

CHAPTER I

INTRODUCTION



Background and Rationale

The universal healthcare coverage program or “30-Baht healthcare scheme” is one of the most important government’s policies which emphasize on giving every citizen equal access to quality health care service and having a health security as clearly stated in the new Constitution of Thai kingdom 1997. This policy was initiated in the middle of fiscal year 2001. Currently, National Health Security Act 2002 has been legislated. (Development of Readiness Resource Management of Health Institution in Ministry of Public Health Committee, 2001).

The current public health system in Thailand has been changed radically and rapidly. Universal Health Security Coverage is an immediate government policy, which had been started implementing nationwide in October 1, 2001. The policy leads to the significant healthcare system reform. It focuses on improving the equality of access to basic healthcare service, efficiency, quality and health insurance of Thai citizen so that the limited public health resource will have been exploited ultimately (Walaiporn Patcharanarumol & Wiroj Tangcharoensathien, 2001). To operate the universal healthcare coverage program or 30-Baht healthcare scheme, the health institutions will get the budget paid by the program for every registered population. As a result, it is very important for the hospital administrators to know the unit cost of the patient

service at their hospitals clearly. The cost analysis is an essential tool to evaluate the efficiency of resource allocation, which leads to the appropriate action for improving the performance of hospital. It also helps manage the health service under the resource constraints (Wiroj Tangcharoensathien et al refer in Development of Readiness in Resource Management of Health Institution in Ministry of Public Health Committee, 2001).

Transforming the universal health coverage scheme into practice, the health institutions need to adapt themselves in managing the scheme extremely as the new medical scheme is also aimed at restructuring the allocated of financial resources and management budget. Formerly, health system budget was allocated on forecast demand and the given project from the center and the paid fee from the patients. On the contrary, under the new medical coverage scheme, the health system budget allocation is calculated per head or per capita annually. Hospital will get paid by the program for the number of registered patients. Budget for the labor cost of hospital, previously allocated separately, were also included in the per capita budget under the new scheme. In addition, the revenue of hospital, which normally collected from the patient directly, shrank dramatically.

According to the universal healthcare coverage program in 2001, it is clearly determined that the budget allocation for the out-patient cases will be used the capitation system whereas the global budget and diagnostic related group will be used for the in-patient service. The hospital is more likely to be a financial risk taker and face the financial crisis due to the per capita budget and diagnostic related group

allocation. In both universal health coverage program and social security program, the hospital will be under the financial pressure and forced to reduce the cost inevitably. This can effect the low quality of health service and result in the negative consequence to the patients' health eventually. However, in reality, experiences from several countries reveal that the high health service cost or hospital cost is more likely from the inefficient administration and management. Frequently, the inefficiency of hospital management is caused by the inadequate direct patient care process. (Niphit Phirawech et al., 2003).

The main objective of health-budgeting system reform is to allocate the budget as a performance-based budgeting system. This budgeting system will emphasize on the performance, output and the operating result of every department in accordance with the budget allocated from the government sector to produce the product or service in the fiscal year. This simply indicates that the appropriate budget allocation depends on accurate unit cost. As a result, the unit cost analysis is a vital factor that every organization needs to consider. Another essential factor to improve the organization structure is the accounting system for final product and output determination and cost finding (Training material of "Cost Analysis of Healthcare Service Network and Activity-Based Costing" Seminar, 2001). The hospital cost can be used to guide the hospital administrator and health personnel to make the decision in hospital management. Therefore, to achieve the ultimate benefit in hospital cost analysis, the cost that all health care personnel need to study initially should be the accounting cost, not the economics cost (Anuwat Supachutikul, 1997).

Maharaj Nakhon Si Thammarat hospital is a 1,000-bed provincial hospital. According to the financial report analysis, the financial ratio, liquidity ratios, current ratio from the fiscal year 2000 to 2002 which compared between current assets and current liabilities were 1.92, 1.23 and 0.89 respectively (This ratio 2:1, is an appropriate and standard measurement) (Development of Readiness of Resource Management of Health Institution in Ministry of Public Health, 2001) When comparing to the hospital management performance among the health institutions nationwide under the Office of Secretary of Ministry of Public Health as of January 6, 2003, it found that the average current ratio was 4.29. This can imply that Maharaj Nakhon Si Thammarat hospital has a low liquidity and low ability to pay the short-term debt. Furthermore, when considering the quick ratio which compared between the current asset excluding the inventory and the current liabilities, the ratio were 1.01, 0.57 and 0.71 respectively. (If ratio is more than 1.0 is good, less than 1.0, should be improved) The average quick ratio was 3.53. This can be seen that the current ratio and quick ratio is below the standard criteria. It implies that Maharaj Nakhon Si Thammarat hospital has a low liquidity ratio and is tentative to be much lower. This will effect to the quality of health service. Maharaj Nakhon Si Thammarat Hospital had implemented the universal health coverage program in the fiscal year 2002 and got budget paid for the number of registered patients. This inadequate funding from the scheme has not been enough for the hospital to pay for its personnel salary. The hospital needed to spend the money from the community hospital budget to pay for the salary in advance and the debt was accumulated accordingly until the end of fiscal year 2002.

To summarize, Maharaj Nakhon Si Thammarat hospital has been facing the cost overrun problem for a long while, as the amount of Bht 54,045,551.00 was still unpaid to the other health institutions network. The hospital got the budget paid for the amount of Bht 199,189,934.00 according to the number of registered patients whereas the personnel salary to be paid was Bht 240,367,560.00. However, the hospital was subsidized by the Contingency Fund for the amount of Bht 166,872,500.00 to pay for the personnel salary. After the other operating expenses were deducted, the hospital still needed to pay the other health institution network for the unpaid debt at Bht 54,045,551.00. (Letter from Nakhon Si Thammarat Provincial Public Health Office, Ref. No. NS.0033.010 / 685: Detail of Unpaid Debt of Maharaj Nakhon Si Thammarat hospital)

From the above mentioned situation, it can be seen that Maharaj Nakhon Si Thammarat hospital has been facing the financial crisis when implementing the new universal health coverage scheme. Therefore, to monitor the financial situation of the hospital, the hospital cost analysis should be taken into account. Besides, the study of unit cost of out-patient and in-patient services should be conducted in order to use the result of the analysis to help the hospital administrator make the best use of their resources for improved health care services. Furthermore, the finding of this study can be the guideline of the development of cost data system for the accurate hospital cost analysis in the future.

Objectives

General Objective

To study the cost structure and unit cost of Out-Patient and In-Patient services of Maharaj Nakhon Si Thammarat hospital between July 1,2003 to December 31, 2003.

Specific Objectives

1. To calculate the direct cost of all departments at Maharaj Nakhon Si Thammarat hospital, which comprises of Labor Cost, Material Cost and Capital Cost.
2. To calculate the indirect cost of patient service and non-patient service areas, which allocated from the other departments at Maharaj Nakhon Si Thammarat hospital.
3. To calculate the full cost of out-patient and in-patient services at Maharaj Nakhon Si Thammarat hospital.
4. To calculate the unit cost of out-patient and in-patient services at Maharaj Nakhon Si Thammarat hospital.

Research Question

What is the cost and unit cost of out-patient and in-patient services at Maharaj Nakhon Si Thammarat hospital between July 1-December 31, 2003?

Scope of Research

This research is the study of all cost centers in both patient service and non-patient services areas at Maharaj Nakhon Si Thammarat hospital. It is a prospective study which data gathered between July 1-December 31, 2003. The cost in this study is analyzed from the provider's point of view only.

Fundamental Agreement

1. Labor cost of In-patient health welfare which referred to other hospitals by using the referral letter and those hospitals directly issue the invoice to the Provincial Treasury will not be considered as the expenditure.
2. Salary information, other special allowances and personnel fringe benefits will be gathered from the personnel who actually work in the department.
3. Personnel time spent collecting for both the personnel who work in one department and various departments will be based on working hours.

Research Constraints

Maharaj Nakhon Si Thammarat hospital is a 1,000-bed hospital, comprises a variety of departments which provide complex health services. The data is currently recorded on computer database system and manually. There is no cost data linkage among the departments. Moreover, the high workload burden of personnel can cause the poor information system and incomplete cost data.

Operation Definitions

1. Cost center: It can be categorized as follow:
 - 1.1 Non–Revenue Producing Cost Center: NRPCC refers to any departments, which provide supporting service to other department, which not produce the revenue. Examples of departments include General Administration, Office of Nursing Administration Office and Dietetics.
 - 1.2 Revenue Producing Cost Center: RPCC refers to any departments, which provide the Specialty Medical care service to the patient, not the direct patient service. This cost center can produce the revenue by charging the service fee to the patients directly. Examples of departments are Pharmacy, Laboratory and Pathology and Radiology.
 - 1.3 Patient Service Area: PS refers to any departments, which are responsible for providing any direct service to the patients. Examples include out-patient and in-patient department which are the absorbing cost center in aspect of patient service cost calculation.
 - 1.4 Non - Patient Service Area: NPS refers to the cost center which responsible for rehabilitation and health promotion activities. Examples of departments are Social Medical Unit, Health Education and Public Relation Unit and Medical Education Center.
2. Cost
 - 2.1 Cost refers to the expenditure or resource, which can be measured in the monetary form. It will be used to get the hospital final products or outputs.

- 2.2 Labor cost: LC refers to the expense which paid to the personnel for their working including all kinds of fringe benefits which paid in the monetary forms, for instance, salary, position allowance, wage, overtime, children support fee, children tuition fee and medical fee.
- 2.3 Material Cost: MC refers to the expenditure of material supplies which worn down in the operation of any department which requested during the study period, for example, drug expense, medical equipment, utility expense, maintenance cost and office supplies.
- 2.4 Capital Cost: CC refers to the annual depreciation cost of all heavy equipment and buildings. The depreciation cost is calculated by using the straight-line method. The total life of equipment will be based on the depreciation calculation criteria of General Accounting Department. The assumption for a building is a total life of 20 years. The depreciation cost of each building will be calculated according to its area usage proportion.
- 2.5 Total direct cost: TDC refers to the cumulative of labor cost, material cost and capital cost which incur in any department directly or refers to the cost of that department excluding the allocated cost from other departments.
- 2.6 Indirect cost: IC refers to the cost of the absorbing cost center which receive from the transient cost center which determined by the association of support or service provided between departments in regards of the cost allocation criteria or it is the cost incurred from the

allocation by the other departments using the appropriate allocation criteria.

- 2.7 Routine Service Cost: RSC refers to the sum of direct cost of patient service and indirect cost which allocated from the non-revenue producing cost center when providing service to the patient but not yet charge the service fee. Alternatively, this means the cost, which not include any service charge to the patient when going to hospital without getting any treatment, operation or drugs.
- 2.8 Medical Care Cost: MCC is the cost which the patient service absorb from the revenue producing cost center.
- 2.9 Full cost: FC refer to the sum of total direct cost and indirect cost or the sum of the direct cost of patient service and indirect cost of non-revenue producing cost center and revenue producing cost center according to the appropriate cost allocation criteria. Alternatively, the full cost can refer to the cumulative of all expenditures incurred which are the total cost of direct patient service itself including the cost allocated from other supporting departments.
- 2.10 Unit cost or Average Cost refers to the full cost which incur for one unit of health care service provided. The unit of patient service can be the number of out-patient visit, the number of in-patient case and the patient day of in-patient.

3. Cost allocation

It refers to the allocation or distribution of cost amongst departments in regard of the association of support or the service provided. The cumulative costs from the support departments are eventually allocated to the absorbing cost centers.

3.1 Cost Allocation criteria refers to the defined criteria determined by the attribute of data illustrating the association of support or the service provided between departments. It indicates the quantity of work from one department allocated to the other department. This criterion will be based on the actual information to ensure that the costs are allocated appropriately.

3.2 Cost Allocation by simultaneous equation method. In solving the reciprocal of cost distribution, the simultaneous equation technique is needed. The result of solving these simultaneous equations will represent the value of the total cost that distributed across transient cost center. The result is obtained by solving the simultaneous to infinity number of time until it reaches the equilibrium point. This means no cost can be distributed or allocated any more. Therefore, the method is regarded as the most complete and most accurate method used to allocate the cost and solve the reciprocal cost allocation by using the aid of computer program.

4. Out-Patient refers to the patients who go to Maharaj Nakhon Si Thammarat hospital for treatment but does not stay at the hospital. Even the patients, who are admitted to the in-patient department, they generally get the treatment at the out-patient department firstly.

5. In-Patient refers to the patients who go to Maharaj Nakhon Si Thammarat hospital and the physician diagnoses that they need to stay at the hospital while receiving the treatment. These patients will be registered as the in-patient.
6. Number of out-patient service refer to the number of hospital visit which the patient go to get the treatment or health service, for example, one patient goes to the hospital twice, it will be two out-patient services.
7. Patient day refers to the total length of stay that the patients stay in the hospital while receiving the treatment.
8. Average cost per capita refers to the total cost of each cost center divided by the total number of patients in that cost center, regardless the type of disease, complication and seriousness of disease.
9. Average In-Patient cost per day refers to the total cost of each cost center divided by the patient day, regardless any differences in each day. Normally, the cost will be high in the very first day of the stay and then decline sharply when waiting for the discharge.

Expected Benefits and Applications

1. The finding of unit cost analysis will be the information for planning, improving the patient service provided and the ultimate utilization of limited resource.
2. The finding will be the fundamental information to help guide the annual budget planning, controlling and evaluation.

3. The finding will be used as the information to control the expense when realizing the waste resources.
4. It can help estimate the future expense incurred and control the cost more effectively and efficiently.