

4.4 Implementation of WHO MDT in Myanmar

Kyaw Lwin, Tin Myint, Mg Mg Gyi, Mya Thein, Tin Shwe, Kyaw Nyunt Sein

History of leprosy

Leprosy has been well known to be endemic in Myanmar for many centuries. However, the earliest scientific record relating to the magnitude of the national leprosy problem in Myanmar comes from a report by the Leprosy Commission of India (1890–1891) – Myanmar at that time was included under India during the British rule (1). In 1891, the Commission estimated the prevalence to be 8.6 per 10 000 population for the country as a whole and 14.4 per 10 000 for central Myanmar. The 1932 census of Myanmar reported 11 127 leprosy cases (prevalence 7.6 per 10 000 population, which was probably an underestimate based on obvious and easily recognized signs of the disease). In 1935 Dr Santra reported a prevalence of 250 per 10 000 population in the Mandalay area, and in a 1951 report, Dr Dharmendra (a WHO consultant to Myanmar) estimated that there were 100 000 cases in the country and a prevalence of 50 per 10 000 population (2). Dharmendra's estimate was subsequently revised upwards by Dr Lampe (also a WHO consultant to Myanmar, from 1953 to 1955) to 100 per 10 000 population (about 200 000 cases).

Based on the findings of a survey conducted in 1963–1964 by a WHO Leprosy Advisory Team, the estimate was again revised upwards, with prevalence being reported as 250 per 10 000 population for the whole country (about 590 000 cases).¹ In some areas of central Myanmar the estimate was as high as 400 per 10 000. During the survey, the prevalence reported by the leprosy control project teams in Shwebo and Myingyan districts was 322 and 443 per 10 000 population respectively. In 1973, the national authorities conducted a parallel survey – the National Leprosy Programme Prevalence and Assessment Survey – and reported an estimated prevalence of 242 per 10 000 population.

Leprosy control in Myanmar

In 1952, in consultation with WHO, the Government of Myanmar launched an intensive programme for leprosy control under Health Department Plan No. 9. This plan was based on early case-finding and on providing home-based treatment with dapsone to all patients in the country. At that time, there were very few primary health centres at township level serving the rural population and most of the services were centred on hospitals and dispensaries. To address the problem of leprosy from a public health point of view and to achieve the necessary coverage within a relatively short period of time, special leprosy control projects were established in each district (comprising 5–8 townships, depending on the population) to cover the whole country. Case-finding activities included mass (village), school, contact, and special group surveys. In addition to the technical support from WHO, UNICEF provided the necessary supplies and equipment, including a free supply of dapsone, to the national programme.²

The Central Unit of the Disease Control Programme in the Department of Health was responsible for the planning and implementation of leprosy control activities in the whole country, and for training, monitoring, and assessment; it was headed by the Deputy Director for

¹ Cap JA et al. *Report of a survey in Burma, January to June 1963*. MOH/PA/11364, dated 4 June 1964.

² Government of Union of Burma, WHO, UNICEF. *Plan of Operation on Leprosy Control Programme, Burma*, signed in 1957, and consecutive addenda.

Leprosy Control. In addition to the special leprosy control project teams, leprosy hospitals in Yangon and Mandalay served as specialized institutions for referral services, training, reconstructive surgery, rehabilitation, and research activities.

As part of the Disease Control Programme, the Government established Regional Leprosy Control Teams in the 14 States and Divisions, under the authority of the State and Division Health Departments. In areas where the disease burden was high, one regional leprosy officer was stationed at the State and Division level; at district level there were several leprosy control project teams, covering several townships according to the endemicity. Each team consisted of a medical officer, between one and three leprosy inspectors, 20–30 junior leprosy workers, and a laboratory technician.

All relevant information and experience acquired from 1952 to 1973 with regard to epidemiology, control strategy, organization, and management were reviewed. On this basis, future strategies were developed and implemented by the leprosy control programme. The most important operational milestones during the period 1970–1977 were as follows:

- The increase in the number of mid-level management personnel, such as regional leprosy officers and leprosy specialists for Bago, Ayeyarwady, and Yangon Divisions, and support staff for these officers.
- The first-ever systematic national health planning process, with the cooperation of WHO and UNICEF, to formulate the Peoples' Health Plan (1977–1981).
- Research activities to strengthen leprosy control measures:
 - dapsone-resistance prevalence survey in Myingyan Township
 - rifampicin trial in Singu Township
 - continuation of BCG trial follow-up studies in Singu area.
- Revision of criteria for determining inactivity of the disease in leprosy patients after a sufficient period of regular treatment with dapsone. Patients who were inactive were released from control and discharged from the treatment register. This was carried out in a timely manner with the intention of reducing the heavy load of registered leprosy patients.
- Introduction of the concept of integrating leprosy control activities into basic health services (BHS) by conducting pilot studies in Yangon, Mandalay, and Magway Divisions and Mon State from 1970.

During the period 1973–1977, the leprosy control programme registered the highest number of cases in the country (262 171 cases), with a prevalence of 86.2 per 10 000 population (3).

In 1978, based on the primary health care concept promoted by WHO and under its First People's Health Plan, the Ministry of Health integrated vertical disease control programmes – such as malaria, tuberculosis, leprosy, and trachoma – within the BHS. The first phase of the plan covered 147 townships, and leprosy control activities were carried out under the Primary Health Care and Basic Health Services Programme of the Department of Health. By the end of the Second People's Health Plan in 1986, integration was completed in all the remaining townships of the country. More than half of the (mainly paramedical) staff in the leprosy control programme, who numbered over 900, were retrained as multipurpose health workers and transferred to the primary health care service of the township health department. The remaining leprosy staff were assigned as technical support staff to the various divisional, district, and township health departments.

Situation during the early 1980s

The leprosy situation during the early part of the 1980s can be summarized as follows:

- A large number of leprosy cases were detected and brought under regular treatment. It was estimated that 89% of lepromatous cases in the country had already been detected and registered for treatment.
- Case-finding activities continued to progress well in all project areas based on routine referrals, self-notifications, contact examination, examination of schoolchildren, and planned mass surveys.
- At the end of December 1980, a total of 262 081 leprosy cases had been registered for treatment, of which 231 469 cases were actually receiving treatment. The treatment regularity rate (patients getting dapsone tablets every month during the year) was 87.6%. During 1980, 2120 cases were treated in leprosy hospitals, homes, and colonies.
- Among those undergoing treatment, 23.1% had lepromatous leprosy and 5.9% were children.
- A total of 4069 non-lepromatous cases were released from control during 1980.
- The annual incidence throughout the early 1980s remained at 1–3 per 1000 population.
- The lepromatous rate was constant at 3 per 1000 population. After more than 6 years of treatment with dapsone monotherapy, 18% of lepromatous cases had negative skin smears compared with 50% of borderline cases.
- Among patients with lepromatous leprosy who had been under treatment with dapsone monotherapy for more than 10 years, a significant proportion remained bacteriologically positive. The dapsone resistance survey in Myingyan Township in 1980–1983 showed that 38.6 % of patients were dapsone-resistant. The annual incidence of dapsone resistance was 3.4 % per year.
- As a result of a timely case detection and early treatment, especially among children, 72% of tuberculoid cases and 96% of the indeterminate cases were free from deformities.
- The number of children under 15 years of age among the treated cases fell markedly, from 26% in 1957 to 5.9 % in 1980. The impact of sustained leprosy control efforts was especially evident among schoolchildren, most of whom were under 15 years of age. During 1962–1963, 9375 new cases (26 per 1000) were detected among 350 798 schoolchildren screened. In 1980, however, only 345 new cases (0.71 per 1000) were detected among the 480 282 school children examined, which clearly demonstrated the effect of mass treatment in protecting children from leprosy.

Challenges faced

Dapsone resistance

A dapsone resistance survey was carried out in Myingyan District in 1980 and 1983. In 1980, there were 779 lepromatous patients who had been treated with dapsone monotherapy for more than 5 years (90% of them for more than 10 years); 38.6% of them were found to be dapsone-resistant.¹ The annual incidence of dapsone resistance in 1981 and 1982 was 40 and 45 per 1000 lepromatous patients respectively; the average annual incidence of dapsone resistance was 3.4%. At that time, it was thought likely that dapsone resistance had developed some 10 years earlier: certainly, a 1973 assessment report recorded that solid-staining bacilli were found in the skin smears of 24–27% of the lepromatous and borderline cases examined in the survey.

¹ Lwin K et al. *Survey of prevalence of dapsone-resistant leprosy in Myingyan District, Upper Burma, 1980–1983, and a preliminary report submitted to THELEP SC meeting in Rangoon, 16–12 November 1981* (unpublished report).

High disease burden

The burden of disease in the country was still huge at the time of integration, with more than 250 000 cases under treatment and more than 10 000 new cases being detected annually. Additional information on the incidence of the disease was obtained from the WHO BCG trial in Singu Township in Mandalay Division. Throughout this trial, which ran from 1964 to 1975, the incidence of leprosy remained constant at about 5 per 1000 population per year. The trial showed that dapsone monotherapy was ineffective in controlling transmission of the disease. Moreover, some 10% of lepromatous patients included in the trial were found to be dapsone-resistant; dapsone resistance was subsequently confirmed by animal inoculation tests.

Shift in donor interest

In the early 1980s, UNICEF – which had been the major provider of drugs (dapsone) and other supplies and equipment to the leprosy control programme – shifted its focus and began to gradually phase out its support for leprosy control. The national programme then had to explore other possibilities and establish new networks with other interested donors to obtain the necessary drugs for the programme.

Finding alternative regimens (1981–1986)

A study of rifampicin treatment was carried out from 1976 to 1984 in the same area – Singu Township – that had been the focus of a BCG trial running. The study involved all bacteriologically positive lepromatous, borderline-lepromatous, and borderline patients, who were given 600 mg of rifampicin daily for 30 days in addition to the usual daily dose of 100 mg of dapsone. A further single dose of 1500 mg of rifampicin was given annually in subsequent years until the skin smears were negative or skin lesions became inactive. Patients who showed signs suggestive of dapsone resistance were given 100 mg of clofazimine daily in addition to the other two drugs.

Cases registered in the Shwebo and Wetlet Townships (also former sites of BCG trials) were designated as controls and were given standard dapsone monotherapy.¹ Two years after the administration of rifampicin (daily for 30 days), all cases showed clinical improvement and the bacteriological index had fallen satisfactorily. Nasal smears were, almost without exception, negative for acid-fast bacilli, and solid-staining bacilli were very seldom seen. In 12 out of 271 patients there was evidence of reactivation during the fifth year, which was controlled in all cases by a further 1500-mg annual dose of rifampicin at the time of full annual assessment. The objective of rendering lepromatous patients non-infectious therefore appears to have been achieved. The annual incidence of leprosy among the study population declined from 49 per 10 000 population in 1976–1977 to 9 per 10 000 population in 1983–1984.

The results of the studies of dapsone resistance and rifampicin treatment encouraged the national programme to add rifampicin to dapsone in its regimen for treating lepromatous cases, which was used from 1982 to 1986 in highly endemic areas – the Divisions of Yangon, Bago, Ayeyarwady, Magway, Mandalay, and Sagaing (Shwebo, Sagaing, and Monywa project areas only). During the preparatory phase (1982–1983), all registered cases were screened and assessed both clinically and bacteriologically. From 1983 to 1985 all lepromatous cases were given 1200 mg rifampicin once a month for 6 consecutive months in addition to daily dapsone.

¹ Lwin K et al. *Rifampicin trial in Upper Burma*. WHO, SEARO Research Grant, 1976–1984 (unpublished report).

This was followed by an annual dose of 1500 mg rifampicin while dapsone treatment continued; the recommendation at that time was lifelong treatment of lepromatous cases with dapsone monotherapy.

In the second year of this initiative, 32 071 lepromatous cases (55% of those registered) were given rifampicin once a month for 6 months. In the third year, an additional 33 676 cases were treated with rifampicin, and all cases treated during the second year were given their annual rifampicin dose. These activities were undertaken by the existing staff of the leprosy control programme. In addition, the specialized staff also treated dapsone-resistant cases, managed leprosy reactions and other complications, carried out clinical and bacteriological assessments, and conducted training and research activities. Altogether, 67 747 lepromatous cases were brought under treatment. At the same time, all non-lepromatous cases were treated with dapsone monotherapy in the BHS.

In Myanmar's other States and Divisions – which at that time were categorized as low-endemic areas – the BHS continued to provide dapsone monotherapy to both lepromatous and non-lepromatous cases as part of the integrated disease control programme. Rifampicin was not given to patients in these areas because of the low endemicity, lack of drugs, and shortage of human resources needed to deliver the services. As well as treating patients, BHS staff also carried out case-finding, clinical assessments, and health education activities under the supervision of township medical officers. The low-endemic areas included: Chin, Kachin, Kayah, Kayin, Rakhine, Shan, and Mon States, and Tanintharyi Division.

Inactive non-lepromatous cases in the six highly endemic regions were screened by the BHS and then reviewed by the medical officers or leprosy inspectors. Cases that met the criteria were released from control. At the end of 1987, 61 587 cases treated with dapsone monotherapy were released from control and discharged from the treatment register.

During the maintenance phase (1985–1986), patients who were given rifampicin underwent annual clinical and bacteriological assessment. The number of registered cases at the end of 1987 was 204 282, and the registered prevalence rate 53.4 per 10 000 population.

Introduction of WHO MDT, 1988

During 1986 and 1987, Myanmar introduced WHO MDT (4) on a small scale in some selected areas of the country. In 1988, with the support of drugs received from WHO, MDT was introduced, in a phased manner, in the six hyperendemic divisions (Ayeyarwady, Bago, Magway, Mandalay, Sagaing, and Yangon), covering about 85% of the country's registered cases of leprosy. To simplify the operational aspects of delivering MDT drugs in the field, fixed-duration treatment was adopted and MB cases were given 24 monthly doses of MDT. After completion of the recommended fixed course of treatment, both PB and MB cases were discharged, regardless of skin-smear status. In these hyperendemic areas, delivery of MDT drugs at village level, as well as case-holding, was made the responsibility of the specialized staff of the leprosy control programme.

By the end of 1990 (Appendices 1 and 2), 167 townships were covered with MDT. The outcome of this treatment was reflected in the dramatic reduction of registered prevalence from 53.4 per 10 000 population (204 282 registered cases) in 1987 to 27.6 per 10 000 population (112 129 registered cases) in 1990. This reduction was the result both of curing 52 566 cases (cumulative figure) with WHO MDT and of “cleaning” the registers as part of the review

process before introduction of the new regimen. Reviewing the progress made, the leprosy control programme realized that further expansion of coverage in the targeted townships, at least in the short term, was impossible using only the existing staff of the leprosy control programme. The nature of home-based treatment and the need to supervise the monthly dose of MDT required the staff to visit each village every month, which made it impossible for them to cover new areas in the townships. However, the following favourable conditions encouraged the leprosy control programme to hand over to the BHS the task of delivering MDT drugs to patients:

- The existing coverage of the basic health infrastructure was adequate and strong except in a few townships in the border areas of the country.
- MDT was simple to administer, had few side-effects, and was effective; operationally, it was easy for the BHS to handle this task as part of their routine activities.
- The disease was declining and township health departments were able to manage the leprosy problem as part of their routine work without becoming over-burdened.

In 1991, the task of delivering MDT was handed over to the BHS and the following measures were undertaken to ensure full collaboration from all the agencies involved:

- Essential administrative steps for the handing over of MDT activities were taken at central, state, and divisional levels.
- Orientation and capacity-building activities were carried out for staff of the leprosy control programme and the BHS.
- Clear and simple mechanisms for monitoring and supervision were established.
- Referral centres for management of complications and other problem cases were also established.
- Support and technical assistance provided by the leprosy control programme to the BHS was strengthened.

With these measures in place, township medical officers were made programme managers for leprosy control in their respective townships. The staff of the BHS, such as health assistants, female health visitors, and public health supervisors grade 1, were made responsible for field supervision, while midwives and public health supervisors grade 2 were designated as implementers and given responsibility for case-finding and for treatment with MDT.

Staff of the leprosy control programme were reassigned as technical advisers, supervisors, and coordinators with responsibility for training, verification of diagnosis in difficult cases, management of leprosy reactions and other complications, and preparation of reports for the BHS.

Expansion of MDT coverage, 1995–1996

The 1991 World Health Assembly resolution WHA 44.9 to eliminate leprosy as a public health problem by the year 2000 gave substantial impetus to leprosy elimination efforts in Myanmar. With the pledge of sufficient supplies of MDT drugs from WHO in 1994, the national programme was able to extend MDT coverage to all 320 townships in the country and to make MDT drugs available in all health facilities (township hospitals, station hospitals, rural health centres and sub-centres) in the country. The BHS staff provided domiciliary treatment to all registered cases within their jurisdiction. By 1996, all 18 758 cases registered for treatment in the country were given MDT in 320 townships.

As a result of expansion of MDT coverage, leprosy prevalence declined further from 6.11 per 10 000 population (24 082 cases) in 1994 to 2.5 per 10 000 population (11 906 cases) by the end of 1998, and the cumulative number of cases cured with MDT throughout the country reached 183 731 (5).

Achievements due to integrated MDT services

Integrated MDT services made possible the following achievements:

- There was a marked reduction in registered prevalence from 59.3 per 10 000 population in 1986 to 2.5 per 10 000 in 1998 (Figure 4.7).
- Significant increases in MDT coverage were achieved in terms of both patients and geographical area. In 1988, only 19.3% of the registered patients were on MDT; by 1996, all registered cases were on MDT (i.e. there was 100% coverage). At the geographical level, only 15% of the country was covered with MDT in 1988 – by 1996 coverage was 100%.
- Detection of new cases became more effective as more health workers were involved in case-finding activities. An average of 8000 to 10 000 new cases were detected annually from 1986 to 1997. The proportion of children among the new cases declined from 17.9% in 1986 (pre-MDT period) to 9.5% in 1997. The proportion of new cases with grade 2 disability fell from 27.6% in 1986 to 10.9% in 1996 (Appendix 2).
- The capacity for diagnosis and treatment among BHS staff was improved, and the health centres and sub-centres were able to provide leprosy services at the peripheral level. The integrated approach proved to be sustainable and highly effective.
- IEC activities were intensified with the involvement of BHS and voluntary health workers.
- A community-based rehabilitation programme for leprosy patients was initiated in selected townships, with the active involvement of the community.
- A coordinated system for supervision and monitoring was established. Key information on leprosy was included in the routine BHS reporting system.
- The leprosy control programme was able to participate in WHO multi-centre studies of new drug combinations (using ofloxacin and minocycline in addition to rifampicin) and health systems research.

Conclusion

The introduction of WHO MDT during 1988 in Myanmar dramatically changed the picture of leprosy. Leprosy patients could now look forward to effective treatment. The community too, with the expansion of MDT services, realized that the disease can be cured within a relatively short time – and this was one of the main reasons for the lessening of the stigma associated with leprosy. Information materials for the public could now be presented in a positive way without creating fear. Patients could be told that they were cured after finishing the recommended course of treatment. Equally significant is the fact that MDT also restored the credibility of the leprosy programme and renewed the enthusiasm of leprosy workers. The public health approach to dealing with leprosy lives on in Myanmar thanks to MDT.

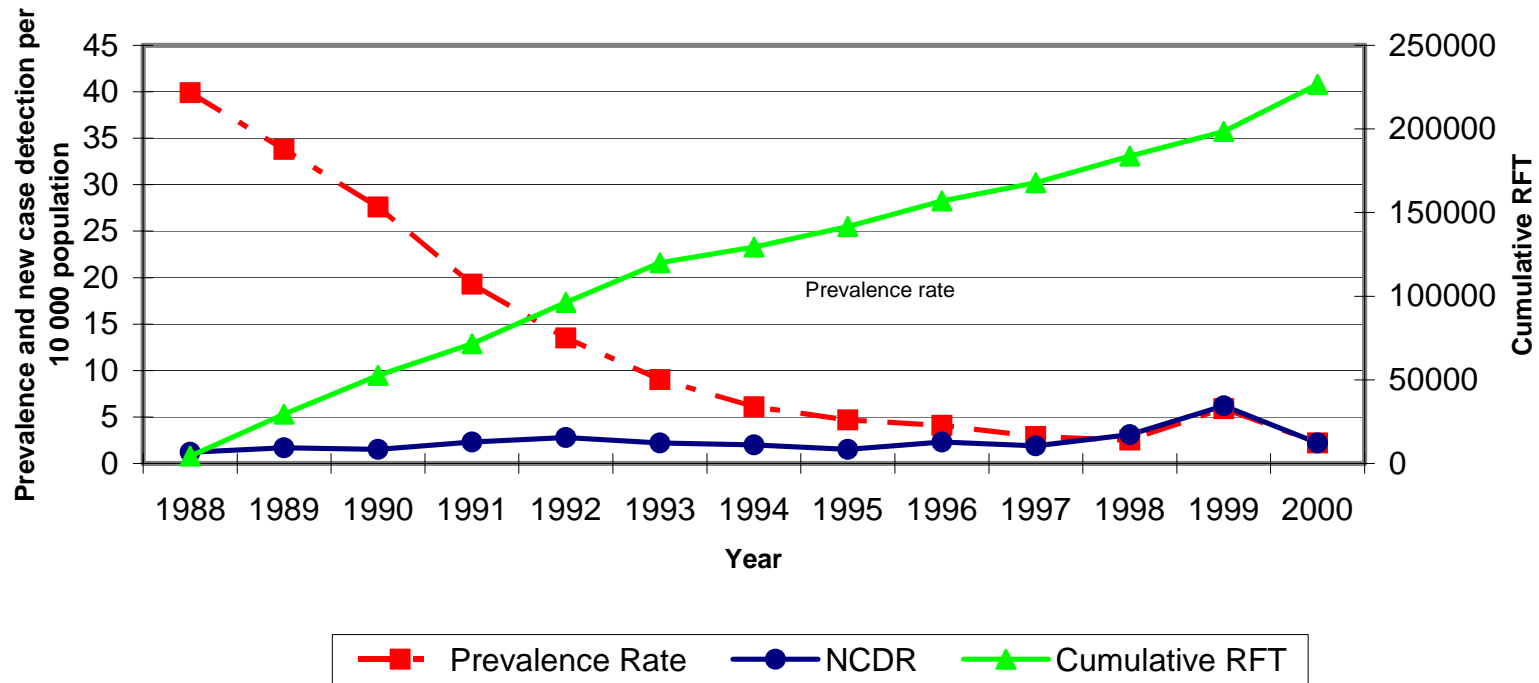
References

1. *Report of the Leprosy Commission in India 1890–91*. Calcutta, Superintendent of Government Printing, 1893.
2. Dhamandra. *Leprosy control in Burma*. Rangoon, Government Printing Press, 1953.
3. Myint T, Htoon M. Leprosy in Myanmar, epidemiological and operational changes, 1958–92. *Leprosy Review*, 1996, 67:18–27.

4. WHO *Chemotherapy of leprosy for control programmes: report of a WHO Study Group*. Geneva, World Health Organization, 1982 (WHO Technical Report Series, No. 675).
5. Lwin K, Sein KN. Leprosy elimination programme in Myanmar. In: *The conquest of scourges in Myanmar*. Yangon, Myanmar Academy of Medical Science, 2002:121–268.

Figure 4.7

Graph showing the trend of registered leprosy prevalence rate/10 000 population, new case detection rate/10 000 population, and cumulative RFT, 1988 to 2000



Appendix 1

Leprosy prevalence rates in Myanmar States and Divisions, 1984–2000

Sr. No.	State or Division	Year																
		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
1	Ayeyarwady	66.5	56.1	54.7	53.7	38.7	34.4	29.1	25.2	11.0	4.4	3.2	3.0	2.9	2.2	3.1	7.8	1.9
2	Bago	81.5	80.4	74.7	76.4	49.0	36.6	26.9	16.4	9.7	6.2	3.7	4.6	5.4	6.7	5.1	8.9	2.6
3	Chin	18.5	14.9	15.1	15.4	26.1	14.4	14.1	13.6	16.3	11.9	10.1	9.4	3.2	4.4	2.7	2.7	1.4
4	Kachin	7.0	5.8	5.5	5.3	4.9	4.7	4.6	4.1	4.0	3.8	3.7	3.2	2.4	1.4	0.3	2.6	0.1
5	Kayah	22.2	17.0	16.5	16.7	14.9	14.4	14.0	13.8	13.6	12.4	11.2	11.0	5.4	4.4	2.6	2.1	2.2
6	Kayin	21.7	21.9	22.0	23.3	21.6	21.4	21.3	21.0	20.2	18.0	9.4	5.6	4.3	2.8	2.0	4.9	2.0
7	Magway	107.8	106.5	99.9	98.2	76.1	68.5	61.6	37.4	23.4	12.5	8.6	6.3	5.2	3.2	5.2	9.5	3.4
8	Mandalay	130.9	130.9	107.4	83.2	56.8	47.6	32.9	15.3	11.8	4.2	3.4	3.6	3.4	3.0	2.7	7.2	3.5
9	Mon	42.2	44.2	42.5	42.7	40.1	37.6	37.4	24.2	24.2	22.4	10.7	8.7	7.5	2.6	1.5	3.8	1.3
10	Rakhine	6.2	5.9	5.9	5.3	4.3	4.3	4.8	4.9	4.8	4.7	4.5	3.5	2.4	0.6	0.3	2.4	0.6
11	Sagaing	278.9	93.0	88.6	90.3	46.6	38.9	27.2	21.6	16.6	11.0	6.2	5.0	4.4	2.8	3.7	6.3	2.9
12	Shan	20.6	18.1	20.4	21.2	19.8	19.2	18.5	18.3	17.4	18.4	7.6	8.7	6.0	2.5	2.2	2.7	1.3
13	Tanintharyi	25.1	23.8	23.7	25.1	22.9	22.5	22.4	21.8	20.9	14.6	11.5	5.8	3.8	1.1	0.8	3.3	1.0
14	Yangon	54.2	51.9	39.6	43.5	33.1	22.7	18.0	11.2	6.1	3.4	2.6	2.1	1.0	1.8	1.6	4.0	2.0
<i>Union</i>		66.7	65.4	59.3	53.4	39.9	33.8	27.6	19.3	13.5	9.03	5.5	4.7	4.1	2.9	2.5	5.9	2.2

Appendix 2

Leprosy situation in Myanmar, 1985–2000

End of year	Prevalence	New case detection	Prevalence/ detection ratio (I)	New case detection						Cured with MDT
				Children		Disabled		MB		
				No.	%	No.	%	No.	%	
1985	240 474 (65.4)	6 600 (17.9)	36.44	908	13.76	1 822	27.6	2 383	36.11	—
1986	222 209 (59.3)	6 191 (16.5)	35.89	1 102	17.80	1 703	27.5	1 929	31.16	—
1987	204 282 (53.4)	5 725 (15.0)	35.68	421	13.39	1 466	25.6	1 966	34.34	—
1988	155 857 (39.9)	4 472 (11.7)	34.85	517	11.56	1 046	23.4	1 599	35.73	4 400
1989	134 487 (33.8)	6 496 (16.7)	20.70	716	11.02	1 176	18.1	2 459	37.85	25 143
1990	112 129 (27.6)	6 204 (15.3)	18.07	688	11.09	1 005	16.2	2 431	39.18	23 023
1991	79 973 (19.3)	9 632 (23.2)	8.30	1 126	11.69	1 350	14.1	4 259	44.22	19 103
1992	57 275 (13.5)	11 814 (28.0)	4.85	1 271	10.76	1 559	13.2	5 421	45.72	24 638
1993	38 945 (9.0)	9 669 (22.4)	4.03	1 374	14.21	977	10.1	4 502	46.56	23 750
1994	24 082 (5.5)	8 665 (19.7)	2.78	1 124	11.63	780	9.0	4 186	48.31	9 375
1995	21 071 (4.7)	6 577 (14.7)	3.20	934	14.20	612	9.3	3 460	52.60	12 229
1996	18 758 (4.1)	10 136 (22.5)	1.85	1 125	11.10	1 105	10.9	5 607	55.32	15 301
1997	13 581 (2.9)	9 086 (19.3)	1.49	863	9.50	1 009	11.1	5 015	55.20	10 987
1998	11 906 (2.5)	14 357 (30.7)	0.83	1 328	9.25	1 917	13.3	7 394	51.50	15 782
1999	28 481 (5.9)	29 765 (61.8)	0.96	2 335	7.84	3 519	11.82	15 459	51.94	14 798
2000	11 006 (2.2)	10 262 (20.52)	1.11	959	9.35	783	7.3	5 643	54.99	28 056
<i>Total</i>										226 585

4.5 Implementation of WHO MDT in the Philippines, 1981–2000

S.S. Griño

When regular health services resumed after the Second World War, the National Leprosy Control Programme in the Philippines used only dapsone monotherapy. However, following establishment of a good relationship between the Bureau of Disease Control, the Philippine Leprosy Mission, and the Sasakawa Memorial Health Foundation, MDT was introduced as the principal approach to leprosy control.

The pilot study

In 1981, Dr Yuasa broached the possibility of using the new MDT approach to leprosy control in the Philippines. It was decided by an ad hoc steering committee that the effort would start with a pilot study to test the feasibility of integrating leprosy services with MDT as the main approach into the general health service. The study was to last for two years, after which the leprosy services would submit the results to the Department of Health for approval of nationwide implementation of this approach. Agreed criteria for selection of the pilot study sites were:

- high prevalence
- a health service that functioned well, with good records available
- accessibility of all areas
- agreement by the health services to implement the pilot study and to sustain activities once satisfactory results were obtained.

Ilocos Norte and Cebu were selected on the basis of these criteria. Logistics for the project were guaranteed by the Sasakawa Foundation through WHO. The Philippine Leprosy Mission promised to provide logistics for emergency and unforeseen activities deemed necessary to expedite the process.

The steering committee selected a technical working group, chaired by the Director of the Bureau of Health Services. This working group met regularly to develop a training manual and a manual of procedures that would be the basis of implementation by the health workers of the two provinces. The head of the leprosy services was to have overall responsibility for the whole enterprise.

Logically, the projects started with the training of health workers who would be involved. Teams were created to undertake the training and worked with the local health workers, monitoring progress regularly. These teams stayed in the two provinces, working with staff of the provincial health office, the city health office, and the skin clinic. In Cebu, the medical officers of the leprosarium were also involved in the training and implementation. Once the health force was trained, the teams carried out the regular monitoring, based on schedules agreed by the main implementers.

Social preparation of the communities involved paralleled the training of health workers – as the staff of health units were trained, schedules for implementation were established. The roles and responsibilities of each sector were defined. Health workers were informed of evaluation and monitoring procedures at the end of training. The training team then went to another town to begin the process again.

At the start, loose drugs were dispensed, but blister packs were introduced as soon as they became available and the details of distribution and monitoring for compliance were worked out. Although early attempts at blister-packing the drugs were unsuccessful, Ciba-Geigy quickly developed the user-friendly blister packs that have made the work of the health units much easier and significantly increased acceptance by patients.

Within a year of implementation, the pilot study staff had collected enough data to prove that the integration of leprosy care and management was not only acceptable, but also easily manageable by health workers delivering general health services.

Findings/implications

Strengths

The strengths of the project, which made implementation easier and sustained enthusiasm for its continuation, are outlined below.

- The logistics of the project were guaranteed and sustained for the entire duration – a factor that probably contributed most to the project’s success and to the commitment of the health workers and patients.
- The cooperation and commitment of the local authorities and the community were ensured before the project got under way.
- Networking and communication among the government health service, international funding agencies, and NGOs did much to maintain the quality of services, ensuring logistic support and resources that could be readily accessed and thus avoiding delays and frustrations in the local health units.
- The regular presence of the task force and oversight by the steering committee in monitoring progress, solving problems and encouraging proved to be the mainstay of continued motivation among both patients and health workers to comply with the requirements of the programme.
- The interest and support of local health authorities made possible the adoption of a monitoring tool that proved to be an excellent means of evaluating compliance and the completion of the MDT regimen. Each unit kept a record of visits, number of blister packs received, notes regarding status of regimen, etc. Workers in rural health units particularly appreciated the simple and quick method of calculating the expected time of the next visit taught to them by the provincial health officer of Ilocos Norte.
- The blister pack was probably the key to compliance, from the point of view of the patient. Individual patients suggested other aids to compliance, such as hanging the blister pack near the water jar, or on the wall where they could see it before going to bed or on waking up. When patients were unable to make the trip to the clinic, a follow-up service to their homes was provided. Many absentees were remotivated to take their drugs regularly because of this show of interest in their welfare.
- Patients who had made good progress with their treatment were recruited to help in motivating other patients to come for treatment or to comply with treatment requirements.
- The guaranteed accessibility/availability of leprosy expertise to field units ensured that problem cases could be rapidly referred to competent health personnel.

Barriers

Barriers that may delay or complicate implementation can be overcome in the following ways.

- Individuals expected to work regularly for the project should be recruited from areas with easy access to the central office and should be appointed permanently to the project until its completion.
- Training of health workers should not start until training and procedural manuals have been printed and are in place. Manuals for training and procedures should be available and each unit should have a copy for easy reference. Monitoring teams' schedules should be respected. Drinking-water and glasses must be available.
- Compliance with treatment by all patients should be carefully checked.

Recommendations

Many recommendations derived from the findings/implications of the pilot study. However, some have evolved from frustrating experience and are emphasized here.

- A clean, paper copy of every report should be readily available in a number of strategic locations – both locally (in provincial, city, and rural health offices) and centrally (in the files of the national leprosy control programme). Heads of offices should not be allowed to “own” records and keep them for themselves. Turnover of officials should not be completed unless all files are endorsed and handed over to the proper authority.
- Feedback from monitoring/evaluation visits by authorized teams or individuals should be provided to the units concerned at the end of the visit; copies of written reports should be mailed back after these are received at the central office. If possible, follow-up visits to these units should be made shortly after each monitoring/evaluation visit to discuss strengths and to provide technical and/or material support in any areas where shortcomings have been revealed.
- The national leprosy control programme should ensure that procedural manuals and reference material on the management of leprosy as a disease and the leprosy control programme are available in every unit at all times. Information on new developments in the control programme should be sent to each unit, especially the referral centres. Two years after the start of the pilot study, many rural health units had lost their copies, resulting in errors by the health workers.
- Forms and other essential supplies should be made available in every unit before existing stocks are depleted.

National leprosy control programme

The year 1986 marked the completion of one year of MDT implementation, and the steering committee for the MDT pilot study had already planned a meeting of the major foreign and local donors to the pilot project for February of that year. The intention was to apprise the donors of the status of the programme with regard to its goals and objectives. The foreign donors had made firm plans to attend, and the technical working group of the national leprosy control programme persuaded the recently appointed Health Secretary, Dr Alfredo Bengson, to meet the donors. He spent an entire morning at the meeting, where the programme managers described the background to the project and reported on its progress and on the benefits accruing to the Department of Health's general public health programme.

The Health Secretary was sufficiently impressed to direct Dr Jesus Abella, Director of Communicable Disease Control and chairman of the technical working group, to immediately

convene a group to plan and organize integration of the programme into Department of Health activities nationwide. He believed that the data collected in one year of implementation in the pilot provinces was enough to warrant the nationwide expansion of the programme, provided that logistic needs could be met. The donors pledged continued support to both the pilot project and the integration of MDT into general health services. An administrative order was subsequently issued and several committees, composed of leprosy workers from both the Department of Health and the NGO partners in the pilot study project, were convened, as described in the following paragraphs.

- A National Leprosy Advisory Board was organized with representatives from WHO, the American Leprosy Missions, the Sasakawa Memorial Health Foundation, and the Canadian Leprosy Association, plus the Director of the Foundation for Assistance to Hansenites, the Director of the Philippine Leprosy Mission, a representative from the Sovereign Military Order of Malta, and another from the Soriano Foundation. The leprosy services staff were to implement the expanded programme. The Sasakawa Foundation guaranteed free drugs for the programme, and WHO guaranteed sustained technical advice and training for programme managers and key implementers as well as for any special projects arising from the needs of the programme. The National Leprosy Advisory Board was to provide technical and administrative guidelines for the programme, while agencies of the Department of Health were responsible for operational aspects. A 5-year budget proposal (1987–1991), presented by the steering committee at the first meeting of the Board, was approved in principle, pending confirmation from the International Federation of Anti-Leprosy Associations (ILEP).

Note: In 1987, the National Board, through the ILEP Coordinator for the Philippines, John Sams, then President of the American Leprosy Missions, received US\$ 200 000, which covered approximately 2 years' operation according to the budget proposal submitted: this ensured an early start for the programme and gave impetus to the scheduled activities. Other implementing bodies were instituted such as the national training and monitoring task force at the central, provincial, and local levels. A national leprosy coordinator was appointed, with regional, provincial city, and municipal counterparts. Orientation courses on the content and mechanics of the programme were conducted for each level in accordance with schedules.

- The technical working group established for the pilot study was directed to plan, organize, and implement the integration of services nationwide. It created a national training and monitoring task force composed of leprosy consultants from different regions, health educators, and leprologists from two sanatoria. The task force formed teams that would travel to different regions and provinces to train all health workers up to rural health unit (RHU) level, help set up the programme, and monitor the progress in each unit. The technical working group then undertook:
 - development of a training manual for general health workers based on the manual of procedures for the pilot projects;
 - development of a manual of procedures based on the existing infrastructure and lines of authority of the Department of Health;
 - development and production of clinic and reporting forms for use by the MDT programme;
 - setting schedules for orientation of officials from different regions;
 - orientation by regions.

- The plan was to conduct training in one area, so that MDT implementation could then be undertaken by the trainees themselves and any problems corrected before the process was repeated in another area. The plan and schedules were usually followed, although a degree of flexibility was essential to deal with unforeseen problems. As planned, the early years were spent in different regions conducting activities from training health workers to stabilizing the integration of MDT into rural health services. A total of about 15 000 workers were trained by 1989, by which time the programme was functioning countrywide. The period of implementation proved the feasibility and acceptability of integrating leprosy services into the Department of Health programme.
- Drugs and supplies were stockpiled in the regional offices, and funds were allocated and disbursed as scheduled; monitoring of continuing implementation in the pilot provinces was maintained.

Note: During 1987–1990, health ministries of neighbouring countries (Indonesia, Myanmar, Nepal, Republic of Korea, Sri Lanka, Thailand) and even from some of the Pacific island nations (Kiribati, Federated States of Micronesia, Palau, Papua New Guinea) sent groups of leprosy workers to learn from the Philippine experience of MDT implementation. The technical working group worked with many of these health workers, helping them to create training and procedural manuals suited to their needs.

MDT implementation accelerated from 1987 and peaked in 1991 (see Appendix 2). However, reorganization of the Department of Health as a consequence of the devolution of services to the local government units began to erode the hard-won gains of the programme. While adequate funds and drugs remained available to the programme, increased turnover and relocation left staff confused about their roles. This is probably a very important reason for the decline in the implementation of MDT treatment. Equally, it is possible that this decline may have been due to the decrease in inpatients, completion of treatment among existing cases, and reduced interest in the programme as a consequence of unsettled working conditions among the various levels of health workers. However, lack of resources made it impossible to test this hypothesis.

From 1986 to 1992, WHO supported activities to evaluate the programme externally, and reports submitted by the programme managers in the field were validated. For the most part, the reports were encouraging and confirmed the impression that the programme was generally successful and merited continuation.

During the years of implementation, WHO policy and strategy for MDT implementation underwent a number of changes which were communicated by the Department of Health to all field units by means of department circulars. Managers of the national leprosy control programme visited health workers to ensure that the changes were understood and that new instructions for patient management were being followed. The major changes were as follows:

- Initially, patients who failed to collect their blister packs for two months would have to repeat the whole regimen again. However, by 1992, the conditions under which the patients had to restart the whole regimen were radically revised. More patients were encouraged simply to continue treatment even after some absence, and this resulted in the drug consumption declining concomitantly as there was no need to restart treatment in a significant number of patients.

- The regimen initially called for MB patients to take 24 blister packs within 36 months; this was reduced to 12 blister packs within 18 months for MB patients and 6 blister packs within 9 months for PB patients. It took some time for this change to take place: most health workers believed that the earlier regimen worked and would not jeopardize their patients' welfare with "new ideas". The patients themselves, especially those who started with monotherapy, refused to conform and insisted on continuing treatment.
- Leprosy elimination campaigns (LECs) were launched in high-prevalence areas in 1995 (see Appendix 1); the health services and cooperating agencies mobilized resources to find all the patients in each targeted area. Implementation adhered closely to the concept and suggested steps developed by expert committees from WHO. Again, the first LECs took place in the pilot provinces of Ilocos Norte and Cebu, and other areas were identified subsequently. In some instances, "mini-LEC" activities were undertaken in small towns with high prevalence.
- Despite these efforts, some areas that were inaccessible to health services because of geographical conditions or for security reasons remained untouched by the programme. Special action projects for the elimination of leprosy were also launched in 1995, at more or less the same time as the LECs, for three such provinces – Abra in the north, and Sulu and Tawitawi in the south. Again, the suggested steps for implementing these special projects were in line with WHO recommendations. The projects were implemented by the Executive Director of the Philippine Leprosy Mission and the national coordinator in cooperation and collaboration with local officials and NGOs in the areas.

From 1991, the organizational structure of the Department of Health underwent several changes that affected budget, leadership, procedures, and staff turnover. The lack of reports – or, at best, delays in reporting and doubts about the validity of reported data – bore testament to the effects of these changes on the implementation process. Technically, the programme continues on as well as the situation and available human resources permit. It is hoped that this generation of leprosy service people, whenever they are assigned, will remain for a substantial period and be committed to sustaining the programme; otherwise, as feared by many leprologists and epidemiologists, there will certainly be a resurgence of the disease.

Strengths – factors that contributed to success

The principal contributions to success came from the following factors:

- Logistics for the programme being secured at the start of the programme.
- Competent health workers, highly motivated and dedicated, with constant access to expertise from partner organizations.
- A knowledgeable, competent, and committed National Coordinator.
- Regular supervisory visits to field units to follow up on the initial training and ensure regular submission of reports.
- Accessibility and availability of referral centres or, in places lacking such facilities, visits by leprologists or workers with the necessary expertise to help health workers to deal with problem cases.
- Commitment and cooperation on the part of local government officials and local health workers.
- Widespread social preparation of each community, securing the cooperation of barangay health workers who have access to individual homes and are trusted by the community.

- The constant presence of members of the technical working group and/or the national training and monitoring task force, helping with the activities that started the programme in each area.

Conclusion

Findings from the MDT pilot study and recommendations emerging from the report were incorporated as far as possible into implementation of the national leprosy control MDT programme. Most of the recommendations were useful in the national expansion – and would be applicable to any national programme if the needed resources are available. The writer urges that the strengths of the Philippine programme be adopted and/or adapted by programmes elsewhere and that the pitfalls identified be avoided.

Information sources

Annual Reports of Communicable Disease Control, 1981–2000.

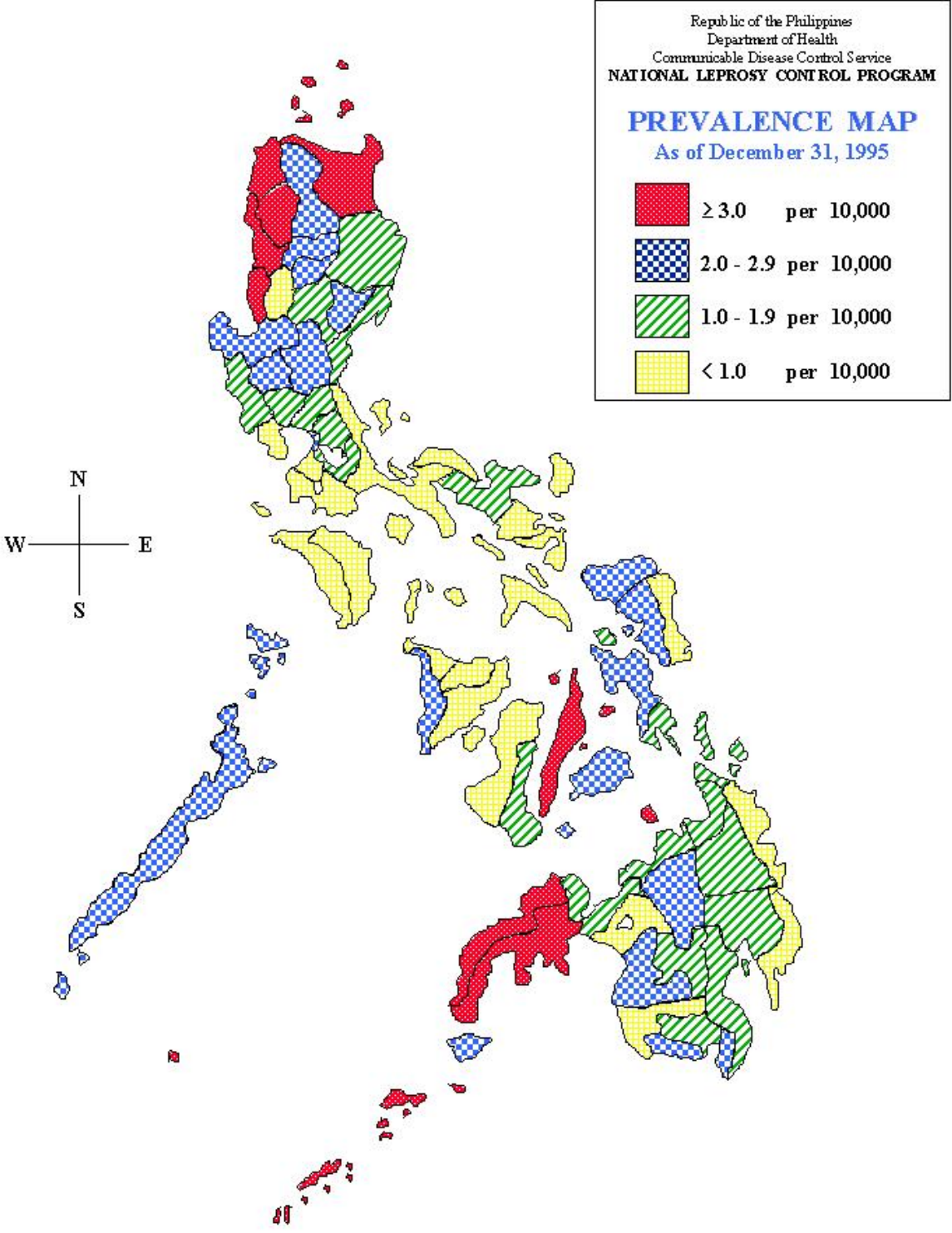
Annual Reports of the Philippine Leprosy Mission, Inc., 1981–2000.



Minutes of Technical Working Group of the National Leprosy Control Programme.

- Manuals of Procedures of: Pilot Study for provinces of Ilocos Norte and Cebu
- MOP 1987 –1991-1996 revisions.

Appendix 1



Maps of leprosy prevalence in the Philippines

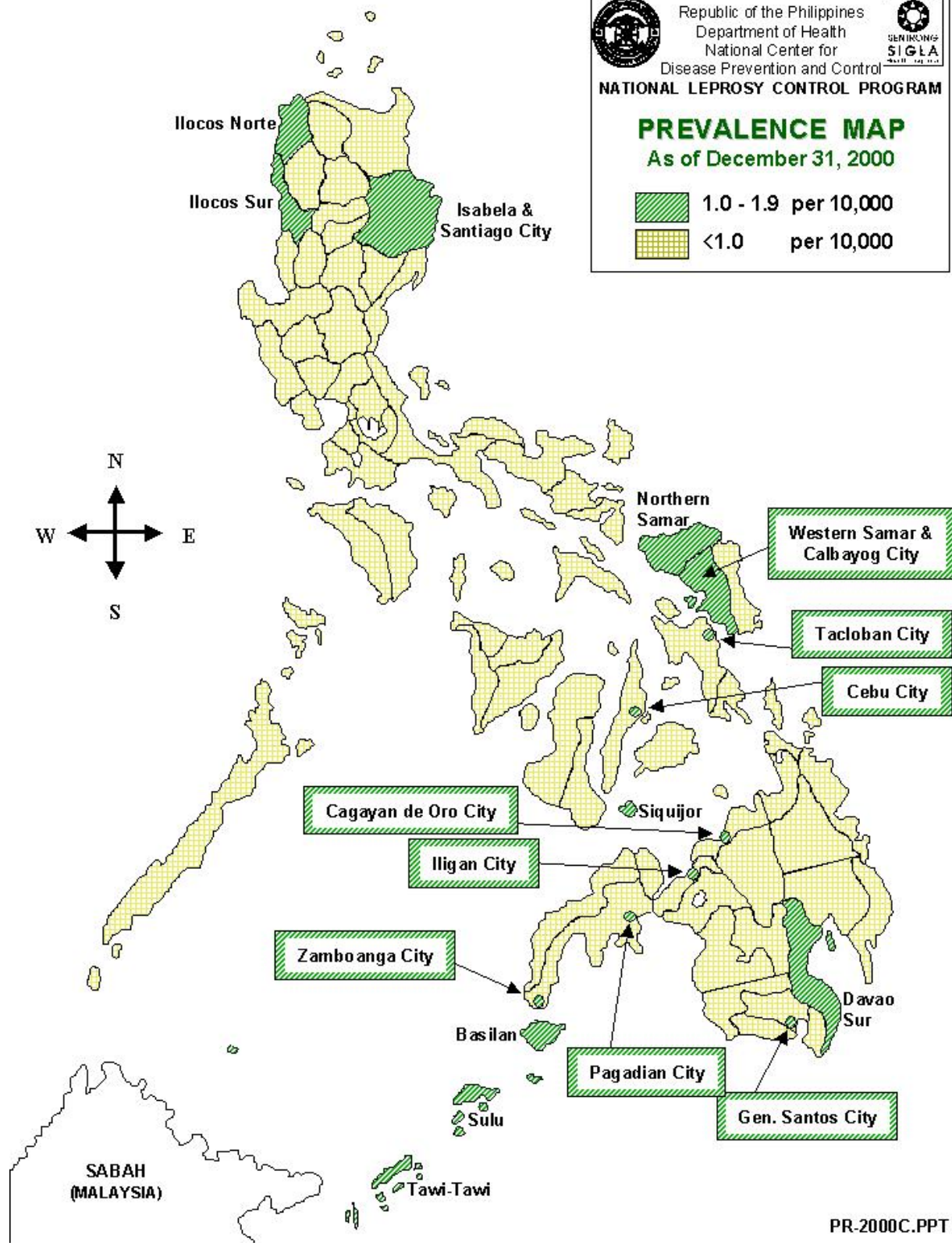



 Republic of the Philippines
 Department of Health
 National Center for
 Disease Prevention and Control


NATIONAL LEPROSY CONTROL PROGRAM

PREVALENCE MAP
As of December 31, 2000

 1.0 - 1.9 per 10,000
 <1.0 per 10,000



PR-2000C.PPT

Appendix 2

Summary report on MDT implementation, 1987–2000

Year	Registered cases at start of year	New cases detected during the year	Cases removed from register		Cases on MDT	Completed treatment	Cases still on MDT at year end	Registered cases at year end	% of cases on MDT
			Died, lost, etc.	Register adjustment					
1987	38 104		51	847	4 588	1 925	2 612	35 281	7.4
1988	35 281	2 442	0	0	12 597	751	14 458	36 972	39.1
1989	36 972	4 163	2 033	3 479	8 301	3 676	17 060	31 947	53.4
1990	31 947	5 725	3 126	8 131	9 588	6 135	17 377	20 280	85.7
1991	20 280	7 169	2 100	0	9 506	8 002	16 781	17 347	96.7
1992	17 347	5 896	2 587	0	5 896	5 339	14 751	15 317	96.3
1993	15 317	4 697	2 204	2 436	4 697	4 245	16 001	16 001	100
1994	16 001	4 450	667	304	4 450	3 602	16 486	16 486	100
1995	16 486	2 685	no data	no data	2 685	2 826	14 679	14 679	100
1996	14 679	4 051	no data	no data	4 051	4 020	8 760	8 760	100
1997	8 760	4 942	no data	no data	12 916	3 549	8 749	8 749	100
1998	8 749	3 572	no data	no data	12 352	4 309	7 276	7 276	100
1999	7 276	3 692	no data	no data	10 515	5 005	4 807	4 807	100
2000	5 024	3 578	no data	no data	8 032	3 248	4 277	4 277	100