

CHAPTER 4

EMPIRICAL RESULTS

This chapter presents the results of the study in relation to costs of the existing package and an integrated core package of HIV/AIDS activities incurred to Tambon Lor Health Center. The costs to be calculated are the costs of the existing package that occurred within one year (1998) in which HIV/AIDS activities had been implemented, and the project costs of an integrated core package of HIV/AIDS activities.

Before presenting costs of HIV/AIDS activities, the general statistic of Tambon Lor Health Center had to be assessed. There are two health centers in Tambon Lor (Lor sub-district). Both centers are small in size and responsibility. The main health center is Tambon Lor Health Center. It was constructed on 2 rais of land, which was donated by the chief of village Mr. Lai Wianglor in April 1987, and opened in November 1998. In the fiscal year 1998, three health staff members were posted to two primary schools, five villages, 920 households with a total population of 3,337. There were a total of 34 AIDS cases and 21 asymptomatic HIV/AIDS patients. The average number of visits for general patient is 2.3 visits per person per year, and the average number of visits by PWA is 2.4 visits per person per year. Most patients come from villages of the service area. They have various kinds of health insurance. Consequently, the health personnel receive no money from users. The health center gets some revenue from patients coming from other places outside the service areas.

Table 4.1 and Figure 4.1 present the distribution health insurance schemes for people in the service area of Tambon Lor Health Center. It does not specify frequency of visits for each health insurance scheme. 86 % of people have a health insurance scheme of with the highest membership is health cards with 28 % of total people, 14 % of the population are not insured. For last three years, total patients of this health center were around 7,600 visits per year, 2.3 visits per person per year. Table 4.2 and Figure 4.2 show the top five causes of disease during 1996-1998. Disease of respiratory system was the highest cause of disease. There were around 600 related visits per year or 7.9% of total visits.

Table 4.1 Health Insurance Scheme Distribution of Health Services

| Type of health insurance scheme | Unit: Baht | |
|---|--------------|------------|
| | Persons | Percentage |
| 1. Health card | 956 | 28 |
| 2. Low income card | 755 | 23 |
| 3. Elderly, disabled or handicapped, veteran and monk | 406 | 12 |
| 4. School card for children 0-12 years | 627 | 19 |
| 5. Civil servant and state enterprises | 134 | 4 |
| 6. Uninsured | 459 | 14 |
| Total | 3,337 | 100 |

Source: Tambon Lor Health Center

Figure 4.1 Percentage Distribution of Health Insurance Scheme

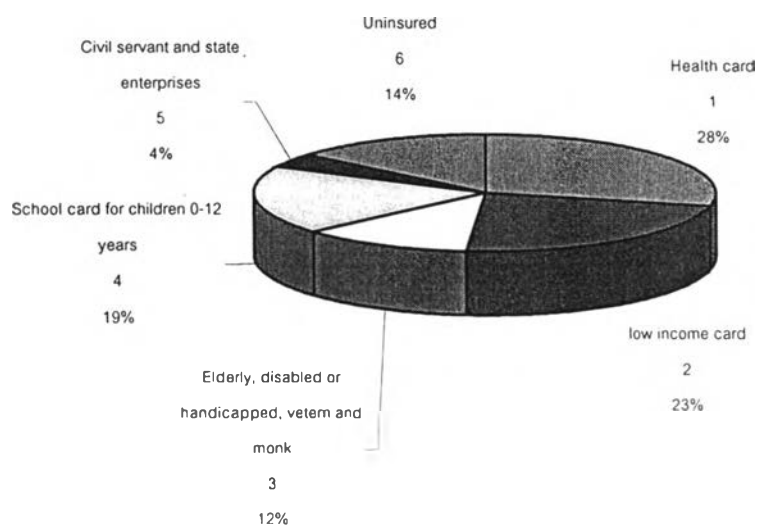
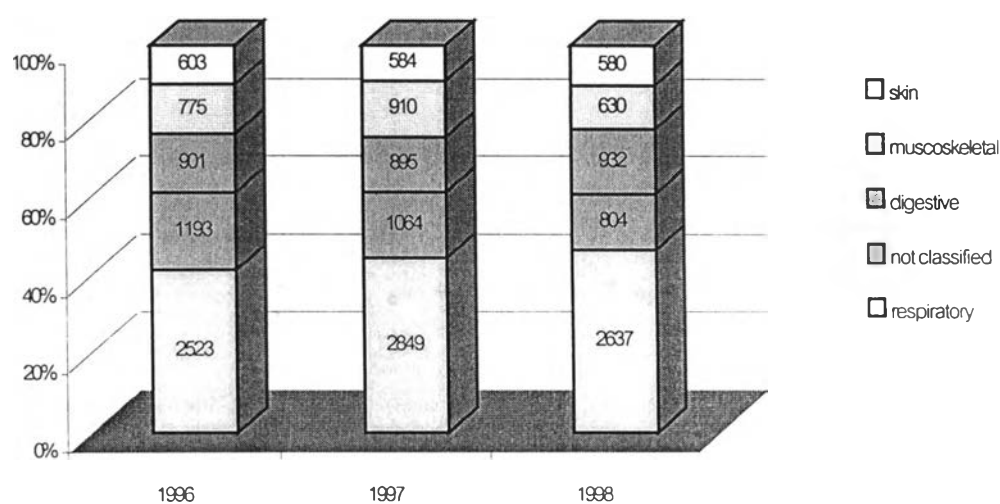


Table 4.2 Top Five Causes of Disease during 1996-1998

| No | 1996 | 1997 | 1998 |
|----|--|--|--|
| 1. | Diseases of the respiratory system | Diseases of the respiratory system | Diseases of the respiratory system |
| 2. | Symptoms not elsewhere classified | Symptoms not elsewhere classified | Diseases of the digestive system |
| 3. | Diseases of the digestive system | Muscoskeletal system & connective tissue related illness | Symptoms not elsewhere classified |
| 4. | Muscoskeletal system & connective tissue related illness | Diseases of the digestive system | Muscoskeletal system & connective tissue related illness |
| 5. | Diseases of the skin and subcutaneous tissue | Diseases of the skin and subcutaneous tissue | Diseases of the skin and subcutaneous tissue |

Source: Tambon Lor Health Center

Figure 4.2 Top Five Causes of Disease during 1996-1998



Presently, trends of birth and death in service area decrease. Death cases were higher than birth cases and 50% of total deaths are AIDS deaths; consequently, the population growth rate declines as indicated by (Table 4.3 and Figure 4.3) population growth rate during 1996-1998.

Table 4.4 and Figure 4.4 illustrate source of the finance for Tambon Lor Health Center in the fiscal year 1998. There are two sources of finance. The first one was 226,270 Baht, is funding from the government. The second one was 131,274 Baht from non-government and local community. Government financing is 63% of total finance that from Provincial Health Office, Ministry of Public Health and social support by Ministry of Interior. Non-government and local fund i.e. TAO, JICA, the interest from the government savings bank and the Bank of Agricultural-Cooperation, sales of health cards, and user fees comprise the remaining 37%.

The distribution of budget by activity is shown in Table 4.5 and Figure 4.5, 39% of total budget paid for curative care and palliative care. About 17% and 16% of the total budget is for family planning and social support.

Table 4.3 Growth Rate during 1996-1998

| Items | 1996 | 1997 | 1998 | Unit of measurement |
|------------------|------|-------|-------|---------------------|
| Total population | 3369 | 3344 | 3337 | Person |
| Total births | 41 | 37 | 33 | Case |
| Total deaths | 30 | 52 | 40 | Case |
| AIDS deaths | 14 | 23 | 22 | Case |
| Growth rate | 0.33 | -0.45 | -0.21 | % |

Source: Tambon Lor Health Center

Figure 4.3 Growth Rate during 1996-1998

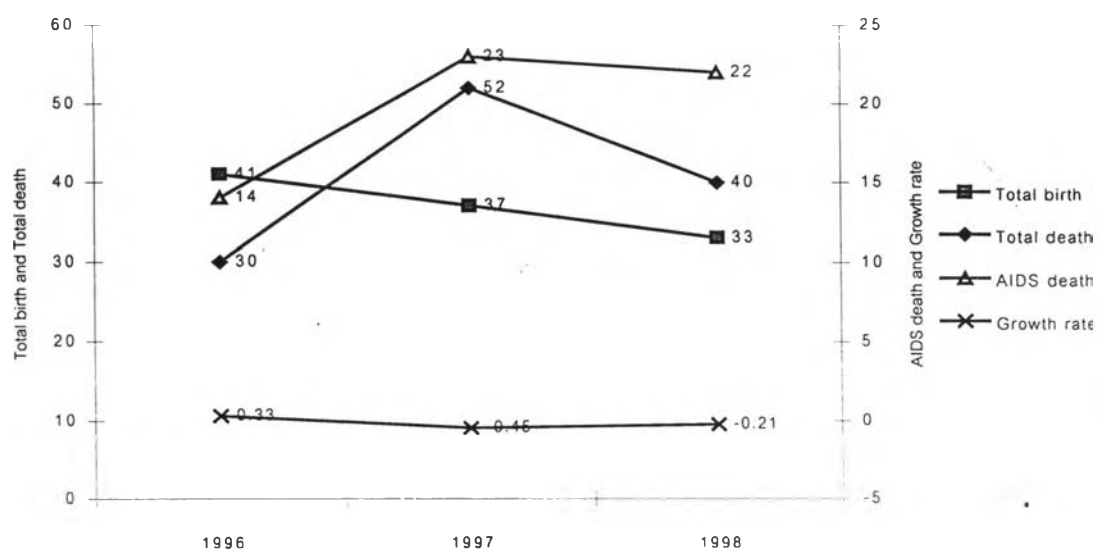


Table 4.4 Source of Finance in 1998

| Source of finance | Amount | Unit: baht |
|--|---------|------------|
| 1. Government | | |
| 1.1 Medicine and supplies from PHO | 93,098 | |
| 1.2 Expanded program on immunization from PHO | 33,000 | |
| 1.3 Medicine and supplies for family planning from PHO | 41,932 | |
| 1.4 Social support by Ministry of Interior | 40,000 | |
| 1.5 Administrative and maintenance from PHO | 18,240 | |
| Subtotal finance from government | 226,270 | |
| 1. Non-government/local community | | |
| 2.1 Tambon Administrative Organization (TAO) | 10,000 | |
| 2.2 HIV/AIDS project support from JICA | 10,000 | |
| 2.3 Interest from saving Bank | 3,332 | |
| 2.4 Sales of health cards | 8,883 | |
| 2.5 User fees | 99,059 | |
| Subtotal finance from non-government/local community | 131,274 | |
| Total finance | 357,544 | |
| Total finance per total population | 107 | |

Source: Tambon Lor Health Center

Figure 4.4 Percentage Source of Finance in 1998

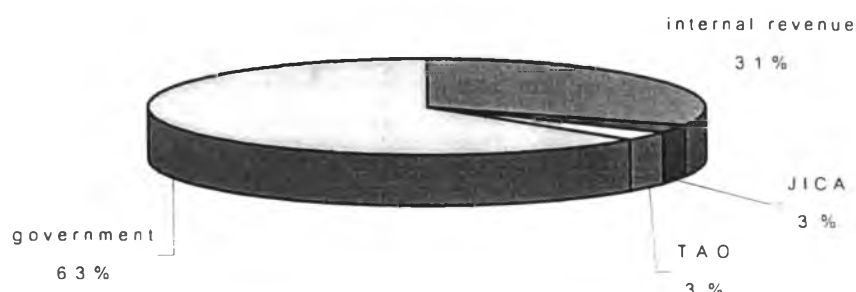


Table 4.5 Distribution of Budget by Activities

| Activities | Amount | Unit: Baht |
|---|----------------|------------|
| 1. Curative care | 93,098 | |
| 2. The well baby program and EPI | 33,000 | |
| 3. Family planning | 41,932 | |
| 4. HHC or home visitation | 10,000 | |
| 5. MIS and paperwork | 28,240 | |
| 6. Social support for HIV/AIDS patients 500 baht per case per month | 40,000 | |
| Total budget | 246,270 | |

Source: Tambon Lor Health Center

Figure 4.5 Percentage Distribution of Budget by Activities

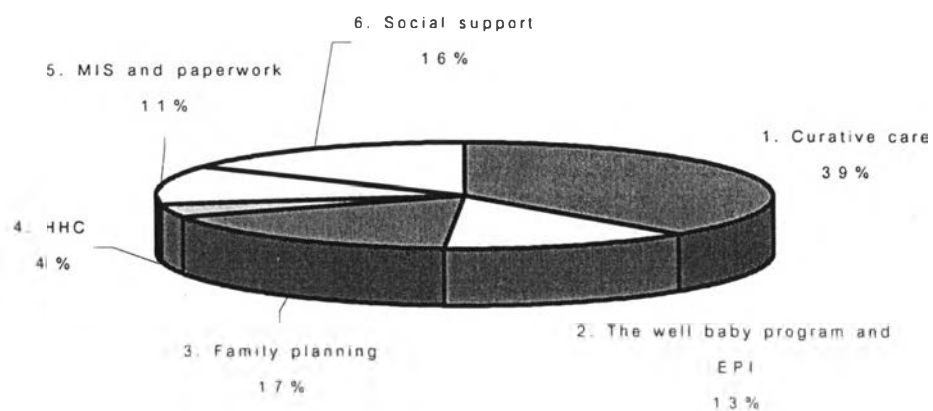
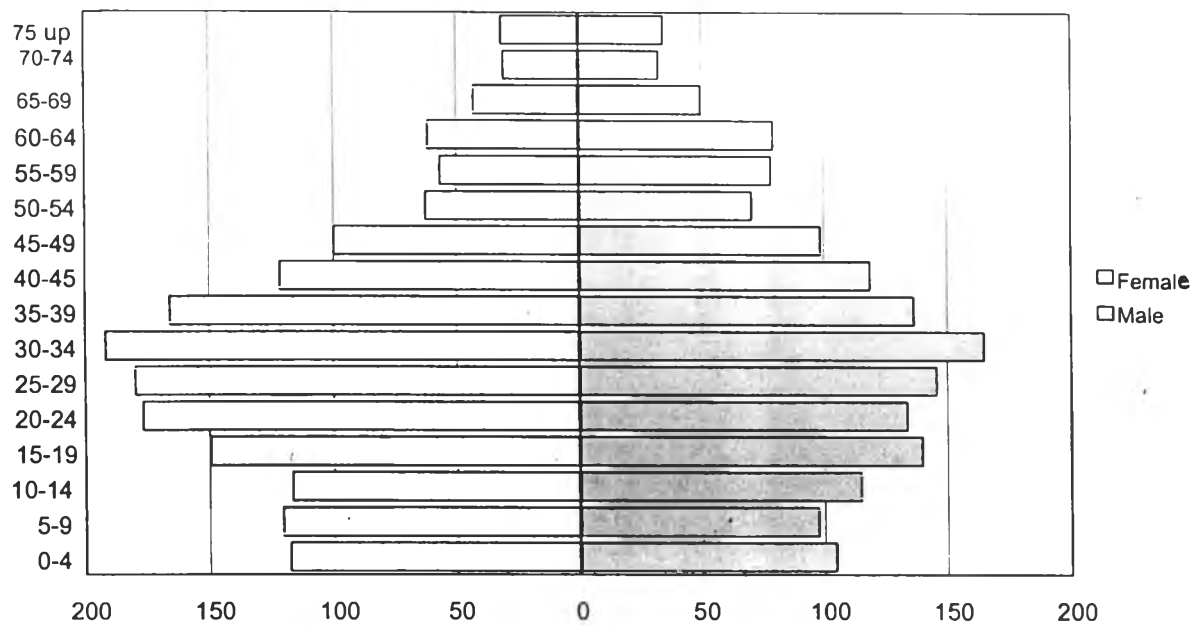


Figure 4.6 presents diagram of population in the service area of Tambon Lor Health Center. The age pyramid shows that children under fifteen years are 41% of the population, adult population aged between fifteen to forty-five years is 55%, and the population over forty-five years is 4% of total population.

Figure 4.7 shows the proportion of HIV visits and Non-HIV visits to Tambon Lor Health Center in the fiscal year 1998. HIV visits are 2% of total visits, and non-HIV visits are 98% of total visits.

The diagram of health personnel role task oriented of Tambon Lor Health Center Health Center as indicated in Figure 4.8 which assigned the appropriate job; administrate, service at health center and outside services for health staff. First staff is a head of this health center responds to general administrative, service administrative, serve patients at health center about the well baby program, ANC clinic, family planning, cervical cancer surveillance, curative care, and responds to people of 267 households in Numchun village. Second staff is responsible for service administrative about finance and account, training, elderly health, dental health, communicable-uncommunicable disease control, epidemiology, curative care at health center, and responds to people of 161 households in South Pangpom and 194 households in New Pangpom. Third staff is in charge of service administrative about insurance, school health, records, report, mental health, EPI, AIDS control, curative care at health center, and responds to people 109 households in North Pangpom, 189 households in Middle Pangpom.

Figure 4.6 Population in the Service Area of Tambon Lor Health Center



Source: Tambon Lor Health Center

Figure 4.7 Proportion of HIV Visits and Non-HIV Visits in 1998

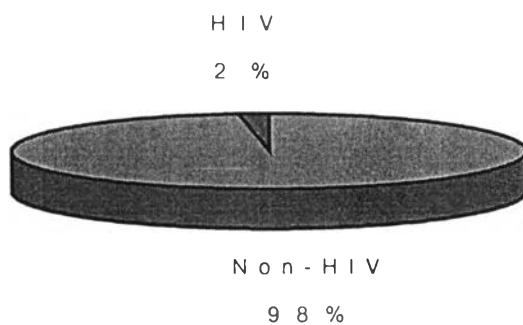
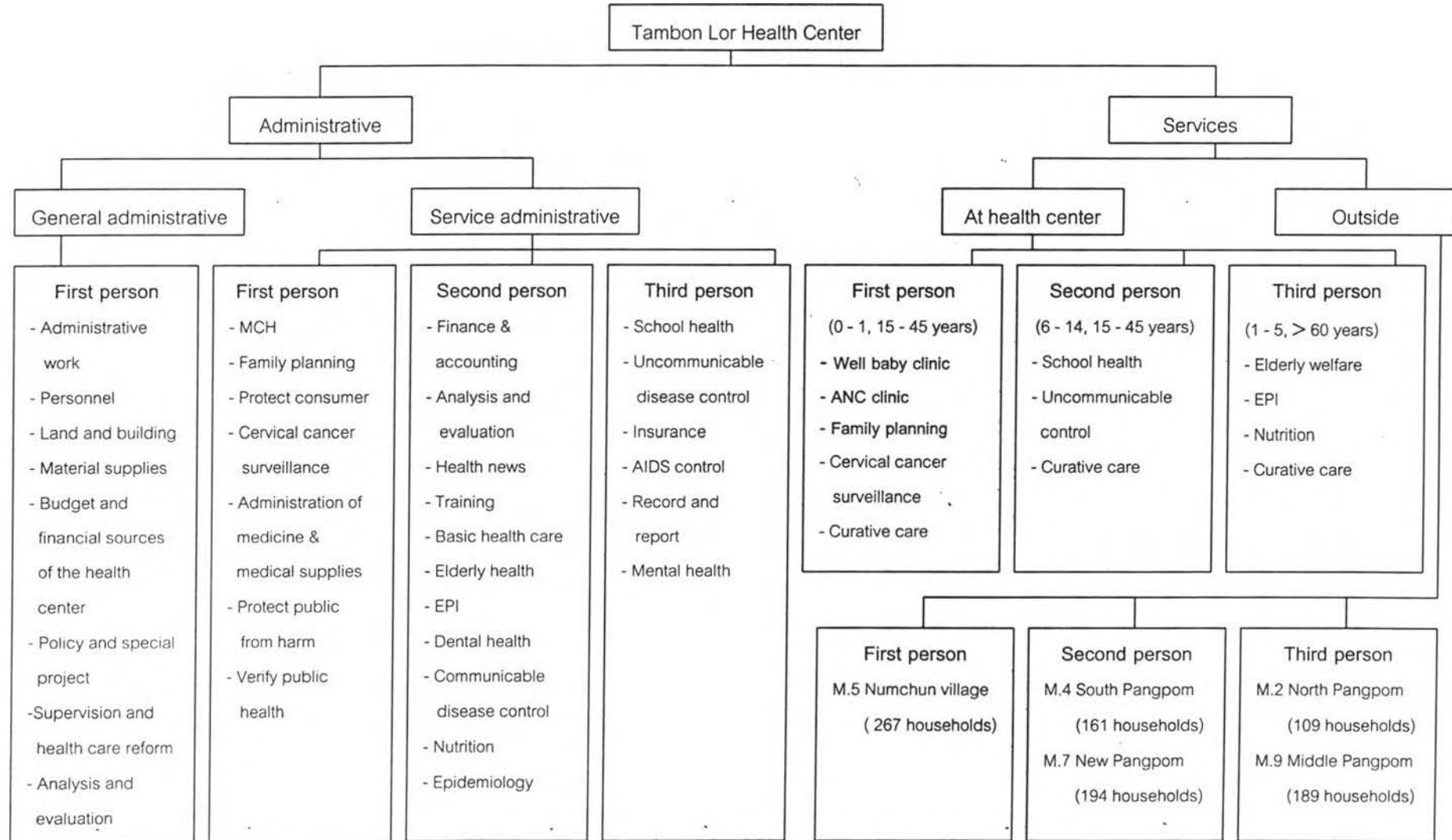


Figure 4.8 Health Personnel Role Task Oriented on a Goal of Tambon Lor Health Center



4.1 Cost of the Existing Package of HIV/AIDS Activities

The variable of this study is cost; hence, many complications of the study are concerned with collected data and defined costs. Some issues in costing are discussed below.

1) Capital cost is calculated from one building, 25 pieces of equipment and 2 motorcycles. This study, the useful life is defined as 25 years for building, 5 years for equipment, and 10 years for vehicle. The World Bank discount rate of 10% is used to calculate current value, and annual cost of building, equipment, and vehicle. Annual cost of each item for HIV/AIDS as presents in Appendix A.1, and specification of capital that used for HIV/AIDS activities are also presented in Appendix A.1. The proportion of total capital cost used for HIV/AIDS activities is a rough proportion obtained from number of HIV visits divided by the number of total visits. In the fiscal year 1998, 1.8% of total visits is represented proportion of HIV/AIDS visits use to allocate costs for building, equipment, and vehicle. This figure is derived from 133 HIV visits divided by 7,453 total visits. Total capital cost is 3,714,763 Baht. Annual capital cost for HIV/AIDS is 474,946 Baht and the annual capital cost for HIV is 8,475 Baht including 6,358 Baht of building cost for HIV, 1,883 Baht of equipment cost for HIV and 235 Baht of vehicle cost for HIV. Details of the components of capital cost are mentioned below.

(1) Building cost The proportion of space for health activities is known when the building space is assigned by health activity as space for either curative care, MCH, HHC or home visitation, MIS and paperwork of HE and health promotion and the area measure is for each activity. According to the appendix A, the total building cost of HIV/AIDS activities is 6,358 Baht, the cost of HIV/AIDS activities are would like to specify. Space measurement used for each activity is carried out first, and then the proportion of space for each activity and the cost is calculated.

Table 4.6 presents total space, space for each activity, the proportion space for each activity. The proportion of space for HIV/AIDS activities by using the proportion of HIV visits and total visits is 1.8% as mentioned before. This study finds that space usage is 39% for MIS and paperwork, 33% for curative care, 21% for MCH, and 17% for other. The total annual building cost of health package is 356,275 Baht. The total annual building cost of HIV/AIDS package is 6,358 Baht. The highest annual building

cost of health package and HIV/AIDS package is used for MIS and paper, and the remainder is curative care, MCH, HE and promotion. The building space used for HHC is less than other activities, so the cost is the least building cost.

(2) Equipment cost Table 4.7 shows annual equipment cost for health activities and HIV/AIDS activities. The proportion of equipment used for HIV/AIDS activities is the same proportion of 1.8% that used for building cost calculation. Total annual equipment cost for health package is 105,514 Baht and total annual equipment cost for HIV/AIDS package is 1,833 Baht. The highest annual equipment cost of health package and HIV/AIDS package used for curative care is 1,316 Baht. The remainder is MIS, paperwork, MCH, HE and promotion. The equipment used for home visitation is the least, so the cost is lowest too.

(3) Vehicle cost Table 4.8 indicates annual vehicle cost of health activity and HIV/AIDS activity. There is no record of time used for each vehicle so the proportion of time used vehicle for health activity is discussed with health staff. 1.8% is the rough proportion used for HIV/AIDS activity as well as the proportion used for calculating building cost and equipment cost. The total annual vehicle cost of health package is 13,157 Baht. The total annual vehicle cost of HIV/AIDS package is 235 Baht including 12 Baht of palliative care, 12 Baht of MCH, 82 Baht of MIS and paper work, 47 Baht of health education and health promotion, 82 Baht of HHC for 34 PWAs. So vehicle cost of HHC is 3 Baht per PWA.

Table 4.6 Building Cost for the Existing HIV/AIDS Activities

Unit: Baht

| Activities | Building space for health activities (m ²) | % of space for activities | Annual building cost for health activities | Annual building cost for HIV/AIDS |
|----------------|--|---------------------------|--|-----------------------------------|
| (1) | (2) | (3) | (4) | (5) |
| Curative care | 20 | 33.3 | 118,758 | 2,119 |
| MCH | 12.5 | 20.8 | 74,224 | 1,325 |
| HHC | 1 | 1.7 | 5,938 | 106 |
| MIS, paperwork | 23.5 | 39.2 | 139,541 | 2,490 |
| HE, promotion | 3 | 5.0 | 17,814 | 318 |
| Total | 60 | 100.0 | 356,275 | 6,358 |

Note: Proportion building space for HIV/AIDS activities = 1.8% and 1 US\$ = 36 Baht

Table 4.7 Equipment Cost for the Existing HIV/AIDS Activities

Unit: Baht

| Activities | Volume of equipment | Annual equipment cost for health activities | Annual equipment cost for HIV/AIDS activities |
|----------------|---------------------|---|---|
| (1) | (2) | (3) | (4) |
| Curative care | 11 | 73,737 | 1,316 |
| MCH | 1 | 5,407 | 96 |
| HHC | 0.5 | 422 | 8 |
| MIS, paperwork | 11 | 24,333 | 434 |
| HE, promotion | 1.5 | 1,616 | 29 |
| Total | 25 | 105,514 | 1,883 |

Note: Proportion equipment used for HIV/AIDS = 1.8%

Table 4.8 Vehicle Cost for the Existing HIV/AIDS Activities

Unit: Baht

| Activities | Proportion used for health activities | Annual vehicle cost for health activities | Annual vehicle cost for HIV/AIDS activities |
|-----------------|---------------------------------------|---|---|
| (1) | (2) | (3) | (4) |
| Curative care | 5 | 658 | 12 |
| MCH | 5 | 658 | 12 |
| Home visitation | 35 | 4,605 | 82 |
| MIS, paperwork | 35 | 4,605 | 82 |
| HE, promotion | 20 | 2,631 | 47 |
| Total | 100 | 13,157 | 235 |

Note: Proportion used for HIV/AIDS = 1.8%

Total capital cost for each existing HIV/AIDS activity is the summation of building cost, equipment cost and vehicle cost for HIV/AIDS activities from Table 4.6, Table 4.7 and Table 4.8. Table 4.9 shows capital cost for the existing HIV/AIDS activities. The highest capital cost is the cost of palliative care, 3,447 Baht. The remainder is 3,006 Baht of MIS and paperwork, 1,443 Baht of MCH, 394 Baht of health education and health promotion. The least capital cost item is 196 Baht of home visitation cost.

2) Recurrent cost includes labor cost and material cost as follows.

(1) Labor cost Labor cost is calculated from proportion of health personnel work time associated with HIV/AIDS activities multiplied by their total income in the fiscal year 1998. Figure 4.9 presents the average work time and personal time of health personnel. Average work time is 81% of total time, and the average personal time is 19% of total time. Actually, all staff always work more after office hour e.g. to suggest, discuss, advice, talk with people about health or community meetings. The first personnel, she works after office time about 30 minutes per day everyday. The second personnel, he also works after office time about 30 minutes per day everyday, and the third personnel, he works after office time about 10 minutes per week. Since they do not get any compensation for work after office time. Staff overtimes do not calculate to labor cost of this study.

Table 4.9 Capital Cost for the Existing HIV/AIDS Activities

Unit: Baht

| HIV/AIDS activities | Building cost | Equipment cost | Vehicle cost | Capital cost |
|---------------------|---------------|----------------|--------------|--------------|
| (1) | (2) | (3) | (4) | (5) |
| Palliative care | 2119 | 1,316 | 12 | 3,447 |
| MCH | 1325 | 96 | 12 | 1,433 |
| Home visitation | 106 | 8 | 82 | 196 |
| MIS, paper work | 2490 | 434 | 82 | 3,006 |
| HE, promotion | 318 | 29 | 47 | 394 |
| Total | 6358 | 1,883 | 235 | 8,476 |

Figure 4.9 Average Work Time and Personal Time of Health Personnel

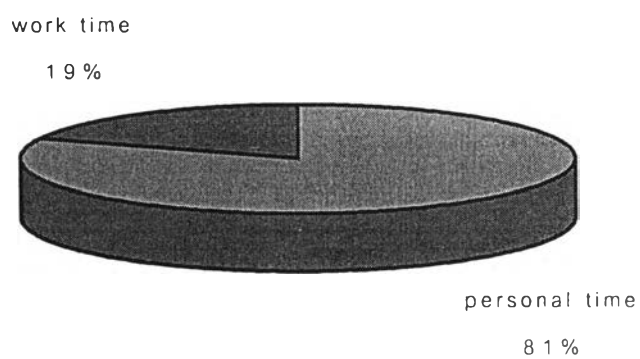


Figure 4.10 shows average work time for HIV and Non-HIV, work time for HIV is 4% of total work time and average work time for Non-HIV is 96% of total work time. Figure 4.11 indicates average time allocation of health personnel that 45% for management information system and paperwork, 13% for curative care, 10% for health education and promotion, 8% for MCH, 5% for HHC, and 19% of total time is personal time. More details of work time for each activity are indicated in Appendix B.

Total labor cost of Tambon Lor Health Center in the fiscal year 1998 is the summation total income of all staff. Total labor cost of each staff for HIV/AIDS activities is the annual salary multiplied by the proportion of work time for HIV/AIDS due to their job. Labor cost for HIV/AIDS package is presented in Table 4.10. The average time of three staff for HIV/AIDS activities is 3.4 % of total time, and the cost is 12,485 Baht. However, the third health personnel works for HIV/AIDS more than other personnel due to this assignment as mentioned in Figure 4.8. The labor cost for each HIV/AIDS activity is presented in the Table 4.11. The highest labor cost is 5,936 Baht for HHC, following by 2,748 Baht of MIS and paper work, 2,064 Baht of health education and health promotion, and 1,533 Baht of curative care. MCH has the least cost (205 Baht).

Figure 4.10 Average Work Time for HIV and Non-HIV

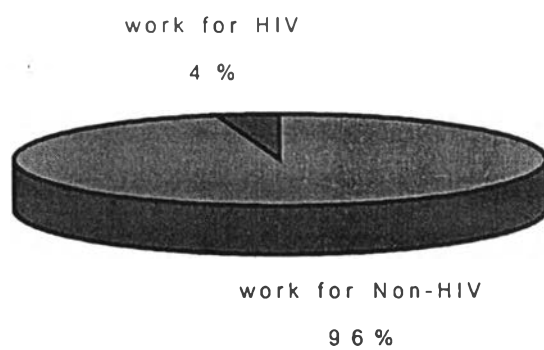


Figure 4.11 Average Time Allocation of Health Personnel

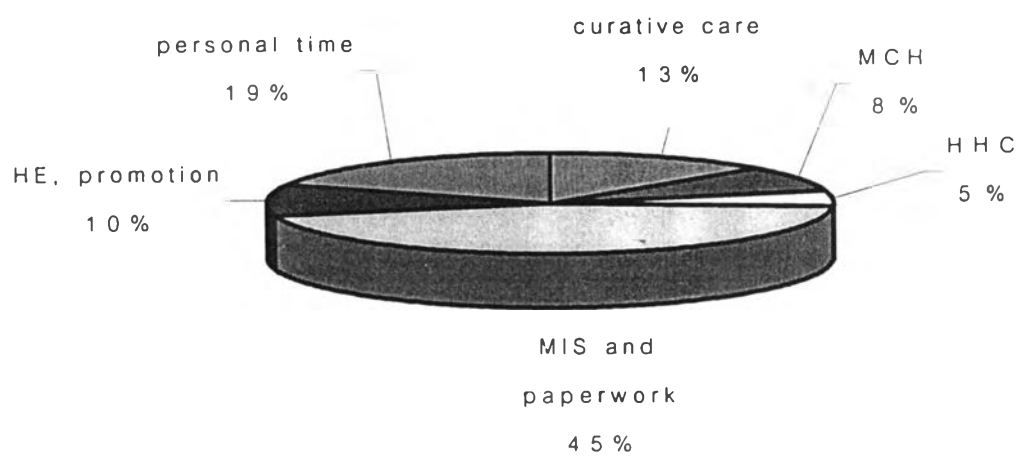


Table 4.10 Labor Cost for HIV/AIDS Package

| Unit: Baht | | | | | |
|----------------------|----------------|----------------|----------------|---------------------|-------------------------|
| Health personnel | Annual salary | Fringe benefit | Total income | % time for HIV/AIDS | Labor cost for HIV/AIDS |
| (1) | (2) | (3) | (4) | (5) | (6) |
| 1st health personnel | 133,440 | 2,796 | 136,236 | 1.4 | 1,880 |
| 2nd health personnel | 93,360 | 28,096 | 121,456 | 2.5 | 3,036 |
| 3rd health personnel | 76,320 | 25,821 | 102,141 | 7.4 | 7,569 |
| Total | 303,120 | 56,713 | 359,833 | 3.5 | 12,485 |

Table 4.11 Labor Cost Specified to HIV/AIDS Activities

| HIV/AIDS activities | Work time for health activities (min/year) | % work time for health activities | Work time for HIV/AIDS (min/year) | % work time for HIV/AIDS | Labor cost for HIV/AIDS (Baht) |
|-------------------------|--|-----------------------------------|-----------------------------------|--------------------------|--------------------------------|
| (1) | (2) | (3) | (4) | (5) | (6) |
| Curative care | 47,594 | 16.4 | 1,348 | 12.3 | 1,533 |
| MCH | 27,170 | 9.4 | 180 | 1.6 | 205 |
| HHC | 16,780 | 5.8 | 5,220 | 47.5 | 5,936 |
| MIS, paperwork | 161,753 | 55.7 | 2,417 | 22.0 | 2,748 |
| HE, promotion | 37,065 | 12.8 | 1,815 | 16.5 | 2,064 |
| HIV/AIDS package | 290,362 | 100.0 | 10,980 | 100.0 | 12,485 |

(2) Supply or material cost is separated into two categories i.e. medical supply and non-medical supply. The volume and kinds of medicine between PWAs and non-HIV patients with the same diagnosis, same symptoms were not different, according to observation for two weeks and examining OPD cards. In the fiscal year 1998, the average visits of general patients and PWAs also did not differ because if PWAs had severe illness, they would go to hospital. Cost of medicine and medical supplies for PWAs were 32,182 Baht (see Table 4.12). Non-medical supplies cost is calculated from total cost of non-medical supplies multiplied by proportion used for HIV/AIDS. Cost calculation for non-medical supplies e.g. office material or office utilities, uses the same proportion as in the cases of building, equipment, and vehicle. Non-medical cost for HIV/AIDS activities is 880 Baht which will be equally divided between every activity, and supplies cost specifies to each HIV/AIDS activity are shown in Table 4.13. For all HIV/AIDS activities, the medicine and supply costs are higher than non-medical supply cost. The ratio of medical supply costs to non-medical supply cost is 97:3.

Table 4.14 indicates total cost of the existing package of HIV/AIDS activities by activities and inputs. The total cost of existing package is 54,023 Baht which consists of 14,467 Baht for curative care, 6,434 Baht for MCH, 16,308 Baht for HHC, 5,930 Baht for MIS and paperwork, and 10,884 Baht for health education and promotion.

Table 4.15 shows the unit costs of the existing HIV/AIDS activities i.e. 109 Baht per visit for palliative care, 56 Baht per visit for MCH, 480 Baht per PWA for HHC, 147 Baht per hour for MIS and paperwork, 64 Baht per service for HE and health promotion. Unit cost of the existing package HIV/AIDS activities is 982 Baht per PWA. The component cost of the existing health package and HIV/AIDS package by inputs presented in Table 4.16. Total cost of health package is 1,062,249 Baht. For this package, the ratio of labor cost, material cost, and capital cost is 34:21:45. Total cost of existing package of HIV/AIDS activities is 54,023 Baht. The ratio between labor cost, material cost, and capital cost of the existing package of HIV/AIDS activities is 23:61:16. The cost ratio of HIV/AIDS package and existing health package is 1:20. Health package per total population is 318 Baht per capita. HIV/AIDS package per total PWAs is 982 Baht per PWA.



Table 4.12 Supply Cost for HIV/AIDS Activities by Inputs

Unit: Baht

| Items of material supply | Supply cost for health activities | Supply cost for HIV/AIDS activities |
|-----------------------------|-----------------------------------|-------------------------------------|
| (1) | (2) | (3) |
| Medicine & medical supplies | 178,330 | 32,182 |
| Material office | 6,000 | 107 |
| Electricity | 5,770 | 103 |
| Water usage | 1,080 | 19 |
| Maintenance (building) | 31,200 | 555 |
| Maintenance (vehicle) | 5,390 | 96 |
| Total | 227,770 | 33,062 |

Note: Proportion used for HIV/AIDS activities = 1.8%

Table 4.13 Supply Cost for HIV/AIDS Activities by Activities

Unit: Baht

| HIV/AIDS activities | Medicine and supplies for HIV/AIDS | Non-medical supply for HIV/AIDS | Total supply cost for HIV/AIDS |
|---------------------|---------------------------------------|------------------------------------|-----------------------------------|
| (1) | (2) | (3) | (4) |
| Curative care | 9,312 | 176 | 9,488 |
| MCH | 4,620 | 176 | 4,796 |
| Home visit | 10,000 | 176 | 10,176 |
| MIS, paperwork | - | 176 | 176 |
| HE, promotion | 8,250 | 176 | 8,426 |
| HIV/AIDS package | 32,182 | 880 | 33,062 |

Note: Proportion of non-medical supply for every activity is equal,

Proportion of medical supply is the real usage.

Table 4.14 Total Cost of the Existing HIV/AIDS Activities by Activities and Inputs

Unit: Baht

| Activities | Building cost | Equipment cost | Vehicle cost | Labor cost | Material cost | Total cost |
|------------------|---------------|----------------|--------------|------------|---------------|------------|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Palliative care | 2119 | 1316 | 12 | 1,532 | 9,488 | 14,467 |
| MCH | 1325 | 96 | 12 | 205 | 4,796 | 6,434 |
| HHC | 106 | 8 | 82 | 5,936 | 10,176 | 16,308 |
| MIS, paperwork | 2490 | 434 | 82 | 2,748 | 176 | 5,930 |
| HE, promotion | 318 | 29 | 47 | 2,064 | 8,426 | 10,884 |
| HIV/AIDS package | 6358 | 1883 | 235 | 12,485 | 33,062 | 54,023 |

Table 4.15 Unit Cost of the Existing HIV/AIDS Activities

| HIV/AIDS activities | Total cost (Baht) | Number of services | Unit cost |
|----------------------|-----------------------|--------------------|------------------|
| (1) | (2) | (3) | (4) |
| Palliative care | 14,467 | 133 visits | 109 baht/visit |
| MCH | 6,434 | 115 visits | 56 baht/visit |
| HHC | 16,308 | 34 persons | 480 baht/person |
| MIS, paperwork | 5,930 | 40 hours | 147 baht/hour |
| HE, health promotion | 10,884 | 170 services | 64 baht/services |
| HIV/AIDS package | 54,023 | 55 PWAs | 982 baht/PWA |

Table 4.16 Cost Component of the Existing Health Package and HIV/AIDS Package by Inputs

Unit: Baht

| Items (1) | Health package (2) | % Used for HIV(3) | HIV/AIDS package (4) |
|--------------------------------------|-----------------------|-------------------|-------------------------|
| 1. Labor cost | 359,833 | 3.5 | 12,485 |
| 2. Supply cost | | | |
| 2.1 Medicine & medical supply | 178,030 | 18.1 | 32,182 |
| 2.2 Material office | 6,000 | 1.8 | 107 |
| 2.3 Electricity | 5,770 | 1.8 | 103 |
| 2.4 Water usage | 1,080 | 1.8 | 19 |
| 2.5 Building maintenance | 31,200 | 1.8 | 555 |
| 2.6 Vehicle maintenance | 5,390 | 1.8 | 96 |
| Total material cost | 227,470 | 1.8 | 33,062 |
| 3. Capital cost | | | |
| 3.1 Building | 356,275 | 1.8 | 6,358 |
| 3.2 Equipment | 105,514 | 1.8 | 1,883 |
| 3.3 Vehicle | 13,157 | 1.8 | 235 |
| Total capital cost | 474,946 | 1.8 | 8,475 |
| Total cost of package | 1,062,249 | 1.8 | 54,023 |
| Health package cost/total population | 318 baht /capita | | |
| HIV/AIDS package cost/total PWA | 982 baht/PWA | | |

Note: Population = 3,337, PWAs = 55, % cost of HIV/AIDS package/health package = 1:20

Figure 4.12 presents of the percentage of cost of an existing health package by inputs. Most of the cost is labor cost and medical supplies. Labor cost, cost of medicine and medical supplies, and cost of equipment are 33%,17%, and 10% repectively.

Figure 4.13 shows the percentage of recurrent cost of an existing health package. The highest cost is labor cost and the remainder is material cost. Labor cost and cost of medicine and medical supply are 6% and 30% respectively. The proportion of recurrent cost of other inputs is very small.

Figure 4.14 indicates the percentage of cost of an existing package of HIV/AIDS activities by inputs. The highest cost is medicine and medical supplies which comprise 61% of total cost of the existing package of HIV/AIDS activities, followed by labor cost. The labor cost is 23% of total cost of the existing package of HIV/AIDS activities.

Figure 4.15 presents the percentage of recurrent cost of an existing package of HIV/AIDS activities. The highest cost is medicine and medical supplies which account for 72% of total recurrent cost of the existing package of HIV/AIDS activities, followed by labor cost which is 27% of total recurrent cost.

Figure 4.12 Percentage of Cost of an Existing Health Package by Inputs

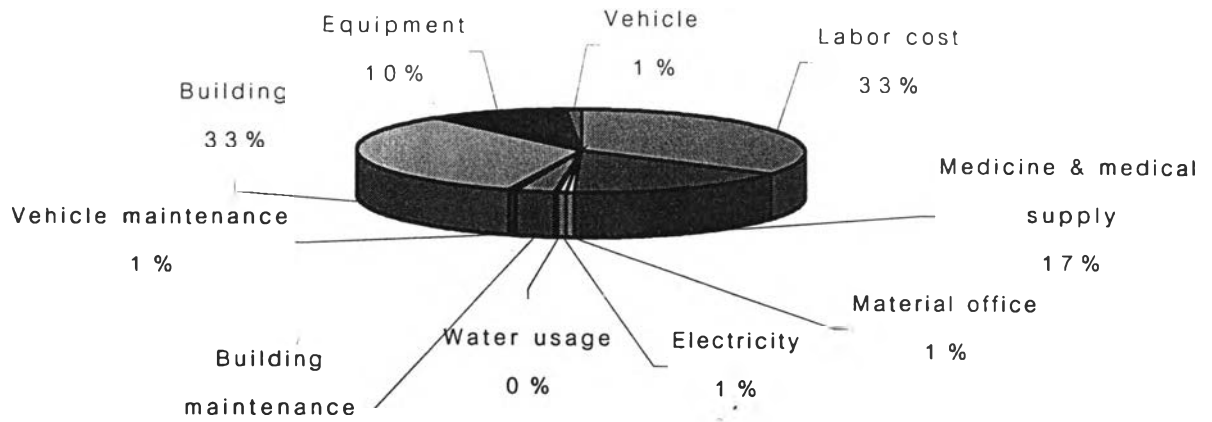


Figure 4.13 Percentage of Recurrent Cost of an Existing Health Package

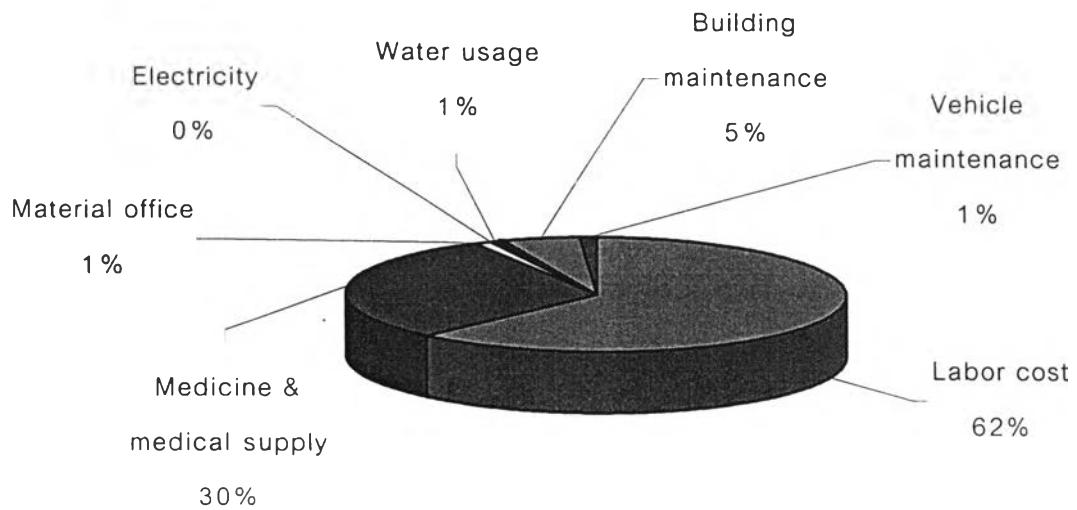


Figure 4.14 Percentage of Cost of an Existing Package of HIV/AIDS Activities

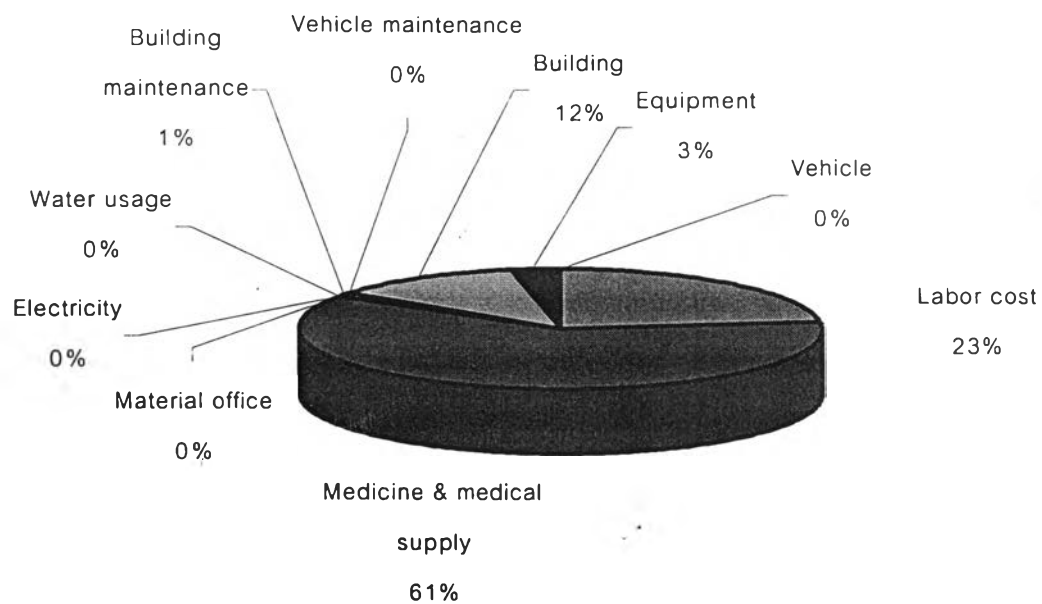
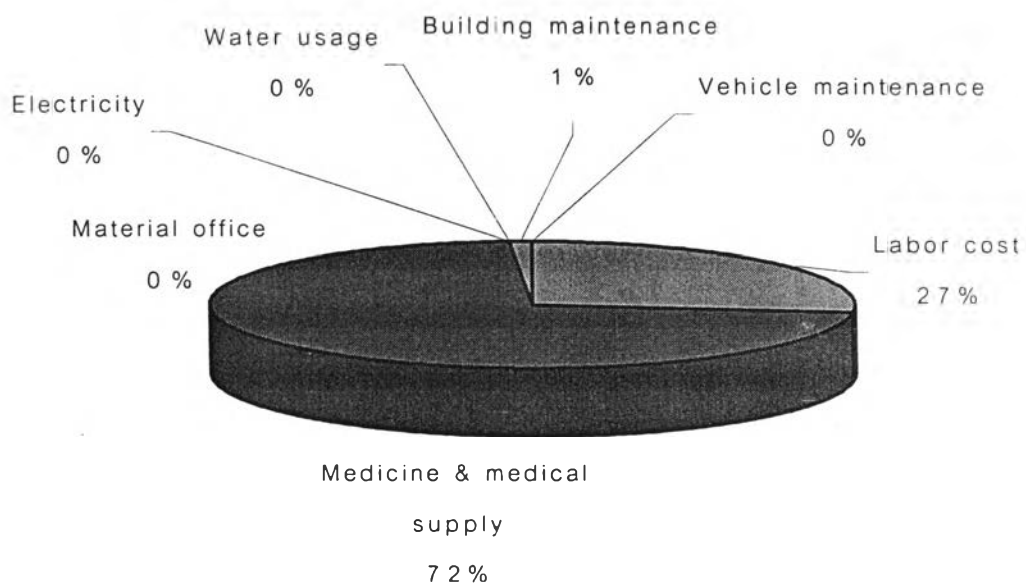


Figure 4.15 Percentage of Recurrent Cost of an Existing Package of HIV/AIDS Activities



4.2 Incremental Cost Calculation

The incremental cost of HIV/AIDS activities is divided into capital cost and recurrent cost as follows. Some are transferred costs from the hospital to the health center, the real additional costs, and additional cost of the existing activities. Since the population growth rate of people in the service area declines to almost zero, the estimated population next year is total population multiplied by percentage growth of people in this year. Thus, 3,330 persons or total population of next year is the result of 3,337 population multiplied by -0.21% of the growth rate value. Number of HIV-positive people or HIV positive prevalence is number of adult population (aged 15-45 years) in the service area i.e. 1,828 persons multiplied by HIV-growth rate of Phayao province which is 5.6% of population growth rate. Consequently, there will be 102 cases of HIV positive. Hence, an integrated core package that serves 102 PWAs who received care at health center, the estimated number of HIV/AIDS patients visit is 245 visits that calculated from number of 102 PWAs multiplied by 2.4 visits per PWAs per year. The number of visit of 3,228 general patients is 7,425, calculated from number of general patients multiplied by 2.3 visits per general patients per year. The proportion 3.2% of HIV/AIDS visits to general patient visit is obtained from 245 HIV/AIDS visits divided by 7,670 total visits. This proportion is 0.8% higher than the old one so inputs used to calculate cost, and thus the cost will be higher.

Capital cost of building, equipment, vehicle, and human capital cost.

1) Building cost: Due to the increase in proportion of HIV/AIDS visits (3.2%) the incremental cost of building is 4,945 Baht, calculated from annual building cost multiplied by proportion of 3.2% .

2) Equipment cost: Calculation of incremental cost use the proportion of HIV/AIDS activities 3.2% , the same as building cost calculation. The incremental cost of equipment is 1,466 Baht.

3) Vehicle cost: The proportion for HIV/AIDS activities is the same as building and equipment calculation. The incremental cost of vehicle is 183 Baht.

4) Human capital cost: Human capital cost such as cost of training is fixed cost. The useful life of human capital is assumed to be 10 years, and the discount rate of 5%

based on the discount rate of HCR, UNAIDS, and PAAC is used to calculate the annual cost. TAO described activity of human capital cost as mentioned below.

(1) Counselling training for three health staffs is one week (5 days) and 1 day per month per year for the first year and 2 days per year for the following year. Total income of the staff per year is 359,833 Baht. Their office time is 360,000 minutes. Consequently, the average cost of health staff member is 1 Baht per minute and 60 Baht per hour. Cost per day (8 hours) is 480 Baht, and cost per half a day (3 hours and 30 minutes) is 210 Baht. First year, training cost of one health personnel for one week is 2,400 Baht per person, training cost of three for one week is 7,200 Baht. Training cost of one staff for 1 day per month in the first year is 12 days, the cost is 5,760 Baht per year. Training cost of three staff members for 1 day per month is also 12 days so the cost is 17,280 Baht per year. Thus, the total training cost of first year is 24,480 Baht that is capital cost. The remainder year cost of training one for 2 days per year is 960 Baht per person and cost of training three health personnel is 2,880 Baht per year, which is labor cost.

(2) Vision building: There are two meetings in one year. Two health personnel spend their time around half a day or three hours and thirty minutes for each meeting. The cost is 210 Baht per person per meeting, so the total cost of two health personnel is 840 Baht per year for two meetings.

(3) Coordination meetings: There are four meetings in one year. The two health personnel spend their time approximately half a day or three hours and thirty minutes for each meeting. The cost is 210 Baht per person per meeting, so the total cost of two health personnel is 1,680 Baht per year.

(4) Rolling planning process: The two health personnel spend half a day for each meeting. The rolling planning process has 10 meetings includes 5 meeting of risk mapping, 3 meeting of response mapping, and 2 meeting of planing and monitoring. The total cost of two health personnel for one year is 4,200 Baht, or 2,100 Baht is the cost of one health personnel for 10 meetings.

(5) Information sharing: There are three meetings per year. The two health personnel spend half a day for each meeting. The cost of one health personnel is 630 Baht per person per year, and total cost is 1,260 Baht per year.

In conclusion, human capital cost of the first year is the summation cost of counselling training for three health staff, vision building, coordination meeting, rolling planning process, and cost of information sharing. All of these costs are the real additional cost that was estimated for an integrated core package of HIV/AIDS activities. The total human capital cost of the first year is 32,460 Baht. The cost of first year is used to calculate the provider cost in this study. The useful life of human capital is assumed to be 10 years, and the World Bank discount rate of 5% is used to calculate the annual cost. Annual human capital cost is 3,246 Baht per year, and 2,880 Baht per year is the annual recurrent cost of training is 2,280 Baht per year as mentioned in Appendix B. The first year, annual cost of training is 6,125 Baht

Recurrent cost This cost is defined to coordinate activities that are the real additional cost as following.

1) Coordination activities

(1) Counselling training cost of three staff members for two days per year is 2,880 Baht per year as already mentioned.

(2) Vision building meeting or main meetings: There are 2 main meetings for one year. There are 10 local facilitators to meeting and the overtime labor cost is 200 Baht per person. The overtime labor cost of 1 external facilitator is 200 Baht and 300 Baht is spent for transportation. In addition, the cost of food (snack) for 100 persons of each meeting is 2,500 Baht. Thus, the total cost of 1 meeting is 5,000 Baht. The two main annual meetings cost is 10,000 Baht. Cost by input is 4,400 Baht for labor cost and 5,600 Baht for supplies cost.

(3) Coordination meetings: These are meetings conducted by the action team (the key actors). There are 20 persons of each meeting. The cost of each meeting is 2,500 Baht including 2,000 Baht of labor cost, and 500 Baht of supplies (snack). Labor cost of each person is 100 Baht and 25 Baht is the cost of the snack for each person. There are 4 meetings per year, so the total cost is 10,000 Baht

(4) Rolling planning process: The total cost of this activity is 20,000 Baht per year including 5,000 Baht of the cost of risk mapping. The community risk assessment is expected for interviews, survey, and focus group of people in the service area 5 villages by 5 persons of key actor for 1 week (5 days). Thus, the labor cost of each key

actor is 200 Baht per day, and 1,000 Baht per week. Total labor cost of community assessment is 5,000 Baht per year.

2) Specific activities: This cost is defined to specific activities that are the transferred cost from hospital to health center. The total cost of specific activities is 78,279 Baht per year.

(1) TB case findings and sputum collecting: According to the hypothesis of local managers, 30% of the total number of HIV patients should benefit from active TB finding by X-ray, tuberculosis test, and sputum exam. Cost of TB case finding includes cost of X-ray, cost of sputum exam, and cost of tuberculosis test. The cost of chest X-ray is 40 Baht per service. Cost of sputum collecting and examination is 5 Baht per service. The course of sputum testing for 1 patient is 3 tests, so the cost of sputum testing is 15 Baht per patient. Cost of tuberculosis test is 3 Baht per case. Thus, total cost of TB case finding is 58 Baht per HIV case. HIV prevalence is 102 cases, and 30% of total HIV patients is 31 case. Therefore, the total cost of TB case findings is 1,798 Baht per year.

(2) TB treatment follow up and adherence assurance with Directly Observed Treatment Short Course (DOTS). The result found that 6% of total tests are active tuberculosis care that are treated with full course of TB treatment, 6% of patients testing-positive is received Isoniazid (INH) prophylaxis, and 18% of total tests are no examine.

This is a typical course of TB treatment:

- Isoniazid (INH) 300 mg per day everyday for 6 months, the cost is 437 Baht per case.
- Rifampicin 450 mg per day everyday for 6 months, the cost of is 3,094 Baht per case.
- Ethambutal 450 mg per day everyday for 2 months, the cost is 102 Baht per case.
- Pyrazinamide (PZA) 1,500 mg per day everyday for 2 months, the cost is 455 Baht per case. The total cost of TB treatment is 3,697 Baht per case. In this study, 6% of total test is 2 AIDS patient with active TB every year, so the total cost of TB treatment is 7,352 Baht of 2 cases per course.

TB prophylaxis: Isoniazid (INH) prophylaxis is provided to 6% of total test for TB case finding. In this study, there are 2 PWAs of INH prophylaxis. Health facility should provide INH 300 mg per day to PWAs every day for 6 months. The cost of INH

54,600 mg per case is 44 Baht. Thus, the cost of 2 AIDS cases is 88 Baht per course. It is assumed that improvement of DOTS will not lead to additional cost.

(3) PCP prophylaxis: All HIV/AIDS cases take Cotrimoxazole 480 mg per case per day every day. The cost of medicine is 365 Baht per case per year so costs of all AIDS (102 cases) cases are 44,676 Baht per year.

(4) Nutritional counselling and growth monitoring of children fed replacement or breast milk substitute for HIV positive children or children born to HIV positive mothers. The proportion of pregnant women HIV in Phayao province is 5.6% of total pregnant. Presently, there are 34 pregnant women in the service area so the estimated number of HIV positive pregnant woman is 2 cases. Breast milk substitute of 2 children is 10,800 Baht per year lease of calculation, thus the cost of one case is 5,400 Baht per case per year.

(5) HIV-testing: There are many kinds of HIV-testing and different cost. Presently, first HIV-test is GPA test or Rapid test, the second is an ELISA test or other HIV-test dissimilar to the past test. If the two tests are dissimilar, the another test is done. The cost of GPA test is 55 Baht, cost of Rapid test is 120 Baht, and the cost of ELISA test is 80 Baht. In this study, the first HIV-testing is GPA test. The second HIV-testing is ELISA test in case of the first test is HIV positive. There are three groups of population for HIV-testing: pregnant woman, woman planning to get married, and family planning user.

Pregnant woman: Health facilities provide one HIV-test for each pregnant woman. And two HIV-tests in case of the first HIV-testing is positive. The cost of first HIV-test for one pregnant woman is 55 Baht per case. The cost of first HIV-test for 34 pregnant women is 1,870 Baht. There were 2 HIV-positive pregnant women, the cost of second HIV-testing is 160 Baht per 2 cases. Consequently, the total cost of HIV-testing in pregnant woman is 2,030 Baht per year.

Woman to get married: The number of woman to get married in this study is a half of total premarital due to the hypothesis of local managers. Hence, the 17 HIV-test performed on woman planning to get married were GPA tests which the total cost was 935 Baht per year.

Family planning user: The hypothesis of local managers is 75% of total adult woman that age between 15-45 years use family planning. There are 900 adult women in the service area, so 70% of total adult women are 630 women who use family planning. And 25% of woman who use family planning have had HIV-testing. Then, 157 women use HIV-testing. The cost of HIV-testing for 156 women is 8,635 Baht. The total HIV-testing cost of three groups is 11,600 Baht.

(6) Anti-retroviral (ARV) antenatal and postnatal for HIV is Zidovudine (AZT). The cost of one HIV positive pregnant woman or mother child couple is 2,160 Baht. Hence, the medical cost of two HIV positive pregnant women is 4,320 Baht per year.

(7) HHC or home visitation: The hypothesis of local managers is health facility should visit PWAs at home, provide care, and give the present kit to HIV-positive patients at least 50% of total HIV-positive patients. In this study, 51 PWAs of HHC is 50% of total HIV positive patients. The cost of HHC for one PWAs is 297 Baht including 294 Baht of the present kit and 3 Baht of transportation. The cost of 51 PWAs is 15,147 Baht including 14,994 Baht of present kit and 153 Baht of transportation. The integrated core package provides HHC for HIV patients more than the existing package is 17 cases. Thus, the incremental cost of HHC is 5,049 Baht that defined to 4,998 Baht of present kit and 51 Baht of transportation.

Total incremental cost is 136,315 Baht including 11,643 Baht for increasing existing activity, 62,810 Baht of real additional cost and 91,863 Baht of transferred cost from hospital to health center. The real additional cost is the cost of community assessment including cost of training counselling for health personnel, vision building, coordination meeting, and cost of rolling planning process. Real additional cost over 102 PWAs is 607 Baht per PWA. Real additional cost over 3,330 of population is 19 Baht per capita. The transferred cost from hospital to health center is the cost of TB case finding and sputum collecting, TB treatment follow up and adherence assurance with DOTS, PCP prophylaxis, nutritional counselling and breast milk substitution, HIV-testing, ARV antenatal and postnatal, and present kit for HHC (see Table 4.17).

Table 4.17 Incremental Cost Distribution

unit: Baht

| Activities (1) | Types (2) | Unit cost (3) | Volume (4) | Cost (5) | Distribute to activities (6) |
|---|------------------------|------------------|---------------|-------------|---------------------------------|
| Capital cost | | | | | |
| 1. Building cost | Increase existing cost | | | 4,945 | All activities |
| 2. Equipment cost | Increase existing cost | | | 1,466 | All activities |
| 3. Vehicle cost | Increase existing cost | | | 183 | All activities |
| 4. human capital cost | | | | | |
| 4.1 Conselling training | Real additional cost | 60 ฿/hour | 408 hours | 24,480 | HE, promotion |
| 4.2 Vision building | Real additional cost | 60 ฿/hour | 14 hours | 840 | HE, promotion |
| 4.3 Coordination meeting | Real additional cost | 60 ฿/hour | 28 hours | 1,680 | HE, promotion |
| 4.4 Rolling planning process | Real additional cost | 60 ฿/hour | 70 hours | 4,200 | HE, promotion |
| 4.5 Information sharing | Real additional cost | 60 ฿/hour | 21 hours | 1,260 | HE, promotion |
| Total human capital cost | Real additional cost | | 541 hours | 32,460 | HE, promotion |
| Annual human capital cost | Real additional cost | | | 3,246 | HE, promotion |
| Recurrent cost | | | | | |
| 1. Coordination activities | | | | | |
| 1.1 Conselling training | Real additional cost | 1,440 ฿/meeting | 2 meetings | 2,880 | HE, promotion |
| 1.2 Vision building | Real additional cost | 5,000 ฿/meeting | 2 meetings | 10,000 | HE, promotion |
| 1.3 Coordination meeting | Real additional cost | 2,500 ฿/meeting | 4 meetings | 10,000 | HE, promotion |
| 1.4 Rolling planning process | Real additional cost | 2,000 ฿/meeting | 10 meetings | 20,000 | HE, promotion |
| 2. Specific activities | | | | | |
| 2.1 TB finding & sputum collecting | Real additional cost | 58 ฿/person | 31 person | 1,798 | Palliative care |
| 2.2 TB treatment – DOST for active TB | Transferred cost | 3,697 ฿/person | 2 person | 7,394 | Palliative care |
| - INH prophylaxis | Transferred cost | 44 ฿/person | 2 person | 88 | Palliative care |
| 2.3 PCP prophylaxis | Transferred cost | 365 ฿/person | 102 person | 37,230 | Palliative care |
| 2.4 Nutritional counselling, milk substitute | Transferred cost | 5,400 ฿/person | 2 person | 10,800 | MCH |
| 2.5 HIV-testing – pregnant woman 1 st test | Transferred cost | 55 ฿/person | 34 person | 1,870 | MCH |
| - pregnant woman 2 nd test | Transferred cost | 80 ฿/person | 2 person | 160 | MCH |
| - woman to get married | Real additional cost | 55 ฿/person | 17 person | 935 | MCH |
| - family planning user | Real additional cost | 55 ฿/person | 157 person | 8,635 | MCH |
| 2.6 ARV antenatal & postnatal for HIV | Transferred cost | 2,160 ฿/person | 2 person | 4,320 | MCH |
| 2.7 Present kit for HHC | Increase existing cost | 294 ฿/person | 17 person | 4,998 | HHC |
| 2.8 Transportation or HHC | Increase existing cost | 3 ฿/person | 17 person | 51 | HHC |
| Total incremental cost | | | | 130,999 | |

Note: 1. Real additional cost = 57,494 ฿, increase existing cost = 11,642 ฿, transferred cost from hospital = 61,863 ฿

2. Real additional cost per total PWAs = 564 ฿ per PWA; where PWAs = 102 cases

3. Real additional cost per capita = 17 ฿ per capita; where total population = 3,330 persons

Table 4.18 shows the incremental cost distribution by inputs and activities as by activities that 49,191 Baht for palliative care, 27,835 Baht for MCH, 5201 Baht for HHC, 2,339 Baht for MIS and paperwork, and 46,433 Baht for HE and health promotion. Incremental costs distributed by input for 4,945 Baht of building, 1,466 Baht of equipment, 183 of vehicle, 2,346 Baht of human capital, 20,280 Baht of labor, and 100,879 Baht of supply cost.

Incremental unit cost is total incremental cost over the different in their output, unit increment cost of each HIV/AIDS activity as follows. Incremental unit cost by activity is 439 Baht per visit of palliative care that incremental number of HIV visit is 112 visits. Incremental unit cost for MCH is 117 Baht per visit that the incremental output is 238 visits including 8 ANC, 34 HIV-first testing for pregnant women, 2 HIV-second testing for HIV-positive pregnant women, 55 HIV-testing for women to get married, 157 HIV-testing for family planning user, 2 sessions nutrition counselling and breast milk substitute for HIV-positive or children born to HIV-positive mother. Incremental unit cost is 306 Baht per person of HHC that 17 PWAs is incremental output for HHC. 2,850 Baht per service is incremental unit cost for HE and health promotion that 18 community meetings is the incremental output of this activity. Increment unit cost of MIS and paperwork go to infinity because total cost is 2,339 Baht over zero of incremental output. Incremental cost of HIV/AIDS package is 136,315 Baht at incremental 47 PWAs, hence the incremental unit cost is 2,787 Baht per PWA. The real additional unit cost is total real additional cost over the different in their output, real additional unit cost is 1,223 Baht per PWA that the different in their output is 47 PWAs (see Table 4.19).

Table 4.18 Incremental Cost Distribution by Inputs and Activities

Unit: Baht

| Activities | Building cost | Equipment cost | Vehicle cost | Human capital cost | Labor cost | Material cost | Total by activities |
|-----------------|---------------|----------------|--------------|--------------------|------------|---------------|---------------------|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Palliative care | 1,648 | 1,024 | 9 | - | - | 46,510 | 49,191 |
| MCH | 1,031 | 75 | 9 | - | - | 26,720 | 27,835 |
| HHC | 82 | 6 | 64 | - | - | 5,049 | 5,201 |
| MIS, paperwork | 1,937 | 338 | 64 | - | - | - | 2,339 |
| HE, promotion | 247 | 23 | 37 | 3,246 | 20,280 | 22,600 | 46,433 |
| Total by inputs | 4,945 | 1,466 | 183 | 3,246 | 20,280 | 100,879 | 130,999 |

Note: Total real additional cost = 57,494 Baht

Table 4.19 Incremental Unit Cost by Activities

Unit: Baht

| Activities | Incremental cost | Incremental number of services | Incremental unit cost |
|------------------|------------------|--------------------------------|-----------------------|
| (1) | (2) | (3) | (4) |
| Palliative care | 49,191 | 112 visits | 439 Baht/visit |
| MCH | 27,835 | 238 visits | 117 Baht/visit |
| HHC | 5,201 | 17 persons | 306 Baht/person |
| MIS, paperwork | 2,339 | 0 hour | Infinity |
| HE, promotion | 46,433 | 18 services (meetings) | 2,850 Baht/service |
| HIV/AIDS package | 130,999 | 47 PWAs | 2,787 Baht/PWA |

Note: Real additional incremental unit cost = 1,223 Baht per PWA

4.3 Cost of an Integrated Core Package of HIV/AIDS Activities.

Assumption of new package calculations, all costs vary by number of patients, increasing number of existing activities, number of real additional activity that just modify by key actor authority and transferred activity from the hospital to the health center.

The proportion used to calculate capital cost of HIV/AIDS such as cost of building, equipment, and vehicle, the proportion of HIV/AIDS increase so capital cost for new package is higher than the existing package of HIV/AIDS activities.

Labor cost depends on the different time allocation of health personnel between the existing package and core package. Staff time for some activities may be the same, but some activities may be change. Material cost is the most necessary to define to the core package of HIV/AIDS activities. The new package does not eliminate any activities from the existing package but add more activities in the new package. Consequently, cost of an integrated core package of HIV/AIDS activities is the summation cost of existing package and incremental cost of HIV/AIDS activities.

1) Total cost Table 4.20 presents total cost distribution of an integrated core package of HIV/AIDS activities by input and activity. The total cost of the integrated core package of HIV/AIDS activities is 190,338 Baht that clarified to 63,658 Baht of palliative care, 33,444 Baht of MCH, 22,334 Baht of HHC, 8,269 Baht of MIS and paper work, 62,633 Baht of health education and health promotion. The breakdown or cost of the integrated core package of HIV/AIDS activities by inputs includes cost 11,303 Baht for building, 3,349 Baht for equipment, 418 Baht for vehicle, 3,246 Baht for human capital, 32,765 Baht for labor, and 133,941 Baht for supply. Total cost of the integrated core package with transferred cost and an increase cost on the existing activities is 116,833 Baht.

2) Unit cost Table 4.21 shows unit cost of the integrated core package of HIV/AIDS activities. Unit cost is 260 Baht per visit for palliative care, 95 Baht per visit for MCH, 438 Baht per person for HHC, 207 Baht per hour for MIS and paperwork, and 333 Baht per service for HE and health promotion. Average cost of the existing package of HIV/AIDS for each PWA is 1,814 Baht per PWA. Unit cost of the integrated core package with transferred cost and an increase cost on the existing activities is 1,093 Baht per PWA, with 102 PWAs.

Table 4.20 Total Cost of an Integrated Core Package of HIV/AIDS Activities by Inputs and Activities

Unit: Baht

| Activities | Building cost | Equipment Cost | Vehicle cost | Human capital cost | Labor cost | Materail cost | Total cost |
|------------------------|---------------|----------------|--------------|--------------------|---------------|----------------|----------------|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Palliative care | 3,767 | 2,340 | 21 | - | 1,532 | 55,998 | 63,658 |
| MCH | 2,356 | 171 | 21 | - | 205 | 30,691 | 33,444 |
| HHC | 188 | 14 | 146 | - | 5,936 | 16,050 | 22,334 |
| MIS, paperwork | 4,427 | 772 | 146 | - | 2,748 | 176 | 8,269 |
| HE, promotion | 565 | 52 | 84 | 3,246 | 22,344 | 31,026 | 57,317 |
| Total by inputs | 11,303 | 3,349 | 418 | 3,246 | 32,765 | 133,941 | 185,022 |

Note: Total cost of an integrated core package of HIV/AIDS activities without transferred cost from the hospital to the health center and increase on the existing cost = 111,517 Baht

Table 4.21 Unit Cost of the Integrated Core Package of HIV/AIDS Activities

Unit: Baht

| HIV/AIDS activities | Total cost | Number of services | Unit cost |
|-------------------------|----------------|--------------------|-----------------------|
| (1) | (2) | (3) | (4) |
| Palliative care | 63,658 | 245 visits | 260 Baht/visit |
| MCH | 33,444 | 353 visits | 95 Baht/visit |
| HHC | 22,334 | 51 persons | 438 Baht/person |
| MIS, paperwork | 8,269 | 40 hours | 207 Baht/hour |
| HE, health promotion | 57,317 | 188 services | 305 Baht/service |
| HIV/AIDS package | 185,022 | 102 PWAs | 1,814 Baht/PWA |

Note: Unit cost of an integrated core package of HIV/AIDS activities without transferred cost from the hospital to the health center and increase on the existing cost per total PWA = 1,093 Baht per PWA, where PWA = 102 cases.

Table 4.22 indicates costs of the integrated core health package and HIV/AIDS package by inputs are 1,193,248 Baht and 185,022 Baht. The cost ratio of an integrated core package of HIV/AIDS activities and health package is 1:6. Health package cost per total population is 358 Baht per capita. HIV/AIDS package is 1,814 Baht per PWA. The cost ratio of an integrated core package of HIV/AIDS activities and health package is 1:10, where the integrated core package of HIV/AIDS activities without transferred cost from the hospital to the health center and an increase cost in the existing activities.

Figure 4.16 presents percentage of cost of an integrated core package of HIV/AIDS activities by inputs. The highest cost is labor cost, followed by building cost, the medical supply cost, and the remaining. The cost of an integrated core health package is 32% for labor cost, 30% for building cost, 21% for medical supply, 9% for equipment cost, 6% for non-medical supply, 1% for vehicle cost as same human capital cost is 1% of total cost.

Figure 4.17 presents percentage of recurrent cost of an integrated core health package. The highest of recurrent cost is 54% for labor, followed by 36% for medical supply, and 10% for non-medical supply. The proportion cost component of labor: medical supply and non-medical supply: is 5:4:1.

Figure 4.18 shows percentage of cost of an integrated core package of HIV/AIDS activities by input. The highest cost is 59% of medicine and medical supplies, followed by 17% of labor, 12% of non-medical supply, and 12% of capital cost including cost of building, equipment, vehicle, and human capital. Percentage component recurrent cost of an integrated core package of HIV/AIDS activities as indicates in Figure 4.19. The highest of recurrent cost is 66% for medical supply, the remainder is 20% for labor cost, and 14% for non-medical supply.

Table 4.22 Cost Component of an Integrated Core Health Package and an Integrated Core Package of HIV/AIDS Activities by Inputs

Unit: Baht

| Items (1) | Incremental cost (2) | Health package (3) | HIV/AIDS package (4) |
|---|-------------------------|-----------------------|-------------------------|
| 1. Labor cost | 20,280 | 380,113 | 32,765 |
| 2. Supply cost | | | |
| 2.1 Medical supply | 78,228 | 256,258 | 110,410 |
| 2.2 Non-medical supply | 22,651 | 72,091 | 23,531 |
| 3. Capital cost | | | |
| 3.1 Building cost | 4,945 | 361,220 | 11,303 |
| 3.2 Equipment cost | 1,466 | 106,980 | 3,349 |
| 3.3 Vehicle cost | 183 | 13,340 | 418 |
| 3.4 Health capital cost | 3,246 | 3,246 | 3,246 |
| Total cost of package | 130,999 | 1,193,248 | 185,022 |
| Health package cost/capita | | 358 | |
| HIV/AIDS package cost/PWAs | | | 1,814 |
| Package with real additional cost (RAC) | 57,494 | 1,119,743 | 111,517 |
| Health package with RAC per capita | | 336 | |
| Health package with RAC per PWA | | | 1,093 |

Note: 1. Population = 3,330, PWAs = 102 cases

2. Real additional cost = 57,494 Baht, real additional cost per capita = 17 Baht per capita

3. HIV/AIDS package with RAC = 111,517 Baht

4. HIV/AIDS package with RAC per PWA = 1,093 Baht per PWA

5. Health package with RAC = 1,119,743 Baht

6. Health package with RAC per capita = 336 Baht per capita

7. % cost of HIV/AIDS package/health package = 1:6

8. % cost of HIV/AIDS package (with RAC)/health package = 1:10

Figure 4.16 Percentage of Cost of an Integrated Core Health Package by Inputs

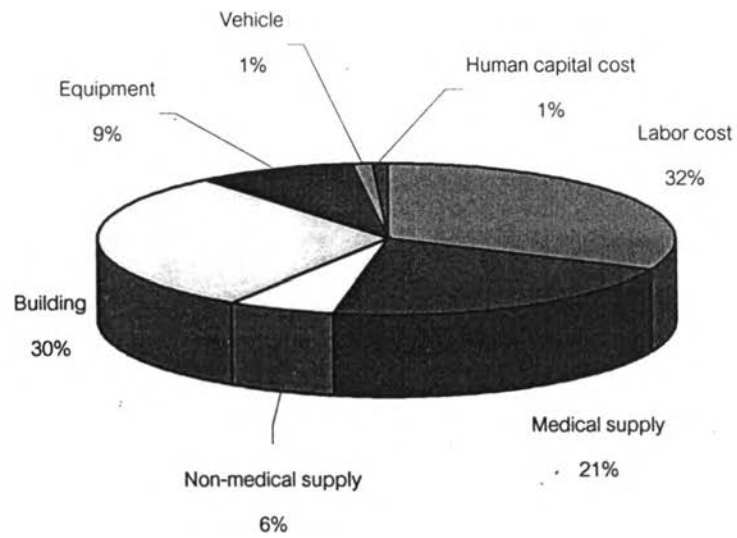


Figure 4.17 Percentage of Recurrent Cost of an Integrated Core Health Package

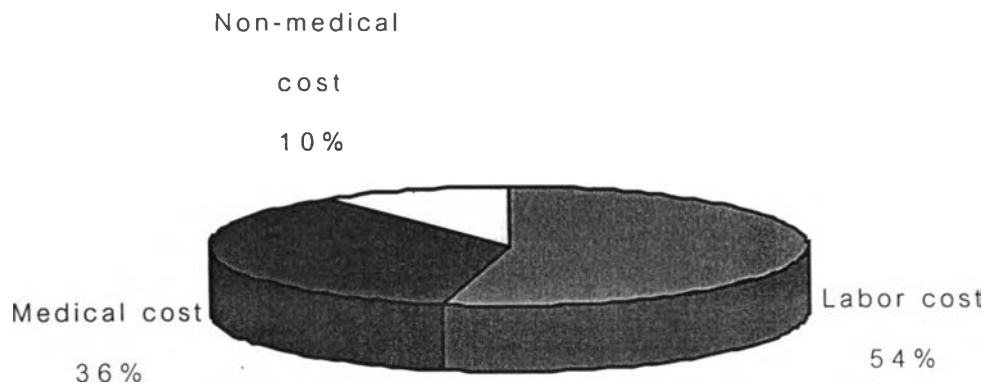


Figure 4.18 Percentage of Cost of an Integrated Core Package of HIV/AIDS Activities by Inputs

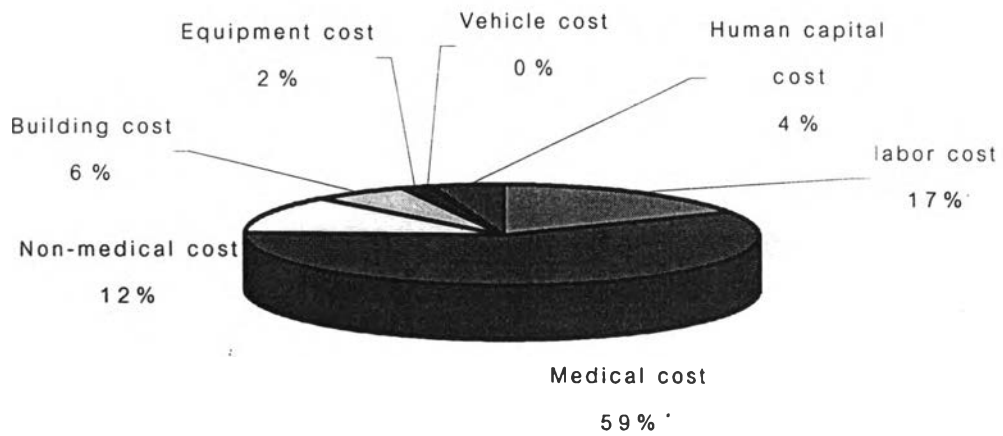
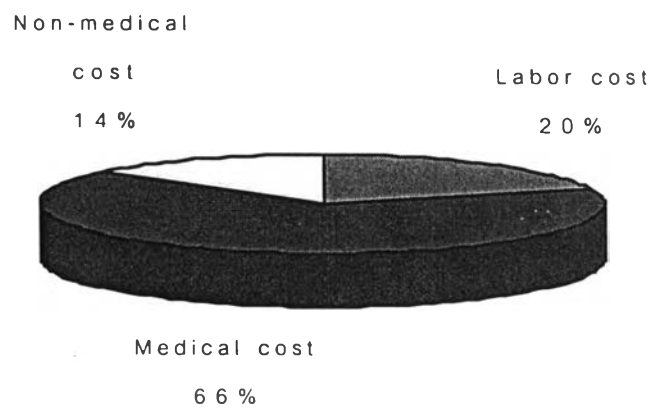


Figure 4.19 Percentage of Recurrent Cost of an Integrated Core Package of HIV/AIDS activities



A cost comparison between the existing package and an integrated core package indicates that all of the calculated costs of the integrated core package are higher than the existing package with the exception of the unit cost of HHC. Total cost of an existing health package existing is 1,060,249 Baht rising to 1,193,248 Baht for the integrated core package with all of incremental cost. The cost of the new package is higher by 10%. Total cost of the existing HIV/AIDS package, 45,023 Baht is less than total cost of 185,022 Baht for an integrated core package. The cost of new package is higher by 35%. The cost different between costs on actual of health package per capita or the existing package is 318 Baht per capita is less than 358 Baht per capita for an integrated core package. Cost of HIV/AIDS package per PWA for the existing package is 982 Baht per PWA is also less than 1,814 Baht per PWA for an integrated core package.

The capital cost of an integrated core package is three times higher than the existing package due to the greater numbers of PWAs or higher proportion of PWAs and the added real additional cost of human capital training. Labor cost of 32,765 Baht for an integrated core package of HIV/AIDS activities is 2.6 times higher than the existing package by. All incremental labor costs do not include pay for health personnel, but most of them pay for health volunteers training. Supply cost of an integrated core package is also more than the existing package due to additional real cost, transferred cost from hospital to health center, and an increase in the existing activities. Supply cost of an integrated core package is higher than the existing package such as medical supply cost is 3.4 times higher due to transferred cost from hospital to health center, non-medical supply cost is 27 times higher due to the developing community assessment that is the real additional cost.

The proportion of an existing HIV/AIDS package cost over total existing health package cost on provider side at health center the ratio is 1:20 that the proportion cost of HIV/AIDS over total health cost less than the proportion of new package. The cost ratio between an integrated core HIV/AIDS package with all types of the incremental cost and an integrated core health package is 1:6. 1:10 is the cost ration between an integrated core package of HIV/AIDS activities with an additional real cost and integrated core health package (see Table 4.23).

Table 4.23 Cost Comparison between the Existing Package and an Integrated Core Package

Unit: Baht

| Items | Existing package | Integrated core package | Cost ratio of existing-integrated core package |
|---|------------------|-------------------------|--|
| (1) | (2) | (3) | (4) |
| 1. Total cost of health package | 1,062,249 | 1,193,248 | 1:1.1 |
| 2. Total cost of HIV/AIDS package | 54,023 | 185,022 | 1:3.4 |
| 3. Component cost of HIV/AIDS package by Inputs | | | |
| 3.1 Building cost | 6,358 | 11,303 | |
| 3.2 Equipment cost | 1,883 | 3,349 | |
| 3.3 Vehicle cost | 235 | 418 | 1:3 |
| 3.4 Human capital cost | - | 3,246 | |
| 3.5 Labor cost | 12,485 | 32,765 | 1:2.6 |
| 3.6 Supply cost | | | |
| - Medical supply | 32,182 | 110,410 | 1:3.4 |
| - Non-medical supply | 880 | 23,531 | 1:27 |
| 4. Component cost of HIV/AIDS package by activities | | | |
| 4.1 Palliative care | 14,467 | 63,658 | 1:4.4 |
| 4.2 MCH | 6,434 | 33,444 | 1:5.2 |
| 4.3 HHC | 16,308 | 22,334 | 1:1.4 |
| 4.4 MIS, paperwork | 5,930 | 8,269 | 1:1.5 |
| 4.5 HE, promotion | 10,884 | 57,317 | 1:5.8 |
| 5. Unit cost | | | |
| 5.1 Palliative care | 109 | 260 | 1:2.4 |
| 5.2 MCH | 56 | 98 | 1:1.8 |
| 5.3 HHC | 480 | 438 | 1:0.9 |
| 5.4 MIS, paperwork | 147 | 207 | 1:1.4 |
| 5.5 HE, promotion | 64 | 305 | 1:5.2 |
| 6. HIV/AIDS package per total PWAs | 982 | 1,814 | 1:1.9 |
| 7. Health package per total population | 318 | 358 | 1:1.1 |
| 8. % cost of HIV/AIDS package per health package | 1:20 | 1:6 | |

Note: 1. Total cost of an integrated core package (ICP) of HIV/AIDS with real additional cost (RAC)= 111,517 baht

2. Total cost of an ICP of HIV/AIDS with RAC per total PWA = 1,093 baht per PWA

3. Total cost of an ICP of HIV/AIDS with RAC per capita = 33 baht per capita, where 3,330 population

4. The proportion cost of an ICP of HIV/AIDS with RAC and an integrated core health package= 1:10