

## CHAPTER 6

### DISCUSSION AND CONCLUSION

#### 6.1 Discussion

The discussion is based on the following issues.

1. Cost/benefit analysis of case finding activity from provider perspective
2. Cost/benefit analysis of case finding activity from patient perspective
3. Sensitivity analysis

##### 6.1.1 Cost/Benefit Analysis of Case Finding Activities from Provider Perspective

###### (1) Costs of Each Method of Case Finding Activities

In this study costs of each method of case finding activities(CFA) are found out from the provider perspective as well as the patient perspective.

The total costs of ACD and PCD from the provider perspective in low, median and high endemic areas of the country are shown in Table 5.3. The total cost for ACD is much lower than the cost for PCD in all different endemic areas. But for the average cost, ACD is higher than those of PCD in low endemic area and ACD is much lower than that of PCD in high endemic area shown in Table 5.4. The reason is that in high endemic area many cases stayed in that area and so the cases are detected easily by doing ACD. But in low endemic area, even if the program finds the cases actively, the cases are not as many as are found in high endemic areas, because few cases are stayed in that area.

Calculation of the average cost for case finding activities demonstrate that the higher the endemicity, the less cost for conducting this activity because in high endemic area, there are more cases than other areas and the denominator of average cost calculation is bigger than other areas. In low endemic areas ACD

is more costly than PCD but in high endemic areas PCD is more costly than ACD.

After calculating the average cost for each method in each area, the total costs for three scenarios are found out (seen in Table 5.5). In low endemic area PCD alone scenario is the cheapest among the three different scenarios. In median and high endemic areas ACD alone scenario is the cheapest among the three different scenarios. It means that, the more endemic the area, ACD activity should be conducted more.

### (2) Expected Benefits for Each method of Case Finding Activities

The expected benefits for each method of CFA are expressed in Table 5.6. The result showed that ACD alone scenario got the highest benefits among three different scenarios because more early cases are detected in ACD alone scenario. And there is higher value of benefits in more endemic areas in all scenarios because in high endemic areas the early cases are relatively more number than low endemic areas.

### (3) Benefit/Cost Ratios for Three Different Scenarios

The benefit/cost ratios (BCRs) for three different scenarios are expressed in Table 5.7. It showed that the highest BCRs are seen in ACD alone scenario in all different endemic areas. In low endemic areas this difference is not too much but in high endemic areas ACD alone scenario the ratio is 10.38 and this value is highest among all three scenarios in all different endemic areas. It means that ACD activities have greater cost benefit than others especially in high endemic areas.

The benefits, costs and benefit cost ratios (BCRs) from provider perspective are shown in Table 6.1.

The hypothesis made in this study is 'ACD might be better than PCD' in high endemic area, the results also show that BCR for ACD is much higher than PCD. Although the hypothesis made in this study is 'PCD might be better than ACD' in low endemic area, the results show that BCR for ACD is still higher than PCD. It means that, even in low endemic area ACD activity is more cost benefit than PCD in terms of early case detection.

Table 6.1: The Benefits, Costs and Benefit/Cost Ratios(BCRs) from Provider Perspective

Scenario	Endemic Area			
		Low	Median	High
Baseline Scenario	Benefits	1071,293	1937,740	3172,357
	Costs	849,585	1663,240	1465,126
	BCR	1.26	1.67	2.17
ACD alone Scenario	Benefits	1212,427	2192,414	3587,587
	Costs	912,927	327,899	345,491
	BCR	1.33	6.69	10.38
PCD alone Scenario	Benefits	1058,837	1775,800	2907,994
	Costs	844,736	1765,353	2121,797
	BCR	1.25	1.01	1.37

#### 6.1.2 Cost/Benefit Analysis of Case Finding Activities from Patient Perspective

##### (1) Costs of Each Method of Case Finding Activities

The total costs for each method of CFA are shown in Table 5.8. It shows that the higher the endemicity, the more costs because in high endemic area more cases stayed there. And total costs for PCD are more than those for ACD, because in ACD the patients didn't need to go to health centers and so they have no traveling costs at all.

Regarding the average costs of CFA, it was shown that the highest value in low endemic area of ACD method(Table 5.9). The average costs of case finding activity, it showed that there is more endemicity, the lower the average costs in ACD as well as PCD.

The total costs for three different scenarios showed that ACD alone scenario has the least cost among different scenarios in all endemic areas(Table 5.10).

(2) Expected Benefits for Each Method of Case Finding Activities

The expected benefits of each method of CFA are found out from the formula which is explained in Chapter 4. By using different incidence it means that the number of early cases per 1000 population in each area. The value got more higher in more endemic area.

The benefits for CFA in three different scenarios (Table 5.12) showed that ACD alone scenario got highest value among the three scenarios in low, median and high endemic area.

(3) Benefit/Cost Ratios for Three Different Scenarios

The BCRs for three different scenarios (Table 5.13) showed that BCR of ACD alone scenario is highest value among three different scenarios in all different endemic areas, but BCR of ACD alone scenario in high endemic area is highest value (76.99) among all BCRs. It means that for high endemic area ACD activity has greater cost benefit than those of PCD activity.

The benefits, costs and BCRs from patient perspective are shown in Table 6.2.

Table 6.2: The Benefits, Costs and Benefit/Cost Ratios (BCRs) from Patient Perspective

Scenario	Endemic Area			
		Low	Median	High
Baseline Scenario	Benefits	7093,903	11104,624	26019,057
	Costs	546,250	656,800	812,100
	BCR	12.99	16.91	32.04
ACD alone Scenario	Benefits	8028,758	12564,089	29424,693
	Costs	212,060	316,563	382,141
	BCR	34.86	39.69	79.99
PCD alone Scenario	Benefits	7011,416	10176,595	23544,295
	Costs	571,640	866,840	1064,310
	BCR	12.27	11.74	22.12

In patient perspective, the condition is similar with provider perspective. It means that in high endemic areas the results follow the hypothesis but In high endemic areas the results do not follow the hypothesis. In patient perspective, the BCRs for ACD and PCD are more differ than provider perspective. The ACD activity is also more cost benefit than PCD activity in provider perspective.

### 6.1.3 Sensitivity Analysis

The data for number of early cases detected by ACD and PCD is not available and so, for this study these numbers are only made by assumption. Therefore there is a need to do sensitivity analysis. If there is a change in percentage of early case detected by ACD and PCD, there will be a change in BCR in three scenarios from provider perspective.

By calculating best and worst combination of ACD and PCD percentage, the results for BCRs for best and worst combinations are shown in Table 6.3.

**Table 6.3: The Results of BCRs for Best and Worst Combinations**

Scenario	Combination	Endemic Area		
		Low	Median	High
Baseline Scenario	ACD 99%(Best)	1.26	1.16	2.16
	ACD 95%	1.26	1.67	2.17
	ACD 90%(Worst)	1.26	1.16	2.16
ACD alone Scenario	ACD 99%(Best)	1.23	6.96	10.82
	ACD 95%	1.33	6.69	10.38
	ACD 90%(Worst)	1.25	6.33	9.84
ACD alone Scenario	ACD 99%(Best)	1.25	0.98	1.34
	ACD 95%	1.25	1.01	1.37
	ACD 90%(Worst)	1.26	1.04	1.43

The table shows that there is not too much change in BCRs by changing the benefits which means the number of early cases detected by ACD and PCD. But in PCD alone scenario for median endemic area, the best combination had a BCR less than 1. Because in median endemic area PCD alone scenario got the least BCR among all scenarios, when a higher percentage was given to ACD (i.e. ACD 99% and PCD --% combination), it was less than one which also means that PCD activity does not have a high cost benefit in median endemic areas.

## 6.2 Conclusion

The expected results for BCRs from provider perspective showed that the highest is 10.38 which is the ACD alone scenario in high endemic area. The study found that the ACD alone scenario is the best in all three endemic areas but these ratios are not much different in low endemic areas. In high endemic areas these ratios for ACD alone scenario and other two scenarios are too much different.

Those results from patient perspective are similar in pattern to provider perspective. In high endemic area, ACD alone scenario was 76.99 which was the highest value.

Therefore the study concludes that ACD activities have higher cost benefit than PCD activity. According to the results explained earlier, ACD activities should be given more priority especially in high endemic areas.

This study is a methodological study for future application in the LCP, Myanmar. The study attempts to answer the question of whether ACD or PCD has a higher cost benefit in case finding activities.

Actual policy implication may not be attained at this moment as the real results are not available pending empirical study. But the following policy implications are expected.

- (1) Determining and deciding the most efficient case finding activities in areas of different endemicity.
- (2) Resource allocation among different case finding activities in different endemic areas.

### 6.3 Limitations of the Study

The following facts are the weakness of this methodological study because of some constraints in the real situation.

(1) There is no primary data for costs from provider as well as patient perspective. For provide perspective some secondary data are available(e.g. manpower list, salary) but we still need some primary data(e.g. proportion of time spent for each method of CFA). From patient perspective the primary data should be used for more appropriate results.

(2) For benefit portion which is cost savings for early case detection, there is no available data for new case detection classified as disability grading, only an estimation can be made in this study.

(3) In this study benefit in terms of cost savings for early case detection and so all the early cases detected by each method of CFA used as disability prevented. In that case probability for these cases go to next step in what time should also be considered, but up to this moment no one find out for this probability.

### 6.4 Strength of the Study

Although this study is a methodology one, most of the secondary data for costs of provider perspective and most of the hypothetical data are based on real situation. Therefore the calculated results are hoped to provide important information to the decision makers for the leprosy control program in order to achieve the most efficient case finding activities.

This syudy will provide a basis for emperical study in cost benefit analysis of case finding activities for different endemic areas.

## 6.5 Recommendations for Further Studies

The following studies are recommended to fill the gap of information and to strengthen research activity.

- (1) Study for productivity loss due to disability caused by leprosy in Myanmar
- (2) Study for disability among new case detection in different method of case finding activity
- (3) The economics of early leprosy case detection in Myanmar

And the emperical study of this research work is also recommended to conduct in the future.