#### REFERENCES



- Barua S., Wakai S. & Shwe T. et al. (1999) Leprosy elimination through integrayed basic health services in Myanmar: the role of midwives. Leprosy Review 70: 174-179.
- Cree I.A. & Smith W.C. (1998) Leprosy transmission and mucosal immunity: towards eradication. <u>Leprosy Review</u> 69: 112-121.
- Drummond M. F., Stoddart G. L., Torrance G. W. (1989) <u>Methods for the economics</u> evaluation of health care programs Oxford University press, Oxford.
- Global Leprosy situation, September 1999. <u>Weekly Epidemiological Record</u>, WHO, September (1999), 73: No. 38.
- Honrado E. R., Fungladda W. & Kamolratanakul P. et al. (1999)Cost-effectiveness analysis of artesunate and quinine + tetracycline for the treatment of uncomplicated falciparum malaria in Chathaburi, Thailand. <u>Bulletin of WHO</u>, 77: 235-241.
- International Leprosy Congress, Beijing, Workshop reports.(1999) Leprosy Review, 70: 78-84.
- Johannes Schafer.(1998), Leprosy and disability control in the Guera Prefecture of Chard, Africa: Do women have access to leprosy control services. <u>Leprosy Review</u> 69: 267-278.
- Joseph G. A., & Sundar Rao P. S. S.(1999), Impact of leprosy on the quality of life. Bulletin of WHO, 77: 515-517.
- Kobina Atta Bainson & Bart Van Den Borne. (1998) Dimension and process of stigmatization in leprosy. Leprosy Review 69: 341-350.
- Konradson F., Steele P., Perera D., et al. (1999) Cost of malaria control in Srilanka. Bulletin of World Health Organization, 77: 301-309.

- Leprosy Elimination Campaigns (LEC), progress during 1997-1998. Weekly Epidemiological Record, WHO, June (1998) 73: No. 24.
- Migliori G. B., Khomenko A. G. and Punga V. V., et al. (1998) Cost-effectiveness analysis of tuberculosis control policies in Ivanovo Oblast, Russian Fedration. <u>Bulletin of the WHO</u>, 76 (5): 475-483.
- Miglori G. B., Abrosetti M., & Besozzi G. et al. (1999) Cost- comparison of different management policies for tuberculosis patients in Italy. Bulletin OF WHO 77: 467-475.
- Progress towards leprosy elimination. <u>Weekly Epidemiological Record</u>, WHO, May (1998) 73: No. 21.
- Richardus J. H., Meima A. & Croft R. P., et al.(1999) Case detection, gender and disability in leprosy in Bangladash: a trend analysis. <u>Leprosv Review</u> 70: 160-173.
- Special report. International leprosy congress, Beijing, 7-12 September 1998. Workshop report. <u>Leprosv Review</u> (1999) 70:78-84.
- Thangaraj R. H., & Yawalkar S. J.(1987) <u>Leprosy for Medical Practitioners</u> and <u>paramedical workers</u>, second edition.
- Trends in leprosy detection. <u>Weekly Epidemiological Record</u>, WHO, June (1998) 73: No. 23.
- Van Brakel W. H., Reed N. K., Reed D. S. (1999)Grading Impairment in Leprosy. Leprosy Review 70: 180-188.
- Varley R. C. G., Tarvid j& Chao D. N. W. (1998) A reassessment of the costeffectiveness of water & sanitation interventions in program for childhood diarrhoea. <u>Bulletin of WHO</u>, (76) 617-631.

Victory over leprosy draws nearer. World Health, 51<sup>st</sup> year, No.2, April 1998: 18-19.

WHO Action program for the elimination of leprosy.(1987) <u>Leprosy elimination</u> <u>campaigns (LEC) and Special Action Project for the Elimination Leprosy (SAPEL)</u> <u>Questions and Answers.</u>

WHO documents. Global leprosy situation 1998, World Health, 1998.

APPENDICES

#### Appendix A

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## Check list for determining Provider's costs

## Questionnaires for data collection at Township Health Department.

# (A) Costs for Building

1. Building Price	kyats.
2. Expected years of useful life	years
3. Maintenance cost for building	kyats.
4. Number of total OPD patients	No./year
5. Number of leprosy patients	
who were diagnosed at OPD.	No./year
(B) Costs for Equipment	
1. Equipment price	kyats.
2. Expected years of useful life	years

3. Maintenance costs for Equipment	kyats/year.

# 1. Vehicle price ------ kyats

- 2. Expected years of useful life ---------- years
- 3. Maintenance cost for vehicle ------ kyats/year

# (D) Cost for long-term training

about leprosy

(C) Costs for vehicle

1. Cost for perdiem (person * days )	kyats/year
2. Traveling allowance	kyats/year
3. Cost for training material	kyats/year
(E) Cost for social mobilization	
1. Cost for posters and pamphlets	kyats/year
2. Cost for giving health education	

----- kyats/year

Part II. Health personnel Cost (BHS & Specialized staff) 1. How much salary have you received? ------ kyats/month 2. How much fringe benefit have you got other than salary? ----- kyats/year 3. How may minutes do you spend for diagnosis of leprosy patient for doing PCD activity? ----- min/patient 4. How many hours have you spend for contact examination? ----- hours/year 5. How many hours have you spend for school examination? ----- hours/year 6. How many hours have you spend for mass survey? ----- hours/year 7. How much traveling cost for doing Contact examination? ----- kyats/year 8. How many days have you done contact Examination within one year? ----- days/year 9. How much traveling cost for doing School examination within one year? ----- kyats/year 10. How much traveling cost for doing Mass survey within one year? ----- kyats/year Part III. Material costs 1. Did the patients need to be diagnosed by Microscopy? [] (1) No (2) Yes 2. How many number of material used for the Diagnosis of leprosy with in one year? (1) Glass slide ----- No./year ----- No./year (2) Reagent

(3) Sterile knife	No./year
3. How many times used for microscope	
For various control activities?	No./year
(1) Leprosy	times/year
(2) Malana	times/year
(3) Other disease	times/year
4. How many paper used for diagnosis of	
Leprosy (number of paper per patient)?	No./pt.
5. How many pens used for outpatient clinic?	[]
(1) one pen for 10 patients.	
(2) One pen for 15 patients.	
(3) One pen for 20 patients.	
Part IV. Cost for short-term training.	
1. How much traveling allowance have you	
Got for attending short-term training?	kyats/year
Part V. Cost for Social Mobilization	
1. How much did you spend for traveling to	
Give health education about leprosy?	
(personnel from control program only)	kyats/year
2. How often did you give health education?	times/year

source; San San Aye M.Sc Health Economics Thesis (1996)

# Appendix B

# Questionnaire for Patient Interview

	A sincere request to the participants
•	Name, address and signature are not needed in completing the forms
•	Your answers will be assured to be confidential
٠	Sincere and cordial thanks to all participants

Patien	t ID	· · · · · · · · · · · · · · · · · · ·
Intervi	ewer's name	••••••
State	Division	
I.	General information	
	1. Sex	[]
	(1) Male	
	(2) Female	
	2. Age (completed years)	[]
	3. Level of education (year of schooling)	[]
	4. Occupation	[]
	(1) Dependent	
	(2) Manual worker	
	(3) Private business	
	(4) Government service personnel	
	5. Distance between your residence and	
	the clinics ( in miles)	[]
II.	Cost Information	
	For the patient who diagnosed by PCD metho	bd
	1. How much do you pay for traveling	
	To the clinic to seek diagnosis of	
	The disease?	kyats
	2.	

	2. How much do you pay for your
	Registration in the clinic? kyats
	3. How much have you spend for food
	While you are traveling to the clinic
	And seeking diagnosis in the clinic? kyats
	4. Have you taken a leave of absence from
	Your work? []
	(1) No
	(2) Yes
	If yes,
5	What is your income? kyats/month
6.	Do you go there alone or with another
	Person accompanying? []
	(1) alone
	(2) accompanied
7	How much did he / she pay for traveling
	To the clinic? kyats
8	How much did he / she spend for food while
	Traveling to the clinic and while you are seeking
	diagnosis in this clinic? kyats
9	Did he / she take a leave of absence
	From his work? []
	(1) No
	(2) Yes
10	). What is his / her income?
1	1. Do you have to pay the person for
	Accompanying with you for diagnosis of
	The disease? []
	(1) Nc
	(2) Yes
	If yes.

12.	How	much	have	you	spent	for	pay	inç	]
-----	-----	------	------	-----	-------	-----	-----	-----	---

that person?

----- kyats

For the patient who diagnosed by ACD method

13. By which method ACD have been diagnosed?

- (1) Mass survey
- (2) Contact examination
- (3) School examination

For patients who were diagnosed by mass survey

14. How much did you spend for traveling to that area?
15. How much did you spend for food while You were traveling to that area and seeking Diagnosis for leprosy?
16. Had you taken a leave of absence from Your work?
17. What is your income?

For the patients who were diagnosed by contact examination.

18. Had you taken a leave of absence from

Your work?

- (1) No
- (2) Yes

If yes,

19. What is your income? \_\_\_\_\_\_kyats/month

source: San San Aye, M.Sc Health Economics Thesis (1996).

#### Appendix C

### Calculation of cost for Routine Case Detection

### (Provider's perspective)

The total costs for routine case detection are calculated by equation explained in chapter 4. In this study we can only the recurrent costs, because of time constraints and limitation of data available.

## A. Health personnel costs for doing Active case detection (routine case detection)

This cost item is calculated equation 1 which is explained in chapter 4. The total annual income of health personnel got from summation of annual salary and fringe benefit. The data for annual salary is from secondary data. For fringe benefit, we assumed that it will be 25% of the salary. The man power list got from Township Health Profile.

The proportion time spent on doing ACD is calculated by following.

Total working hour for one year:

6 hours \* 22 days \* 12 months = 1584 hours

For contact examination, the health personnel can do this activity one hour every 2 months. Therefore for contact examination health personnel will spent 6 hours per year.

$$p = \frac{6}{1584} = 0.0038$$

p = Proportion time spent on doing contact examination.

For school children examination, the health personnel spent 6 hours per 6 months. So they

spent 12 hours for school children examination for a year.

$$p = \frac{12}{1584} = 0.0076$$

p = proportion time spent on doing school children examination.

For village mass survey, the health personnel spent 8 hours per year. They have done village mass survey once a year.

$$p = \frac{8}{1584} = 0.0051$$

p = Proportion time spent on doing village mass survey.

### B. Health personnel costs for doing Passive case detection (routine case detection)

### For urban area,

The health personnel open the clinic every day and assumed that they spent 1

hours per year for OPD activity.

### 1 hour. \* 22 days \* 12 months = 264 hours

$$q = \frac{264}{1584} = 0.17$$

q = Proportion time spent on doing PCD.

For rural area,

The health personnel open the clinic 3 days per week and assumed that they spent one hour per day for OPD activity.

1 hour \* 3 days \* 4 weeks \* 12 months = 144 hours

$$q = \frac{144}{1584} = 0.091$$

q = Proportion time spent on doing PCD.

### C. Total costs for material supplies.

The cost item contained costs for glass slide, reagent, disposable knife for skin scrubbing, paper and pen. In that case, programme personnel assumed that there are only 40% need to confirm the diagnosis by microscopy. The other 60% of newly detected cases are diagnosed by clinical signs and symptoms only.

Among the newly detected cases who need to confirm the diagnosis are :

1. Oak-pho (Bago Division)	= 25 * 40% = 10
2. Kyoutpinkouk (Bago Division)	= 16 * 40% = 6.4
3. Myaung (Sagaing Division)	= 29 * 40% = 11.6
4. Sarlingyi (Sagaing Division)	= 14 * 40% = 5.6
5. Htantabin (Yangon Division)	= 70 * 40% = 28
6. Kautmu (Yangon Division)	= 25 * 40% = 10

For calculation of paper cost, they need 2 pieces of paper for one patient to fill up the registered form.

For pen, they used roughly one pen for 20 patients.

## C. Total cost for short-term training.

This cost item contained per diem cost, travelling allowance (TA), and cost for training material.

D. Total cost for social mobilization.

This cost item contained transportation of educational materials and costs for providing

health education by health personnel.

 Table (A3)
 Total Provider's Cost of 1998 LECs Townships.

ITEMS	Htantabin	Myaung	Окро
	4500	1500	
Initial phase	1500	1500	1500
Preparatory phase			
A. preliminary data collection	36437.5	36437.5	45437.5
B. Advocacy meeting	13750	13750	1 <b>375</b> 0
C. Health education materials	100326	44522	121016
D. Stationary, equipment & drugs	11 <b>40</b> 0	10800	11400
Implementation phase			
A. Meeting & workshop	185850	96450	211850
B. Perdiem of team	54000	15750	47250
C. Perdiem of supervisor	27000	27000	27000
D. Transportation for supervisor	34000	34000	34000
E. For mobilization of team	7200	2100	6700
F. Compilation of report	2250	2250	2250
G. Miscellaneous	5000	5000	5000
TOTAL COST (provider)	478713.5	280559.5	<b>53</b> 0153.5
Newly cases Detected	63	119	168
Cost/ Effectiveness Ratio	7598.6	2357.6	3155.7
US \$	47.5	17.2	22.7

	ACD(CE)											
H.person	Gyobin	Saling	Kawh	salary	fringe	total	р	to	TC.GB	TC	TC KM	
	ga	yi	mu		В				G	SLG		
HA	5	4	5	15000	3750	18750	0.0038	71.25	356.25	285	356.25	
LHV	5	5	7	13200	3300	16500	0.0038	62.7	313.5	313.5	438.9	
PHS1	1	2	3	13200	33000	16500	0.0038	62.7	62.7	125.4	188.1	
PHS2	2	13	1	11400	2850	14250	0.0038	54.15	108.3	703.95	54.15	
MW	30	27	28	11400	2850	14250	0.0038	54.15	1625.5	1462.1	1516.2	
									2466.2	2889.9	2553.6	

	ACD (SE)										
H.pers	Gyobin	Saling	Kawh	salary	fringe	total	р	to	TC.GB	TC SL	ТС КМ
MO	4	3	8	18900	4725	23625	0.0076	179.55	718.2	538.65	1436.4
nurse	5	5	8	13200	3300	16500	0.0076	125.4	627	627	1003.2
НА	5	4	5	15000	3750	18750	0.0076	142.5	712.5	570	712.5
LHV	5	5	7	13200	3300	16500	0.0076	125.4	627	627	877.8
PHS1	1	2	3	13200	33000	16500	0.0076	125.4	125.4	250.8	376.2
PHS2	2	13	1	11400	2850	14250	0.0076	108.3	216.6	1407.9	108 3
MW	30	27	28	11400	2850	14250	0.0076	108.3	3249	2924.1	3032.4
									6275.7	6945.5	7546.8

	ACD (V'MS)											
H.pers	Gyobin	Saling	Kawh	salary	fringe	total	p	to	TC.GB	TC SL	TC KM	
MO	4	3	8	18900	47:25	23625	0.0051	120.49	481.95	361.46	963.9	
nurse	5	5	8	13200	3300	16500	0.0051	84.15	420.75	420.75	673.2	
HA	5	4	5	15000	37:50	18750	0.0051	95 625	478.12	382.5	478.12	
LHV	5	5	7	13200	3300	16500	0.0051	84.15	420.75	4220.75	589.05	
PHS1	1	2	3	13200	33000	16500	0.0051	84.15	84.15	168.3	252.45	
PHS2	2	13	1	11400	28:50	14250	0.0051	72.675	145.35	944.78	72.675	
MW	30	27	28	11400	28:50	14250	0.0051	72 675	2180.2	1962.2	2034.9	
									4211.3	4660.8	5064.3	

	PCD											
H.person	Gyobin	Saling	Kawh	salary	fringe	total	p	tc	TC.GB	TC SL	ТС КМ	
MO	4	3	8	18900	47:25	23625	0.17	4016.3	16065	12049	32130	
nurse	5	5	8	13200	3300	16500	0.17	2805	14025	14025	22440	
НА	5	4	5	15000	37:50	18750	0.091	1706.3	8531.2	6825	8531.2	
MW	30	27	28	11400	28:50	14250	0.091	1296.8	38902.	35012	36309	
									77523.	67911	<b>994</b> 10.	

item	TC.Gyobin	TC.Salingyı	TC Kawhmu
CE	2466 3	2889.9	2553.6
SE	6275.7	6945.5	7546.8
VMS	4212.3	4661.9	5065.25
PCD	77524	67911	99410.3
STT	31050	35075	35650
Material	360	315	550
SM	5700	5900	6100
TOTAL	127588	123698.3	156875.9
New Cases	18	25	11
C/E Ratio	7088.2	4947.9	14261.4
US\$	44.3	30.9	89.1

	ACD(CE)												
H. Perso	Okpo	M <b>ya</b> un	H <b>ta</b> nta	SALAR	F.B	Total	р	tc	TC.Ok	TC. My	TC. Ht		
НА	5	4	5	15000	3750	18750	0.0038	71.25	356.25	285	356.25		
LHV	5	6	7	13200	3300	16500	0.0038	62.7	313.5	376.2	4:38.9		
PHS1	2	2	3	13200	3300	16500	0.0038	62.7	125.4	125.4	188.1		
PHS2	1	4	1	11400	2850	14250	0.0038	54.15	54.15	216.6	54.15		
MV	33	28	34	11400	2850	14250	0.0038	54.15	1787	1516.2	1841.1		
									2636.3	2519.4	2878.5		

H. Per	Okpo	Myaun	Htanta	SALAR	F.B	Total	P	tc	TC.Ok	TC. M	TC. Ht
MO	7	3	5	18900	4725	23625	0.0076	179.55	1256.9	538.65	897.75
nurse	9	4	6	13200	3300	16500	0.0076	125.4	1128.6	501.6	752.4
HA	5	4	5	15000	3750	18750	0.0076	142.5	712.5	570	712.5
LHV	5	6	7	13200	3300	16500	0.0076	125.4	627	752.4	877.8
PHS1	2	2	3	13200	3300	16500	0.0076	125.4	250.8	250.8	376.2
PHS2	1	4	1	11400	2850	14250	0.0076	108.3	108.3	433.2	108.3
MW	33	28	34	11400	2850	14250	0.0076	108.3	3573.9	3032.4	3682.2
									3573.9	3032.4	3682.2

					ACD	(VMS)					
H.	Oak-	Myaun	Htanta	SALA	F.B	Total	p	tc	TC.Oa	TC.	TC.
Person	pho	g	bin	RY					kp	Myaun	Htantb
MO	7	3	5	18900	4725	23625	0.0051	120.49	843.41	361.46	602.43
nurse	9	4	6	13200	3300	16500	0.0051	84.15	757.35	336.6	504.9
HA	5	4	5	15000	3750	18750	0.0051	95.625	478.13	382.5	478.12
LHV	5	6	7	13200	3300	16500	0.0051	84.15	420.75	504.9	589.05
PHS1	2	2	3	13200	3300	16500	0.0051	84.15	168.3	168.3	252.45
PHS2	1	4	1	11400	2850	14250	0.0051	72.675	72.675	290.7	72.675
MW	33	28	34	11400	2850	14250	0.0051	72.675	2398.3	2034.9	2470.9
							-		5138.9	4079.4	4970.6

	PCD										
H.Person	Окро	Myaung	Htanta	SALA	F.B	Total	р	to	TC.Ok	TC. My	TC. Ht
				R							
MO	7	3	5	18900	4725	23625	0.17	4016.3	28114	12048.	20081.
nurse	9	4	6	13200	3300	16500	0.17	2805	25245	11220	16830
НА	5	4	5	15000	3750	18750	0.091	1706.3	8531.3	6825	8531.2
MW	33	28	34	11400	2850	14250	0.091	1296.8	42793	36309	44089.
PCD									104683	66402.	89532

item	TC. Oak-p	TC. Myaun	TC. Htantb
CE	2636.25	2519.4	2878.5
SE	3573.9	3032.4	3682.2
VMS	5138.88	4079.36	4970.59
PCD	104683	66402.8	89532
STT	36800	30475	36225
Material	550	640	1500
SM	7100	6300	7500
TOTAL	160482	113449	146288
New Cases	12	29	12
C/E Ratio	13373.5	3912	12190.7
US <b>S</b>	83.6	24.5	76.2

The price index of 1997 in Myanmar was 1.12 according to the International Financial Statistic. If we adjusted the 1997 cost to 1998 cost, the result are the following.

TOTAL	260,378.7	135,462.8	230,482.9
New Cases	27	29	12
C/E Ratio	9,643.7	4671.1	19,206.7
US\$	60.3	29.2	120

#### Appendix D

Calculation of Total Costs of Case Finding Activities from Patient's perspective.

In Routine Case Detection activities, there are two activities, one is Active case detection (ACD) and another one is Passive case detection activity (PCD). In ACD, the patients do not need to go to the health center. In this case, we calculate the patient's time cost only, no need to calculate the travelling cost and the cost of accompanying relative's time cost and travelling cost. In PCD, we have to calculate the patient's time cost and accompanying relative's time cost and travelling cost. In PCD, we have to calculate the patient's time cost, travelling cost and accompanying relative's time cost and travelling cost. In this study, we can not get the data about the actual patient's cost, we assume some cost for calculation. But for empirical study, we can get primary data by using questionnaire.

In Routine case detection, 40% of the patients is from ACD and 60% of the patients is from PCD according to secondary data from township health profile. For LEC case finding activities, 12% of the patients come from ACD and 88% of the patients come from PCD according to the secondary data from the health records. The detailed calculation are the following.

Total Cost for Routine Case Detection (1998).

(Patient's Perspective)

Probability of ACD = 0.4 Probability of PCD = 0.6

1998 Routine Case Detection Townships	Total	ACD	PCD
1. Kawhmu	11	4	7
2. Salingyi	25	10	15
3. Gyobingauk	18	7	11

1997 Routine Case Detection Townships	Total	ACD	PCD
1. Htantabin	12	5	7
2. Myaung	29	12	17
3. Окро	27	11	16

For LEC Townships.

Probability of ACD = 0.12

Probability of PCD = 0.88

Among the PCD cases, 75% of patients come from visiting villages and 25% of patients from Drainage Villages.

1998 LEC Townships	Total	ACD	PCD	V.V	D.V
1. Htantabin	63	8	55	41	14
2. Myaung	119	14	105	79	26
3. Okpo	168	20	148	111	37

# 1. Kawhmu Township (Total Cost, Patient's Perspective)

1.1 Direct Cost ACD Patient's time	cost	=	1000 kyats.
1.2 Direct Cost PCD Patient's time	cost	=	1750 kyats.
1.3 Direct Cost PCD Patient's trave	elling cost	Ξ	700 kyats.
1.4 Indirect Cost PCD Relative's til	ne cost	=	1750 kyats.
1.5 Indirect Cost PCD Relative's tr	avelling cost	=	700 kyats.
		_	
	Total Cost	Ŧ	5900 kvats.

l otal Cost	= 5900 kyats.
Detected Cases	= 11
C/E Ratio	= 536.4
US\$	= 3.35

# 2. Salingvi Township (Total Cost, Patient's Perspective)

1.1 Direct Cost ACD Patient's time cost		=	2500 kyats.
1.2 Direct Cost PCD Patient's time cost		=	3750 kyats.
1.3 Direct Cost PCD Patient's travelling cost		=	1500 kyats.
1.4 Indirect Cost PCD Relative's ti	me cost	=	3750 kyats.
1.5 Indirect Cost PCD Relative's travelling cost		=	1500 kyats.
		_	
	Total Cost	=	13000 kyats.
Detect	Total Cost ed Cases	1	
Detect		=	•

# 3. Gyobingauk Township (Total Cost, Patient's Perspective)

1.1 Direct Cost ACD Patient's time cost	= 1750 kyats.
1.2 Direct Cost PCD Patient's time cost	= 2750 kyats.
1.3 Direct Cost PCD Patient's travelling cost	= 1100 kyats.
1.4 Indirect Cost PCD Relative's time cost	= 2750 kyats.
1.5 Indirect Cost PCD Relative's travelling cost	= 1100 kyats

Total Cost	= 9450 kyats.
Detected Cases	= 18
C/E Ratio	= 525 kyats.
US\$	= 3.28

# 4. Htantabin Township (Total Cost, Patient's Perspective)

1.1 Direct Cost ACD Patient's time cost		=	1250 kyats.
1.2 Direct Cost PCD Patient's time	cost	=	1750 kyats.
1.3 Direct Cost PCD Patient's travelling cost		=	700 kyats.
1.4 Indirect Cost PCD Relative's ti	me cost	=	1750 kyats.
1.5 Indirect Cost PCD Relative's travelling cost		=	700 kyats.
	Total Cost	= (	6150 kyats.
Detect		= (	
Detect	ed Cases	=	•

# 5. Myaung Township (Total Cost, Patient's Perspective)

1.1 Direct Cost ACD Patient's time cost	= 3000 kyats.	
1.2 Direct Cost PCD Patient's time cost	= 4250 kyats.	
1.3 Direct Cost PCD Patient's travelling cost	= 1700 kyats.	
1.4 Indirect Cost PCD Relative's time cost	= 4250 kyats.	
1.5 Indirect Cost PCD Relative's travelling cost	= 1700 kyats.	

Total Cost	= 14900 kyats.
Detected Cases	= 29
C/E Ratio	= 513.8 kyats.
US\$	= 3.21

# 6. Okpo Township (Total Cost. Patient's Perspective)

1.1 Direct Cost ACD Patient's time cost	= 2750 kyats.
1.2 Direct Cost PCD Patient's time cost	= 4000 kyats.
1.3 Direct Cost PCD Patient's travelling cost	= 1600 kyats.
1.4 Indirect Cost PCD Relative's time cost	= 4000 kyats.
1.5 Indirect Cost PCD Relative's travelling cost	= 1600 kyats.

Total Cost	= 13950 kyats.
Detected Cases	= 27
C/E Ratio	= 516.7
US\$	= 3.22

### 1. 1998 LEC Htantabin Township Cost for Patient's Perspective

1.1 ACD Patient's Cost	=	2000 kyats.
1.2 PCD (V.V) Patient's cost	=	10250 kyats.
1.3 PCD (D.V) Patient's cost	Ξ	3500 kyats.
1.4 PCD (D.V) Patient travelling cost	=	1400 kyats
1.5 PCD (D.V) Relative's time cost	=	3500 kyats.
1.5 PCD (D.V) Relative travelling cost	=	1400 kyats.
	-	

Total Cost	= 2	2050 kyats.
Detected Cases	=	63
C/E Ratio	= 3	50 kyats.
US\$	= 2.	18.

# 2. 1998 LEC MyaungTownship Cost for Patient's Perspective

1.1 ACD Patient's Cost	=	Ξ	3500 kyats.
1.2 PCD (V.V) Patient's co	st =	Ξ	19750 kyats.
1.3 PCD (D.V) Patient's co	st =	=	6500 kyats.
1.4 PCD (D.V) Patient trav	elling cost =	Ĩ	2600 kyats.
1.5 PCD (D.V) Relative's t	ime cost =	=	6500 kyats.
1.5 PCD (D.V) Relative tra	velling cost	=	2600 kyats.
	Total Cost	=	41450 kyats.
Detect	ed Cases	=	119
	C/E Ratio	=	348.31 kyats
	US\$	-	2.17

# 3. 1998 LEC Okpo Township Cost for Patient's Perspective

1.1 ACD Patient's Cost	Ξ	5000 kyats.
1.2 PCD (V.V) Patient's cost	Ξ	27750 kyats.
1.3 PCD (D.V) Patient's cost	=	9250 kyats.
1.4 PCD (D.V) Patient travelling cost	=	3700 kyats.
1.5 PCD (D.V) Relative's time cost	=	9250 kyats.
1.5 PCD (D.V) Relative travelling cost	=	3700 kyats.
Total Cost	Ξ	58650 kyats.
Detected Cases	Ξ	168

C/E Ratio = 349 1 kyats.

US\$ = 2.18.

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### Appendix E

### Sensitivity Analysis of LEC activities form different endemic areas.

In this study, LEC Activities cover the 50% of the total number of villages of the township. If we expand the coverage of the visiting villages, the total cost will be changed and the cost-effectiveness ratio will be changed. If the programme expend the coverage of the visiting villages from 50% to 75% and up to 100%, what will happen in total costs and cost-effectiveness ratio? Detailed calculation is shown in appendix (5).

Table Appendix 5.1	Coverage of Visiting Villages in	Sensitivity Analysis.
· · · · · · · · · · · · · · · · · · ·		

Townships	COVERAGE OF VISITING VILLAGES			
	25%	75%	100%	
Htantabin Township	56	167	223	
Myaung Township	21	60	81	
Okpo Township	67	201	268	

Sensitivity Analysis of LECs Townships, 25% Visiting Villages Coverage.

Table (A5-1)

ITEMS	Htantabin	Myaung	Окро
Initial phase	1500	1500	1500
Preparatory phase			
A. preliminary data collection	13937.5	27437.5	45437.5
B. Advocacy meeting	13750	13750	13750
C. Health education materials	95926	44522	121016
D. Stationary, equipment & drugs	10800	10800	11400
Implementation phase	L.		
A. Meeting & workshop	177850	96450	211850
B. Perdiem of team	42000	15750	47250
C. Perdiem of supervisor	27000	27000	27000
D. Transportation for supervisor	34000	34000	34000
E. For mobilization of team	5600	2100	6700
F. Compilation of report	2250	2250	2250
G. Miscellaneous	5000	5000	5000
TOTAL COST (provider)	429613.5	280559.5	530153.5
Newly cases Detected	63	119	168
Cost/ Effectiveness Ratio	6819.2	2357.6	3155.7
US \$	42.6	14.7	19.7

Sensitivity Analysis of LECs Townships, 75% Visiting Villages Coverage. Table (A5-2)

Htantabin Okpo ITEMS Myaung 1500 1500 1500 Initial phase Preparatory phase 54437.5 27437.5 45437.5 E. preliminary data collection 2 13750 13750 13750 F. Advocacy meeting G. Health education materials 109126 44522 121016 H. Stationary, equipment & drugs 12600 10800 11400 Implementation phase H. Meeting & workshop 233350 115950 211850 Perdiem of team 125250 45000 47250 1 27000 J. Perdiem of supervisor 27000 27000 34000 K. Transportation for supervisor 34000 34000 6000 6700 L. For mobilization of team 16700 2250 2250 2250 M. Compilation of report 5000 5000 5000 N. Miscellaneous 333209.5 530153.5 634963.5 TOTAL COST (provider) Newly cases Detected 119 168 63 10078.8 2800.1 3155.7 Cost/ Effectiveness Ratio 63 17.5 19.7 US\$

Sensitivity Analysis of LECs Townships, 100% Visiting Villages Coverage.

Table (A5-1)

ITEMS	Htantabin	Myaung	Okpo
Initial phase	1500	1500	1500
	1500	1500	1500
Preparatory phase			
I. preliminary data collection	49937.5	27437.5	58937.5
J. Advocacy meeting	13750	13750	13750
K. Health education materials	106926	44522	128016
L. Stationary, equipment & drugs	12300	10800	12900
Implementation phase			
O. Meeting & workshop	261350	126450	312350
P. Perdiem of team	167250	60750	201000
Q. Perdiem of supervisor	27000	27000	27000
R. Transportation for supervisor	34000	34000	34000
S. For mobilization of team	22300	8100	26800
T. Compilation of report	2250	2250	2250
U. Miscellaneous	5000	5000	5000
TOTAL COST (provider)	703563.5	361559.5	823503.5
Newly cases Detected	63	119	168
Cost/ Effectiveness Ratio	11167.7	3038.3	4901.8
US \$	69.8	19	30.6

# CURRICULUM VITAE.

Name:	Dr. Tin Win Kyaw.			
Date of Birth:	July, 5, 1952.			
Place of Birth:	Bago, Myanmar.			
Citizenship;	Myanmar.			
Civil Status:	Government Officer.			
Position:	Deputy State Health Director, Kachin State.			
Address: Residence:	366/18 Yanshin Road, West Yankin,	Yangon,		
Myanmar.				
Office:	State Health Department, Kachin State, My	yitkyina,		
Myanmar.				
Education:				
Degree	Where obtained	When		
obtained				
1. M.B.,B. S.	Institute of Medicine, Mandalay.	1977.		
2. M.Med. Sc (P & TM)	Institute of Medicine (1), Yangon.	1995.		
3. M.Sc. Health Economics	Faculty of Economic, Chulalongkom	2000.		
	University, Bangkok, Thailand.			

# **Present Position:**

Deputy State Health Director, Kachin State.

Past Position Held:

1. Medical Officer, Deputy Minister's Offfice, Ministry of Health.

Membership in Professional and Honour Societies.

- .1. Secretary, Kachin State Red Cross Society.
- 2. Member, Myanmar Medical Association.

# **Researches and Publication:**

- 1. Utilization of Rural Health Center in Hmawbi Township, Yangon Division.
- 2. Relapses and Drop-out of Heroin Addicts admitted in Yangon Narcotic Hospital in 1990-92.

