

# CHAPTER 6

## CONCLUSION, DISCUSSION, POLICY IMPLICATION, RECOMMENDATION AND LIMITATION

### 6.1 Conclusion and discussion

This study begins to find the unit cost of Nakornthon hospital by dividing departments into 4 groups.

- 1) Non-revenue producing cost centers (NRPCC) use code A
- 2) Revenue producing cost centers (RPCC) use code B
- 3) Patient service cost centers (PS) use code C
- 4) Non-patients service (NPS) use code D

All together 28 departments.

The total direct costs of each cost center were determined and classified into capital, labor and material cost.

The total direct cost of NRPCC and RPCC was allocated to all PS which is the main center to patients care. This study used two methods 1) Simultaneous 2) Step down method. Two methods were used to determine how different results were.

#### 1) Hospital cost

Total cost of Nakornthon hospital is 220,552,518.11 baht. The proportion of material cost, labor cost and capital cost is 34.35 : 42 : 23.65 . The labor cost is the biggest part of the cost and follow by material and capital cost. Also from the other studies of unit cost of any hospital labor cost (table 3.1) is the highest cost. So, we can assumed that for hospital industry manpower is the most important cost especially in Bangkok, Thailand where doctors and nurses are scare resources.

The total hospital fix cost was 52,164,310 baht and total hospital variable cost was 168,388,207 baht. Allocate total fix cost and variable cost of non-revenue producing cost center and revenue producing cost center to find full fix cost (CC+NRPCC) and full variable cost (LC+MC+RPCC) of patient service center (see appendix D)

The fix cost and variable cost of SSS was 12,946,055 baht and 60,693,137 baht.

2) Compare top 5 of Social Security Scheme in-patients at Nakornthon hospital to 5 major in-patients of the people in Thailand

Diarrhea and Gastroenteritis of Presumed Infectious Origin is the most of SSS inpatients. The second is Acute Appendicitis with Generalized Peritonitis. The third is Acute Tubulo-Interstitial Nephritis. The fourth is Acute Tonsillitis and the fifth is Pneumonitis due to solids and liquids.

Compared to health status of the people in Thailand. (from chapter 1) the five major illness for inpatients with leading causes of morbidity were Single spontaneous delivery, Symptoms, signs of abnormal clinic and laboratory findings, not elsewhere classified, Other intestinal infectious diseases, Complications of pregnancy, labor, delivery, puerperium and other obstetric conditions, not elsewhere classified and Acute upper respiratory infections and other diseases of upper respiratory tract.

Assumed that at Nakornthon Hospital area there are some problems about the consumption of poison foods, this is one of the most illness for SSS insured.

3) Cost comparison between simultaneous and step down method

For total cost of patient service cost centers which are code C1-C7 the results were not so different between simultaneous and step down method. Almost each result using simultaneous cost will be a little bit higher than step down method. Due to simultaneous method no cost left in that cost center and by using computer programmed. We can take into consideration all cost interrelations between departments: non-revenue department to non-revenue departments to revenue departments. In the other way, by step down method not allowing fully for interdepartmental charges between the different non-revenue department. But step down method can show how the cost of one cost center is allocated to other cost center. So both methods are the most popular to allocate cost center.

## 6.2 Policy implication and recommendation

It is very important for the hospital to set up a policy about labor cost, material cost, capital cost and social security scheme to control cost. We can handle by well planning and evaluating which different from revenue that the hospital can not control because of outside factors.

### 6.2.1 The three main costs are labor cost, material cost and capital cost.

**Labor cost :** consist of salary & wage, overtime, part-time wage, welfare, and traveling expense which is highest proportion of cost at Nakornthon. The hospital should consider carefully about personnel recruitment. Personnel of each position should be rotate and flot as necessary with good training. The legal employment under overtime brings a higher labor cost because of overtime wages. To hire more full time staff may be necessary for better service and lower pay although this may cause of higher fringe benefit but in total this might lower labor cost.

**Material cost:** consist of office and medical supplies, water, electricity and telephone. Medical supply is the highest cost. To control material cost the Nakornthon hospital should follow these policies;

- 1) Purchasing and payment system are very important.  
Large amount of buying can be the best way to get lower price but the hospital must pay a large amount of money. So the hospital should join with other hospitals to be a group of buyer and negotiate with the suppliers.
- 2) Also contract payment can be negotiated such as 3 –6 months without interest.
- 3) Grouping any kinds of material is another way to concentrate usage of the material in order to control cost.
- 4) Arrange campaign safe energy about electric, water or telephone use.
- 5) Local or original brand of material should be considered carefully before order

**Capital cost:** consist of depreciation of equipment, depreciation of building and maintenance of building. Rent or buy? Invest now or later? These are good questions. These factors depends on cashflow or capital in hand. Full capacity of equipment or building must be considered because of depreciation.

The policy of a new health facility construction should be reconsidered. The cost should not only consider construction cost, but maintenance cost and other recurrent cost should be considered also. The decision for extending the overutilized health facility or constructing a new health facility should be made under economic backgrounds as well. The advantages and disadvantages including maintenance cost in the future should be considered carefully. Channels or new ways to provide health services with lower cost should be created.

## 6.2.2 Changing in SSS revenue and SSS cost components

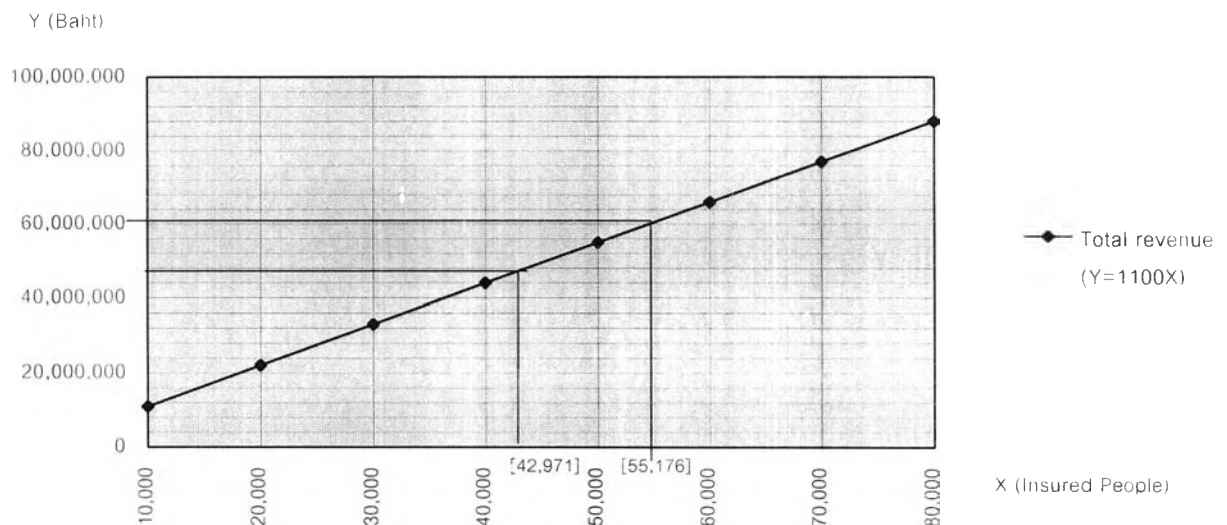
**Scenario 1 :** Assumption that 1) number of patient visits are the same. 2) Total costs are still the same. Find number of insured people to break variable cost

$$\text{Total variable cost} = 60,693,137 \text{ baht.}$$

$$\text{Number of insured people to break variable cost} = 60,693,137 / 1,100 = 55,176 \text{ people}$$

In fact in 2000 the number of insured people at Nakornthon hospital was 42,971 people so the hospital need 12,205 people more to break even.

Figure 6.1 Scenario 1



**Scenario 2 :** Assumption that SSS revenue has change by 30 percentage increasing number of insured people. Other factors are still the same.

$$\text{Number of insured people in 2000} = 42,971 \text{ people}$$

$$30 \text{ percentage increasing} = 42,971 * 30\% = 55,862 \text{ people}$$

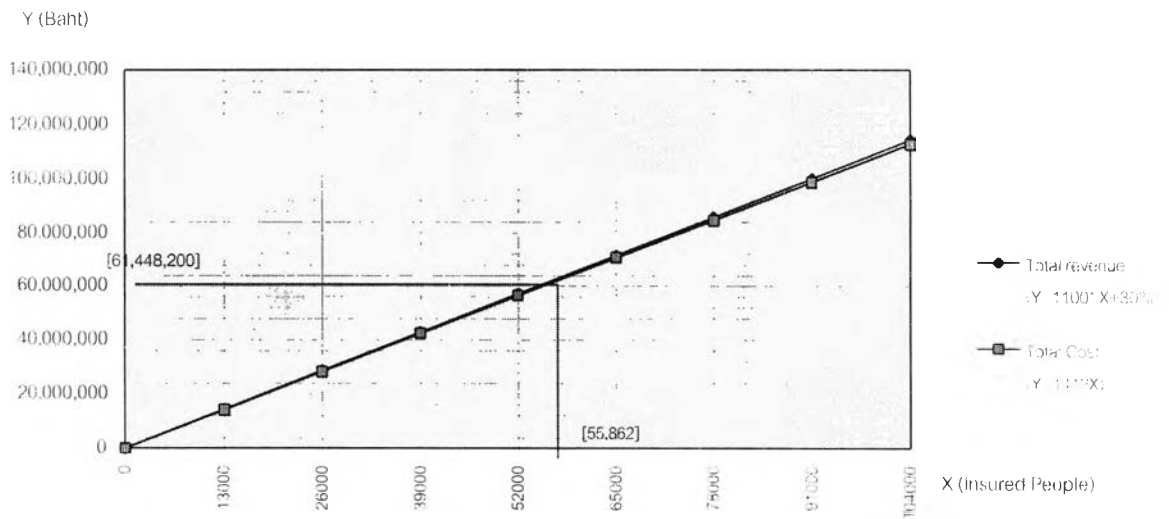
$$\text{Total revenue} = 55,862 * 1,100 = 61,448,200 \text{ baht}$$

$$\text{Total profit} = \text{Total revenue} - \text{Total cost (in this term use only variable cost)}$$

$$= (61,448,200 - 60,693,137) = 755,063 \text{ baht}$$

In this assumption the hospital will profit 755,063 baht

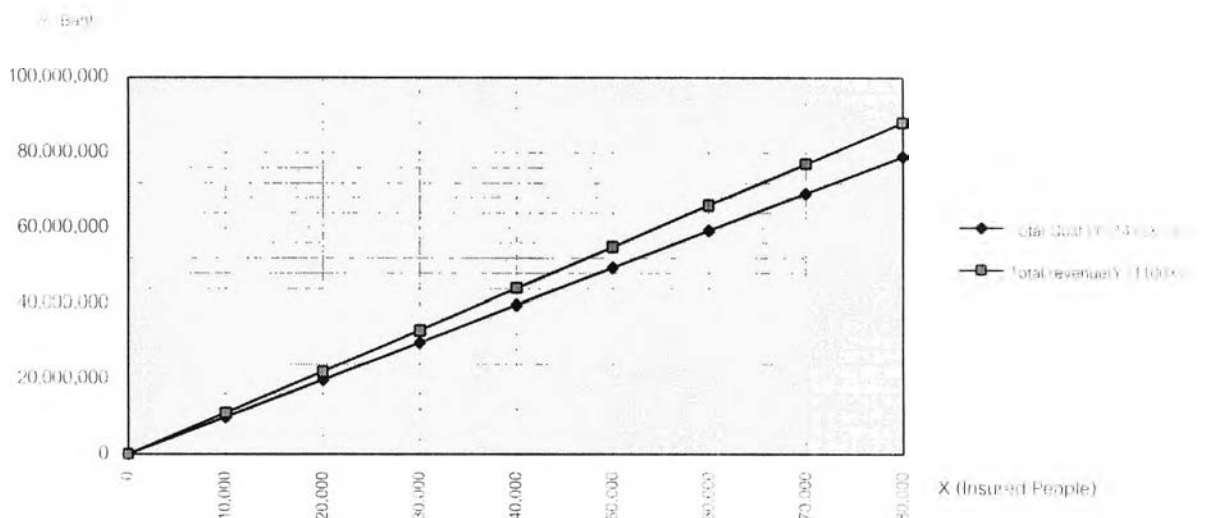
Figure 6.2 Scenario 2



Scenario 3 : Assumed that SSS cost has change by 30 percentage reducing. ( in this term use only variable cost )

In this assumption using the same figure 6.1 but reducing 30 percentage in total cost the graph in figure 6.3 show that the total revenue are higher than cost .It means that the hospital can profit if the hospital can reduce 30 percentage in cost.

Figure 6.3 Scenario 3



From these assumptions the hospital may adjust for management policy to reduce cost or increase revenue.

### 6.2.3 Social security Scheme policy

Since 1999 Nakornthon Hospital started to service to SSS insured with 25,000 insured quota and in the year 2000 with 50,000 insured quota. The number of SSS insured who selected Nakornthon Hospital was 31,056 and 42,971 people by consequence. Due to system of payment for social security scheme by capitation, the amount of insured people quota also the volume of the insured people for out-patients and in-patients for the service of the hospital is very important. The standard of treatment must continue for the reputation of the hospital, so the preventive policy for insured people should be provide regularly.

The result meant that SSS was the cause of high cost and loss. To reduce loss Nakornthon hospital should have major polices such as

- 1) To control any kind of cost to establish good and efficient management and management development in both quality and quantity. In terms of efficient management a Social Security committee or Social Security medical committee should be established. The SSS at Nakornthon hospital needs on efficient audit system. A financial and accounting division to operate and manage money received, payment, keeping money, balance sheet, and financial report. As we know that there are various kind of cost such as variable cost and fix cost that we must pay attention to control loss, especially for variable cost which are labor cost and material cost.
- 2) The highest expense of material cost was medicine so to manage, control and ensure that medical care is provided to insured and other qualified persons according to prescribed standards which made by doctors. High technology medical instruments need to be used. This brings a high cost. Therefore the cost effectiveness must be considered.
- 3) Health promotion or preventive campaign are need to promote such as mobile check-up to the community or direct to the factory or patients' company.
- 4) Adequate service centers and medical care providers covering some of the hospital 's area including more sub-contractor clinic are necessary due to hospital cost for out-patients and in-patients which is quite high. This also provides a more convenient service to the community.

- 5) The cost for chronic disease treatment usually incurs huge expenditures and leads to the higher cost of curative treatment. Preventative education costs less. The hospital should play an important role in educating on measures, which can prevent disease and resultant loss of unnecessary expenditures for the hospital, and reduce the cost of complicated diseases too.
- 6) The increased number of day admittance relates to higher cost so an early discharge may be a considered policy but the doctor must give suggestions of how to take care of themselves in order to prevent infection after discharge.
- 7) The number of outpatient and inpatient has increased. In order to achieve for satisfied customer (employer and insured person) satisfaction, the SSS at Nakornthon Hospital has to provide a faster customer service system, including registration, and medical care services. Improving quality of staff by training and improve computer system for front service.
- 8) From the break even point analysis, the hospital must try to increase revenue and reduce cost after the hospital tries a good management policy to cut labor cost, material cost and capital cost and even try to cut off sunk cost but finds that its efforts are unsuccessful. A last choice should be stop to service for SSS group and try to promote non-SSS or other private insured group.

### 6.3 Limitations

This is a retrospective study, so there are some significant limitations which may lessen its value.

**First**, the research only focuses on provider's perspective. Cost of care and treatment incurred by patients and their family (i.e. personal health expenditure and user fees) are not included in the cost calculation in this study.

**Second**, this study focuses on the capital cost, material cost, and labor cost of provider to implement all activities and specific to 5 diseases illness of SSS in-patient but there are some working area and some staff used for both non-SSS patients and SSS patients can not be definitely separate.

**Third**, there are no real unit costs available for some of the hospital services, such as administrative and personnel department, in-patients services etc. It was difficult to calculate the real economic cost.

**Fourth**, true evaluation of utility costs, like electricity and water supply, are hampered because, there is no meter to measure the quantity used, specific for the SSS service.

**Fifth**, unit of measurement or allocation criteria was one of the important factors to find unit cost, the criteria must well relate to the real cost of each department.