

CHAPTER 1

INTRODUCTION



1.1 Background and Rationale

Some kinds of illness that the patients cannot afford by themselves facing with those illness, for example: cancer, kidney disease, severe trauma, heart disease caused by very high expenditure for treatment, may lead to lose large loan in order to support their health expenditures. Or else they have to sell their assets or even the producing factors of the family. Those kinds of illness are called catastrophic illness.

Heart diseases comprise one group of catastrophic illness because of their treatment open-heart surgery, which is technologically complicated procedure, needs to be intensively 24 hours cared and extremely high overall cost. Open-heart surgery is used to treat a number of heart diseases that were once considered incurable.

Cardiovascular disease (CVD) is included with dysfunctional conditions of the heart, arteries, and veins that supply oxygen to vital life-sustaining areas of the body, for example, the brain, the heart itself, and other vital organs. In case that oxygen cannot arrive to any tissue or organ, those would be died finally. Cardiovascular disease (CVD), principally heart disease and stroke, is the Nation's leading killer for both men and women among all racial and ethnic groups. Almost 1 million Americans die of cardiovascular disease each year, which adds up to 42% of all deaths. Heart disease doesn't only kill the elderly, but also it is the leading cause of death of age 35 and older. Statically, Heart disease accounts for over one million deaths each year. 160,000 of those deaths the individuals were 35 to 64 years old.

(<http://www.healingwithnutrition.com/cardiovascular>)

In 1999, population in Thailand is approximately 60 million, which approximately 5,000 of them were babies born with cardiac anomalies annually. Unfortunately, only 1,000 young patients will have a heart operation a year. The complicated heart surgery should be required by a team of specialists, special medical equipment and intensive care that a handful of public hospitals can only provide and nationwide. Public hospitals can only handle 1,000 cases annually.

Ratchawithi Hospital lonely operated on 400 children and half of them are on the waiting list. As a result of long queue to have a call for surgery, children usually wait for their turn at least 2 years. Ninety-five percents of the children come from poor families in any provinces and cannot afford to the high medical treatment in private hospitals. There are basically two types of heart defects in children, and the conditions are commonly known as blue baby and flooded lung. Children born with heart defects will not survive so long unless they have corrective surgery before the age of 15 years. Ninety-seven percents of such operations are successful and more than 90 percent of children feel healthier after operation 3 days.

The average of operation costs per child among 60,000 with 120,000 baht depends on the actual problem and complications, which may arise. Normally, Young patients get free of charge of operation and care until their hearts are healthy because the hospital and the Ministry of Public Health absorb such high fees. Every 10,000 bahts of public donation occurs, for example, the operations can be increased in number for couple of children. (Pediatric Cardiac Surgery Foundation, 1999)

At present, Thai people with health insurance coverage (For example: Civil servant medical scheme, Health Card Scheme, Social security scheme, Workers Compensation scheme, and Low income people) as well as thirty percents of Thai people without health insurance are influenced by catastrophic illness. Moreover, efficiency in funding for the cost of the catastrophic illness is another problem as well. Important questions are noticed as the follows:

1. What is the appropriate reimbursement rate to the contractor provider of open-heart surgery?
2. What is the appropriate method of payment to the provider so that the patients can get the most efficient health services?

Consequently, it is very essential to know about the real cost incurred appropriate policy in management of these illness (Donalson, et al, 1998).

The Social Security scheme has been established in Thailand since 1990. A lot of changes have been occurred both insured persons and medical providers. Insured persons expect to get higher health care benefits from this scheme but the medical providers cannot provide services to the extent insured persons expected because of the limited resources (Intajak, 1996). In 1996, open-heart surgery has been approved and included in the criteria and rate of reimbursement in case of High Cost Care by Social Security Office (SSO). Normally, open-heart surgery is displayed the limited maximum rate of fee for service while Social Security Office will be responsible for any retrospectively expenditure not exceeding than 100,000 bahts per case paid to the contracted hospitals, which treated its insured members with the High Cost Care (Social Security Office, 1996). In 1999, the Social Security office which open-heart surgery and coronary bypass were the highest portion spent 70 million bahts (The Social Security Office, 1999).

Universal Coverage Health Insurance was introduced in Thailand in April 2001. The main budget under the universal coverage is deducted to the Health Insurance Office and allocated by 1,202.40 bahts per capitation, which can be divided as follows:

Out of patient	574.00	bahts
Health promotion Disease control and prevention	175.00	bahts
High cost care	32.00	bahts
Accidental Trauma and emergency	25.00	bahts
Capital and investment	93.40	bahts

Beside of the capitation payment system as above, Health Insurance Office will reimburse additional payment of open-heart surgery to the hospital at rate 100,000 bahts per case.

In Thailand, the number of open-heart surgery has increased dramatically in 1999. After launching the voluntary Health Card Scheme with unlimited benefits to people since 1993, the hospital has faced with crowds of open-heart surgery, especially at the tertiary hospitals. Among high cost care, open heart is very significant in terms of burden of disease that is rapidly increased to 32.61 % or 742 cases in 1999 compared with 500 cases in 1998, and great complications in terms of cost for health care providers as well.

Open Heart Surgery has several procedures that can be classified into 3 categories of main operation as followings: Ordinary Heart Operation, Coronary Artery Bypass Grafting (CABG) and Complex Congenital Heart. For example, Ratchawithi Hospital found that the average cost per case of general open-heart surgery is as follows: 1) Ordinary Open-heart operation is 82,578.19 bahts. 2) Coronary artery bypass (CABG) is 95,389.82 bahts 3) Complex congenital operation is 169,592.83 bahts 4) And the average of open-heart surgery is 112,355.98 bahts.

Every center found that the cost per case except drugs and supplies is as follows: Open-heart operation is 3,915.00 bahts, Anesthesia is 3,066.56 bahts, Oxegenator is 4,585.10 bahts, ICU is 15,218.00 bahts per bed per day, General ward is 654.14 bahts, Doctor Fee for operation is 4,133.00 bahts, Administration is 6,479.37 bahts, and the average costs of open-heart surgery are 8,635,106.85 bahts per month or 103,837,282.20 bahts annually (Jaiyoudsrind, S. et al, 2001).

The cost of any surgery significantly varies among surgeons, medical facilities, and regions of the country. Patients who are younger, sicker, or need more extensive surgery will require more intensive and expensive treatment. Surgery charges can be separated into five parts: 1) the surgeon's fee, 2) the anesthesiologist's fee, 3) the

hospital charges, which includes nursing care and the operating room; 4) the medications, and 5) additional charges. Insurance coverage for surgery expenses depends on many factors and should be explored for each individual instance. (Robert, 2000)

Currently, inpatient charge is reimbursed by flat rate not exceeding than 100,000 bahts per case. In fact, inpatient charges for open-heart surgery are quite different depending on different factors that effect to inpatient charge as shown in table 1.1.

Table 1.1: Inpatient Charge of Open Heart Surgery in 1999

Scheme	Total	Amount of money	
		Minimum (Baht)	Maximum (Baht)
Out of Pocket ¹	15	36,105	114,248
CSMBS ²	21	4,696	236,037
Social Security Scheme ³	24	31,318	340,441
MOPH subsidized ⁴	119	7,248	247,601

Source: Health Insurance Office in Ministry of Public Health, 1999.

- Note:
- 1 Out of Pocket refer to the patient who paid the inpatient charge by his or own expense.
 - 2 CSMBS refers to the patient who had health insurance certified by the Civil Servant Medical Benefit Scheme and the admitted had reimbursed payment from the Ministry of Finance
 - 3 Social Security patient refers to patient who registered as the social security member of the hospital
 - 4 MOPH refer to the patient who were not charged according to one of the several rights mandated by the Ministry of Public Health such social welfare groups, low-income card holders, and health card holders.

As mentioned above, Ministry of Public Health and Social Security are responsible for determination of open-heart surgery reimbursement rate, not exceeding than 100,000 bahts per person, and is used for contacted hospitals in Thailand at same rate.

This study concentrates on analyzing of factors that influence inpatient charge of open-heart surgery. Finally, the study is useful for government and private sectors that are concerned with open- heart surgery and can lead to plan suitable and equitable policies.

1.2 Research Question

1. What factors affect inpatient charge of open-heart surgery?
2. What should be the guideline of the reimbursement for open-heart surgery?

1.3 Research Objectives

1. To identify factors that determine inpatient charge of open-heart surgery.
2. To evaluate inpatient charges of open-heart surgery.
3. To propose the guideline of the reimbursement for open-heart surgery.

1.4 Scope of Study

This study will focus on inpatient charge reimbursement rate of open-heart surgery in public hospital under the Ministry of Public Health and university hospital outside the Ministry of Public Health. The hospital data of inpatient charge are reported by standard data set. Types of operation can be classified into 3 groups as follows:

No	Operation	Description
1	Ordinary open-heart operation	Replacement of heart valve operation: mitral valve replacement (MVR), atrial valve replacement, mitral valve repair And incomplex congenital heart operation: atrail septal defect, ventricular septal defect, tetralogy of fallot.
2	Coronary artery bypass graft (CABG)	Bypass anastomosis for heart revascularization
3	Complex congenital heart operation	Complex disable heart operation such as Complex anomaly operation: total correction of transposition of great vessels complex congenital operation

It is assumed that public hospital should be charged with standard price for patient admission. Since the open-heart surgery provides each charge, which can be a proxy index of inpatient cost. In other word, charge represents the relative amount of consumed resources of each admission compared with the average used resources per admission of all patients in particular groups. The question is whether the charge is a good measurement of inpatient cost in Thailand? This study concerns the justification of using inpatient charge for representing inpatient cost.

In order to build up more understandings about alternative sources of open-heart surgery, this study proposed a framework to study relevant factors contributing to inpatient charge.

This study proposes some hypothetical factors that are likely to affect inpatient charge such as procedure, indirect payments and their criterion. The description and interpretation of these hospital contexts might reveal motivational forces towards administrative decision to set hospital pricing, which would discriminate patient by payment criteria. Other related factors from hypothesis will be taken into consideration

and analyzes in term of relation between used resource of reimbursement and inpatient charge.

1.5 Possible Benefit of the Study

Some suggestions from result of this study indicate that factors related to hospital charge lead to estimate the inpatient charge of open-heart surgery and current reimbursement rate of open-heart surgery for every criteria of operation. This study suggests that reimbursement rate should be equally calculated or adjusted payment based on related factors according to this study so that the results will be useful for policy implications.