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REPORT OF THE FIRST MEETING OF THE WHO WORKING GROUP ON LEPROSY CONTROL

Geneva, 1-3 July 1991

1. INTRODUCTION

The first meeting of the WHO Working Group on Leprosy Control was declared open by Dr R. Henderson, Assistant Director-General, WHO, Geneva. In his opening address, he welcomed all participants to the meeting, and stated that the creation of such a Working Group was timely, particularly in view of the very significant progress being made in leprosy control through multidrug therapy (MDT). He considered that the role of this Group would be to redefine the strategies for leprosy control so that the 44th World Health Assembly resolution (WHA44.9), i.e. the global elimination of leprosy as a public health problem by the year 2000, could be achieved.

He then requested all participants to introduce themselves, after which Dr S. Talhari was nominated Chairman, Dr C.K. Rao Vice-Chairman and Dr N.S. Benebo Rapporteur of the meeting. The list of participants is attached as Annex 1.

2. BACKGROUND, SCOPE AND OBJECTIVES (Dr S.K. Noordeen)

Dr Noordeen, Chief, Leprosy Unit, WHO, Geneva, stated that during the past six or seven years the global situation with regard to leprosy and its control has been passing through an important phase. The implementation of MDT, recommended in 1981 by a WHO Study Group on Chemotherapy of Leprosy for Control Programmes, had made such steady progress that by the end of 1990 over 50% of registered patients were on MDT and since 1985 there had been a significant global decline in the number of registered cases (about 30%).

However, several problems remained which needed to be tackled. Some of these were the uneven MDT coverage country-wise, poor case-finding, limited resources for the prevention and control of disabilities, poor mechanisms for the coordination of available resources and inadequate managerial capabilities for leprosy control.

He further stated that notwithstanding these constraints, major opportunities would exist during the next 5 to 10 years to markedly reduce and eventually eliminate leprosy as a public health problem (i.e., reaching levels of prevalence below 1 case per 10 000 population). This would mean not only a need for increased resources and activities, but also improved strategies to meet the emerging demands.

Therefore, the overall purpose of the Working Group would be to redefine strategies, intensify leprosy control activities at the country-level, and evaluate progress and its advancement towards the ultimate goal of eliminating leprosy as a public health problem by the year 2000.

The objectives of the WHO Working Group are to:

a) advise on how to further promote the increased interest and participation of leprosy-endemic countries in disease control efforts;

b) advise on how to seek increased support from, and improve mechanisms of coordination between, the various agencies working in or interested in leprosy;

c) advise on how to improve or redefine strategies and set priorities to meet the changing needs of disease control;

d) evaluate the progress of leprosy control in the world and advise on how to accelerate the pace towards the ultimate goal of eliminating leprosy as a public health problem;

e) evaluate scientific developments in leprosy in general and foresee their future application in disease control.

3. SUMMARY OF GLOBAL AND REGIONAL REVIEWS

3.1 Global Situation (Dr L. Lopez Bravo)

Dr Lopez Bravo, in reviewing the global leprosy situation, stated that there had been a steady increase in the number of registered cases between 1966 and 1985: 2.8 million in 1966; 3.6 million in 1976; and 5.4 million in 1985. The latter figure represented an increase of 49% over 1976 and 90% over 1966. However since 1985, the trend had been towards a decline, with 3.7 million registered patients in 1990, representing a 31% decrease. This was mainly attributed to MDT implementation and the resulting release from treatment of a significant number of patients.

The uneven global distribution of registered cases, as well as MDT coverage, is shown in tables 1 and 2:

Table 1. DISTRIBUTION OF REGISTERED LEPROSY CASES, BY WHO REGIONS, 1990

WHO region	Registered Cases	Prevalence per 10 000[1]	Percentage of total	New cases detected	Case detection per 10 000[1]
Africa	482 669	9.20	12.91	37 335	0.71
Americas	301 704	4.20	8.08	30 543	0.42
South-East Asia	2 693 104	20.50	72.06	488 285	3.72
Europe	7 248	0.10	0.19	87	0.00
Eastern Mediterranean	99 913	2.60	2.67	6 008	0.15
Western Pacific	152 739	1.00	4.09	14 103	0.09
World	3 737 375	7.10	100.00	576 361	1.09

[1] Based on the 1990 mid-year population data from: United Nations, *World population prospects 1988*. New York, United Nations, 1989.

Table 2. MULTIDRUG THERAPY (MDT) COVERAGE, BY WHO REGION, OCTOBER 1990

WHO region	Registered Cases	Coverage (%)	Completed MDT
Africa	482 669	18.37	102 552
Americas	301 704	23.75	23 114
South-East Asia	2 893 104	66.15	1 020 453
Europe	7 246	49.72	238
Eastern Mediterranean	99 913	38.67	17 177
Western Pacific	152 739	63.40	41 287
World	3 737 375	55.68	1 204 821

Leprosy remains a major public health problem in 93 countries of which 63 belong to the African Region, 21 to the American region, 9 to the Eastern Mediterranean Region, 9 to the South-East Asia Region and 18 to the Western Pacific Region. The total number of registered cases in the 93 countries is 3 579 354, representing 98.2% of the global registered cases.

Twenty-five countries, with 10 000 or more registered cases, accounted for 95.2% of the total registered cases in the world. Six of these countries (Brazil, India, Indonesia, Myanmar, Nigeria and the Philippines) contributed 85.1%, while India alone contributed 68% of the global figure.

Progress in MDT coverage had rapidly increased from 8.77% in 1986 to 55.68% in 1990 and is progressing satisfactorily in the South-east Asia and Western Pacific Regions.

There are 21 countries in which MDT coverage is below 25% of the registered cases: fourteen of these belong to the African Region, one each to the American, European and Western Pacific Regions, while four belong to the Eastern Mediterranean Region. The major constraints to MDT implementation in these countries are the:

1. absence of a plan of action (10 countries);
2. plan of action prepared but not implemented because of external factors (2 countries);
3. political unrest (3 countries);
4. late start of MDT implementation (3 countries);
5. non-implementation of WHO MDT (2 countries);
6. wrong setting of priorities (1 country);
7. disagreement on technical aspects of MDT among national health professionals (1 country);
8. lack of coordination with international NGOs (11 countries);
9. technical, operational and administrative problems which play important roles in many countries.

To conclude, Dr Lopez Bravo stated that based on the prevalence of leprosy, MDT coverage, health infrastructure development and other country-based problems, priority for intensive support should be given to 16 countries, namely, Afghanistan, Angola, Bangladesh, Brazil, Colombia, Côte d'Ivoire, Madagascar, Mali, Mexico, Mozambique, Nepal, Sudan, Turkey, Uganda, Viet Nam and Zaire.

3.2 African Region (Dr P. Eriki)

Dr Eriki, in his review of leprosy control in the African Region, stated that the leprosy situation had remained serious, earning the Region a prevalence rate second only to Asia. The average prevalence rate of 0.92/1000 ranged locally from less than 0.01 to over 1.0/1000. Although the organization of leprosy control in Africa remained a complex situation, because of technical, demographic, socioeconomic and most recently, political readjustment, the recommended WHO-MDT holds promise for leprosy control in the Region. Already a steady decline in the number of cases reported and registered has been observed. MDT coverage for the Region is only about 20%. In spite of this low coverage, the number of registered cases has continued to fall.

He acknowledged the collaboration existing between NGOs and WHO, which had benefited the Region tremendously. This collaboration required acceleration towards the implementation of MDT in order to achieve the global elimination goal as envisaged by the Resolution WHA44.9.

3.3 American Region (Dr C. Lombardi)

Dr Lombardi viewed the leprosy situation in the American Region as intermediate; although in third position, it contributed only 8.1% to the global registered number of cases. However, considering the greater speed at which MDT had been implemented in other WHO regions and the consequent decrease in prevalence during the past five years, the position of the American Region was not so favourable. MDT coverage for the Region is only 23.7%.

The distribution of leprosy in endemic areas of the Region is very uneven, with Brazil contributing 87% of the total number of registered cases. Because of the diverse leprosy prevalence in the Region, different strategies aimed at eliminating leprosy as a public health problem needed to be evolved. For Brazil, a special intersectoral

project, not limited to a health services network and based on massive implementation of MDT, was required. For Argentina, Mexico, and some other countries in the Region, where leprosy will progressively become more and more a local or micro-regional problem over the next few years, an intervention based on epidemiological stratification of the high endemicity areas will be required. On the other hand, for countries which are likely to achieve/have achieved the goal of elimination such as Ecuador, Uruguay and those served by the Caribbean Epidemiological Center (CAREC), projects to consolidate the elimination status are mandatory.

3.4 Eastern Mediterranean Region (Dr N.I. Neouimine)

Dr Neouimine presenting the leprosy situation in the Eastern Mediterranean Region stated that the disease continues to be an important public health problem in some parts of the Region as a result of technical, demographic and socioeconomic factors prevailing in the countries of the Region. The leprosy prevalence rate is 0.27 per 1000 and the pb/mb ratio is 1:2. The number of newly registered cases is about 5% of the total registered cases in the Region of which the proportion of children under 15 years accounts for 18.4%. The disability rate among these new cases varies between 0 and 20%.

Sudan has the largest number of leprosy cases and the largest land area in which the disease is considered to be highly endemic. Both national and international voluntary organizations, as well as WHO, play very significant roles in leprosy control in the Region.

3.5 South-East Asia Region (Dr A.S. Abdullah)

Dr Abdullah, in his review of the leprosy situation in the South-East Asian Region, stated that of the 3.7 million globally registered patients, about 2.7 million (72%) are from this Region. From 1966 to 1985, the Region witnessed a rapid increase in the number of registered cases as a result of intensified case-finding.

Due to the implementation of MDT in 1985, the decline in the number of cases had been dramatic. Presently, about one million patients have been released from treatment after completing MDT. All leprosy-endemic countries of the Region have accepted the implementation and further expansion of MDT within the framework of Primary Health Care (PHC) as the key strategy for leprosy control. However, the degree of integration and the level of development of individual programmes, as well as MDT coverage, varies from country to country. An overall MDT coverage of over 66% has been achieved.

With the significant case-load reduction, disability prevention and rehabilitation of former leprosy patients are beginning to gain prominence in the Region.

The programme managers of the national leprosy control programmes of the Region have accepted, in principle, that given the necessary technical and material support, the goal of reducing the prevalence of leprosy to less than 1/10 000 by the year 2000 can be achieved.

3.6 Western Pacific Region (Dr J.W. Lee)

Dr Lee reviewed the leprosy situation in the Western Pacific Region and stated that the prevalence of leprosy in the Region was, next to Europe, the second lowest: 0.1/1000. The total number of registered cases (152 288) is only 4.6% of the registered cases worldwide.

With the introduction of MDT in 1982, a number of countries in the Region had launched eradication programmes. China aims at achieving 'basic eradication' of leprosy by the year 2000 and the Philippines is in its second year of the National Leprosy Eradication Programme. In the vast area of the South Pacific, there is a real hope that leprosy can be eliminated in the near future. The organized effort to control leprosy in Viet Nam and Laos is very encouraging whilst Malaysia, Singapore, Hong Kong and the Republic of Korea have already managed to reduce the incidence to a minimum.

4. REVIEW OF THE LEPROSY SITUATION BY THE NONGOVERNMENTAL ORGANIZATIONS

4.1 International Federation of Anti-Leprosy Associations (ILEP) (Mr P. Sommerfeld)

Mr Sommerfeld welcomed the WHO initiative of establishing the Working Group on Leprosy Control to improve cooperation among the various agencies involved in the control of leprosy. He stated that in June 1990 ILEP's adoption of the objective of MDT for all patients by the year 2000, had the same meaning, in practice, as the 44th World Health Assembly resolution. He informed the meeting that an Expert Group of the ILEP Medical Commission has been considering the identification of key countries in which leprosy activities need to be focused.

He stressed the nongovernmental nature of ILEP members and their sense of responsibility to the many hundreds of thousands of small donors who expect their contributions to be applied directly to helping leprosy sufferers.

He concluded by discussing some areas of possible cooperation with WHO such as global initiatives and information, assistance from WHO in resolving country administrative difficulties, Health Systems Research (HSR) and training.

4.2 International Leprosy Association (ILA) (Dr W.M. Meyers)

Dr Meyers, in his review of the situation from an ILA viewpoint, reaffirmed his Association's support for the 44th WHA resolution, not only because of the striking reduction in the reported number of new patients, but also because its implication that these salutary results depended on principles appropriate to the socioeconomic structures prevailing in most leprosy-endemic countries. These principles included:

1. training programmes for medical and paramedical workers in the diagnosis and management of leprosy;

2. use of MDT.

4.3 International Leprosy Union (ILU) (Dr S.D. Gokhale)

Dr Gokhale appreciated the dramatic reduction in the number of cases and suggested some issues for consideration:-

1. Training patients, while under MDT, to take care of their hands, feet and eyes.

2. Establishing an integrated rehabilitation programme for all categories of disabled persons according to the community-based rehabilitation (CBR) pattern.

3. Undertaking health education with a special role for the printing and electronic media.

4. A training module for paramedical and rehabilitation workers for the prevention of disability and for integrated rehabilitation.

5. Meetings at country-level with national governments/international NGO's/WHO to draw up a plan for MDT and rehabilitation.

4.4 Japan Shipbuilding Industry Foundation (JSIF) and Sasakawa Memorial Health Foundation(SMHF) (Dr Y. Yuasa)

Dr Yuasa explained that the Japan Shipbuilding Industry Foundation (JSIF) is a private organization, established in Japan by Mr R. Sasakawa for the sole purpose of extending financial support to various non-profit-making agencies working in the areas of health, social welfare, education, etc., both in and outside the country.

The Sasakawa Memorial Health Foundation (SMHF) was established in 1974 to support health programmes in developing countries. The fund for leprosy is primarily used to strengthen leprosy control efforts at national government level in leprosy-endemic countries. The support largely depends on the commitment of governments to leprosy and their initiative to start effective programmes.

5. REVIEW OF INFORMATION ON THE NUMBER OF ESTIMATED CASES (Dr S.K. Noordeen)

Dr Noordeen presented currently available information on the estimated number of leprosy cases - globally, by WHO Region, and by the 30 most important leprosy-endemic countries. Figures for the first five countries were estimated on the basis of a detailed study of the situation in each country and discussions with relevant programme managers. Estimated figures for the subsequent twenty-five countries (except four) were based on estimates made by national authorities or consultants. Estimated figures for the remaining countries or territories (numbering about 180) were developed by appropriate correction factors applicable to each WHO Region. The correction factor for each Region was calculated as the ratio between registered cases for the major countries (included in the first thirty) and estimates made for those countries by the national authorities or consultants. It is planned to send the tentative estimates to these countries to obtain their final comments before publication. The global figures for the number of estimated cases as of 1991 are likely to be only about half of the 10-12 million cases quoted in the 1980's. Two-thirds of the estimated number of cases are contributed by the South-East Asian Region.

6. IMPLICATIONS OF ELIMINATION OF LEPROSY AS A PUBLIC HEALTH PROBLEM (Dr S.K. Noordeen)

There are several assumptions which are implicit in the strategy to eliminate leprosy as a public health problem, the more important of which include the following:-

1. That the leprosy programmes are willing to accept a small residual problem, i.e. less than one case per 10 000 population.

2. That there is a clear understanding of the geographic level at which elimination should be attained.

3. That the acceptable minimum prevalence has a clear relationship to incidence.

4. That there is a clear relationship between incidence of leprosy in various age groups and transmission of the disease.

5. That MDT regimens, as applied now and those to be developed in the future, will continue to be effective.

6. That MDT will have impact on the disability situation in the longer term.

7. PROJECTION OF LEPROSY TRENDS IN THE 90's UNDER VARIOUS ASSUMPTIONS (Professor M.F. Lechat)

Projection of trends is required for planning, monitoring and evaluating leprosy control. Within the context of the resolution, prevalence is the relevant operational indicator for monitoring the implementation of MDT and assessing the efficiency of

control activities. On the other hand, incidence is the appropriate indicator for evaluating the effectiveness of control strategies for interrupting transmission. Information on incidence is, or will be, essential after elimination has been reached. In the first few years after the introduction of MDT, "cleaning" of registers and discharge of former patients may result in an artificial decline of prevalence. Care must be taken to select relevant denominators for prevalence rates (country, province/states, counties, high-risk groups).

A prevalence rate of 1/10 000, the target for elimination, has different meanings in different demographic/epidemiological contexts. Together with prevalence rates, it is important to consider the absolute number of patients so as to obtain a clear picture of the size of the problem, the amount of work to be done, and the resources to be allocated.

The essential indicators for monitoring and predicting are prevalence and numbers of patients, MDT coverage, cumulative number of patients completing MDT, and also new patients (those to be identified as true new, old cases recently detected, and relapses). To yield a significant picture, these indicators must be arranged and presented on a cohort basis.

For operational purposes, and also in order to define priority areas for MDT, some kind of 'index of vulnerability to intervention', should be developed which should include indicators (rates, numbers), situational analysis, and expert opinion.

8. OPERATIONAL AND TECHNICAL PROBLEMS IN THE IMPLEMENTATION OF MDT (Dr L. Lopez Bravo)

The experience gained during the last eight years in the use of MDT for leprosy control has shown that its implementation has progressed reasonably well and that its expansion and coverage in leprosy-endemic countries could be expedited if a number of operational and technical constraints could be overcome.

There is a need to improve the coordination of control activities - particularly at the country-level - between Governments, NGO's and WHO. Once a Government's political commitment has been obtained, prerequisites for MDT implementation would be the preparation of a detailed plan of action and the acquisition of an adequate supply of drugs, funds and trained manpower.

Since MDT implementation has resulted in increased voluntary reporting, passive case-detection has been adopted by most programmes. Although bacteriological examination of skin smears continues to be recommended for control programmes, its performance is not an absolute prerequisite for initiating MDT; the diagnosis and classification of leprosy could be based on clinical examination. Increasingly, fixed duration (24 months) treatment for multibacillary patients has been adopted by control programmes. Passive post-treatment surveillance (2 years for PB and 5 years for MB) is becoming the rule for most leprosy control programmes.

9. PROGRESS WITH HEALTH SYSTEMS RESEARCH (HSR) IN LEPROSY (Dr S.K. Noordeen)

Leprosy control in recent years has greatly benefited from the effective technology of MDT. However, the achievements vary widely from programme to programme. One of the major impediments to successful control is the failing of managers to not only plan, implement and evaluate control activities, but also to clearly identify critical problems and carry out systematic studies in order to resolve them. The HSR approach can help towards systematic problem-solving at the field level. The transformation of a vertical into an integrated programme is a complex process which requires careful planning and has political, operational, financial and technical implications.

10. NEW DRUG DEVELOPMENT (Professor J.H. Grosset)

Newer drugs with bactericidal activities against *M. leprae* belong to three different classes of drugs: fluoroquinolones, macrolides and tetracyclines. Among fluoroquinolones, pefloxacin 800mg per day and ofloxacin 400mg per day demonstrated a high anti-leprosy activity in the mouse footpad system and in humans. For example, 22 daily doses of pefloxacin or ofloxacin were capable of reducing by 99.99% (or 4 $\log_{10}$) the number of viable *M. leprae* recovered from skin biopsies of patients. This has led to the proposed multicentre field trial which is currently being organized by the WHO Leprosy Unit's Scientific Working Group on Chemotherapy of Leprosy (THELEP).

Among macrolides, clarithromycin (an erythromycin derivative) and among tetracyclines, minocycline, have demonstrated a high anti-leprosy activity in both the mouse footpad system and in humans. In humans, more than 99% of viable *M. leprae* are killed by one month's treatment with daily 500mg clarithromycin, 100mg minocycline or the combination of clarithromycin-minocycline, and more than 99.99% of viable *M. leprae* are killed by two month's treatment with the same drugs. In addition, the combination of clarithromycin and minocycline with rifampicin appears to have an additive effect.

Because of the great potentiality of newer drugs to control leprosy, investigations have to be undertaken in order to:-

1. measure more precisely the anti-leprosy activities of each drug given alone or in combination with newer and standard (for example, rifampicin) drugs;

2. provide alternative regimens for areas where current MDT regimens are operationally difficult to implement;

3. develop completely new regimens.

11. VACCINES IN LEPROSY CONTROL (Professor P. Brennan)

There is a role for vaccines in leprosy control measures, as potentially inexpensive, safe, therapeutic/prophylactic agents. It is also likely that under MDT, leprosy will retreat to discrete population pockets where immunotherapeutic and immunoprophylactic regimes, as applied to high-risk populations, could be most effective.

Professor Brennan reviewed progress under the three major vaccine trials now underway in Venezuela, Malawi and in the Tamil Nadu region of India. All are independently constructed, all ask different medical and epidemiological questions and all are independent studies. The observed and projected decrease in the leprosy case-load worldwide, and the accelerated pace for leprosy elimination through MDT, must not diminish the importance of the course of these trials, especially in view of the need for alternative control strategies well into the next century. There is considerable progress being made towards the development of second generation leprosy vaccines, in particular the evidence that $CD4^+$ T-helper cells producing IL2 and IFN-(Th1) may be harbingers of protective immunity. This information, when combined with the large number of available *M. leprae* protein antigens, should provide the basis of a new round of testing on human subjects, with a view to instigating the necessary second generation pre-vaccine studies and new 'skin test' antigens. The new elimination strategy calls not only for effective vaccines but also for new skin test antigens suitable for assessing epidemiological trends in infection. Basic research in immunology and molecular biology make these goals feasible in the short term.

12. DISABILITIES IN LEPROSY (Dr S. Talhari)

After identifying the deficiencies in the areas of prevention, treatment of disabilities and rehabilitation, Dr Talhari suggested that the country programmes consider the following:-

1. Programme priorities for disability prevention and rehabilitation.

2. Training.

3. Supervision and programme evaluation.

4. Establishment of disability registers:

   a) to identify those with a high risk of having future disability;
   b) to identify those with disabilities;
   c) to determine indicators for programme planning and evaluation.

5. Mobilizing resources for prevention/rehabilitation programmes after chemotherapy and discharge.

6. Integrating disability control activities into disease control.

7. Integrating disability prevention and rehabilitation into general health care services and community-based rehabilitation programmes.

8. Establishing planning groups to develop strategies in prevention programmes.

9. Development of field manuals for the prevention of disability.

13. TRAINING MODULES: MANAGING PROGRAMMES FOR LEPROSY CONTROL (Dr D. Daumerie)

The aim of the Training Modules, developed by WHO in collaboration with the Royal Tropical Institute in Amsterdam (KIT), is to strengthen the management skills of health personnel at the district level.

The elaboration of this training material was planned and coordinated through an Editorial Committee, comprising experts in training, management and leprosy. The Committee's first task was to list the existing training materials on leprosy. It appeared that although a large number of documents were available, especially on clinical and epidemiological aspects of leprosy, there was very little or nothing dealing with the organization and management of leprosy control at the district level.

The integration of leprosy control activities within the general health services, and the overall implementation of MDT as the main component of control, explains the importance of training material, with district health personnel as target audiences.

In this respect, the Committee identified a list of the main activities and tasks needed to carry out leprosy control at all levels and for the various categories of health workers. The learning objectives were listed from the tasks related to management activities and the training course was built in such a way that every participant could identify, select and reach his own objectives. Various exercises were developed for each objective, leading to a set of six Modules entitled 'Managing Programmes for Leprosy Control'. A series of workshops to train managers has been planned to be held in different countries, beginning in 1991.

14. INTEGRATION OF LEPROSY CONTROL INTO GENERAL HEALTH SERVICES OR OTHER SERVICES (Dr C.K. Rao)

Vertical leprosy programmes continue to operate in a few countries. The integration of leprosy control into general health services is a natural option and the ultimate goal even in those few countries, considering the marked reduction in case-load and work-load as a result of effective MDT implementation.

Important drawbacks observed in the implementation of integrated leprosy control include the absence of accountability by health staff for leprosy control, the lack of

adequate technical capability and motivation of health staff, and the non-availability of trained leprosy workers at mid-level. Techniques that could actively involve general health staff effectively in leprosy control have to be developed and implemented. Integration would retain the significance and approaches of the MDT strategy. Appropriate preparation would go a long way to overcome the constraints associated with integration. Activities/issues related to leprosy control have to be adapted to suit the integrated set-up.

In countries where effective MDT has resulted in the reduction of case-load/work-load for vertical leprosy staff, additional responsibilities in respect of other health programmes may be entrusted to them to justify their continuation. The degree of need and willingness of the health programme(s) could decide the alliance.

15. MONITORING FOR LEPROSY CONTROL AND THE USE OF INDICATORS AT GLOBAL LEVEL
(Dr D. Daumerie)

Considering the elimination goal and the priority given to leprosy control, it becomes evident that reliable information should be obtained on the magnitude of the problem and on the impact of the control measures. This information should be used to set priorities and targets, to enable the formulation of plans and to allocate appropriate resources. The surveillance system should be established for the periodic evaluation and monitoring of any intervention programme and should help with estimating, predicting and modelling.

The collection and analysis of data at the global level should be relevant, reliable, simple and flexible but standardized and timely in order to lead to decisions. Its implementation should not create an additional work-load for programme managers and health workers.

There is much information available on the leprosy situation, very often varying from one source to another, and its use could be improved. The implementation of a worldwide data-base for leprosy surveillance could contribute to the motivation of health workers for leprosy control. The feedback, and the 'high technology' look given by computers, will help in the standardization and collection of data. This opportunity could be used to discuss, develop and implement efficient information systems at country level to monitor all aspects of leprosy control programmes and to integrate them into general health information systems. It could also help improve harmonization and collaboration with the ILEP information system.

Following the presentations, discussions, and individual presentations, the Group discussed at length the major issues and implications in relation to the objectives of the Working Group and came to the following conclusions and recommendations.

GENERAL CONCLUSIONS

The considerable progress made in implementing MDT, and the consequent reduction in disease prevalence over the past decade, has made it possible to envisage the goal of eliminating leprosy as a public health problem (i.e., prevalence of less than 1 per 10 000 population) by the year 2000, as reflected in the WHA Resolution, 44.9. This target can be achieved provided that further, substantial, intensified efforts are made in terms both of action and mobilization of adequate resources. The Leprosy Working Group concluded that such intensification is important, particularly during the next six to seven years. For the leprosy-endemic countries, it is an important opportunity to solve a major public health problem. In order to achieve the elimination goal it is necessary to formulate country, regional and global strategies with full participation of all agencies involved, including NGOs.

SPECIFIC RECOMMENDATIONS

1. The Group recommended that MDT implementation, as well as case-finding, should be intensified during the next six to seven years. This entails the optimal utilization of existing resources, as well as the mobilization of substantial, additional, national and external resources. Such intensified action should be carried out within the context of effective national plans of action.

2. The Group recognized the importance of estimating the number of individuals affected by leprosy at global and country levels so as to plan the implementation of control measures and the need for resources. Maximum use should be made of the currently available information on leprosy cases in order to obtain reasonable estimates at regular intervals. In addition, WHO should promote the development of simple methods to estimate the prevalence of leprosy.

3. The Group endorsed the essential indicators (prevalence of registered cases, new case detection, MDT coverage, MDT completion, disability among new cases and relapses after MDT) required for monitoring/forecasting as defined at the International Meeting on Epidemiology of Leprosy in Relation to Control held in Jakarta, stressing the need to further develop composite indicators such as the cumulative number of patients having completed MDT. Monitoring and evaluation, especially through essential indicators, should be strengthened at all levels.

4. The Group recognized the need to further develop and validate methods to predict trends in leprosy. Special emphasis should be placed on methods which monitor the epidemiological situation under conditions of very low prevalence.

5. WHO should develop/strengthen the implementation of uniform recording/reporting systems, including the use of computers. The group stressed the importance of feed-back to those who provide the data. In addition, the existing recording/reporting systems should be validated and updated to ensure compatibility.

6. The control of leprosy through MDT is capable of being achieved through integrated services and this should be supported by specialized services at the appropriate level. Transforming existing vertical services into integrated services is a complex process requiring careful planning and has political, operational, technical and financial implications. In view of the time-limited elimination strategy, leprosy control using MDT should be implemented through whatever system is the most appropriate in the local situation.

7. As WHO-recommended MDT regimens are capable of being applied under a variety of conditions, it is not necessary to use regimens other than those recommended by WHO. If there are operational problems, such as treatment of patients from inaccessible areas, these should be solved by finding alternative ways of delivering the WHO-recommended MDT.

8. The Group recognized the important need to ensure, through appropriate logistics, the continued supply of MDT drugs in the field. Failure to supply individual drugs may seriously compromise the very basis of MDT. In view of this and the need to promote patient compliance, administration of drugs through calendar blister packs should be encouraged. However, the present cost of such packs is not an incentive to their adoption. Combined formulation of MDT drugs under development may be able to address the problem even better, particularly if they are also supplied in calendar packs at a reasonable cost.

9. As a priority, persons in charge of leprosy control should be trained in management: they can then, in turn, facilitate training at subsidiary levels.

10. The Group recognized that HSR in leprosy could be a systematic problem-solving approach at the operational level, particularly as new management problems are appearing as a result of integration. In view of this, the WHO Leprosy Unit should appoint a task force to promote HSR so that assistance can be given to programme managers to develop

practical approaches for implementing, applying and incorporating HSR in their control activities. The initiative for HSR should come from within the local leprosy programmes but with appropriate support in research methodology so that they can learn from the process of using it for problem-solving.

11. Drug combinations under development which contain rifampicin, fluoroquinolones, macrolide and tetracyclines are promising, particularly in relation to new, more effective, MDT regimens of considerably shorter duration. However, all new regimens should be introduced only after they satisfy appropriate scientific requirements, such as controlled clinical trials.

12. Three independent first generation leprosy vaccine trials are progressing satisfactorily as planned. Recent research leading to second generation vaccines is in the forefront of immunology and molecular biology. The Group encouraged the efforts made towards developing an effective vaccine as well as appropriate immunological tools for epidemiological monitoring.

13. The activities of prevention and limitation of disabilities should be an integral part of every leprosy control programme. Methods for gathering epidemiological data on disabilities in leprosy should be further developed.

14. Rehabilitation services for needy patients, whether on treatment or cured, should be provided through intersectoral collaboration by national governments, communities and NGOs. Community-based approaches are often likely to be appropriate. Before launching a programme in rehabilitation, a situation analysis of the needs should be undertaken.

FIRST MEETING OF THE WORKING GROUP ON
LEPROSY CONTROL (LWG)
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