CHAPTER 2
LITERATURE REVIEW

2.1 Universal Coverage

Universal Coverage means coverage for all, not coverage for everything (WHO 1999). The two decades since 1978 have not seen the realization of the wished-for rapid and sustained progress toward universally accessible basic health care (WHO 1999). The industrialized countries have largely preserved their systems of near-universally accessible (as in Canada, New Zealand and the United Kingdom). And other countries have begun to shift payment responsibilities for long-term care directly onto patients and their families. Inequality in health outcomes between the poorest and best-off groups has widened in many industrialized countries. Yet some countries have made real progress towards universal coverage. The Republic of Korea implemented universal health insurance in 1989, during along period of rapid economic growth.

Britain has had a National Health Service (NHS) since 1948 (Myatt 2001). The British government is a purchaser and provider of health care and retains responsibility for legislation and general policy matters. The government decides on an annual budget for the NHS, which is administered by the NHS executive, regional and district health authorities. The NHS is funded by general taxation and National Insurance contributions (and accounts for 88% of health expenditure). Complementary private insurance, which involves both for profit and not for profit insurers, covers 12% of the population (and account for 4% of health expenditures). Physician are paid directly by the government via salary, capitation and fee-for-service. General Practice doctor act as gatekeepers. Specialist may supplement their salary by

treating private patients. Hospitals are mainly semi-autonomous, self-governing public trusts that contract with groups of purchasers on long-term basis.

National Health Insurance (Medicare) had been discussed in Canada at the federal level since 1919, but no real action was taken until 1944 (Myatt 2001). Today, Canada's health system is characterized by single-payer national health insurance. And the federal government requires that insurance cover all medically necessary services. Medicare is a public program administered by the provinces and overseen by the federal government. Medicare is funded by general tax revenues (and accounts for 72% of health expenditures). In addition, the majority of Canadians have supplemental private insurance coverage through group plans, which extends the range of insured services, such as dental care and rehabilitation. Most physicians in Canada are in private practice and accept fee-for-service Medicare payment rates, which set by the government. Hospitals are mainly not for profit and operate under global institution specific or regional budgets with some fee-for-service payment. Less than 5% of all Canadian hospitals are privately owned.

And in 1941, New Zealand achieved universal coverage. The health system is funded through taxation and administered by a national purchasing agent, the Health Funding Authority (HFA). Health care is provided by 23 hospital provider organizations. Public funding accounts for 76% of health expenditures. Private insurance covers about one third of the population (and accounts for 7% of health expenditures). New Zealand's government is a purchaser and provider of health care and retains the responsibility for legislation and general policy matters. The payment system is currently moving from fee-for-service to capitation. Hospitals are mostly semiautonomous. Specialists are commonly salaries, but may supplement their salaries through treatment of private patients.

2.2 Health Care Reform in Thailand.

2.2.1 Health Insurance Schemes in Thailand

Before UC implemented, there are five major comprehensive subsidized health insurance schemes in Thailand (Pannarunothai, S., et al. 1999). In addition, there are special insurance programs for work (Workman's Compensation Scheme – WCS) and traffic (Traffic Accident Protection Scheme – TAPS) related accidents. The five major comprehensive programs are

1. Civil Servant Medical Benefit Scheme (CSMBS) covers all government employees and pensioners, and their dependents. The scheme is tax financed and manages by the MOF.
2. Social Security Scheme (SSS) and also WCS are managed by the MOLSW. While the two schemes cover nearly the same population, i.e., employee in firm, they collect premiums and pay provider in different ways. Specifically, the SSS collects 1.5 percent of and employee's wage from the employee, the employer and an equal contribution from the MOLSW, and pays providers on a capitation basis. The WCS collects from 0.2 to 2.0 percent of total wages depending upon the firm's workplace safety record.
3. Voluntary Health Card Scheme (VHCS) started in the mid-1980s as community revolving funds under the Primary Health Care initiative, and has over time evolved into a voluntary health insurance program aimed at the near poor. The premium collected is currently from three sources: households, the MOPH and ADB loan funds, and totals 1,500 Baht per card
4. Low-Income Card Scheme (LICS) is basically a social welfare program for the poor. There are five categories of people who are in this scheme as follows; Children 0-12 years old, Low-income adult (15-60 years old), Elderly (60 years old up), the maimed and monk.

In this scheme, source of fund comes from the MOPH. And the people who are in this scheme will get free of charge for health care services.

5. Private Indemnity Insurance

Otherwise, after UC implemented, there are four major comprehensive subsidized health insurance schemes in Thailand, CSMBS, SSS, Universal Coverage Scheme (UCS) and Private Insurance. The objective of UCS is to cover populations who are the Uninsured. However, the current UCS covers population in the LICS, VHCS and the Uninsured. For the special insurance programs (WCS, TAPS), there are still consistent.

2.2.2 Why did Thailand's Government implement the UC?

Health expenditure in Thailand has dramatically increased since 1980 from 3.82% of GDP to 6.21% in 1998 (Thailand Health Profile 1997-1998). Besides approximately 24 percent or 15 million of the Thai population remain uninsured.

Table 2.1: Health Insurance Scheme in Thailand, 1997

Insurance Program	Population Coverage (Million)	% Coverage
CSMBS	6.6	11%
SSS/WCS	4.8	8%
VHCS	6.0	10%
LICS	27.0	45%
Private	1.2	2%
Total	**50.4**	**76%**

Source: Donaldson, Pannarunothai and Tangcharoensathien 1999

Also the problem of asymmetric information and imperfect health care market, consumers cannot make rational choices and otherwise, they do not have adequate choice of health services. Furthermore, cost of health care is rising rapidly even if the health system has not been able to provide equal access and equitable financing to all. Therefore, there is a need for institution of universal health care coverage.

The Ministry of Public Health has been examining the possibility of this idea for several years. The Working Group on Implementation of Universal Health Coverage under the State Policy (2001) offers that the ultimate scenario of universal health coverage has to provide normal services underlining equity and comparable standard. The core package has to cover the main services, which are necessary and also include personal and family preventive/promotive services. The health service system emphasizes on nearby gatekeeper providing primary care and become to integral part of provider network in health care at higher level. Under the cost-containment system, the payment mechanism is close end payment and has to include salaries of personal. In addition, the Universal Coverage Committee (2001) suggested the three possible alternatives toward universal health care coverage, as follows:

1. *Expansion of existing systems*

Nowadays, there are several health insurance/welfare schemes in Thailand such as SSS, VHCS and CSMBS. Although these schemes have covered various population groups, they have not yet cover 100% of the total 60 million. Additionally, there are still some weaknesses in terms of efficiency and equity. The expansion of the previous health schemes would be cost saving from the adaptation in the initial stage and would not greatly affect the structure of government services. However, these advantages cannot be used for adaptation because of their existing limitations, for instance, the basis of their capitation and their philosophy.

2. *Single-payer System*

The philosophy of this system is a national health insurance that is managed by government. This system is suitable for starting when there are no existing health insurance schemes. The strong point lies with equity that all people can access in the same basic of health services. With respect to efficiency, such a system can reduce the adverse selection problem. Lastly, with respect to choice and quality of care, it offers a way to stimulate the providers to compete with each other in order to increase the quality of services. However, this system would possible fail if the administration were not appropriate since it is based on a centralized funding system.

3. *Dual Health Insurance System for formal and informal sectors*

In this system, there is a parallel between the formal sectors (e.g., CSMBS, SSS) and the informal sector (e.g., farmers, self-employed). For the formal sector health insurance, the methodology as the same with previously, but it should expand to include spouses and children less than 18 years in SSS. The system of CSMBS should change to the same direction as the SSS with respect to part contribution to funding. The informal sector health insurance should be managed under the universal health fund with support of government, locality organization and resident co-payment. Poor groups may need to be exempted from co-payment. However, even though this system seems to be appropriate, it still has some weaknesses.

In summary, the study has suggested that the appropriate way to move towards universal health care coverage is to start from the dual health insurance system for formal and informal sectors before leading to the single-payer or national health insurance in the future.

On the February 26th, 2001, the government launched the universal coverage scheme (Ministry of Public Health 2001). The first phase was

established in six pilot provinces as follows; Nakhonsawan, Phayao, Patum Thanee, Samut Sakorn, Yasothron and Yala – on April 1st, 2001. The second phase was established for whole country on October 1st, 2001. The insured are all of the people who were not in any health scheme and whose names are in the house registrations in those provinces. These people would receive the universal health card or the gold card. The accessing health service has to follow the referral system from the primary health center or the nearby hospital, which are registered under the project. For emergencies and accidents, the insured can access any government health services. To access needy health services, the insured must contribute co-pay of 30 Baht per episode. Under the Universal Coverage Scheme, the insured will receive the same quality health services as offered by other health scheme. From the government side, the funding of the system is paid by capitation. The total payment per capita paid from tax revenue is 1,202.40 Baht per year, which is paid to health care facilities, according to the number of local residents who are register with them. This capitation can be divided into

- 574 Baht for out-patient care
- 303 Baht for in-patient care
- 175 Baht for prevention and control diseases. MOPH set up 10 regulations for prevention and control diseases which are Family Folder, Home Health Care Visit, Pregnant women Counseling, Child Health and Nutrition Program, Physical Check-up for risk taker, HIV program for mother and child, Family Planing, Health prevention Counseling, Health education and Prevention of dental disease.
- 32 Baht for high cost care. This amount of money will accumulate in the central office, which is the Health Insurance Office. In the case of high cost care, the reimbursement can be done by following the price schedule in The Tendency of Universal Health Coverage in a Transitional Period under the State Policy (2001).

- 25 Baht for emergency and accident care. The system as the same as for high cost cares.
- 93.4 Baht for structural investment. This money will accumulate at the central level.

Therefore, the actual money that health care facilities will receive is equal to 1,052 Baht per person per year.

Viroj, Yot and Phusit (2001) demonstrate that how was the 1,202.40 Baht per person rate derived from? The study carried out between January and March 2001. This study relied on two set of parameter that are cost and morbidity including choice of care sought. Unit cost for outpatient visit and admission was retrieved from the most recent studies, expenditure per capita for emergency and accident and high cost care provision was referred from the most recent data from social security schemes (see Appendix I, Table I.2).

In addition, Phusit, Walaiporn and Viroj (2001) found that under the new method of financing health care providers, the health service system in Chantaburi province would be affected by the reduction of revenue from the program registration and household spending. The current expenditure was higher than the potential income generates from capitation and other fees. All levels of the health service system have to improve their efficiency, for example, the improvement of drug purchasing system, the proper staffing level and more tight management of overtime expense and other controllable spending. This will minimize the negative impacts and support a successful of universal coverage scheme.

The methodologies of this literature are cost analysis, calculated unit cost by quick method, estimated the revenue from universal coverage scheme and include the non-budgeting revenue for see the financial survive trend in whole province. They also estimated four scenario of revenue, which can happen from the difference compliance of patient under universal coverage scheme (full compliance, high compliance, medium compliance and low compliance). The time frame of this study is April to June 2001.

For this study, I will focus on the cost-recovery in two community hospitals in Buri Ram under UC scheme on the first quarter of fiscal year 2002. This study will use retrospective data from the first quarter of fiscal 2002.

2.2.3 What has been done so far in Thailand?

Thailand has three key areas for reform (Tangcharoenthein, V. 1996), which are Financing system, Health Care Delivery and Organization / Management. According to Thailand Health Profile (1998), Thailand has been done into six categories for reform as follows:

1. Information Support for Reform: Health System Research Institute supports the development of the National Health Account (NHA) in Thailand that reflects the pattern of health expenditure borne by different sources of finance both public and private. Besides, HSRI also develop the National Drug Account (NDA), which intends to reflect how drugs flow through various channels to the end users.
2. Compulsory Health Insurance Development: Ministry of Labor and Social Welfare (MOLSW) and MOPH established the Social Security Scheme (SSS) in early 1990s. Thailand gained a good experience on capitation payment (on cost containment, quality of care and cost quality trade off) and contract model to public and private providers by the Social Security Office (SSO). Rich lessons were drawn from this scheme. The current policy aims to extend sickness coverage to spouse and dependants of the worker.
3. Social Welfare Scheme Reform: Civil Servant's Medical Benefit Scheme (CSMBS) was reformed that aims to improve efficiency in term of cost containment, because the real terms of expenditures of this scheme increased by about 14 percent per annum up through 1997.

4. Development of Quality Assurance Mechanism and Hospital Accreditation by The Thailand Research Fund and Health Systems Research Institute.
5. Decentralization: In the management process, particularly in the area of monitoring and control, the MOPH has delegated authority to Regional Inspectors General who act on behalf of the Permanent Secretary for Public Health. However, it should be more consideration in this categories because these is also the common move towards decentralization the improve accountability and responsiveness of the health care system to the needs of the people (Asian Seminar on Social Health Insurance, 1998).
6. Autonomous Hospital (decentralization form): Because Thailand has weakness of health services delivery system being managed under a highly centralized bureaucracy (Charoenparij, S., et al. 1999). For example, staffs working in the public sector lack motivation to deal with the large volume of work due to the fix salary system and rigid manpower management rules and regulation. Besides, efficiency in the use of resources has not been ensuring. Finally, systems to ensure transparency and accountability of the public sector resources still need to be improved. Therefore, the public sector needs to change their methods of delivering services and dealing with their hospitals in the way that improve efficiency and accountability.

However, Thailand has to do other things for health care reform in the future (Tangcharoensathein, V. 1996) e.g., Policy on pubic private sector relationship, Development of Primary Medical Care (PMC), Development of cost effective basic service packages etc.

2.5 Cost Analysis Method

According to Viroj (2000), there are four major steps for hospital cost analysis, which are

1. Cost center identification and grouping
2. Total Direct Cost Determination
3. Indirect cost allocation
4. Unit cost calculation

1. Cost center identification and grouping

Andrew and David (1994) said that cost elements could be broken down in several ways. A good classification scheme depends on the needs of the particular situation or problem, but there are three essential elements:

- It must be relevant to the particular situation
- The classes (categories) must not overlap.
- The classes chosen must cover all possibilities

In addition, Mehta and Maher (1977) divided the cost center (classes of cost) of hospital into three categories as follows:

- Non-Revenue Producing Cost Centre (NRPCC) or Non-charging directly to patients: It means the departments do not get the service charge directly from patient such as administration department and laundry department.
- Revenue Producing Cost Centre (RPCC) or Charging to patients for their services: It means the departments can produce the revenue from providing health care service such as pharmaceutical department and laboratory department.

- Patient Service Area (PS): It means the department that provide service directly to patient and also include the health care prevention /promotion department.

On the other hand, we can call NRPCC and RPCC in term of Transient Cost Centre (TCCs) and PS in term of Absorbing Cost Centre (ACCs)

2. Total Direct Cost Determination

Pirom (1992) suggest that the Total Direct Cost (TDC) is equal to summation of Labor Cost (LC), Material Cost (MC) and Capital Cost (CC)

$$TDC = LC + MC + CC$$

- Labor Costs include salary, overtime wage and fringe benefit.
- Material Costs: e.g., drug, medical material etc. These also include rent and utility.
- Capital costs: Kunchana, Walaiporn and Viroj (2001) calculate depreciation rate of capital equipment by straight line or fix installment method. Average of expected useful life of capital equipment is equal to 5 years and 20 years for building.

$$\text{Depreciation rate per one year} = \frac{\text{Investment value} - \text{Corpse value}}{\text{Expected Useful Life}}$$

Where; Corpse value is always equal to zero

3. Indirect cost allocation

This step is to find out the appropriate allocation method for determine full cost of ACCs. Full cost of ACCs is equal to direct cost of ACCs plus Indirect cost which is allocated from TCCs.

Full cost of PS = Direct cost of PS + Indirect cost from NRPCC + Indirect cost from RPCC

Basically, cost allocation method can be divided into 4 methods

1. Direct distribution method
2. Step-down method
3. Double distribution method
4. Simultaneous equation method

The advantage of the direct and step-down methods is that they are relatively to simple compute and understand but the outcome of step-down method is nearly with the actual cost more than the direct method and the outcome of simultaneous equation method is nearest with actual cost. However, each method has strong point and weak point. It depends on the objective of study and the amount of data that we have.

The direct distribution method (see figure 2.1) allocates each support department's costs directly to the operating departments (see figure1; where A= activity in NRPCC, B= activity in RPCC and C= activity in PS)

The step down method (see figure 2.2) requires the support departments to be ranked (sequenced) in the order that the step down allocation is to proceed. Different sequences will result in different allocations of support department costs to operating departments. A popular step-down sequence begins with the support department that renders the highest percentage of its total services to other support departments. The sequence continues with the department that gives the next-highest percentage of its total services to other

support departments, and so on. Ending with the support department that renders the lowest percentage its total services to other support departments.

Under the step down method, once support department's costs have been allocated, no subsequence support department costs are allocated back to it.

The double distribution method is mostly the same with step down method but the first distribution, NRPCC RPCC and PS allocate cost by explicitly including the mutual services provided among all departments. The second distribution has to use step-down method.

The simultaneous equation method (see figure 2.3) allocates costs by explicitly including the mutual services provided among all support departments. Conceptually, this method is the best accuracy. Implementing the simultaneous equation method requires three steps.

Step1: Express Support Department Costs and Support department simultaneous relationships in the form of linear equations such as

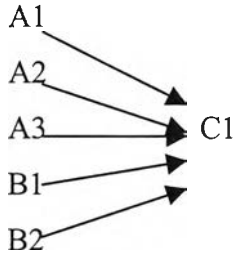
$$A1 = 0.2A2+0.5B1+0.7B2+0.2C1$$

$$A2 = 0.5A1+ 0.2A3+0.1B1+0.5C1$$

Step2: Solve the set of linear equations to obtain the complete reciprocated costs of each support department.

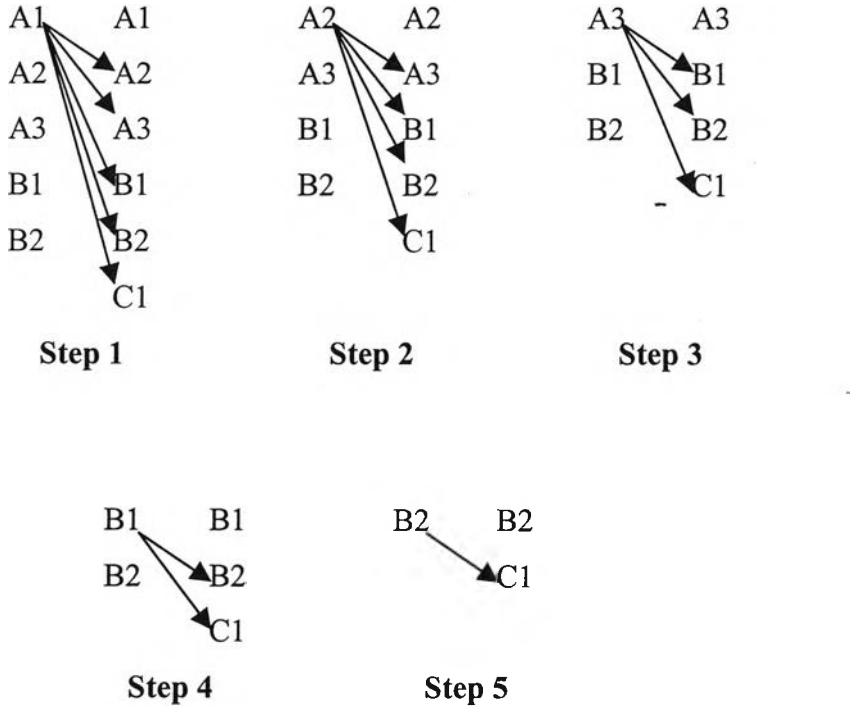
Step3: Allocate the complete reciprocated costs of each support department to all other departments (both support departments and operating departments) on the basis of the usage percentages (based on total units of service provided to all departments).

Figure 2.1: Direct distribution Method for cost allocation in Health Facility



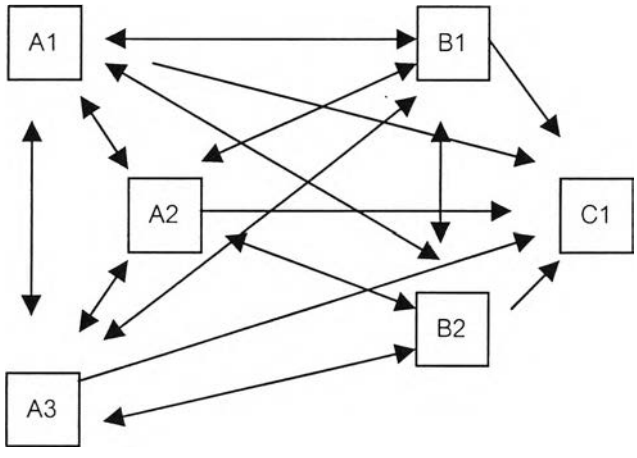
Source: Viroj Tungjareounsathean (1996).

Figure 2.2: Step-down Method for cost allocation in Health Facility



Source: Viroj Tungjareounsathean (1996).

Figure 2.3: Simultaneous Equation Method for cost allocation in Health Facility



Source: Viroj Tungjareounsathean (1996).

For the allocation criteria, Kunchana, Walaiporn and Viroj (2001) have set 4 standard allocation criteria which are

- % Time allocation
- % Expenditure
- % Number of patient
- % Area

4. Unit cost calculation

$$\text{Unit Cost of OPD} = \frac{\text{Full cost of PS of OPD}}{\text{Number of Visits}}$$

$$\text{Unit Cost of IPD} = \frac{\text{Full cost of PS of IPD}}{\text{Number of patient days}}$$