy of leprosy control based on early detection and effective chemotherapy is likely to remain unchanged for many years. In order to prevent the emergence of secondary dapsone resistance, it is now accepted that multi-drug regimens should be used for the treatment of leprosy.

A WHO Study Group convened at Geneva from 12 to 16 October 1981, to review the chemotherapy of leprosy in control programmes, has recommended the following regimens for the treatment of leprosy:

- (1) Multibacillary leprosy (Lepromatous and Border-line in the Madrid Classification)
- | | | |
|-------------|--------|-------------------------------|
| Rifampicin | 600 mg | once monthly, supervised |
| Dapsone | 100 mg | daily self-administered |
| Clofazimine | 300 mg | once monthly, supervised, and |
| | 50 mg | daily self-administered. |

Where clofazimine is totally unacceptable owing to the coloration of skin lesions that it causes, its replacement by 250-375 mg self-administered daily doses of ethionamide/protionamide should be considered.

Treatment should be continued till the size of the bacillary population has been reduced to such an extent that resistant mutants are no longer present. Since the time required to achieve this is not known, combined therapy should be given for the entire course of treatment, which must be for a minimum of two years, and should be combined preferably until smear negativity is attained.

(2) Paucibacillary leprosy (Tuberculoid and Indeterminate
in the Madrid Classification)

Since, in paucibacillary leprosy, the bacterial load is much lower than in multibacillary leprosy (the maximum being about 10^6 organisms) the problem of selection of drug-resistant mutant organisms through treatment is insignificant. Any persisters remaining are likely to be contained by the adequate cell-mediated immune response these type of patients possess. Therefore, short-course chemotherapy has now become feasible by using rifampicin, the potent and rapidly bactericidal drug. The recommended standard regimen is rifampicin 600 mg once a month for 6 months, plus dapsone 100 mg (1-2 mg/kg body weight) daily for 6 months.

The administration of rifampicin should invariably be fully supervised. If treatment is interrupted, the regimen should be recommenced where it was discontinued to complete the full course. Thereafter, treatment can be terminated and the patient advised to report for re-examination if symptoms recur.

7. ADVANTAGES OF SUPERVISED COMBINED CHEMOTHERAPY

The main advantage of intermittent combined chemotherapy is that it is entirely supervisable. Thus no concealed irregularity can occur as with self-administered dapsone monotherapy. A further advantage is its lower toxicity compared with daily regimens which include rifampicin. The total amount of drugs is also less as compared to daily regimens with a corresponding reduction in cost. This factor is particularly important for countries that have to import drugs and pay for them in foreign exchange.

It has clearly been established that irregularity of the drug intake and high drop-out rates are directly proportional to the duration of treatment. The advantages of shorter regimens of finite duration are therefore obvious, viz.:

- smaller quantities of drugs required,
- shorter duration of treatment,
- greater convenience to the patient,
- better chances for patient compliance and cooperation,
- smaller risk of chronic drug toxicity, and
- socio-economic and administrative advantages of high capital investment being amply recouped by finite treatment as against the recurring and sustained cost of dapsone monotherapy.

8. REORGANIZATION OF LEPROSY CONTROL SERVICES
TO COPE WITH THE REVISED STRATEGY

Since their inception, leprosy control activities in Member countries of this region have been implemented by specialized services with their own personnel. Increasingly, however, during the past decade, such specialized services are gradually being integrated into the general health

services. The primary health care approach, involving the active participation of the community, in support of the strategy for leprosy control is, however, essential if success has to be achieved. It must nevertheless be appreciated, that the new challenge resulting from the increased complexity of the revised treatment technology will render integration with the primary health care system more difficult and will involve a fundamental reconsideration of the various activities relating to leprosy control such as:

- restructuring the leprosy control services to facilitate closer collaboration with the primary health care system, in order to ensure high levels of case-detection, treatment regularity and case-holding;
- retraining staff to undertake these duties;
- full community participation;
- strengthening laboratory services, and
- formulating priorities in accordance with manpower and financial resources.

In recent years, a veritable revolution in primary health care has occurred which makes it obligatory to utilize this approach for leprosy control in order to ensure adequate coverage of the population at risk. This relatively new community emphasis on health delivery received clear expression at the Alma-Ata Conference in 1978. The challenge to planners, providers and educators is to find not only scientifically sound but also practical and socially acceptable answers to local needs in relation to leprosy control. This approach demands a heightened awareness of the subjective expressions of the disease and a sensitivity to how local people perceive official efforts to solve the problem.

8.1 Community Participation, Case-detection and Case-holding

An essential component of primary health care is the concept of community participation and self-reliance. It implies that people should act to improve their own health rather than rely on others to do it for them. The sheet-anchor in any strategy for leprosy control is early detection. At the home level, it is imperative that individual family members should be aware of the early signs and symptoms so that they can voluntarily seek confirmation of the diagnosis and treatment at the appropriate health facility. This will need health education in order to promote social and personal awareness regarding the disease. There must be primary diffusion of information in the community regarding leprosy, tailored to the peculiarities of each population group, in order to influence especially the help-seeking behaviour. The need is for culturally more relevant health education with a view to encouraging voluntary reporting of patients, and promoting case-detection by participative involvement of the community. At the home level, individual family members, e.g., parents, can play an active and useful role in ensuring regularity of treatment by the patient. Generating family pressures through appropriate health education, in order to ensure patient compliance of treatment, will be the sine qua non for the success of the revised strategy. Irregularity

or premature cessation of chemotherapy has serious consequences not only for the patient but for the community as a whole. There is far more to motivation than informing and instructing people. It is a matter of mutual human relations requiring an understanding of the patient's non-medical problems, his way of life, work, religion, wants, fears and attitudes towards traditional and modern medicine. Motivation requires a person who speaks the "patient's language" and is capable of bridging intellectual and social distances, removing cultural barriers and changing attitudes and habits. This can best be achieved by individual family members and the village council or village health committee which has an all-pervading influence in tradition-bound societies.

At the most peripheral level of the primary health care system are the voluntary health workers who work in close collaboration with the health services organization. The community health worker is the interface between the resources of the community and those of the health care system. Depending on their educational qualifications and training, they can be assigned the following tasks:

- recognition of early symptoms of leprosy;
- referring patients to a health facility for confirmation of diagnosis;
- motivating patients to take regular treatment;
- defaulter retrieval action;
- surveillance of family members of the patient who form a high-risk group, by conducting annual clinical examinations, and
- administration of supervised doses of drugs in special situations e.g., sparsely populated communities in mountainous terrain with difficult communication.

In this context, it may perhaps be appropriate to demarcate the PHC approach into two phases. One of these is that which the community members can undertake for themselves, and the other comprises measures which must be undertaken by trained health workers. The sharing of information and techniques is a matter concerning the interface of these two phases. A conceptual model of the system is given in Annex 2.

The most difficult part of primary health care is the achievement of total and genuine "community participation" as opposed to "community control". It is necessary to guard against this pitfall particularly in the context of leprosy because of the social stigma attached to this disease. The patient should not be discriminated against by society, as this will negate all efforts, and the entire philosophy of this approach will be self-defeating. Priorities should be redefined in favour of deprived groups, and the community should engage itself in an unremitting quest for innovative approaches to ensure treatment regularity, so that maximum benefit can be achieved with the available resources. Redoubled efforts have to be made to promote the rehabilitation of patients into the mainstream of community life. In this context, the community's participative involvement will have far-reaching benefits.

The coverage of leprosy control services in most parts of this region are inadequate for reasons that go beyond limited resources. However, it is clear that more can be done within the constraints of economic and political forces than is being undertaken at present. The concept of utilization of the community health worker is thus an important step towards correcting these inadequacies, because it offers the possibility of making available enough health personnel to reach all communities. This concept is financially realistic and also consistent with the social and economic development of the community.

8.2 Bacteriological and Other Laboratory Investigations

This is an axiomatic corollary to the clinical examination and an essential prerequisite prior to the introduction of the multi-drug therapy. It is, therefore, of paramount importance to organize an efficient service for taking slit-skin smears and processing them to ensure uniformity and reliability of smear microscopy.

Essential laboratory facilities must be available when clinical screening of patients indicates the need for such investigations. Adequate laboratory support at the peripheral level must therefore be ensured.

8.3 Treatment Delivery

The main thrust of the programmes so far has been to provide treatment to the maximum number of patients possible. The emphasis has been on quantitative rather than qualitative care without a logical sequence of priorities related to control. This has resulted largely in unsupervised, self-administered oral therapy with poor case management. With the introduction of multi-drug regimens and the adoption of the primary-health-care approach, a more vigorous attempt is now necessary to ensure regularity of drug intake by increased supervision and health instruction. It is essential to ensure that the patient actually ingests each monthly dose of rifampicin and clofazimine in multibacillary cases, and rifampicin in paucibacillary cases. In addition, compliance of daily self-administered drugs must also be strengthened by health education and motivation. This will be an essential function of the multipurpose health worker and the community health volunteer.

The critical factor will be the flexibility of the treatment delivery system which should be tailored to meet the individual needs of patients. Consumer satisfaction demands the highest priority, and the major emphasis must therefore be on the provision of adequate, efficient and flexible ambulatory treatment facilities.

Each patient should be able to receive treatment at the place most convenient to him, e.g., leprosy control unit, primary health centre, medical aid post, etc. If necessary, an auxiliary should visit the patient's home for drug delivery in certain special situations. It is therefore imperative that the full potential of the basic health services must become more increasingly involved in the management of leprosy patients. To ensure regular drug intake has now become a managerial task par excellence and needs priority attention, particularly in the prevailing context of high defaulter rates in the service programme.

The number and quantum of health facilities are increasing in the region, and it is a challenge to every health administrator that fixed health centres and health posts should be fully utilized for the administration of supervised treatment. Continuity, regularity and completion of chemotherapy are the keys to success wherever this care is provided. A leprosy service cannot reach its full potential until all levels of medical and health skills are available to leprosy patients. It is at the primary medical care level that this vital link with the health services must be established.

To meet the demands, it may be necessary in certain situations to evolve treatment delivery systems outside the scope of the conventional medical network. In mountainous regions with low population density, it may be essential to utilize the services of traditional practitioners of medicine and school teachers for drug delivery. Innovative variations with a bold approach, properly planned and formulated, will be required if the drug delivery system has to be scientifically diversified.

The countries of Asia and Africa are now undergoing radical transformation in their primary health care delivery system, and there remains no justification for continuing to separate leprosy patients from the vortex of the mainstream of medicine. Planning for integration should ensure that an effective control service is retained and fortified and does not deteriorate in scope and function.

Prevention of deformities should also commence at the home level. Simple physiotherapeutic measures like oil massage and exercises should be taught to the patient and supervised by family members and community health volunteers. This will minimize deformities, which are largely responsible for the unparalleled social stigma attached to this disease. Provision of full primary health care is also necessary so that minor ailments can be comprehensively treated at the peripheral level. The patient should be the pivot around whom the control programme is built. His felt needs should be met and social concern for him should radiate from the treatment centre to the periphery.

8.4 Referral Services

Referral for more specialized attention including temporary hospitalization may become necessary for the treatment of complications like reactions to, and side-effects of, drugs which may occur. Hospitals and health centres should be willing and competent to admit and treat these patients in order to improve case management. This will require training and motivation of intermediate staff, capable of a progressively wider range of specialized health intervention that requires more sophisticated technology than can be provided at the community level. These establishments will now have to adopt a new role in response to the needs of leprosy patients. Such extramural involvement is essential to inspire confidence in the whole system and provide specialized care when necessary.

8.5 Monitoring of Patients

At periodic monthly contacts for supervised administration of the drugs, the auxiliary field worker should:

- elicit information regarding side-effects;
- monitor occurrence of any adverse reactions, and
- motivate patients to take the self-administered drugs regularly.

In multibacillary patients, annual clinical reviews should be undertaken by a medical officer or a senior field worker. It should include:

- assessment of leprosy lesions, and
- smear examinations.

This must be repeated annually for a minimum of two years and preferably until smear negativity is reached.

In paucibacillary patients, clinical assessment must also be undertaken by a medical officer or a senior field worker after six supervised doses of rifampicin have been administered at monthly intervals, concurrently with self-administered dapsone therapy. Treatment can then be terminated provided:

- there is no extension of existing lesions, and
- there is no appearance of new lesions.

9. MANPOWER DEVELOPMENT

9.1 Programme Managers and Health Administrators

The critical decision of accepting the new strategy and the primary health care approach will depend on health administrators and programme managers. They should be informed by effective communication techniques regarding:

- the new technical policy based on recent scientific knowledge,
- the need for managerial competence and intermediate level supervision,
- the operational constraints in programme implementation through the PHC approach and methods to overcome them, and
- the long-term cost-effectiveness of the revised strategy.

This will be a major challenge to international agencies, to generate the political will and enthusiasm required to implement the new approach.

9.2 Training

The shortage of trained manpower is particularly acute in leprosy control services in several endemic countries. This is one of the major obstacles to ensuring total and intensive coverage of patients. Manpower development will involve training and re-training of health personnel at various levels, according to job-oriented tasks which will have to be redefined in accordance with the revised multi-drug strategy. This will

involve retraining of existing staff and recruitment and training of additional staff in order to strengthen the infrastructure where necessary.

The training must be a planned and organized part of the programme, and should graft the new knowledge and technology on traditional practices that are useful and beneficial. It should prepare each type of personnel to perform clearly defined activities and functions. There can be no single module for a training programme which is universally acceptable in the rural areas of developing countries. The training for different levels of staff must be flexible. Its course content should be adapted to the local needs, resources, and special social and other environmental characteristics, in consonance with the revised strategy. The key word will be relevance to the health needs of leprosy patients. The education of each category of personnel will vary in scope, duration and function, with the fundamental purpose of preparing them for effective service, within the constraints and limitations of the available resources.

10. PHASING OF THE PROGRAMME

Owing to financial and manpower constraints and the intensive training requirements, most countries will have to implement the revised strategy in a phased manner. The phasing will be a managerial decision, based on several operational indicators:

- availability of financial resources,
- availability of drugs and supplies,
- availability of a suitable infrastructure,
- training needs, etc.

Where an adequate infrastructure exists, it may be more realistic to introduce the combined therapy for all multibacillary patients at the country level in the first phase, since they constitute a clear priority for control programmes. Paucibacillary patients can be put on multi-drug therapy in the second phase after three to five years.

Alternatively, both multibacillary and paucibacillary patients can simultaneously be given the new regimens in geographically defined areas where this is operationally feasible. The programme can then be gradually expanded to cover other areas over a five to ten year phasing according to the availability of financial and manpower resources.

In countries where manpower and financial resources including logistic support are available, all multibacillary and paucibacillary patients should be started on multi-drug regimens in a phased manner within a time-bound schedule. When there are serious financial and manpower constraints, priorities must be formulated so that available resources can be put to maximum use. Patients requiring multi-drug regimens can be classified in the following categories in order of priority:

- newly-diagnosed multibacillary cases
- multibacillary cases clinically suspected as dapsone-resistant
- multibacillary cases treated for more than five years but continuing to remain active

- multibacillary cases treated for less than five years
- paucibacillary cases clinically suspected as dapsone-resistant
- multibacillary cases rendered negative and on maintenance therapy
- other paucibacillary patients.

11. HEALTH EDUCATION

Health education and motivation of patients will continue to remain the sine qua non for the success of the programme, particularly with the introduction of multi-drug regimens. Generating community involvement by utilizing village elders, headmen and village health committees can be a useful method of promoting the attendance of patients at treatment centres. The challenge today is for more dynamic health education, based not on teaching people to utilize available resources as passive receivers, but on the fact that individuals, regardless of their level of education, are capable of making suitable decisions regarding their own health, when properly informed and motivated. The need for concerted action on all fronts and exploitation of all available resources is therefore imperative.

12. SUPERVISION

Supervision entails regular monitoring and control of the critical activity provided by the service. An enlightened community itself can provide managerial control through various mechanisms designed to promote regularity of treatment. Control of a technical nature, however, comes from more specialized levels of the leprosy control service through guidance, education, monitoring and provision of the right kind of information. This becomes even more important with the introduction of multi-drug regimens on a mass scale. It is essential to ensure that programme activities are undertaken in accordance with prescribed procedures. Supervision must be systematic and continuous, and corrective action must follow each visit, if necessary.

13. COORDINATION

The control of leprosy affords an excellent example of the need for multisectoral coordination. Leprosy endemicity is often directly linked to poverty which, in turn, stems from unequal distribution of wealth and resources. In urban slums, poverty - and hence poor health - is aggravated by rural migrants flooding into the cities at rates well beyond the capacity of industry and other employers to provide jobs or other means of livelihood. In developing leprosy control strategies, it is therefore important to identify the action required in other sectors, such as in housing, rehabilitation, slum development and education. It is also necessary to convince those responsible in these sectors to implement the measures required, and ensure allocation of funds for these activities, so that long-range benefits can accrue to the control strategy.

14. PLANNING AND EVALUATION

14.1 Planning

To develop or reorient an effective leprosy control service, it is necessary to formulate and plan a project within the country health programme, whether to raise the operational efficiency of an existing programme, or to initiate a new service.

Planning provides a logical process for ensuring a full examination of current epidemiological, operational and administrative problems. Some of the more important information required for effective situation analysis which is an essential prerequisite to planning is as follows:

- population data,
- health situation data,
- national health policy,
- legal measures relating to leprosy, and
- policy and targets of the national health plans such as those concerned with primary health care and integrated services.

A national leprosy control service consists of many elements including facilities for the treatment of the disease and its complications and the prevention of deformities. Other important components are laboratory services, facilities for the production or import of drugs, research and training centres and administrative and logistic support personnel. In planning the revised strategy for leprosy control using multi-drug regimens and the PHC approach, it is important to examine the current health care delivery system, to determine the elements that are already available and which could be further strengthened to achieve programme objectives. The areas of particular relevance are:

- available health care facilities
- available health care personnel
- access to health services for supervised delivery of drugs
- utilization of health services.

14.2 Evaluation

Evaluation of the revised strategy is necessary to determine whether the objectives and targets of the programme are being achieved, and whether the activities are appropriate and sufficient to meet pre-established goals. There are, however, a number of intermediate stages at which measurements may also be made. The levels of evaluation in order of priority are:

- provision of resources (personnel, facilities, drugs, equipment, etc.),

- quantity of services provided and received,
- estimated quality of services provided, e.g., regularity of treatment, and
- impact and improvement resulting from the service.

Programme evaluation and monitoring the determination of programme effectiveness should include essential elements such as population coverage, regularity of treatment and successful completion of therapy. Proper evaluation also presupposes adequate collection of information and its objective analysis.

After the information is analysed, the data should be used to evaluate the achievement of the objectives, targets and sub-targets. If the evaluation shows that the objectives or targets are not being achieved, or are not likely to be achieved, appropriate corrective action should be taken to ensure that they are attained. Another useful method of evaluating a programme is a formal comprehensive programme review conducted by a group consisting of both national and international staff.

15. RESEARCH NEEDS

While the present inputs and ongoing research activities are commendable, it will be necessary to intensify operational research studies to ascertain the most cost-effective and optimal strategies for case-detection, treatment and follow-up of patients. To provide a definite answer to these questions is impossible without an extension of the hospital-based technology to field situations under programme conditions.

Research on sociological factors which affect leprosy control activities, especially those aimed at improving motivation of patients and community participation, must also be given the necessary priority.

16. CONCLUSION

While the need for action to promote a primary health care approach to leprosy control is clear, each country's response to this need may have to be unique. These differences are the expected varying national responses to the variegated pattern of health needs within each country, as well as the expression of differences in socio-cultural background, political structure and economic realities. This approach can be summarized by the following general principles:

- (1) Leprosy control should be integrated into the primary health care system, which should be shaped around the life patterns of the population it serves, and should meet the needs of the community.
- (2) Leprosy control should be an integral part of the national health system. Other echelons of the health services should be designed in support of the needs of the patient at the peripheral level, especially as this pertains to technical supply, supervision and referral support.

- (3) Leprosy control activities should be fully integrated with the activities of other sectors included in community development, e.g., education, housing, slum clearance and rehabilitation.
- (4) The majority of health interventions should be undertaken at the most peripheral level of the health services by workers suitably trained to perform these activities.

It is clear that the integration of anti-leprosy activities with the general health services, through the primary health care concept is feasible and it is therefore incumbent on Member countries to ensure that this is implemented in a proper manner, in order to achieve the highest possible level of efficiency and effectiveness.

Annex 1

PREVALENCE OF LEPROSY AND THE NATURE OF CONTROL PROGRAMMES
IN COUNTRIES OF THE SOUTH-EAST ASIA REGION

Country	Total estimated cases	Total registered cases	Percentage of case detection	Prevalence of dapsone resistance	Nature of control programme
Bangladesh	150 000	34 328	23.0%	Reported	Integrated with TB and basic health services
Bhutan	10 000	5 000*	50.0%	Suspected	Integrated with the basic health services in certain areas
Burma	700 000	275 377	39.3%	Reported extensively	Integrated with basic health services in 147 townships
India	4 000 000	2 600 000	65.0%	Reported extensively	Specialized programme- SET units first stage in integration
Indonesia	233 000	115 569	49.6%	Reported	Full integration
Maldives	2 000	1 677	83.8%	-	Treatment delivery by basic health services/ island chiefs
Nepal	100 000	33 159	33.1%	Reported	Treatment delivery and follow-up by basic health services. Case-detection by specialized workers
Sri Lanka	14 000	11 266	80.5%	-	Case-detection by specialized workers. Treatment delivery by general health institutions
Thailand	140 000	115 753	82.6%	Reported	Integrated in 66 provinces. Specialized programme in 6 provinces
Total	5 349 000	3 192 129			

*Active cases on treatment as on 31.12.1981: 2927.

Annex 2

CONCEPTUAL MODEL OF A LEPROSY CONTROL SERVICE
WITH EMPHASIS AT THE COMMUNITY LEVEL

