CHAPTER 1.

INTRODUCTION

1.1 Background

1.1.1 History of leprosy

Leprosy, one of the oldest communicable diseases of mankind, is not a disease of modern civilization and industrialization. Leprosy has always been seen as a part of humanity's burden of misery. Most probably it originated in India. Leprosy was described as " Kushtha" in Sushruta Samhita, written in India in 600 BC. (Thangaraj, R.H & Yawalkar, S.J, 1986) In China leprosy was first recorded in the Nei Jing, one of the earliest Chinese medical classics (400 BC), in which its clinical features were described under the name "Da Feng". The earliest Japanese reference to leprosy are also from the 4th century BC. Soldiers of Alexander the Great may have carried leprosy back when returning from Indian Campaign in 326 BC.

In past ages, sufferers were forced to live in isolation and were shunned by their own community. In those days leprosy was thought to be hereditary disease, a punishment from God. Probably the most important scientific event in the history of leprosy took place in Bergen, Norway, on 28 February 1873, when Hansen observed rod-shaped bodies in unstained fluid from skin lesion of leprosy patients (Harboe, 1973).

1.1.2 Global leprosy situation

The world is well on the way to attaining the World Health Organization's declared goal of eliminating leprosy as a public health problem by the year 2000. Leprosy is caused by a bacillus, Mycobacterium leprae, which reproduces very slowly and mainly affect the skin, nerves and mucous membrane. If untreated, there can be

progressive and permanent demage to limbs and eyes. But the visible symptoms may not show themselves for 10,15 or even 20 years.

At the start of 20th century, leprosy was universally regarded as incurable. In 1873, the physician Armauer Hansen discovered the bacillus Mycobacterium leprae under the skin of his patient. The use of Dapsone as monotherapy had been worldwide since 1940. If the patient regularly took the Dapsone proper dose over many years, it cured the disease. Then M. leprae started to develop resistant to dapsone, and it seemed as if the world's only known safe anti-leprosy drug was about to become useless.

In 1981 a WHO study group was able to recommend treatment with a cocktail of three drugs, dapsone, rifinpicin and colfazimine- which effectively prevented the bacillus from becoming resistant to any of the three drugs. MDT has proved remarkably effective, reasonably cheap and highly acceptable to all patients. The treatment lasts 6 months for paucibacillary cases and 24 months for multibacillary cases. At the end of that period the cure is complete. WHO consider leprosy is no longer a public health problem when the number of cases in the country falls below one per 10 000 population. Globally there was already been decrease in the estimated number of cases, from 5.4 million in 1991 to about 1.3 million in early 1996.

A total of 60 countries are technically endemic today. Only 16 of these are rated as " the most endemic countries" and they account for 90% of all cases. They are Bangladesh, Brazil, Cambodia, Ethiopia, Guinea, India, Indonesia, Madagascar, Mozambique, Myanmar, Nepal, Nigeria, Philippines, Sudan, United Republic of Tanzania and Zaire. By the end of 1995, nearly 8 million patients had been cured with MDT, which had also prevented the development of physical disabilities in perhaps as many as 2 million individuals.

In May 1991, the forty-fourth World Health Assembly adopted the resolution to eliminate leprosy as the public health problem by the year 2000. In July 1994, an International Conference on the elimination of leprosy was convened in Hanoi,

Viet Nam, where governments, international agencies and concerned NGOs reaffirmed their commitment to this goal. This reaffirmation was known as Hanoi Declaration. In 1996 Second International Conference on leprosy was held in New Delhi, India. The main objectives were to reaffirm the previous commitments and to reach every patients in every village by LEC and SAPEL. In 1998, 15th International Leprosy Congress was held in Beijing, China. The main objective was working towards "A World Without Leprosy".

Table 1.1 The Most Leprosy Endemic Countries in 1998.

Country	Prevalence	Prevalence rate per 10,000	Detection	Detection rate per 100,000 population
India	527,344	5.25	524,411	53.10
Brazil	72,953	4.33	43,933	25.86
Indonesia	29,225	1.41	15,337	7.42
Bangladesh	13,248	1.03	11,320	8.80
Nigeria	12,878	1.06	7,176	5.89
Myanmar	13,581	2.74	9,086	18.35
Mozambique	11,072	6.24	4,198	23.64
Dem.Rep.Conn	4,863	1.01	3,781	7.85
Neple	12,540	5.30	7,446	31.49
Ethiopia	8,104	1.35	4,444	7.39
Madagascar	11,005	6.78	11,555	71.23
Sudan	4,065	1.34	2,633	8.65
Philippines	8,749	1.22	4,842	6.89
Guinea	4,805	6.56	6,117	83.55
Niger	2,738	2.71	2,288	22.61
Cambodia	1,921	1.73	2,438	22.00
Total	739,091	3.81	661,102	33.70

Source: WHO Weekly Epidemiological Record 22 May 1998 No. 73,21

Table 1.2. Global Leprosy Situation (1988-1997)

END OF YEAR	Registered Leprosy Cases	Growth Rate of Leprosy cases.	Registered prevalence Rate	New Case Detection		
				Children percentage	Disabled percentage	M B percentage
1988	3,729,982	-	18.5	12.9	8.15	21.54
1989	3,500,723	- 6.14%	17.0	14.88	8.01	22.37
1990	2,916,407	- 16.7%	13.9	14.55	7.94	26.52
1991	2,361,032	- 19.04%	11.0	13.61	7.59	30.94
1992	1,820,302	- 22.9%	8.3	13.97	7.54	30.79
1993	1,485,785	- 18.38%	6.7	15.67	8.19	36.02
1994	1,171,711	- 21.14%	5.2	17.01	7.84	34.81
1995	924,064	- 21.14%	4.0	16.25	7.23	34.96
1996	838,718	- 9.24%	3.5	13.81	5.43	30.66
1997	770,244	-8.17%	3.2	15.34	6.84	34.91

Source: WHO Weekly Epidemiological Record 22 May 1998 No. 73,21.

1.1.3 Leprosy in Myanmar.

Leprosy has been endemic in Myanmar since the ancient days. Myanmar has a significant leprosy problem and is included by WHO in a list of top 16 endemic countries worldwide (WHO, 1998). Among the communicable disease, it causes the greatest socio-economic problem due to its disfigurement and disabilities.

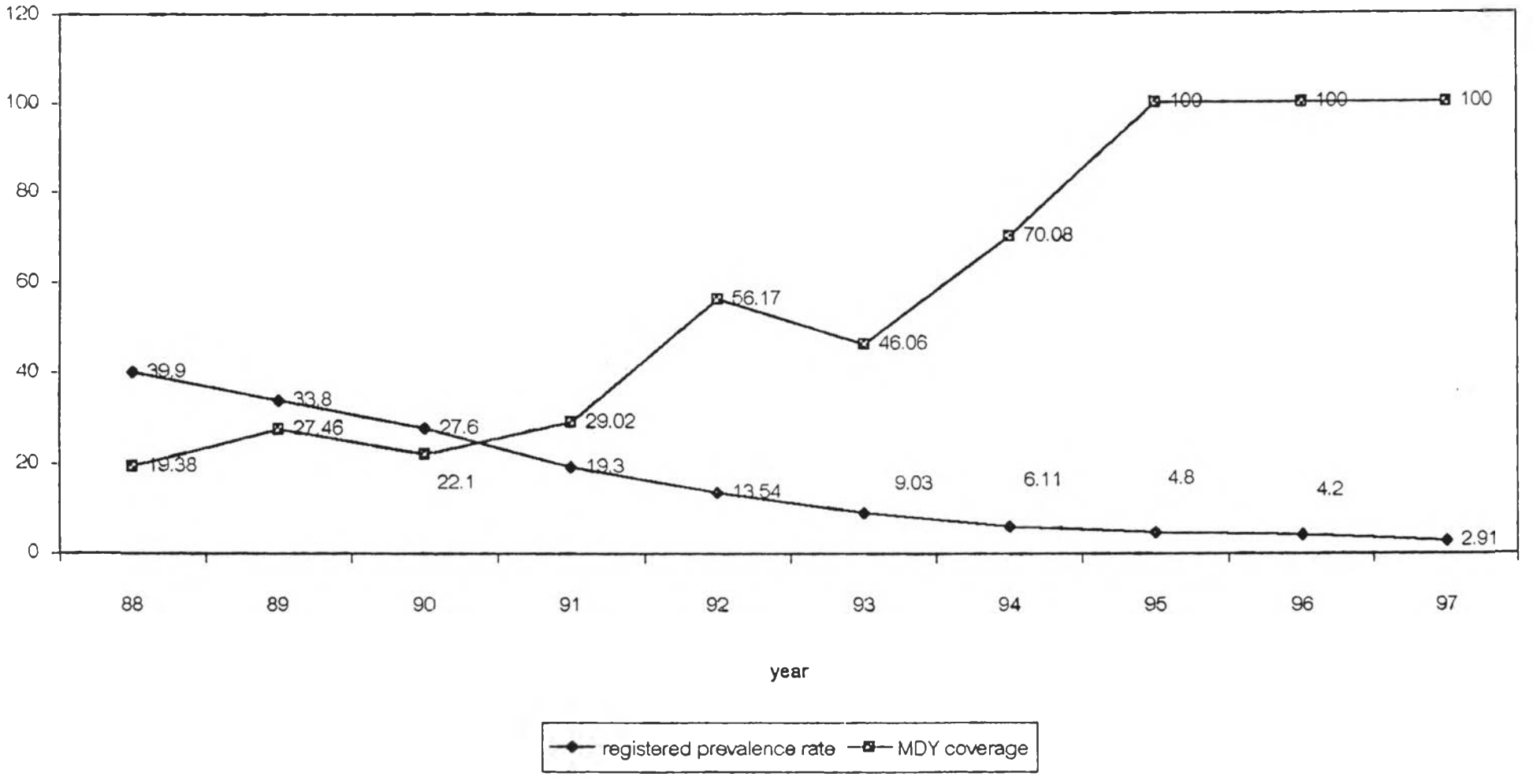
Knowing the magnitude of the problem, the Government of Union of Myanmar started to launch an anti-leprosy campaign as early as 1950-51. Dapsone monotherapy was the first tool of intervention introduced in 1963. The Government decided to launch a five years program to cover the whole country by 1968. In 1963 WHO leprosy advisory team estimated that leprosy prevalence was 250 per 10 000 population with nearly 600 000 cases in Myanmar. A National MDT with fixed duration was initiated in six hyper-endemic divisions, (Ayeyarwaddy, Bgo, Magway, Mandalay, Sagaing, Yangon) in a phased manner by vertical staff since 1998. By the end of 1990, it was recognized that the present leprosy control manpower will not be sufficient to cover all cases with in the short period. In addition to previously integrated activities, MDT activities was also integrated into BHS by the mid 1991. It covered the whole country by 1995(Department of Health, National Leprosy Elimination Program, Yangon, Myanmar, unpublished Government Report, 1995).

Table 1.3 Registered Prevalence Rate and Multi-Drug Therapy(MDT) Coverage Rate of Leprosy Cases in Myanmar, 1988-1998.

Year	91	92	93	94	95	96	97	98
Registered prevalence rate	19.3	13.5	9.1	6.1	4.7	4.2	2.91	2.74
MDT coverage	29.0	56.2	46.1	70.1	100	100	100	100

Source: National Leprosy Elimination Program, Myanmar.

Registered Prevalence Rate and Multi Drug Therapy Coverage Rate of Leprosy Cases in Myanmar (1988-98)



This achievement was made through the combined effort of both vertical (specialized) leprosy and BHS staff with midwives playing a vital role (Tin Shwe,1997). An average of 8000-10 000 new cases were detected per year since 1986-1997. The children proportion new cases reduce from 27.5% in 1986 to 9.5% in 1997. The disability Grade 2 proportion among new cases was also reduce from 27.5% in 1986 to 10.9% in 1997.

1.1.4 What is LEC?

LEC is an initiative which aims to detect leprosy cases, particularly the more serious ones refered to as "cases of consequences", that remain undetected in the community, and to treat them with MDT. LEC is a combination of three elements, namely: capacity building measure for local health workers to improve MDT services; increasing community participation to strengthen elimination activities at the peripheral level; and diagnosing and curing patients, particularly "cases of consequences".

In many areas where leprosy treatment services are currently available there is evidence that a number of patients remain undetected and therefore untreated. This is due to lack of awareness of the disease on the one hand and the un attractiveness of the leprosy services on the other. LEC is not an exclusive active case finding project. It is more likely that only those individuals with obvious skin lesions will be coming forward for diagnosis and that those will consist mostly of cases of consequences (WHO, 1997).

The ideal situation would be for the community to be so well-informed about leprosy that when any member becomes diseased he \she will come forward for diagnosis and treatment before impairment and disabilities set in. By contrast conducting house to house survey is a very time-consuming activity requiring a lot of resources. Program should promote self-detection through health education, as self-reported patients attend more regularly for treatment where multi drug therapy has been adequately implemented,

it has been found that self-reporting by patients increases significantly. It prevent deformities (WHO,1987).

Leprosy Elimination Campaigns were first introduced in 1995 in order to accelerate elimination activities in the major endemic countries in the world. The LEC are conducted in selected areas where there are indications that a large number of hidden cases are present, (WHO Weekly Epidemiological Record, 1998). By conducting such campaigns, the remaining hidden cases are expected to be diagnosed and cured with MDT. After conducting LEC in an area, the expectation is that most of the hidden (backlog) cases will be detected. This leads to a steep increase in case detection followed by a significant decline during subsequent years. This will happen if LEC is properly carried out and routine elimination activities are strengthened and maintained. Similarly prevalence is also expected to increase immediately after LECs, but should start to fall as the patients complete hteir treatment. The long term impact of LECs can be measured only in terms of a significant reduction in both prevalence and detection rates.

1.2 Rationale

Goal for leprosy elimination by the year 2000 in Myanmar is too close to reach the national figure of less than 1/10 000 population. It is necessary to reduce the registered prevalence in time. In many areas where leprosy treatment services are currently available, there is evidence that a number of patients remain undetected and therefore untreated. These hidden cases are individuals who have not been diagnosed and treated by the health services even though they have had signs and symptoms of leprosy for some time. This could be because they do not know they have leprosy or they suspect or know they have leprosy but, because of the stigma, do not want to be identified for treatment or, in some instances. Do not where to go for treatment. In some area, depending on effectiveness of the elimination programmes, this pool of hidden cases could be quite large. Thus among the new cases reported yearly by the national programmes, only a small proportion of them are true incidence cases.

These area will be need LEC to reduce the pool of untreated cases in the community, an thus reduce the disease burden significantly. LEC is not intended to replace the routine leprosy elimination programme. It is aimed at strengthening and supplementing the present activities carried out in a selected area.

The immediate outcome of LEC is to be evaluated using the following indicators:

1. Number of new cases (Paucibacillary and Multibacillary) detected during the campaign period.
2. Number of new cases with more than 5 skin lesions.
3. Proportion of disabled (grade two) among new cases.

By doing this study we can determine which strategy (Routine Elimination programme or Leprosy Elimination Campaigns) has more operative effiency for new case detection of National Leprosy Elimination Programme in Myanmar.

1.3 Research Question

Which strategy (routine case detection or leprosy elimination campaigns) has more operative efficiency for new case detection of National Leprosy Elimination Programme in Myanmar?

1.4 Research Objective:

1.4.1 General Objective

To find out the most cost-effectiveness strategy for new case detection of National Leprosy Elimination Programme in Myanmar.

1.4.2 Specific Objective.

1. To estimate the cost of routine case detection strategy and leprosy elimination campaigns strategy in National Leprosy Elimination Programme in Myanmar.
2. To study the factors influencing effectiveness in term of total number of new case s detected, of the two case detection programmes.
3. To analyze effectiveness in term of new leprosy patients with single skin lesion, more than five skin lesion, and grade two disablities among the new cases detected.
4. To analyze the cost-effectiveness of routine case detection and leprosy elimination campaigns of National Leprosy Elimination Programme in Myanmar.

1.5 Scope of the study.

This study is an economic evaluation of case detection activity for the early detection and treatment of leprosy with MDT to prevent deformity. This study evaluates the early detection and treatment in National Leprosy Elimination Programme by analyzing costs and effectiveness of different methods from provider's and patient's perspective.

From the provider's perspective, the total costs are classified as capital and operating costs. From the patient's perspective, the total costs are classified as direct and indirect costs. In this study the effectiveness are determined as total number of new cases detected. This study will be done in Myanmar as retrospective study in 1998.

1.6 Benefit of the study.

The information from this study will benefit to the Programmer's Manager of National Leprosy Elimination Programme of Myanmar. According to the results of the study, they can choose the best strategy for new case detection in Leprosy Elimination Programme.