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APPENDICES

Check List for Determining Provider Costs

Part I Check List for data collection at National level, Disease Prevention and Control Region (DPCR).

(A) Costs for Building

- | | |
|--|----------------|
| 1. Building price |Baht |
| 2. Expected years of useful life |Years |
| 3. Maintenance costs for building |Baht/Year |
| 4. Number of total OPD patient |No./Year |
| 5. Number of leprosy patient who were diagnosed at OPD |No./Year |

(B) Costs for Equipment

- | | |
|------------------------------------|----------------|
| 6. Equipment price | Baht |
| 7. Expected years of useful life | Years |
| 8. Maintenance costs for equipment |Baht/Year |

(C) Costs for Vehicle

- | | |
|-----------------------------------|----------------|
| 9. Vehicle price | Baht |
| 10. Expected years of useful life | Years |
| 11. Maintenance costs for vehicle |Baht/Year |

Health Personnel ID.....

Place.....

Part II Health Personnel Costs

- | | |
|---|------------------|
| 1. How much salary have you received? | Baht/month |
| 2. How much fringe benefit have you got other than salary?..... | Baht/year |

3. How many minutes do you spend for diagnosis of leprosy patient for doing PCD activities? min./patient
4. How many hours have you spent for doing contact examination?hr./year
5. How many hours have you spent for doing school examination?hr./year
6. How many hours have you spent for doing rapid village survey?hr./year
7. How much traveling costs for doing contact examination activity?Baht/day
8. How many days have you done contact examination within one year?days/year
9. How much traveling costs for doing school examination within one year?Baht/year
10. How much traveling costs for doing rapid village survey within one year?Baht/year

Part III Material Costs

1. Did the patients need to be diagnosed by microscope? []
 - (1) No
 - (2) Yes
 If yes,
2. How many numbers of material used for the diagnosis of leprosy with in one year?
 - 2.1 Glass slideNo./year
 - 2.2 ReagentNo./year
 - 2.3 Sterile knifeNo./year
3. How many times used for diagnosis with microscope for various control activities?
 - 3.1 Leprosytimes/year
 - 3.2 Tuberculosistimes/year
 - 3.3 Other diseasestimes/year
4. How many paper used for diagnosis of leprosy (number of paper / patient)?No./patient
5. How many pens used for out patient clinic? []
 - 5.1 One pen/10 patients
 - 5.2 One pen/15 patients
 - 5.3 One pen/20 patients

Part IV Costs for Training program

- | | |
|---------------------------------------|----------------|
| 1. Costs for per diem (person x days) |Baht/Year |
| 2. Traveling allowance |Baht/Year |
| 3. Costs for training material |Baht/Year |

Part V Costs for Social Mobilization

- | | |
|--|-----------------|
| 1. Costs for posters and pamphlets |Baht/Year |
| 2. Costs for giving health education about leprosy
(i.e. cost for car rent, cost of screening for village health volunteer, etc.) |Baht/Year |
| 3. How much did you spend for traveling to give health education about
leprosy? (personnel from control program only) |Baht/year |
| 4. How often did you give health education? |times/year |

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Source: Aye SS.(1996)

### Questionnaire for Patient Interview

Patient ID .....

Interviewer's name .....

Place .....

#### I. General Information

1. Sex [   ]
  - (1) Male
  - (2) Female
2. Age (complete year) [   ]
3. Level of education [   ]
4. Occupation [   ]
  - (1) Dependent
  - (2) Manual worker
  - (3) Private business
  - (4) Government service personnel
5. Distance between your residence and the clinics (in kilometer) [   ]

#### II. Costs Information

##### • For the patients who diagnosed by PCD method

1. How much patients who pay for traveling to the clinic to seek diagnosis of the disease? .....Baht
2. How much do you have to pay for your registration in this clinic? .....Baht
3. How much have you spent for food while you are traveling to the clinic and seeking diagnosis in this clinic? .....Baht
4. Have you taken a leave of absence from your work? [   ]
  - (1) No
  - (2) yes



If yes,

5. What is your income? .....Baht/month

6. Do you go there alone or with another person accompanying? [ ]

(1) Alone

(2) Accompanied

If you come with accompanying person,

7. How much did he/she pay for traveling to the clinic? .....Baht

8. How much did he/she spend for food while traveling to the clinic and while you are seeking diagnosis in this clinic? .....Baht

9. Did he/she take a leave of absence from his/her work? [ ]

(1) No

(2) Yes

If yes,

10. What is his/her income? .....Baht/month

11. Do you have to pay the person for accompanying with you for diagnosis of the disease? [ ]

(1) No

(2) Yes

If yes,

12. How much have you spent for paying that person? .....Baht

● **For the patients who diagnosed by ACD method**

1. By which method of ACD had the patient been diagnosed? [ ]

(1) RVS

(2) Contact examination

(3) School examination

● **For the patients who were diagnosed by RVS**

2. How much did you spend for traveling to that area? .....Baht

3. How much did you spend for food while you were traveling to that area and seeking diagnosis for the disease? .....Baht

4. Had you taken a leave of absence from your work? [ ]

(1) No

(2) Yes

If yes,

5. What is your income? .....Baht/month

6. Do you go there alone or with another person accompanying? [ ]

(1) Alone

(2) Accompanied

If you come with accompanying person,

7. How much did he/she pay for traveling to the clinic? .....Baht

8. How much did he/she spend for food while traveling to the clinic and while you are seeking diagnosis in this clinic? .....Baht

9. Did he/she take a leave of absence from his/her work? [ ]

(1) No

(2) Yes

If yes,

10. What is his/her income? .....Baht/month

11. Do you have to pay the person for accompanying with you for diagnosis of the disease? [ ]

(1) No

(2) Yes

If yes,

12. How much have you spent for paying that person? .....Baht

● **For the patients who were diagnosed by contact examination.**

13. Had you taken a leave of absence from your work? [ ]

(1) No

(2) Yes

If yes,

14. What is your income? .....Baht/month

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Appendix 3

Consent Form

(For patient)

Explanation:

My name is Weena Primkaew. I'm studying Master of Science in Health Economic at Chulalongkorn University. May I interview you about health expenditure in order to determine about "Cost-effectiveness analysis of combined active and passive versus passive leprosy case detection alone in Thailand". The information from this study will benefit to the policy maker. According to the results of the study, they can decide most efficient way of resource allocation for case detection activities in Leprosy Elimination Program.

I promise to follow these messages:

1. Your information, I keep it as the top secret.
2. You have the right to change your mind at any time which this study is operating, including after your signed this form.
3. I confirm that your information are not impact or risk to you.

If you have problem, contact:

Miss Weena Primkaew

Raj Pracha Samasai Institute, Department of disease control,

Muang district, Nonthaburi 11000

Phone number : 02 5903330

Confirmation of consent: Date/...../.....

I understand the explanation about the objectives, methodology and benefit of this study.

The researcher answers the doubtful point with willingly, no hidden until I satisfied.

I joined this study voluntarily. And may terminate or withdraw from the study at any time. In any case, I will not participate or withdraw from the study of this later. It will not affect to prevention and treatment of disease.

Ensure that the research will collect information about me to disclose confidential information in a summary of research. Or disclosure of the related support functions / monitoring this study only.

I have read a description in the consent form of this study, and the researcher answered the doubtful point with willingly, no hidden until I satisfied. I understand all the reasons that it has signed and agree with satisfaction.

Signed.....The consent

Signed.....The researcher

Signed.....Witness

I'm illiterate, the researcher explained the content of this study, including the consent form and I understand the doubtful points. I have a good understanding have all signed and assigned representatives signed a consent form willingly.

Signed.....The consent/the representative

Signed.....The researcher

I am immature. Dependent parents have read or the researchers, who have explained the content and the consent form of this study, agree with willingness and answer to all questions fully with understanding all and signed to agree for participating with this study willingly.

Signed.....The parent/parent in law

Signed.....The researcher

Signed.....Witness

Consent Form

(For health provider)

Explanation:

My name is Weena Primkaew. I'm studying Master of science in Health Economic at Chulalongkorn University. May I interview you about costs of leprosy case finding activities in order to determine about "Cost-effectiveness analysis of combined active and passive versus passive leprosy case detection alone in Thailand". The information from this study will benefit to the policy maker. According to the results of the study, they can decide most efficient way of resource allocation for case detection activities in Leprosy Elimination Program.

I promise to follow these messages:

1. Your information, I keep it as the top secret.
2. You have the right to change your mind at any time which this study is operating, including after your signed this form.
3. I confirm that your information is not impact or risk to you.

If you have problem, contact:

Miss Weena Primkaew

Raj Pracha Samasai Institute, Department of disease control,

Muang district, Nonthaburi 11000

Phone number : 02 5903330

Confirmation of consent: Date/...../.....

I understand the explanation about the objectives, methodology and benefit of this study.

The researcher answers the doubtful point with willingly, no hidden until I satisfied.

I joined this study voluntarily. And may terminate or withdraw from the study at any time. In any case, I will not participate or withdraw from the study of this later. It will not affect on me any.

Ensure that the research will collect information about me to disclose confidential information in a summary of research. Or disclosure of the related support functions / monitoring this study only.

I have read a description in the consent form of this study, and the researcher answers the doubtful point with willingly, no hidden until I satisfied. I understand all the reasons that it has signed and agree with satisfaction.

Signed.....The consent

Signed.....The researcher

Signed.....Witness

~~~~~

**Calculation of costs for each method of case finding activity  
(Provider perspective)**

The total costs for each method of case finding activity are calculated by equation explained in Chapter 4. The total provider costs for combined ACD and PCD, and PCD alone are found out by using equation 7 and 8 respectively. In this study, we calculated only the recurrent costs, because of time constraint and limitation of data available.

Personnel Costs for doing combined ACD and PCD

This cost item is calculated from equation 1 which is explained in Chapter 4. The total annual income of health personnel got from summation of annual salary fringe benefit (received salaries and fringe benefit from the government). The data for annual salary available from secondary data source. For fringe benefit primary data source. The number of health personnel got from manpower list in that area.

In combined ACD and PCD method, there are two activities, one is ACD and another one is PCD. In this case, the calculated time spent is following:

The proportion time spent on doing ACD is calculated by following

Total working hour for one year

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

**For RVS.**

DPCR4: The health personnel (everybody) spent only 12 hours per year. They have also done this activity only once per year.

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

p = Proportion time spent on doing ACD



DPCR8: The health personnel spent only 20 hours per year. They have also done this activity only once per year.

$$p = \frac{20}{1584} = 0.0126$$

p = Proportion time spent on doing ACD

DPCR11: The health personnel spent only 18 hours per year. They have also done this activity only once per year.

$$p = \frac{18}{1584} = 0.0114$$

p = Proportion time spent on doing ACD

DPCR5: The health personnel spent only 48 hours per year. They have also done this activity only once per year.

$$p = \frac{48}{1584} = 0.0303$$

p = Proportion time spent on doing ACD

DPCR6: The health personnel spent only 6 hours per year. They have also done this activity only once per year.

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

p = Proportion time spent on doing ACD



DPCR7: The health personnel spent 3 hours per year for first phase and 6 hours per year for second phase. They have also done this activity only once per year.

$$p = \frac{9}{1584} = 0.0057$$

p = Proportion time spent on doing ACD

DPCR10: The health personnel spent only 9 hours per year. They have also done this activity only once per year.

$$p = \frac{9}{1584} = 0.0057$$

p = Proportion time spent on doing ACD

#### Personnel costs for doing PCD

The method of cost calculation is same as ACD. Calculation for proportion of time spent (q) is following.

#### For provincial hospital:

The health personnel open the clinic every day and assumed that they used 2 hour per day for OPD activity.

$$2 \text{ hours} * 22 \text{ days} * 12 \text{ months} = 528 \text{ hours}$$

$$q = \frac{528}{1584} = 0.33$$

q = Proportion time spent on doing PCD

#### For community hospital:

The health personnel open the clinic 3 day per week and assumed that they used 2 hour per day for OPD activity.

$$6 \text{ hours} * 3 \text{ days} * 4 \text{ weeks} * 12 \text{ months} = 288 \text{ hours}$$

$$q = \frac{228}{1584} = 0.14$$

q = Proportion time spent on doing PCD

#### Total costs for material supplies

This cost item contained costs for glass slide, reagent, disposable knife for slit skin smear, paper and pen.

The routine program, there are 100% need to confirm the diagnosis by slit skin smear.

|              | <u>Combined ACD and PCD</u> | <u>PCD alone</u>   |
|--------------|-----------------------------|--------------------|
| Non-endemic: |                             |                    |
| DPCR 4       | 2 cases * 100% = 2          | 2 cases * 100% = 2 |
| DPCR 8       | 9 cases * 100% = 9          | 3 cases * 100% = 3 |
| DPCR 11      | 5 cases * 100% = 5          | 3 cases * 100% = 3 |
| Endemic:     |                             |                    |
| DPCR 5       | 4 cases * 100% = 4          | 4 cases * 100% = 4 |
| DPCR 6       | 0 case * 100% = 0           | 0 case * 100% = 0  |
| DPCR 7       | 8 cases * 100% = 8          | 3 cases * 100% = 3 |
| DPCR 10      | 7 cases * 100% = 7          | 1 case * 100% = 1  |

For calculation of paper cost, they used 3 pieces of paper per 1 patient to fill up the registered form, Prevention of disability recording form.

For pen, they used roughly 1 piece per 20 patients.

#### Total costs for training program/ workshop and meeting

This costs item contained per diem cost, traveling allowance and costs for training material from RPSI (national level), DPCR (regional level), and provincial level.

Total cost for training program/ workshop/ meeting

| ● Area  | Training program | Cost for ACD+PCD (baht) | Cost for PCD alone (baht) |
|---------|------------------|-------------------------|---------------------------|
| DPCR 4: | - by RPSI        | 6,870                   | 6,870                     |
|         | - by DPCR*       | -                       | -                         |
| Total   |                  | 6,870                   | 6,870                     |
| DPCR 8: | - by RPSI        | 3,751                   | 3,751                     |
|         | - by DPCR        | 23,533                  | 10,533                    |
| Total   |                  | 27,284                  | 14,284                    |
| DPCR11: | - by RPSI        | 3,232                   | 3,232                     |
|         | - by DPCR*       | -                       | -                         |
| Total   |                  | 3,232                   | 3,232                     |
| DPCR 5: | - by RPSI        | 1,899                   | 1,899                     |
|         | - by DPCR        | 251                     | 4,428                     |
| Total   |                  | 2,150                   | 6,327                     |
| DPCR 6: | - by RPSI        | 2,385                   | 2,385                     |
|         | - by DPCR*       | -                       | -                         |
| Total   |                  | 2,385                   | 2,385                     |
| DPCR7:  | - by RPSI        | 466                     | 466                       |
|         | - by DPCR        | 9,332                   | 9,332                     |
| Total   |                  | 9,798                   | 9,798                     |
| DPCR10: | - by RPSI        | 17,522                  | 17,522                    |
|         | - by provincial  | 7,161                   | 7,161                     |
| Total   |                  | 24,683                  | 24,683                    |

\* In 2006, DPCR 4, 6, and 11, no provided the budget for leprosy training/workshop/meeting.

Total costs for social mobilization (Raj Pracha Samasai week or National leprosy awareness week)

This costs item contained costs for transporting educational material and costs for providing health education by leprosy control personnel from RPSI (national level), DPCR (regional level), provincial level and district level.

| Area        | item               | Cost for ACD&PCD (baht) | Cost for PCD alone (baht) |
|-------------|--------------------|-------------------------|---------------------------|
| DPCR 4:     | -media             | 1,734                   | 2,034                     |
|             | -transp. media     | 59                      | 59                        |
|             | -provi. health ed. | -                       | 2,000                     |
| Total       |                    | 1,793                   | 4,093                     |
| DPCR 8:     | -media             | 1,177                   | 1,177                     |
|             | -transp. media     | 38                      | 38                        |
|             | -provi. health ed. | 8,200                   | 4,100                     |
| Total       |                    | 9,415                   | 5,315                     |
| DPCR11<br>: | -media             | 846                     | 846                       |
|             | -transp. media     | 29                      | 29                        |
|             | -provi. health ed. | 48,322                  | 6,500                     |
| Total       |                    | 49,147                  | 7,375                     |
| DPCR 5:     | -media             | 600                     | 600                       |
|             | -transp. media     | 24                      | 24                        |
|             | -provi. health ed. | 8,163                   | 3,018                     |
| Total       |                    | 8,787                   | 3,642                     |
| DPCR 6:     | -media             | 774                     | 774                       |
|             | -transp. media     | 29                      | 29                        |
|             | -provi. health ed. | 10,000                  | -                         |
| Total       |                    | 10,803                  | 803                       |
| DPCR7:      | -media             | 691                     | 691                       |
|             | -transp. media     | 22                      | 22                        |
|             | -provi. health ed. | 806                     | 10,806                    |
| Total       |                    | 1,519                   | 11,519                    |
| DPCR10<br>: | -media             | 619                     | 619                       |
|             | -transp. media     | 21                      | 21                        |

|       |                    |       |        |
|-------|--------------------|-------|--------|
|       | -provi. health ed. | 500   | 12,000 |
| Total |                    | 1,140 | 12,640 |

Total cost for RVS implementation

| Area    | item                     | Cost for ACD+PCD (baht) |
|---------|--------------------------|-------------------------|
| DPCR 4: | -advocacy meeting        | 900                     |
|         | -fuel                    | 1,600                   |
|         | -per diem of mobile team | 1,176                   |
|         | -drug                    | 1,520                   |
| Total   |                          | 5,196                   |
| DPCR 8: | -advocacy meeting        | 1,626                   |
|         | -fuel                    | 1,500                   |
|         | -per diem of mobile team | 5,624                   |
|         | -drug                    | -                       |
| Total   |                          | 8,750                   |
| DPCR11: | -advocacy meeting        | 25,822                  |
|         | -fuel                    | 5,600                   |
|         | -per diem of mobile team | 10,152                  |
|         | -drug                    | -                       |
| Total   |                          | 41,574                  |
| DPCR 5: | -advocacy meeting        | 18,036                  |
|         | -fuel                    | 9,000                   |
|         | -per diem of mobile team | 10,224                  |
|         | -drug                    | -                       |
| Total   |                          | 37,260                  |
| DPCR 6: | -advocacy meeting        | 6,538                   |
|         | -fuel                    | 4,200                   |
|         | -per diem of mobile team | 5,096                   |
|         | -drug                    | -                       |
| Total   |                          | 15,834                  |
| DPCR7:  | -advocacy meeting        | 13,448                  |
|         | -fuel                    | 1,500                   |

|         |                          |        |
|---------|--------------------------|--------|
|         | -per diem of mobile team | 1,884  |
|         | -drug                    | 1,000  |
| Total   |                          | 17,832 |
| DPCR10: | -advocacy meeting        | 26,800 |
|         | -fuel                    | 2,765  |
|         | -per diem of mobile team | 7,300  |
|         | -drug                    | -      |
| Total   |                          | 36,865 |

Personnel costs for case detection activities

| <b>Combined ACD and PCD : ACD (n=46)</b> |                 |               |                |           |        |        |
|------------------------------------------|-----------------|---------------|----------------|-----------|--------|--------|
| Area                                     | No. of provider | Annual salary | Fringe benefit | Total     | p      | TC ACD |
| DPCR 4:<br>Bang Len                      | 4               | 1,194,240     | 129,434        | 1,323,674 | 0.0076 | 10,061 |
| DPCR 8:<br>Banphot Phisai                | 6               | 1,703,880     | 155,245        | 1,859,125 | 0.0126 | 23,425 |
| DPCR11:<br>Phrasaeng                     | 9               | 2,314,680     | 111,636        | 2,426,313 | 0.0114 | 27,660 |
| DPCR 5:<br>Sateuk                        | 5               | 969,960       | 98,504         | 1,068,464 | 0.0303 | 32,374 |
| DPCR 6:<br>Bueng Kan                     | 7               | 1,626,840     | 223,250        | 1,850,090 | 0.0038 | 7,030  |
| DPCR7:<br>Uthumphon Phisai               | 10              | 2,560,480     | 171,228        | 2,731,708 | 0.0057 | 15,571 |
| DPCR10:<br>Fang                          | 5               | 1,176,016     | 166,913        | 1,342,929 | 0.0057 | 7,655  |

Source: From primary data, author's calculation

| <b>Combined ACD and PCD: PCD</b> |                 |               |                |         |      |            |
|----------------------------------|-----------------|---------------|----------------|---------|------|------------|
| Area                             | No. of provider | Annual salary | Fringe benefit | Total   | q    | TC         |
| DPCR 4:<br>Bang Len              | 2               | 612,000       | 183,000        | 795,000 | 0.14 | 111,300.00 |
| DPCR 8:<br>Banphot Phisai        | 2               | 492,000       | 197,800        | 689,800 | 0.14 | 96,572.00  |
| DPCR11:<br>Phrasaeng             | 2               | 587,760       | 255,200        | 842,960 | 0.14 | 118,014.40 |
| DPCR 5:<br>Sateuk                | 2               | 458,360       | 426,460        | 884,820 | 0.14 | 123,874.80 |
| DPCR 6:<br>Bueng Kan             | 2               | 648,000       | 250,200        | 898,200 | 0.14 | 125,748.00 |

|                           |   |         |         |           |      |            |
|---------------------------|---|---------|---------|-----------|------|------------|
| DPCR7:<br>UthumphonPhisai | 2 | 524,040 | 480,000 | 1,004,040 | 0.14 | 140,565.60 |
| DPCR10:<br>Fang           | 2 | 459,840 | 473,304 | 933,144   | 0.14 | 130,640.16 |

Source: From primary data, author's calculation

| <b>PCD alone</b>              |                 |               |                |           |      |            |
|-------------------------------|-----------------|---------------|----------------|-----------|------|------------|
|                               | No. of provider | Annual salary | Fringe benefit | Total     | q    | TC         |
| DPCR 4:<br>Muang NakhonPathom | 2               | 756,000       | 29,500         | 785,500   | 0.33 | 259,215.00 |
| DPCR 8:<br>Phaisali           | 2               | 315,840       | 363,000        | 678,840   | 0.14 | 95,037.60  |
| DPCR11:<br>Muang SuratThani   | 2               | 777,960       | 292,000        | 1,069,960 | 0.33 | 353,086.80 |
| DPCR 5:<br>Prakhon Chai       | 2               | 597,480       | 400,000        | 997,480   | 0.14 | 139,647.20 |
| DPCR 6:<br>Si Chiang Mai      | 2               | 504,000       | 370,200        | 874,200   | 0.14 | 122,388.00 |
| DPCR 7:<br>Kantharalak        | 2               | 588,000       | 456,800        | 1,044,800 | 0.14 | 146,272.00 |
| DPCR10:<br>Chiang Dao         | 2               | 291,840       | 600,000        | 891,840   | 0.14 | 124,857.60 |

Source: From primary data, author's calculation



**Total personnel cost for doing combined ACD and PCD, and PCD alone method**

| Area                | Total personnel cost for<br>Combined ACD and PCD | Total personnel cost for<br>PCD alone |
|---------------------|--------------------------------------------------|---------------------------------------|
| <b>Non-endemic:</b> |                                                  |                                       |
| DPCR 4:             | 269,276.00                                       | 259,215.00                            |
| DPCR 8:             | 119,997.00                                       | 95,037.60                             |
| DPCR11:             | 145,674.40                                       | 353,086.80*                           |
| <b>Total</b>        | <b>534,947.40</b>                                | <b>707,339.40</b>                     |
| <b>Endemic:</b>     |                                                  |                                       |
| DPCR 5:             | 156,248.80                                       | 139,647.20                            |
| DPCR 6:             | 132,778.00                                       | 122,388.00                            |
| DPCR 7:             | 156,136.60                                       | 146,272.00                            |
| DPCR10:             | 138,295.16                                       | 124,857.00                            |
| <b>Total</b>        | <b>583,458.56</b>                                | <b>533,164.20</b>                     |

\* Total personnel cost for **PCD alone** of DPCR 11 is highest; depend on the personnel cost of staffs (different level of salary and fringe benefit) that higher than those of the other regions and different of time spent between a provincial and community hospital.

**Total cost for material supplies**

| Area         | item          | Unit<br>cost<br>(baht) | No. of<br>ACD+PCD | No. of<br>PCD<br>alone | Total<br>ACD+<br>PCD | Total<br>PCD<br>alone |
|--------------|---------------|------------------------|-------------------|------------------------|----------------------|-----------------------|
| DPCR 4:      | -glass slide  | .50                    | 2                 | 2                      | 1                    | 1                     |
|              | - reagent     | .50                    | 2                 | 2                      | 1                    | 1                     |
|              | - disp. Knife | 5.00                   | 2                 | 2                      | 10                   | 10                    |
|              | - paper       | 10.50                  | 2                 | 2                      | 21                   | 21                    |
|              | - pen         | .50                    | 2                 | 2                      | 1                    | 1                     |
| <b>Total</b> |               |                        |                   |                        | <b>34.00</b>         | <b>34.00</b>          |
| DPCR 8:      | -glass slide  | .50                    | 9                 | 3                      | 4.50                 | 1.50                  |
|              | - reagent     | .50                    | 9                 | 3                      | 4.50                 | 1.50                  |
|              | - disp. Knife | 5.00                   | 9                 | 3                      | 45.00                | 15.00                 |
|              | - paper       | 10.50                  | 9                 | 3                      | 94.50                | 31.50                 |
|              | - pen         | .50                    | 9                 | 3                      | 4.50                 | 1.50                  |

|         |               |       |   |   |        |       |
|---------|---------------|-------|---|---|--------|-------|
| Total   |               |       |   |   | 150.00 | 51.00 |
| DPCR11: | -glass slide  | .50   | 5 | 3 | 2.50   | 1.50  |
|         | - reagent     | .50   | 5 | 3 | 2.50   | 1.50  |
|         | - disp. Knife | 5.00  | 5 | 3 | 25.00  | 15.00 |
|         | - paper       | 10.50 | 5 | 3 | 52.50  | 31.50 |
|         | - pen         | .50   | 5 | 3 | 2.50   | 1.50  |
| Total   |               |       |   |   | 85.00  | 51.00 |
| DPCR 5: | -glass slide  | .50   | 4 | 4 | 2.00   | 2.00  |
|         | - reagent     | .50   | 4 | 4 | 2.00   | 2.00  |
|         | - disp. Knife | 5.00  | 4 | 4 | 20.00  | 20.00 |
|         | - paper       | 10.50 | 4 | 4 | 42.00  | 42.00 |
|         | - pen         | .50   | 4 | 4 | 2.00   | 2.00  |
| Total   |               |       |   |   | 68.00  | 68.00 |
| DPCR 6: | -glass slide  | .50   | 0 | 0 | 0      | 0     |
|         | - reagent     | .50   | 0 | 0 | 0      | 0     |
|         | - disp. Knife | 5.00  | 0 | 0 | 0      | 0     |
|         | - paper       | 10.50 | 0 | 0 | 0      | 0     |
|         | - pen         | .50   | 0 | 0 | 0      | 0     |
| Total   |               |       |   |   | 0      | 0     |
| DPCR7:  | -glass slide  | .50   | 8 | 3 | 4.00   | 1.50  |
|         | - reagent     | .50   | 8 | 3 | 4.00   | 1.50  |
|         | - disp. Knife | 5.00  | 8 | 3 | 40.00  | 15.00 |
|         | - paper       | 10.50 | 8 | 3 | 84.00  | 31.50 |
|         | - pen         | .50   | 8 | 3 | 4.00   | 1.50  |
| Total   |               |       |   |   | 136.00 | 51.00 |
| DPCR10: | -glass slide  | .50   | 7 | 1 | 3.50   | .50   |
|         | - reagent     | .50   | 7 | 1 | 3.50   | .50   |
|         | - disp. Knife | 5.00  | 7 | 1 | 35.00  | 5.00  |
|         | - paper       | 10.50 | 7 | 1 | 73.50  | 10.50 |
|         | - pen         | .50   | 7 | 1 | 3.50   | .50   |
| Total   |               |       |   |   | 119.00 | 17.00 |

| Total provider's cost of combined ACD and PCD method in each area: |             |            |            |            |            |            |            |  |  |
|--------------------------------------------------------------------|-------------|------------|------------|------------|------------|------------|------------|--|--|
| Items                                                              | Non-endemic |            |            |            |            | Endemic    |            |  |  |
|                                                                    | DPCR 4      | DPCR 8     | DPCR11     | DPCR 5     | DPCR 6     | DPCR 7     | DPCR 10    |  |  |
| - Training/workshop/meeting                                        | 2,969       | 25,422     | 856        | 749        | 276        | 9,516      | 23,099     |  |  |
| - Social mobilization<br>(Raj Pracha Samasai week)                 | 1,793       | 9,415      | 49,147     | 8,787      | 10,803     | 1,519      | 1,140      |  |  |
| - Material supply                                                  | 34          | 150        | 85         | 68         | 0          | 136        | 119        |  |  |
| - RVS implementation                                               | 5,196       | 8,750      | 41,574     | 37,260     | 15,834     | 17,832     | 36,865     |  |  |
| - personnel cost                                                   | 269,276.00  | 119,997.00 | 145,674.40 | 156,248.80 | 132,778.00 | 156,136.60 | 138,295.16 |  |  |
| Total provider cost                                                | 279,268.00  | 163,734.00 | 237,336.40 | 203,113.07 | 159,691.00 | 185,139.60 | 199,518.16 |  |  |
| Newly detected case                                                | 2           | 9          | 5          | 4          | 0          | 8          | 7          |  |  |
| Cost-effectiveness Ratio (Baht)                                    | 139,634.00  | 18,192.67  | 47,467.28  | 50,778.27  | -          | 23,142.45  | 28,502.59  |  |  |
| US\$                                                               | 3,518.12    | 458.37     | 1,195.95   | 1,279.37   | -          | 583.08     | 718.13     |  |  |

| Total provider's cost of PCD alone method in each area: |             |            |            |            |            |            |            |        |        |        |
|---------------------------------------------------------|-------------|------------|------------|------------|------------|------------|------------|--------|--------|--------|
| Items                                                   | Non-endemic |            |            |            |            | Endemic    |            |        |        |        |
|                                                         | DPCR 4      | DPCR 8     | DPCR11     | DPCR 5     | DPCR 6     | DPCR 7     | DPCR10     | DPCR 5 | DPCR 6 | DPCR 7 |
| - Training/workshop/meeting                             | 2,969       | 12,422     | 856        | 4,926      | 276        | 9,516      | 23,099     |        |        |        |
| - Social mobilization<br>(Raj Pracha Samasai week)      | 4,093       | 5,315      | 7,375      | 3,642      | 803        | 11,519     | 12,640     |        |        |        |
| - Material supply                                       | 34          | 51         | 51         | 68         | 0          | 51         | 17         |        |        |        |
| - personnel cost                                        | 259,215.00  | 95,037.60  | 353,086.80 | 139,647.20 | 122,388.00 | 146,272.00 | 124,857.60 |        |        |        |
| Total provider cost                                     | 266,311.00  | 112,825.60 | 361,368.80 | 148,283.20 | 123,467.00 | 167,358.00 | 160,613.60 |        |        |        |
| Newly detected case                                     | 2           | 3          | 3          | 4          | 0          | 3          | 1          |        |        |        |
| Cost-effectiveness Ratio (Baht)                         | 133,155.50  | 37,608.53  | 120,456.20 | 37,070.80  | -          | 55,786.00  | 160,613.60 |        |        |        |
| US\$                                                    | 3,354.89    | 947.56     | 3,034.92   | 934.01     | -          | 1,405.54   | 4,046.70   |        |        |        |

### Calculation of total costs for patient perspective

#### For combined ACD and PCD

There are two activities, one is active case detection (most of RVS activity) and another one is passive case detection activity.

#### For PCD alone

The direct costs contained traveling cost and time costs for patient. The time costs are calculated from their average wages (Only who leave and absenteeism).

Indirect costs contained traveling costs and time costs for relative who accompany with patient.

In combined ACD and PCD, 71.43 % of the patients are from ACD, and 28.57 % of the patients are from PCD (self reporting) according to primary data and secondary data from annual report of leprosy control program. The detailed calculation is the following:

#### Total cost for patient's perspective

##### DPCR 4:

##### ● Combined ACD and PCD

|                                               |   |       |       |
|-----------------------------------------------|---|-------|-------|
| - Direct cost ACD patient's time cost         | = | 1,000 | baht  |
| - Direct cost ACD patient's traveling cost    | = | 0     | baht  |
| - Direct cost PCD patient's time cost         | = | 100   | baht  |
| - Direct cost PCD patient's traveling cost    | = | 120   | baht  |
| - Indirect cost PCD relative's time cost      | = | 0     | baht  |
| - Indirect cost PCD relative's traveling cost | = | 0     | baht  |
| Total                                         | = | 1,220 | baht  |
| No. of patient interviewed                    | = | 2     | cases |
| C/ E ratio                                    | = | 610   | baht  |



- **PCD alone**

|                                               |   |     |       |
|-----------------------------------------------|---|-----|-------|
| - Direct cost PCD patient's time cost         | = | 200 | baht  |
| - Direct cost PCD patient's traveling cost    | = | 160 | baht  |
| - Indirect cost PCD relative's time cost      | = | 0   | baht  |
| - Indirect cost PCD relative's traveling cost | = | 160 | baht  |
| Total                                         | = | 520 | baht  |
| No. of patient interviewed                    | = | 1   | cases |
| C/ E ratio                                    | = | 520 | baht  |

**DPCR 8:**

- **Combined ACD and PCD**

|                                               |   |     |       |
|-----------------------------------------------|---|-----|-------|
| - Direct cost ACD patient's time cost         | = | 766 | baht  |
| - Direct cost ACD patient's traveling cost    | = | 110 | baht  |
| - Direct cost PCD patient's time cost         | = | 0   | baht  |
| - Direct cost PCD patient's traveling cost    | = | 100 | baht  |
| - Indirect cost PCD relative's time cost      | = | 0   | baht  |
| - Indirect cost PCD relative's traveling cost | = | 0   | baht  |
| Total                                         | = | 976 | baht  |
| No. of patient interviewed                    | = | 8   | cases |
| C/ E ratio                                    | = | 122 | baht  |

- **PCD alone**

|                                               |   |        |       |
|-----------------------------------------------|---|--------|-------|
| - Direct cost PCD patient's time cost         | = | 66     | baht  |
| - Direct cost PCD patient's traveling cost    | = | 830    | baht  |
| - Indirect cost PCD relative's time cost      | = | 200    | baht  |
| - Indirect cost PCD relative's traveling cost | = | 0      | baht  |
| Total                                         | = | 1,096  | baht  |
| No. of patient interviewed                    | = | 3      | cases |
| C/ E ratio                                    | = | 365.33 | baht  |

**DPCR 11:**

- **Combined ACD and PCD**

|                                       |   |     |      |
|---------------------------------------|---|-----|------|
| - Direct cost ACD patient's time cost | = | 333 | baht |
|---------------------------------------|---|-----|------|

|                                               |   |        |       |
|-----------------------------------------------|---|--------|-------|
| - Direct cost ACD patient's traveling cost    | = | 182    | baht  |
| - Direct cost PCD patient's time cost         | = | 667    | baht  |
| - Direct cost PCD patient's traveling cost    | = | 1,800  | baht  |
| - Indirect cost PCD relative's time cost      | = | 167    | baht  |
| - Indirect cost PCD relative's traveling cost | = | 0      | baht  |
| Total                                         | = | 3,149  | baht  |
| No. of patient interviewed                    | = | 5      | cases |
| C/ E ratio                                    | = | 629.80 | baht  |

- **PCD alone**

|                                               |   |       |       |
|-----------------------------------------------|---|-------|-------|
| - Direct cost PCD patient's time cost         | = | 1,200 | baht  |
| - Direct cost PCD patient's traveling cost    | = | 180   | baht  |
| - Indirect cost PCD relative's time cost      | = | 0     | baht  |
| - Indirect cost PCD relative's traveling cost | = | 0     | baht  |
| Total                                         | = | 1,380 | baht  |
| No. of patient interviewed                    | = | 3     | cases |
| C/ E ratio                                    | = | 460   | baht  |

#### DPCR 5:

- **Combined ACD and PCD**

|                                               |   |    |       |
|-----------------------------------------------|---|----|-------|
| - Direct cost ACD patient's time cost         | = | 0  | baht  |
| - Direct cost ACD patient's traveling cost    | = | 0  | baht  |
| - Direct cost PCD patient's time cost         | = | 0  | baht  |
| - Direct cost PCD patient's traveling cost    | = | 60 | baht  |
| - Indirect cost PCD relative's time cost      | = | 0  | baht  |
| - Indirect cost PCD relative's traveling cost | = | 0  | baht  |
| Total                                         | = | 60 | baht  |
| No. of patient interviewed                    | = | 2  | cases |
| C/ E ratio                                    | = | 30 | baht  |

- **PCD alone**

|                                            |   |       |      |
|--------------------------------------------|---|-------|------|
| - Direct cost PCD patient's time cost      | = | 350   | baht |
| - Direct cost PCD patient's traveling cost | = | 1,524 | baht |

|                                               |   |        |       |
|-----------------------------------------------|---|--------|-------|
| - Indirect cost PCD relative's time cost      | = | 84     | baht  |
| - Indirect cost PCD relative's traveling cost | = | 150    | baht  |
| Total                                         | = | 2,108  | baht  |
| No. of patient interviewed                    | = | 3      | cases |
| C/ E ratio                                    | = | 702.67 | baht  |

**DPCR 6:**

- **Combined ACD and PCD**

|                                               |   |   |      |
|-----------------------------------------------|---|---|------|
| - Direct cost ACD patient's time cost         | = | 0 | baht |
| - Direct cost ACD patient's traveling cost    | = | 0 | baht |
| - Direct cost PCD patient's time cost         | = | 0 | baht |
| - Direct cost PCD patient's traveling cost    | = | 0 | baht |
| - Indirect cost PCD relative's time cost      | = | 0 | baht |
| - Indirect cost PCD relative's traveling cost | = | 0 | baht |

- **PCD alone**

|                                               |   |   |       |
|-----------------------------------------------|---|---|-------|
| - Direct cost PCD patient's time cost         | = | 0 | baht  |
| - Direct cost PCD patient's traveling cost    | = | 0 | baht  |
| - Indirect cost PCD relative's time cost      | = | 0 | baht  |
| - Indirect cost PCD relative's traveling cost | = | 0 | baht  |
| Total                                         | = | 0 | baht  |
| No. of patient interviewed                    | = | 0 | cases |
| C/ E ratio                                    | = | 0 | baht  |

**DPCR 7:**

- **Combined ACD and PCD**

|                                               |   |     |      |
|-----------------------------------------------|---|-----|------|
| - Direct cost ACD patient's time cost         | = | 0   | baht |
| - Direct cost ACD patient's traveling cost    | = | 0   | baht |
| - Direct cost PCD patient's time cost         | = | 0   | baht |
| - Direct cost PCD patient's traveling cost    | = | 160 | baht |
| - Indirect cost PCD relative's time cost      | = | 0   | baht |
| - Indirect cost PCD relative's traveling cost | = | 0   | baht |
| Total                                         | = | 160 | baht |



|                            |   |       |       |
|----------------------------|---|-------|-------|
| No. of patient interviewed | = | 6     | cases |
| C/ E ratio                 | = | 26.67 | baht  |

- **PCD alone**

|                                               |   |     |      |
|-----------------------------------------------|---|-----|------|
| - Direct cost PCD patient's time cost         | = | 0   | baht |
| - Direct cost PCD patient's traveling cost    | = | 340 | baht |
| - Indirect cost PCD relative's time cost      | = | 0   | baht |
| - Indirect cost PCD relative's traveling cost | = | 0   | baht |
| Total                                         | = | 340 | baht |

|                            |   |        |       |
|----------------------------|---|--------|-------|
| No. of patient interviewed | = | 3      | cases |
| C/ E ratio                 | = | 113.33 | baht  |

#### DPCR 10:

- **Combined ACD and PCD**

|                                               |   |       |      |
|-----------------------------------------------|---|-------|------|
| - Direct cost ACD patient's time cost         | = | 0     | baht |
| - Direct cost ACD patient's traveling cost    | = | 0     | baht |
| - Direct cost PCD patient's time cost         | = | 100   | baht |
| - Direct cost PCD patient's traveling cost    | = | 341   | baht |
| - Indirect cost PCD relative's time cost      | = | 267   | baht |
| - Indirect cost PCD relative's traveling cost | = | 341   | baht |
| Total                                         | = | 1,049 | baht |

|                            |   |     |       |
|----------------------------|---|-----|-------|
| No. of patient interviewed | = | 6   | cases |
| C/ E ratio                 | = | 175 | baht  |

- **PCD alone**

|                                               |   |   |      |
|-----------------------------------------------|---|---|------|
| - Direct cost PCD patient's time cost         | = | 0 | baht |
| - Direct cost PCD patient's traveling cost    | = | 0 | baht |
| - Indirect cost PCD relative's time cost      | = | 0 | baht |
| - Indirect cost PCD relative's traveling cost | = | 0 | baht |
| Total                                         | = | 0 | baht |

|                            |   |   |       |
|----------------------------|---|---|-------|
| No. of patient interviewed | = | 0 | cases |
| C/ E ratio                 | = | 0 | baht  |

## Appendix 7

**Estimation of Social Mobilization for Sensitivity Analysis**

In this study, PCD method covers the 9% to 24% by of the total number of villages. These numbers are only made by assumption. Therefore, we need to do sensitivity analysis. If we change the coverage of the PCD method, there will be a change in cost-effectiveness ratio in each area from provider perspective. (The number of case detected no change.)

If we change the percentage of coverage by PCD method from 9 - 24% to 50%, 75% and up to 100%, the number of villages is shown in Table A7.

**Table A7: The number of village which coverage by social mobilization**

| Area / District       | No. of village which coverage by social mobilization |     |     |      |
|-----------------------|------------------------------------------------------|-----|-----|------|
|                       | Estimate                                             | 50% | 75% | 100% |
| <b>Non-endemic:</b>   |                                                      |     |     |      |
| DPCR 4:               |                                                      |     |     |      |
| - Bang Len            | 18 (11%)                                             | 90  | 135 | 180  |
| - Muang Nakhon Pathom | 31 (15%)                                             | 108 | 162 | 217  |
| DPCR 8:               |                                                      |     |     |      |
| - Banphot Phisai      | 17 (15%)                                             | 58  | 88  | 117  |
| - Phaisali            | 15 (16%)                                             | 50  | 76  | 101  |
| DPCR11:               |                                                      |     |     |      |
| - Phrasaeng           | 13 (19%)                                             | 36  | 54  | 72   |
| - Muang Surat Thani   | 13 (24%)                                             | 30  | 44  | 59   |
| <b>Endemic:</b>       |                                                      |     |     |      |
| DPCR 5:               |                                                      |     |     |      |
| - Sateuk              | 18 (10%)                                             | 96  | 143 | 190  |
| - Prakhon Chai        | 16 (9%)                                              | 92  | 137 | 182  |
| DPCR 6:               |                                                      |     |     |      |
| - Bueng Kan           | 14 (12%)                                             | 66  | 98  | 131  |
| - Si Chiang Mai       | 6 (16%)                                              | 22  | 32  | 43   |

| Area / District    | No. of village which coverage by social mobilization |     |     |      |
|--------------------|------------------------------------------------------|-----|-----|------|
|                    | Estimate                                             | 50% | 75% | 100% |
| DPCR7:             |                                                      |     |     |      |
| - Uthumphon Phisai | 21 (9%)                                              | 116 | 174 | 232  |
| - Kantharalak      | 33 (12%)                                             | 138 | 207 | 276  |
| DPCR10:            |                                                      |     |     |      |
| - Fang             | 15 (16%)                                             | 52  | 77  | 102  |
| - Chiang DAO       | 12 (16%)                                             | 42  | 62  | 83   |

Sensitivity analysis of social mobilization in each area, 50% coverage village

Table A7.1:

| Items                                              | Non-endemic |            |            | Endemic    |            |            |            |
|----------------------------------------------------|-------------|------------|------------|------------|------------|------------|------------|
|                                                    | DPCR 4      | DPCR 8     | DPCR11     | DPCR 5     | DPCR 6     | DPCR 7     | DPCR10     |
| - Training/workshop/meeting                        | 2,969       | 25,422     | 856        | 749        | 276        | 9,516      | 23,099     |
| - Social mobilization<br>(Raj Pracha Samasai week) | 8,150       | 31,383     | 129,334    | 43,935     | 45,013     | 8,439      | 3,563      |
| - Material supply                                  | 34          | 150        | 85         | 68         | 0          | 136        | 119        |
| - RVS implementation                               | 5,196       | 8,750      | 41,574     | 37,260     | 15,834     | 17,832     | 36,865     |
| - personnel cost                                   | 269,276.00  | 119,997.00 | 145,674.40 | 156,248.80 | 132,778.00 | 156,132.60 | 138,295.16 |
| Total provider cost                                | 285,625.00  | 185,702.00 | 317,523.40 | 238,260.80 | 193,901.00 | 192,055.60 | 201,941.16 |
| Newly detected case                                | 2           | 9          | 5          | 4          | 0          | 8          | 7          |
| Cost-effectiveness Ratio (Baht)                    | 142,812.50  | 20,633.56  | 63,504.68  | 59,565.20  | -          | 24,006.95  | 28,848.74  |
| US\$                                               | 3,598.20    | 519.87     | 1,600.02   | 1,500.76   | -          | 604.86     | 726.85     |

Sensitivity analysis of social mobilization in each area, 75% coverage village

Table A7.2:

| Items                                              | Total provider's cost of combined ACD and PCD method in each area: |            |            |            |            |            |            |  |  |  |
|----------------------------------------------------|--------------------------------------------------------------------|------------|------------|------------|------------|------------|------------|--|--|--|
|                                                    | Non-endemic                                                        |            |            |            |            | Endemic    |            |  |  |  |
|                                                    | DPCR 4                                                             | DPCR 8     | DPCR11     | DPCR 5     | DPCR 6     | DPCR 7     | DPCR10     |  |  |  |
| - Training/workshop/meeting                        | 2,969                                                              | 25,422     | 856        | 749        | 276        | 9,516      | 23,099     |  |  |  |
| - Social mobilization<br>(Raj Pracha Samasai week) | 12,225                                                             | 47,075     | 194,001    | 65,902     | 67,519     | 12,658     | 5,344      |  |  |  |
| - Material supply                                  | 34                                                                 | 150        | 85         | 68         | 0          | 136        | 119        |  |  |  |
| - RVS implementation                               | 5,196                                                              | 8,750      | 41,574     | 37,260     | 15,834     | 17,832     | 36,865     |  |  |  |
| - personnel cost                                   | 269,276.00                                                         | 119,997.00 | 145,674.40 | 156,248.80 | 132,778.00 | 156,132.60 | 138,295.16 |  |  |  |
| Total provider cost                                | 289,700.00                                                         | 201,394.00 | 382,190.40 | 260,227.80 | 216,407.00 | 196,278.60 | 203,722.16 |  |  |  |
| Newly detected case                                | 2                                                                  | 9          | 5          | 4          | 0          | 8          | 7          |  |  |  |
| Cost-effectiveness Ratio (Baht)                    | 144,850.00                                                         | 22,377.11  | 76,438.08  | 65,056.95  | -          | 24,534.83  | 29,103.17  |  |  |  |
| US\$                                               | 3,649.53                                                           | 563.80     | 1,925.88   | 1,639.13   | -          | 618.16     | 733.26     |  |  |  |

Sensitivity analysis of social mobilization in each area, 100% coverage village

Table A7.3:

| Items                                              | Total provider's cost of combined ACD and PCD method in each area: |            |            |            |            |            |            |  |  |  |  |
|----------------------------------------------------|--------------------------------------------------------------------|------------|------------|------------|------------|------------|------------|--|--|--|--|
|                                                    | Non-endemic                                                        |            |            |            |            |            | Endemic    |  |  |  |  |
|                                                    | DPCR 4                                                             | DPCR 8     | DPCR11     | DPCR 5     | DPCR 6     | DPCR 7     | DPCR 10    |  |  |  |  |
| - Training/workshop/meeting                        | 2,969                                                              | 25,422     | 856        | 749        | 276        | 9,516      | 23,099     |  |  |  |  |
| - Social mobilization<br>(Raj Pracha Samasai week) | 16,300                                                             | 62,767     | 258,668    | 87,870     | 90,025     | 16,878     | 7,125      |  |  |  |  |
| - Material supply                                  | 34                                                                 | 150        | 85         | 68         | 0          | 136        | 119        |  |  |  |  |
| - RVS implementation                               | 5,196                                                              | 8,750      | 41,574     | 37,260     | 15,834     | 17,832     | 36,865     |  |  |  |  |
| - personnel cost                                   | 269,276.00                                                         | 119,997.00 | 145,674.40 | 156,248.80 | 132,778.00 | 156,132.60 | 138,295.16 |  |  |  |  |
| Total provider cost                                | 293,775.00                                                         | 217,086.00 | 446,857.40 | 282,195.80 | 238913.00  | 200,498.60 | 205,503.16 |  |  |  |  |
| Newly detected case                                | 2                                                                  | 9          | 5          | 4          | 0          | 8          | 7          |  |  |  |  |
| Cost-effectiveness Ratio (Baht)                    | 146,887.50                                                         | 24,120.67  | 89,371.48  | 70,548.95  | -          | 25,062.33  | 29,357.59  |  |  |  |  |
| US\$                                               | 3,700.87                                                           | 607.73     | 2,251.74   | 1,777.70   | -          | 631.45     | 739.67     |  |  |  |  |

Sensitivity analysis of social mobilization in each area, 50% coverage village

Table A7.4:

| Items                                              | Total provider's cost of PCD alone method in each area: |            |            |            |            |            |            |
|----------------------------------------------------|---------------------------------------------------------|------------|------------|------------|------------|------------|------------|
|                                                    | Non-endemic                                             |            |            | Endemic    |            |            |            |
|                                                    | DPCR 4                                                  | DPCR 8     | DPCR11     | DPCR 5     | DPCR 6     | DPCR 7     | DPCR10     |
| - Training/workshop/meeting                        | 2,969                                                   | 12,422     | 856        | 4,926      | 276        | 9,516      | 23,099     |
| - Social mobilization<br>(Raj Pracha Samasai week) | 13,643                                                  | 16,609     | 15,365     | 20,233     | 2,509      | 47,996     | 39,500     |
| - Material supply                                  | 34                                                      | 51         | 51         | 68         | 0          | 51         | 17         |
| - personnel cost                                   | 259,215.00                                              | 95,037.60  | 353,086.80 | 139,647.20 | 122,388.00 | 146,272.00 | 124,857.60 |
| Total provider cost                                | 275,861.00                                              | 124,129.60 | 369,358.80 | 164,874.20 | 125,173.00 | 203,835.00 | 187,473.60 |
| Newly detected case                                | 2                                                       | 3          | 3          | 4          | 0          | 3          | 1          |
| Cost-effectiveness Ratio (Baht)                    | 137,930.50                                              | 41,376.53  | 123,119.60 | 41,218.55  | -          | 67,945.00  | 187,473.60 |
| US\$                                               | 3,475.20                                                | 947.56     | 3,034.92   | 1,038.51   | -          | 1,711.89   | 4,723.45   |

## Sensitivity analysis of social mobilization in each area, 75% coverage village

Table A7.5:

| Items                                              | Total provider's cost of PCD alone method in each area: |            |            |            |            |            |            |  |  |  |
|----------------------------------------------------|---------------------------------------------------------|------------|------------|------------|------------|------------|------------|--|--|--|
|                                                    | Non-endemic                                             |            |            |            |            | Endemic    |            |  |  |  |
|                                                    | DPCR 4                                                  | DPCR 8     | DPCR 11    | DPCR 5     | DPCR 6     | DPCR 7     | DPCR 10    |  |  |  |
| - Training/workshop/meeting                        | 2,969                                                   | 12,422     | 856        | 4,926      | 276        | 9,516      | 23,099     |  |  |  |
| - Social mobilization<br>(Raj Pracha Samasai week) | 20,465                                                  | 24,914     | 23,047     | 30,350     | 3,764      | 71,994     | 59,250     |  |  |  |
| - Material supply                                  | 34                                                      | 51         | 51         | 68         | 0          | 51         | 17         |  |  |  |
| - personnel cost                                   | 259,215.00                                              | 95,037.60  | 353,086.80 | 139,647.20 | 122,388.00 | 146,272.00 | 124,857.60 |  |  |  |
| Total provider cost                                | 282,683.00                                              | 132,424.60 | 377,040.80 | 174,991.20 | 126,428.00 | 227,833.00 | 207,223.60 |  |  |  |
| Newly detected case                                | 2                                                       | 3          | 3          | 4          | 0          | 3          | 1          |  |  |  |
| Cost-effectiveness Ratio (Baht)                    | 141,341.50                                              | 44,141.53  | 125,680.27 | 43,747.80  | -          | 75,944.33  | 207,223.60 |  |  |  |
| US\$                                               | 3,561.14                                                | 947.56     | 3,166.54   | 1,102.24   | -          | 1,913.44   | 5,221.05   |  |  |  |



Sensitivity analysis of social mobilization in each area, 100% coverage village

Table A7.6:

| Items                                              | Non-endemic |            |            | Endemic    |            |            |            |  |  |
|----------------------------------------------------|-------------|------------|------------|------------|------------|------------|------------|--|--|
|                                                    | DPCR 4      | DPCR 8     | DPCR11     | DPCR 5     | DPCR 6     | DPCR 7     | DPCR10     |  |  |
| - Training/workshop/meeting                        | 2,969       | 12,422     | 856        | 4,926      | 276        | 9,516      | 23,099     |  |  |
| - Social mobilization<br>(Raj Pracha Samasai week) | 27,287      | 33,219     | 30,729     | 40,467     | 5,019      | 95,992     | 79,000     |  |  |
| - Material supply                                  | 34          | 51         | 51         | 68         | 0          | 51         | 17         |  |  |
| - personnel cost                                   | 259,215.00  | 95,037.60  | 353,086.80 | 139,647.20 | 122,388.00 | 146,272.00 | 124,857.60 |  |  |
| Total provider cost                                | 289,505.00  | 140,729.60 | 384,722.80 | 185,108.20 | 127,683.00 | 251,831.00 | 226,973.60 |  |  |
| Newly detected case                                | 2           | 3          | 3          | 4          | 0          | 3          | 1          |  |  |
| Cost-effectiveness Ratio (Baht)                    | 144,752.50  | 46,909.87  | 128,240.93 | 46,277.05  | -          | 83,943.67  | 226,973.60 |  |  |
| US\$                                               | 3,647.08    | 1,181.91   | 3,231.06   | 1,165.96   | -          | 2,114.99   | 5,718.66   |  |  |

### Chi-square test

$H_0$  = Case detection of combined ACD and PCD method is not associated with endemic area

$H_a$  = Case detection of combined ACD and PCD method is associated with endemic area

#### Chi-square test:

| Area        | ACD &PCD<br>(Observed) | PCD alone<br>(Expected) | (O-E) | (O-E) <sup>2</sup> | $\frac{(O-E)^2}{E}$             |
|-------------|------------------------|-------------------------|-------|--------------------|---------------------------------|
| Non-endemic | 16                     | 8                       | 8     | 64                 | 8                               |
| Endemic     | 19                     | 8                       | 11    | 121                | 15.13                           |
|             |                        |                         |       |                    | <b><math>X^2 = 23.13</math></b> |

$$X^2 = \sum \frac{(O - E)^2}{E}$$

Where: O = Observed

E = Expected

degree of freedom = (n-1)

$$X^2_{cal} = 23.13 ,$$

The table value for Chi-square in the correct box of 1 df and p= 0.05, level of significance is 3.84.

So we rejected the null hypothesis, accepted the alternative hypothesis. Therefore case detection of combined ACD and PCD method is associated with endemic area

Weighted calculation of the cost-effectiveness ratio of combined ACD & PCD vs. PCD alone method in each level

- In non-endemic area (N=7 regions, n=3 regions)

| Area         | ACD&PCD                                                                           | PCD alone                                                                              |
|--------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| DPCR4        | 140,244*                                                                          | 133,676*                                                                               |
| DPCR8        | 18,314*                                                                           | 37,974*                                                                                |
| DPCR11       | 48,098*                                                                           | 120,916*                                                                               |
| <b>Total</b> | $\frac{140,244 \times 2 + 18,314 \times 2 + 48,098 \times 1}{5} = 73,041.20^{**}$ | $\frac{133,676 \times 7 + 37,974 \times 15 + 120,916 \times 19}{41} = 92,749.90^{***}$ |

\* cost/1case before weighted calculation in each DPCR

\*\* the sum of cost/1case in each DPCR multiplied by no. of total district which carried out combined ACD&PCD method in each DPCR divided by no. of total district in combined ACD&PCD method (N=5).

\*\*\* the sum of cost/1case in each DPCR multiplied by no. of total district which carried out PCD alone method in each DPCR divided by no. of total district in PCD alone (N=41).

- In endemic area (N=4 regions, n=4 regions)

| Area         | ACD&PCD                                                                                               | PCD alone                                                                                                   |
|--------------|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| DPCR5        | 50,808*                                                                                               | 37,773*                                                                                                     |
| DPCR6        | -**                                                                                                   | -**                                                                                                         |
| DPCR7        | 23,169*                                                                                               | 55,899*                                                                                                     |
| DPCR10       | 28,678*                                                                                               | 160,614*                                                                                                    |
| <b>Total</b> | $\frac{50,808 \times 8 + 159,691 \times 4 + 23,169 \times 1 + 28,678 \times 1}{14} = 78,362.50^{***}$ | $\frac{37,773 \times 23 + 123,467 \times 17 + 55,899 \times 22 + 160,614 \times 24}{86} = 93,630.60^{****}$ |

\* cost/1case before weighted calculation in each DPCR

\*\* DPCR6: no newly detected case, but the total cost of provider's perspective in combined ACD & PCD is 159,691 Baht, in PCD alone is 123,467 Baht.

\*\*\* the sum of cost/1case in each DPCR multiplied by no. of total district which carried out combined ACD&PCD method in each DPCR divided by no. of total district in combined ACD&PCD (N=14).

\*\*\*\* the sum of cost/1case in each DPCR multiplied by no. of total district which carried out PCD alone method in each DPCR divided by no. of total district in PCD alone (N=86).

● Region level

| Level  | ACD&PCD                                                          | PCD alone                                                             |
|--------|------------------------------------------------------------------|-----------------------------------------------------------------------|
| Region | $\frac{73,041.2 \times 7 + 78,362.5 \times 4}{11} = 74,976.22^*$ | $\frac{92,749.90 \times 7 + 93,630.60 \times 4}{11} = 93,070.15^{**}$ |

\* cost/1case of combined ACD&PCD method in non-endemic area x 7 regions + cost/1case of combined ACD&PCD method in endemic area x 4 regions divided by the no. of total regions (non-endemic area: N=7, endemic area: N=5)

\*\* cost/1case of PCD alone method in non-endemic area x 7 regions + cost/1case of PCD alone in endemic area x 4 regions divided by the no. of total regions ( non-endemic area: N=7, endemic area: N=5)

## Appendix 10

**List of abbreviations**

| <b>Notation</b> | <b>definition</b>                                     |
|-----------------|-------------------------------------------------------|
| M.ACD+PCD       | Material costs for doing combined ACD and PCD         |
| M.PCD           | Material costs for doing PCD                          |
| P               | Personnel                                             |
| Pr              | Provider                                              |
| Pt              | Patient                                               |
| pr.ACD+PCD      | Provider for doing combined ACD and PCD               |
| p. ACD+PCD      | Personnel costs for doing combined ACD and PCD        |
| p.PCD           | Personnel costs for doing PCD                         |
| pr.PCD          | Provider for doing PCD                                |
| pt.ACD+PCD      | Patients for diagnosing leprosy by combined ACD & PCD |
| pt.PCD          | Patients for diagnosing leprosy by PCD method         |
| re              | Relative                                              |
| SM              | Social mobilization                                   |
| t.ACD+PCD       | Time costs for patients by combined ACD and PCD       |
| t.pt            | Time costs for patients                               |
| t.re            | Time costs for relatives                              |
| TP              | Training program                                      |
| tr.pt           | Traveling costs for patients                          |
| tr.             | Traveling costs for relatives                         |

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- |                               |                                                                    |      |
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- Health seeking behavior of leprosy patient (2002)
- Behaviors contributing to stigma against leprosy in Nadoon district, Mahasarakham province (2007)

