Effectiveness of public health insurance schemes on financial risk protection in Thailand: the assessments of purchasers' capacities, contractors' responses and impact on patients.

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June 2011

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ABOUT CREHS

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List of Acronyms

ART	Anti-Retroviral Treatment
CA	Cancer
CAPD	Continuous Ambulatory Peritoneal Dialysis
CGD	Comptroller's General Department
CUP	Contracting Unit for Primary Care
CSMBS	Civil Servant Medical Benefit Scheme
DMI	Disease Management Initiative
DM	Diabetes Mellitus
DRG	Diagnostic Related Group
KI	Key Informants
MOPH	Ministry of Public Health
NEDL	National Essential Drug List
NGO	Non Governmental Organisation
NHSO	National Health Security Office
RRT	Renal Replacement Therapy
SHI	Social Health Insurance
SSO	Social Security Office
UC	Universal Coverage
UNAIDS	United Nations Programme on HIV/AIDS
WHO	World Health Organisation

Executive Summary

Background

When universal coverage was achieved in 2002, two out of three public health insurance schemes in Thailand, Social Health Insurance (SHI) and Universal Coverage (UC), applied a capitation contracting model for paying healthcare providers while the Civil Servants Medical Benefit Scheme applied a fee for service reimbursement model for outpatient care, and conventional Diagnostic Related Group (DRG) with global budget for inpatient services. The very low prevalence of financially catastrophic health expenditure in Thailand reflects the capacities of public health insurance schemes to protect their members against financial risk from medical care costs. This study assessed the SHI and UC schemes in three dimensions: the purchasers' capacity to manage and enforce contracts, the provider's responses to such contracts, and the impact on patients in terms of access to and use of health services and financial risk protection.

Methods

Qualitative approaches were applied including documentary reviews and in-depth interviews conducted with three levels of stakeholders, namely purchasers, providers and patients. Four key informants (KI) from National Health Security Office (NHSO) for the UC scheme, six KI from Social Security Office (SSO) for SHI, seven KI from public and private contractor healthcare providers in Samutsakhon province, and sixty five diabetes and cancer patients who were covered by the UC and SHI schemes and using public and private contractor providers were purposively selected and interviewed.

Findings

Although the NHSO and SSO have no explicit policy statement on financial risk protection other than the general NHSO statement of providing equitable access to care for all population groups, both purchasers had taken explicit steps to extend the coverage of high cost services proven to be cost effective to their members. This aimed to mitigate the negative impact of capitation payment on under-provision of services. A separate fee schedule was applied to pay for special high cost services such as chemotherapy and radiation therapy for cancer patients, heart and brain surgery. The inclusion in the UC benefit package of antiretroviral treatment (ART) in 2003 and Renal Replacement Therapy (RRT) in 2007 were two examples of extending life saving interventions, and these made a major contribution to the financial risk protection provided to UC members. Due to the geographical monopoly of district health provider networks, NHSO cannot use conventional quality standards as contract conditions, so multiple administrative instruments were applied. Both purchasers applied positive financial incentives for good performing contractors, and negative sanctions such as reducing the maximum number of beneficiaries that could be registered. On the demand side, unsatisfied SHI members can change their registered contractors in subsequent years.

With adequate special payment for high cost treatments in addition to capitation for outpatient services and global budget for hospital admission, public and private contractor providers responded in a positive way in providing quality services to members.

Evidence from cancer and diabetic patients clearly indicated no barrier of any kind in access to and use of specialized and expensive health services. Referral to high cost care was adequate, although there were some psychosocial barriers in use of services among the cancer cases. Household payment for direct cost was minimal, ranging from 0% to 0.44% of household income at contractor providers.

Conclusions

In addition to capitation and global budget with DRG payment methods, the separate fee schedule and adequate payment for high cost services centrally managed by SSO and NHSO supported the schemes in providing adequate financial risk protection to SHI and UC members. A clear policy direction on equitable access to essential health services from health insurance purchasers, a comprehensive benefit package, and an active purchasing function based on evidence and clinical monitoring capacities were important foundations for successful financial risk protection.

1. INTRODUCTION

Financial risk protection in health is considered a social right and a key objective of health systems worldwide [1,2]. It implies fair financial access to adequate health services for all at the time of need which results neither in households bearing a disproportionate financial burden, nor being impoverished from medical care costs. Many international development organizations including WHO and the International Labour Office are supporting countries to move towards achieving universal coverage and improve financial risk protection [3, 4]. Evidence indicates that people in poor households can be protected from catastrophic health expenditures and impoverishment from medical care costs if governments introduce a policy to reduce the proportion of people relying on out-of-pocket payments and provide effective financial risk protection [5, 6].

Historical background

By early 2002, Thailand achieved universal coverage (UC) in access to health care by introducing a tax-funded health insurance scheme, the UC scheme, to approximately 47 million people or 75% of the entire population who were not previously beneficiaries of either the Civil Servant Medical Benefit Scheme (CSMBS) or the Social Health Insurance (SHI). Since 2002, there have been three public health insurance schemes providing health insurance coverage for the entire population of Thais. These are:

- the CSMBS, which covers around six million government employees and their dependants;
- the SHI, which covers employees in private sector employees from non-work related health care expenditures; and,
- the UC scheme, which covers the residual population and replaces all previous government-subsidized health insurance schemes, namely the Voluntary Health Card which covered the non-poor informal sector, and the Low Income Card scheme which covered the poor, the disabled, the elderly, and children aged less than 12 years.

Characteristics of three public health insurances schemes

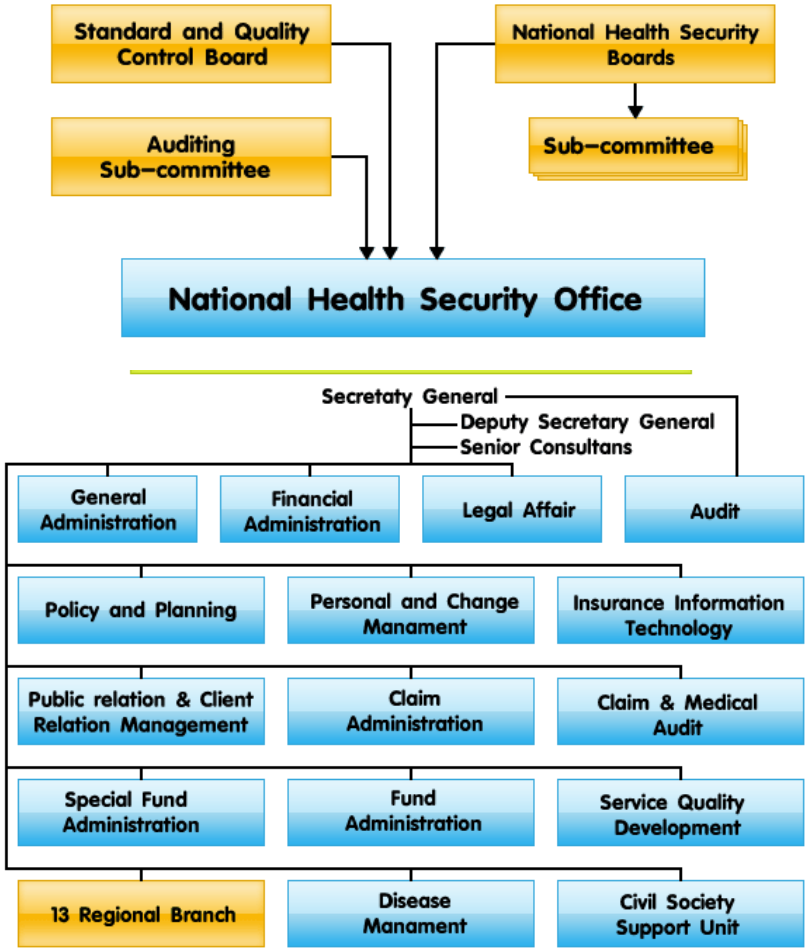
The CSMBS is a tax-financed, non-contributory scheme operated by the Comptroller's General Department (CGD), Ministry of Finance since 1980. The CSMBS benefit package is generous compared to the two other public health insurance schemes. The scheme applies a fee-for-service reimbursement for services provided, which has led to problems of cost escalation and a rising financial burden on the government budget [7].

The SHI launched in 1990 is a tripartite payroll-tax scheme, financed by equal contributions by employers, employees and the government. The Social Security Act of 1990 [8] grants statutory public organization status to the Social Security Office (SSO) to operate the SHI scheme. The SSO pays both public and private health care providers using a capitation contracting model with additional risk-adjusted fixed payment per beneficiary for effective management of chronic and high cost diseases, and additional fee-for-service payments for specific high cost services and equipments. The contracts are of a competitive nature, with 65% of total members registered with private providers, who are in the majority. Apart from health care benefits (sickness, maternity, dental), the SSO also provides other benefits to members such as child allowance, old age pension, unemployment and death compensation.

The UC scheme launched in 2002 is a tax-financed health insurance scheme operated by the National Health Security Office (NHSO). The National Health Security Act of 2002 [9] authorizes the NHSO to administer the UC scheme governed by the National Health Security Committee, and the National

Committee for Quality Accreditation, see Figure 1. The NHSO is also responsible for registering UC members, health service providers and their networks. It also administers the fund, which is mainly financed by general tax, and pays health care providers and their networks according to the regulations determined by the National Health Security Committee on the basis of efficiency, equity, and transparency.

Figure 1 Organizational structure of NHSO, Thailand



Source: National Health Security Office of Thailand. http://www.nhso.go.th/eng/

The design of the UC scheme promotes the use of primary care at the district level by contracting a primary care network whereby registration of the UC beneficiaries in the catchment area is needed. This leads to a shift of health service delivery from tertiary care hospitals to the primary care provider networks. A contractual agreement is made between the government and a Contracting Unit for Primary care or 'CUP' as the main provider for its registered population. The CUP comprises all health centres in a district and the district hospital, and typically covers a population of 50,000 in rural areas. Patients can use services at any health centre or district hospital in this network; referral to provincial or regional hospitals is ensured when needed care is beyond the clinical capacity of the CUP. The CUP receives a capitation budget for ambulatory care according to the number of people registered and reimburses the expenses for inpatient care on the basis of DRG weights from a pooled inpatient budget.

Benefit package across three schemes

The benefit package for all three public health insurance schemes is comprehensive comprising ambulatory care, hospitalization, disease prevention, health promotion and a number of expensive medical services such as chemo- and radiation therapy for cancers, surgical operations, accidents and emergency conditions. Medical services including medicines in the National Essential Drug List (NEDL) are free at the point of use for members in all three insurance schemes; though medicines outside NEDL are subject to payment in full by the patient. Services used by UC and SHI members which are provided by hospitals outside the contractor providers without proper referral are also liable for full payment by the patient. "Fundholding" arrangements are applied by the SHI and UC schemes. The individual SHI contractor provider is responsible for the cost of outpatients and inpatients that they refer, though this applies to a small proportion of patients as the contractor provider can provide almost all of the services. Similarly, UC contractor networks are responsible for payment for any outpatient service referrals. Inpatient admissions are not paid for from the UC contractor budget as hospitals are paid directly for inpatient care on the basis of DRGs and a global budget.

When UC was launched in 2002, renal replacement therapy (RRT) for end-stage renal disease patients and Antiretroviral Therapy (ART) were excluded from the UC benefit package due to fiscal constraints. However, universal access to ART and kidney dialysis was introduced in 2003 and 2007, respectively. Table 1 summarises key characteristics of the three public insurance schemes [10].

Table 1 Characteristics of three public insurance schemes, 2002

Insurance Scheme	Population coverage		Financing source	Mode of provider payment	Access to service
Social Health Insurance	Private sector employees, excludes dependants	16%	Tri-partite contribution, equally employer, employee and the government	Capitation for inclusive outpatient and inpatient services	Registered public and private competing contractors
Civil Servant Medical Benefit Scheme	Government employees plus dependants (parents, spouse and up to 2 children age <20)	9%	General tax, non-contributory scheme	Fee for service, direct disbursement to mostly public providers	Free choice of providers, no registration required
Universal coverage	The rest of the population not covered by SHI and CSMBS	75%	General tax	Capitation for OP and global budget plus DRG for IP	Registered contractor provider, notably district health system

Source Prakongsai et al 2009

Objectives

This study assesses three dimensions of the UC and SHI schemes influencing the extent to which the schemes achieve financial risk protection for its members: first, the capacity of insurance funds to manage, enforce and monitor contracts; second, the responses by public and private contract hospitals to contractual agreements in their service provision; and third, the utilization and financial impact of high cost medical conditions on patients, using diabetes mellitus (DM) and cancer (CA) cases selected from contract hospitals as tracer conditions. This study aims to inform national policy makers about how to improve performance of public health insurance schemes, and to draw lessons for international audiences in their efforts to provide financial risk protection for the population.

2. METHODOLOGY

The SHI and UC schemes were selected for comparison in this study as the schemes have similar benefit packages and close-end provider payment methods using contracting model. In contrast, CSMBS applies a fee for service reimbursement model, though recently they have introduced a conventional DRG system with global budget for payment of hospital admissions.

The research proposal and data collection tools were approved by the National Ethical Review Committee for Research in Human Subjects under the Ministry of Public Health (MOPH). All respondents were fully informed about the objectives of this study and were assured of their right to withdraw from the study if so wished, prior to signing an informed consent form. The researchers observed all ethical practices in conducting this work.

Samutsakhon province was purposively selected as a site for the study because it is an industrial province with a large number of SHI members as well as UC patients. There were 7 hospitals (3 public and 4 private) for the population of 470,000 in 2008. The province is not too far from Bangkok, which facilitated repeated patients interviews.

Data collection took place from November 2008 to May 2009.

Assessment of purchasers and providers

Qualitative methods were applied including review of documents related to performance of health insurance purchasers and in-depth face to face interviews. Documents included policy statements on the vision and core values of NHSO and SSO, their benefit packages, organizational structure and management system, and annual financial and output reports since the inception of these two organizations. Contractual agreements between purchasers (SSO and NHSO) and health care providers were explored in detail. In addition, minutes of the NHSO Governing Board meetings and Social Security Committee meetings were reviewed.

Officials in the two purchasers -- the Social Security Office (SSO) responsible for SHI and National Health Security Office (NHSO) responsible for UC -- were interviewed. Ten administrators were identified, 4 from NHSO and 6 from SSO (4 from the Headquarters office in Bangkok and two from Samutsakhon provincial social security office), for in-depth interviews in order to assess their capacity in contract design, enforcement and monitoring, and evaluation with specific focus on the scheme's performance in providing financial risk protection for their members.

Seven key informants in all three public hospitals (including one autonomous hospital) and four private contract hospitals in Samutsakhon province were identified for in-depth interviews. They were hospital directors or managing directors. The interview addressed how, in the context of their contractual agreement with SSO and NHSO, they responded to comply with the policy objectives of financial risk protection to the SHI and UC members. The impact of the different financing and contractual arrangements of the SHI and UC schemes on health providers were also assessed.

On average, each interview session took around 1.5 to 2 hours. Following the interview, the tape recorded content was transcribed and analyzed manually in order to draw out the key themes generated from these interviews. Contradictory views or factual problems were verified and triangulated. Respondents' anonymity was observed by reporting only the informant's ID number in the report.

Assessment of patients

Diabetes, a chronic condition requiring effective continuous care of patients to control their blood sugar and cancer, a catastrophic condition for which patients and relatives may seek various sources of diagnostics and treatment from either formal or informal providers which may impose huge costs on households, were chosen as tracer conditions for this study. In addition to their potentially catastrophic consequences, these two diseases have the advantage of being relatively common.

An introductory visit, face to face interviews, and direct observation in the patients' living areas were applied to assess their experiences in access to and use of health services, their coping mechanisms, and the level of associated expenditure such as transportation and other items not covered by health insurance schemes.

Selection of patients and interview processes

This study applied a three-step approach for selection of patients and interviews.

Introductory interview

Diabetic and cancer patients were initially identified by health staff in all seven sample public and private hospitals in Samutsakhon. An introductory interview was conducted on site at the hospital, to probe patients and care givers on their willingness to participate in this study. This resulted in 93 patients willing to participate in the study. With the application of multiple criteria shown in Table 2, at this phase researchers classified all 93 participants into two groups: better-off and worse-off. Contact addresses and telephone number for making appointments were requested from the patients and their care givers.

Table 2 Multiple criteria for classifying respondents

Criteria	Worse-off group	Better-off group
1. Job security	Odd job or daily wage earners	Permanent salaried staff in factory or service sector, own business
2. Housing construction and land	Non-permanent housing material, small land	Permanent housing material, plenty of land
3. Ownership of the house	Rental house or rental apartment, squatter	Own house
4. Household income security	Irregular income depends on job availability	Regular income, probably receives regular financial transfers from relatives e.g. sons or daughters
5. Mode of transport to hospital	Public transport, motor cycle, walk	Own transport e.g. pick up or private car

First interview

After the introductory interviews at the hospitals, 93 patients were called for the first interview at their homes. Using Tools 1 and 2 (see below), the first interview collected data on patient's family tree in order to understand household dynamics, and where feasible information on three generations was collected. Patients' life history and life line were also documented.

At this stage, the category of better-off or worse-off was verified using the evidence from observations of the households. Where there were conflicts of classification, final grouping was reconciled by consensus of the research team.

Second interview

This was conducted three months after the first interview with the same 93 patients from the first round at the patient's home. With the application of Tools 3 and 4, detailed information on the patient's illness and health care utilization, problems with access and use of services, financial constraints, and strategies to manage such problems were addressed. At the same time, household expenditures over the last three months including spending on food, health and other items were assessed and recorded.

Data Collection Tools

Four tools were tested, developed and applied to all selected patients.

Tool 1, the family tree was used to depict family members, dependants, kinship and financial relationships with the household bread-winners; where possible, information on three generations was assessed in the tree.

Tool 2, the life history and life line tool depicted key events among family members, such as accidents, illnesses or deaths and job loss. This helps to better understand the patients' world view and life skills to cope with unpleasant events in the past.

Tool 3, illness narratives and health care service tool provided a snap-shot of patients' health problem, their knowledge, attitude and understanding of illness and its financial impact on their family. Their history of health care use, problems with access and use, financial and social consequences, and strategies to manage problems were covered by this tool.

Tool 4, household expenditure on food, health and other items during the three months prior to interview date were assessed. This provided information to estimate health spending as a percent of total household expenditure.

In each of the face to face in-depth interviews, tape recording was applied after receiving permission. In addition, field notes were taken by researchers on-site to record all interesting points and observations during the interviews. Field notes were used to help clarify points and as prompts in interactive interviews.

Data analysis

A thematic approach with manual coding was applied to the analysis of qualitative data as the number in the sample was manageable. Patients' names and addresses were concealed and treated confidentially, and their data were recorded by ID number.

3. RESULTS

Results are reported in two main sections. First, we report on the performance of the two insurance funds in providing financial risk protection to their members and the assessment of responses by public and private contractors to contractual agreements. Second, we present the assessment of impact on patients in term of access to and use of services and financial implications. The discussion and conclusion are in the following sections where lessons are drawn for national and international audiences.

Assessment of purchasers, contractor providers and their relationships

The following themes emerged from document analysis and key informant interviews with individuals in the two insurance funds, and in public and private contractors in Samutsakhon province.

Organizational background

Under the 1990 Social Security Act and subsequent amendments up to 2009, formal private sector employees are entitled to seven types of benefits including (1) non-work related sickness and injuries[1], (2) maternity, (3) invalidity, (4) death compensation, (5) child allowance, (6) old age pension, and (7) unemployment benefits.

The Social Security Office (SSO) was established in September 1990, as a Department in the Ministry of Interior and later in the Ministry of Labour and Social Welfare in 2003. Although SSO is a Department under the Ministry, it is governed by a tripartite board consisting of equal representation from employees, employers and the government. In 2009, the SHI covered approximately 9.2 million members.

The 2002 National Health Security Act Section 26 authorized the National Health Security Office (NHSO), as an independent public agency responsible for registration and update on the status of its members, to organize the purchase of health services from public and private contractor providers, mobilize an annual budget to fund the scheme and monitor and control service quality. In 2009, there were 47 million individuals covered by the UC scheme.

Institutional mandates

Table 3 compares the key institutional mandates of NHSO and SSO. Both have similar mandates as the policy formulation for SHI and UC schemes was influenced by the same group of reformists. The SHI contract model serves as the predecessor of the UC scheme, though the UC scheme was able to introduce some improvements to the conventional SHI model by introducing a global budget and DRG for paying for inpatient services instead of inclusive SHI capitation.

[1] Note that the work related sickness, injuries and deaths are fully covered by another Workmen's Compensation Scheme, contributed solely by the employers. Contributions rates are based on percent of payroll related to the level of risk of industries and are adjusted for historical reimbursement of each employer, with higher reimbursement met by higher contributions in subsequent years.

Table 3 Institutional mandates, NHSO and SSO

	National Health Security Office	Social Security Office
Scheme	Universal Coverage Scheme	Social Health Insurance Scheme
Legal framework	National Health Security Act 2002	Social Security Act 1990
Registry of contractors	• Public hospital: automatically enrolled • Qualification for private hospital includes (1) Adequate proportion between specified health workers and population in domicile area, (2) Capacity to manage health service; referral system, health network development, information system (3) Network of Primary Care Units in case where the registered population is more than 10,000 people	• Public and private contractors have to comply with the following qualifications: (1) more than 100 beds, (2) medical specialists in all 12 fields, (3) standard set of departments and services (e.g. emergency care, out-patient care, in-patient care, intensive care, medical record) (4) referral system network
Number of contractors in 2009	• 952 Contracting Units for Primary Care (CUP) which are public hospitals, including 9,726 health centres throughout the country (94.4% of contractors) Note that a typical CUP is district health provider network, consists of health centres and district hospital covering 50,000 population • 57 Private healthcare providers (5.6% of contractors)	• Main contractor: ○ 152 Public providers (60.8%) ○ 98 Private providers (39.2%) • Sub-contractors: 2,313 clinics and hospitals (data does not differentiate sub-contractors to public or private main contractors)
Source of funding for the insurance scheme	General tax revenue through annual budget negotiations conducted by the National Health Security Board and endorsed through Budget Bill by the Parliament.	Mandatory payroll tax contribution (1.5% of payroll) paid by employers, employees and the government for four types of benefit [sickness, maternity, invalidity, death compensation]. Electronic transfer to Social Security Fund account by the employers (for the amount contributed by employee and employer) on a monthly basis; the government contribution is submitted through annual budget processes.
Total members	47 million members, all newborns not covered by the CSMBS are automatically covered by UC Scheme. Note ○ The spouses and children of SHI members are not covered by SHI but by UC Scheme. ○ When UC members become employed they become covered by SHI, when SHI member loses job they are automatically covered by UC Scheme through monthly sharing of beneficiary database between the two schemes.	Mandatory members 8.6 million + voluntary members 0.647 million, Total 9.247 million (2009)

	National Health Security Office	Social Security Office
Benefit packages and provider payment methods		

Health services	• Capitation is applied for out-patient care including dental care
	• Global budget and DRG are applied for paying for hospitalization services including delivery
		• A single capitation rate is applied for both outpatient and inpatient services
		• Separate payment mechanisms for
		  • Dental services: a fixed rate reimbursement not more than twice a year
		  • Maternity benefit, not more than 2 confinements per member
		  • Medical benefit for invalidity
		• In addition to medical benefit, SHI also provides sick leave benefit, maternal leave benefit, invalidity benefit and death compensation

High cost care	• Separate payment mechanisms for high-cost medical services e.g. heart surgery, Accident and emergency services sought outside registered contractors, Antiretroviral treatment (ART), Renal replacement therapy (RRT) and referrals for further treatment among health facilities	• A list of high cost care was announced with a special payment outside the capitation rate, using a fixed fee schedule; this applies to conditions such as dialysis, heart and neurosurgical interventions, dialysis and antiretroviral treatment.
Diseases prevention and health promotion	• Disease prevention and health promotion programs are paid on a capitation basis. For example, preventive programs related to MCH such as ANC, EPI, family planning, HIV/AIDS prevention interventions, home health care, annual physical check-up for general population and high risk group for the whole population • Historically CSMBS and SHI do not cover this benefit package; in the design of UC scheme, this item was designed to cover the whole Thai population	• Neither disease prevention nor health promotion programs are covered (they are covered by the UC scheme)
Medicines	○ Medicines are covered in the benefit package of outpatient and inpatient services, ○ There is no separate payment for medicines, ○ Covers medicines included on the National Essential Drug List	○ Medicines are included in the capitation payment for outpatient and inpatient services ○ Covers medicines included on the National Essential Drug List

Source: http://www.nhso.go.th/eng/#
http://www.sso.go.th/wpr/eng/sickness.html

History and ideology contrasts

As sickness benefit is only one of seven benefits provided by the SHI Scheme, other administrative functions by SSO are important such as collecting premium contributions, managing almost 300,000 transactions annually for maternity benefit claims, and keeping individual member records for not more than two dental claims per annum. Findings from the in-depth interviews indicate that the SSO does not demonstrate intention or interest in health system development or reform as there is a huge opportunity for SSO, as a monopsonistic purchaser of services, to facilitate better access and influence systems efficiency. For example, although contracted providers can sub-contract private clinics to facilitate improved access by SHI members, only a few do so. In contrast, NHSO plays its role in not only purchasing services for its members, but also in negotiating at the national level in order to secure the best possible price for medicines and supplies such as erythropoietin (to prevent anaemia) for end-stage renal patients, and stents for cardio-vascular surgery. In addition, it also focuses on health system development.

> *"Staff at SSO are not medical personnel, most of them are labour administrators. In health issues, they act as administrative manager and do their business on financial management for the fund and beneficiaries, with no role on medical service approval." (NHSO4)*

> *"The institutional memory and the founders of NHSO are rooted from health systems reform, therefore reforming the health system along with system development are among NHSO focuses, not only purchasing services for their members. SSO does not share this concept and concern, they are (passive) purchasers who pay for health services only." (NHSO2)*

Healthcare providers also share the view that the SSO plays a major role in financial management of their fund without taking a conceptual view of how SHI, through its purchasing power, can improve the performance of the health system.

> *"That office (SSO) thinks they are only brokers, they calculate how much they earn from the registrants (social security members) and how much they gain by containing their expenditure [in a passive way and not give adequate attention on how SHI can influence and improve health systems]" (Private1)*

On the other hand, NHSO, which takes care of a much larger population, focuses on reforming the health system for better and more equitable access to health services; their mission is to protect households from catastrophic health expenditure and to further develop preventive services.

> *"We (NHSO committee) have never discussed explicitly whether the UC scheme should protect households from catastrophic health expenditure or not, but from my understanding, the overall aim of UC is that people can access and use health services, especially high cost care rather than simple health conditions [for which adequate coverage of treatment for these simple health conditions was almost fully achieved]. This implied that we (UC) would protect catastrophic problem for UC members, which is the majority of Thais [who are rural poor]." (NHSO1)*

> *"We should also focus on preventive care because we always took curative care as our first priority, not integrated care. If we include preventive care, we will see the whole picture of health system and know what has to be improved." (NHSO4)*

Organizational culture and styles

Administrators from NHSO and SSO accepted that the organizational culture of NHSO is more open and conducive to new ideas and changes, as it is an independent public agency with less bureaucracy. SSO is criticized as a bureaucratic government machine under the Ministry of Labour, where decisions are often influenced by politics. The two also differ in terms of their governing structures and their functioning, in particular the use of evidence in decision making.

NHSO has a multi-sectoral representation in its governing board including ex-officio members of civil society and independent experts in various areas. Various sub-committees of the NHSO Board serve as cornerstones for health systems development, such as sub-committees on benefit package and on health financing. SHI is governed by a tri-partite representation from employers, employees and government; decisions are made by law, rules and regulation, with little use of evidence and little flexibility.

> *"The organization of SSO is semi-political and politics can intervene easily. For example, the employee representatives in the Governing Board are only proxies (of politics) and do not act on the benefit of the employees." (NHSO1)*

> *"The Governing Board members should be elected. Right now, they are selected and appointed by the politicians (for which it protects the interest of politics, and not the SHI members)." (SSO3)*

The two schemes require different technical capacities. SSO collects contributions from employers and employees, but this is a passive function because by law, employers are obliged to wire transfer money every month to the Social Security Fund and therefore SSO's responsibility is only to manage enforcement of the law. In addition, SSO needs to manage seven benefits whereby the NHSO provides health benefits only. From the SSO perspective the health benefit is a short term benefit which has less complexity, in terms of actuarial and program management, than long term benefits such as old age pension.

NHSO and SSO administrators pointed to the fact that NHSO staff are mostly health personnel with excellent understanding of health systems, having extensive experience in health systems management. For example, some were ex-provincial chief medical officers, and ex-deputy Director General of MOPH Departments. Many NHSO staff were involved in the formulation and design of UC in 2001-2, and are strongly influenced by their experience in rural health systems. Because they know the health system well they can use the NHSO's monopsonistic purchasing power strategically to improve the system. In contrast, senior SSO administrators formally belong to the Ministry of Interior and are labour experts from the Ministry of Labour who are not well versed in the health arena. Their tendency is to focus on political issues rather than technical improvement of SHI.

> *"The strength of NHSO is their staffs, most of them are medical doctors, public health personnel or those [who are skilled in] health system development and management; NHSO recruited them from MOPH key staff..." (SSO1)*

Sources of finance and budget negotiations

By law, the Social Security Fund is funded through equal, tripartite contributions, of 1.5% of payroll for four types of benefit, by employees, employers and the government. Funding for SHI is governed by the tripartite governing board, not subject to annual budget negotiation process by the Parliament. In contrast, NHSO funding comes from an annual budget, subject to annual budget negotiations and political decisions.

"The source of financing is the major difference between these two Schemes from the start. The NHSO got budget through annual Budget Bill, thus management is quite inflexible. With the SSO financing system they get money and take out the amount they need, so they can spend more or less, it is more flexible. For us (NHSO), our budget is based on the government and political decision." (NHSO2)

"I think the strength of SSO is the flexibility of their financial system, while for NHSO it is their management system." (SSO3)

However, leaders of the NHSO manage successfully in the annual budget process. The negotiation between NHSO and the Bureau of Budget is on one figure – the capitation rate, which is calculated from the utilization rate and unit cost, and other evidence, and needs to be set at a rate which the budget people and politicians will accept. A 1-Baht change in the capitation rate has a budget implication of 47 million Baht (equivalent to US$ 1.5 million). Often the budget proposal prepared by health financing subcommittee of NHSO is accepted with some negotiation, and fiscal constraint is a major factor. From the NHSO's perspective, political support from the general population is a major influence on the continued budget support for the UC scheme.

"….Every year the general public and the media pay close attention to the capitation figure. The UC scheme now belongs to the people as it really benefits them. The capitation rate becomes a public issue, not our (NHSO) issue, the public support us to get adequate budget to support the Scheme. We refer to evidence whenever we have to negotiate on the capitation rate with the Bureau of Budget and Finance Minister." (Personal communication NHSO Secretary General)

Financial risk protection: explicit implementation in the light of implicit policies

Having reviewed documents, there has never been an explicit statement by NHSO on financial risk protection except a short policy statement in section 45 of the 2002 National Health Security Act "to provide equitable access to care by all members". However, the notably explicit equity stance in program implementation demonstrates that both NHSO and SSO have improved not only financial risk protection to their members through the extension of high cost service and other chronic condition coverage; both Schemes also focus on the health outcome of their members.

Despite the favourable benefit package provided by both NHSO and SSO, and services which are free at point of use achieved by not allowing additional charges by providers, several high cost interventions may not be provided if contractor providers earn low margins from the capitation provided (in the case of SHI) and capitation for outpatient and global budget and DRG for inpatient (in the case of UC).

In NHSO, a separate fund was created in 2005 which is centrally managed by NHSO. The Disease Management Initiative (DMI) aims to pay for high cost services and specific diseases, for which patients are required to register with NHSO in order to follow up clinical outcomes such as survival and to monitor quality of care.

Several conditions are managed by DMI, for example childhood and adult leukaemia and lymphoma which require chemotherapy and bone marrow transplantation, surgical interventions for cleft lips and palates as there were previously long queues for these services, heart surgery including heart valve and coronary diseases, haemophilia, cataract surgery, stroke fast track initiative (to improve the clinical outcome and survival of stroke), bone marrow transplantation for childhood leukaemia, and prevention of diabetic complications[11] .

Interventions are included in the DMI on the basis of two major criteria: cost effectiveness evidence and lack of incentives by contractors to provide such care under capitation payment. This initiative has resulted in a significant increase in the number of cases adequately treated, improved clinical outcomes and prevention of catastrophic health expenditure by households that previously sought care from private providers, see Table 4.

DMI is managed by NHSO in-house staff with support from other technical partners such as the relevant Royal Colleges with skills and experience in disease management. There are no such skills in SSO. This difference clearly reflects how the technical level and skill-mix of professionals managing the UC scheme influences the organizations' motivation towards continuous self-improvement.

For SHI, there is no such active DMI management: a selected number of high cost service have a separate payment based on fee schedules. For example, SHI patients can be reimbursed 1,500 Baht per session of dialysis; they have to absorb the cost beyond 1,500 Baht, while SSO does not actively intervene to influence the total price, which varies from 1,500 to 3,000 Baht per session. There are opportunities for SSO to better protect its members from such payments.

Table 4 Number of patients covered by high cost case management, 2005-2008

	2005	2006	2007	2008
OP cancer cases with chemotherapy or radiation therapy	100,203	143,287	158,993	209,883
IP cancer cases with chemotherapy or radiation therapy	56,812	63,701	69,837	71,411
Open heart surgical cases	2,865	4,212	6,411	6,345
Coronary Artery Bypass Graft (CABG)	926	1,094	1,278	1,462
Percutaneous Transluminal Coronary Angioplasty (PTCA)	1,530	2,625	3,811	5,078

Source: NHSO annual report, 2008

Significant contribution by RRT and ART coverage

Anti-retroviral therapy (ART) and renal replacement therapy (RRT) for end-stage renal disease patients were initially excluded from the UC benefit package due to fiscal constraints. However, universal access to ART and RRT were reached in 2003 and 2007 respectively; these interventions provided significant financial risk protection to UC scheme members.

Anti-Retroviral Therapy (ART)

The major turning point in adopting universal ART was the development of national capacity to produce low cost generic antiretroviral medicines. This made the medicines much more affordable, and reinforced the broader contextual developments including national and international NGO lobbying for universal access to ART, such as WHO Three by Five and UNAIDS advocacy. Evidence on cost effectiveness did not guide policy adoption but subsequently it was found that ART was cost effective [12] which led to justify further program support.

Performance in scaling up ART provision for UC members has been outstanding. In 2008 there were 202,925 voluntary counselling and testing services provided, of which 17,001 were found to be HIV positive. Of the total national enrolment of 179,371 in ART program, 145,403 were UC members and the rest were SHI members. Within the UC scheme, a high level of coverage of CD4 count monitoring has been achieved, with 89.3% of total ART patients receiving such monitoring once and 51% receiving it twice, and 53% received viral load monitoring to test for resistance to first line therapy. These services were fully funded by NHSO.

Renal Replacement Therapy (RRT)

NHSO and its partners, including IHPP, the Nephrology Society and the Kidney Foundation of Thailand, contributed to the formulation of the policy on extension of renal replacement therapy for chronic end stage renal patients who are UC members [13]. Adopting universal access to RRT was dictated by concerns over financial catastrophe of households and inequity across publicly-funded insurance schemes, even though evidence indicated that RRT was cost ineffective [14] and that it would incur huge long term financial requirements for the scheme. A kidney failure patient group triggered the policy agenda, while technocrats were involved in policy formulation and supported the design of the system. Serious catastrophic impact from out of pocket payment for dialysis not only affects patients, but leads to financial repercussions on other family networks and relatives [15]. The annual expenditure for RRT, including dialyses, erythropoietin and kidney transplantation, has been 1.09 billion Baht (US$ 34 million) since the launch in June 2008. This expenditure has not only saved these patients' lives but has also significantly reduced the events of financial ruin experienced by households affected by the disease, see Table 5.

Table 5 Summary expenditure by NHSO on renal replacement therapy, June 2008 to December 2009

Items of RRT disbursement	Million Baht
1. Continuous ambulatory peritoneal dialysis (CAPD)	180.1
2. Temporary haemodialysis	10.4
3. Hemodialysis and Erythropoietin	817.9
4. Vascular Access preparation (Shunt)	3.0
5. Payment for appeal	3.3
6. Immuno-suppressive medicines post kidney transplantation	58.2
7. Organ harvests from cadavers	0.9
8. Kidney transplantation	18.3
Total	1092.1

Source: NHSO website http://kdf.nhso.go.th/payment/sumpay.php

It should be noted that the UC system design for haemodialysis services had to take into account harmonization with SHI benefit package, to address the situation when members move from one scheme to another, in order to prevent discrepancies in service delivery. Coordination between the two Schemes is steadily improving over the years.

SHI extended coverage to RRT a few years prior to the commencement of the UC scheme. RRT was reimbursable based on a fee schedule but allows copayment for costs over the reimbursement rate of 1,500 Baht per session of dialysis.

The NHSO believes that providers are willing to provide all services clinically required for high cost treatment when they are fully funded based on the fee schedule and other NHSO regulations. This is confirmed by one provider as reflected below.

> *".. No problem krub (polite words), we (medical doctors) have ethical concerns, at the end it is the benefit of the patients, we have to treat them anyway, if beyond our capacities, we refer, sometime when we refer to other private tertiary care hospital, we have to go and pay from our pot. For SHI patients, sometime I refer them to Bumrungrad (most expensive five star private hospital) for heart and brain surgeries, and I have to pay for them using the hospital budget" (Public1)*

Contract design and enforcement

Referring to the 2002 National Health Security Act, Section 5, public health care providers are automatically registered as contractors with the UC scheme. However, private contractor networks have to be certified and approved by the NHSO prior to contractual agreement. The MOPH provincial or district hospitals do not have corporate status; hence they are not legally entitled to sign contract agreements with NHSO. In such circumstances, NHSO cannot apply strict quality standards to district hospitals as a condition of the contract, as district hospitals and affiliated health centres are the sole providers in the district, providing them with a geographical monopoly without competition from the private sector; it is therefore not possible to terminate a contract for non-performance. Because *de facto*, NHSO has to contract the only public provider network in the district, it uses other instruments and mechanisms to improve quality and gradually achieve quality standards.

This rule is similar to the SHI scheme; public provincial hospitals are automatically main contractors and their networks such as district hospitals, or private clinics are sub-contractors. Private hospitals are to be certified and approved by the SSO. NHSO and SSO require legally binding contracts with private hospitals which by law, have corporate status, and are legally entitled to enter to contracts.

Due to the nature of public sector provider dominance where district health systems are the sole provider, the UC scheme contracts significantly more with public than private contractors. However, in SHI private contractors make up a greater market share, with 65% of total SHI members currently registered with private contractor providers.

Complaints were made by private hospitals on the "uneven playing field" that is faced by them in competing with public hospitals for contracts. Where the private sector is allocated a very small share of total UC members, they feel they were unequally treated by NHSO.

> *"This is a weak point of NHSO as perceived by private providers. Though there are a huge number of NHSO members (47 million or 75% of total population), NHSO can furnish them only with a limited choice for members, often no choice except the only one district health provider network for people who live in a district. Public hospitals are automatically included with no limit of registrants, though population size covered by each contractor is quite homogeneous throughout the country. In such condition, (due to geographical monopoly where there is no qualified private provider network capable of providing a wide range of curative, prevention and health promotion services required by NHSO), it seems public hospitals monopolize the UC scheme and our contract means nothing to them. This natural limitation was exaggerated by private sector to justify their complaints" (NHSO1)*

> *"Private hospitals get limited numbers of members; we are rated and assessed on our clinical services and capacity. The numbers depend on SSO. One hospital may get 50,000 members, while other may get 75,000. But public hospitals can get unlimited members, sometimes more than 100,000 and another important thing is they don't have to sign a contract."(Private 4)*

Additionally, SHI contracts with private contractors have to be renewed annually. However, in practice this process is not very onerous as the only condition is that no complaints were received from members in the previous year (in other words, adequate services were provided).

> *"Usually, SSO would consider our previous performance for renewal of contract, if our services didn't cause any major problems or got complaints by patients, we can get the renewal almost automatically." (Private4)*

Article 4.7 of the SSO contract places financial liability on the contractor. It states that during the contract period if there is a new benefit or service approved by the SSO Board, the providers are responsible for providing this (new) benefit to members. While in negotiations, the SSO commits that services outside the original contract will be compensated in a later phase, retrospective payment by SSO is not possible, due to rigid bureaucratic rules and regulation. Contractors complain that this exposes them to additional risk of providing services without compensation. However, this theoretical argument is exaggerated by private contractors, as it rarely happens in practice: the costs of expanding the benefit package in the middle of the contract are fully covered in the capitation estimate for the next year's contract.

On contract enforcement, both purchasers have introduced various types of incentives for good performers and sanctions for non-compliance. For example, a free phone hotline complaint filing centre was set up at the NHSO along with management and sanction measures. In 2001, the medical committee of the SSO introduced sanction measures clearly written into the contract. Four levels of sanction are specified, which range from notification of warning, one year probation, reduction in the numbers of registered members (quota reduction), and forwarding the issue to the SSO Medical Ethics committee for termination of contract.

Monitoring, evaluation and conflict resolutions

Since 2002, NHSO has outsourced independent survey agencies to monitor consumer satisfaction with the services provided by the UC scheme, and identified gaps and strengths for program performance improvement. The outcome is impressive, with UC members voicing a high, and increasing level of satisfaction with the UC scheme performance.

The free hotline is a useful channel to provide case by case advice, counselling and initial conflict resolution in cases of factual misunderstanding by members or providers. It also registers complaints and forwards them to the NHSO administration.

Some SSO sanction measures are not effective in practice, for example, reduction of member quotas. Other positive motivations are applied to improve quality of service.

> *"Our punishment ranges from warning to decrease in quota of registrants. But quota reduction doesn't work especially for public hospitals because they have no limits of registrants. Additionally, private hospitals which receive complaints from members tend to have a smaller number of registrants than their full quota anyway." (SSO4)*

> *"We (SSO) have created incentives to promote good quality of contractors, for example, those who provide good service with no complaint from members are awarded Favourite Health Service Provider, with a prize of 200,000 Baht (equivalent to US$ 6,250). This is to recognize the good performers" (SSO1)*

Hospital accreditation also helps to ensure the quality and standards of care provided by SHI and UC contractor providers, and patients' confidence in the healthcare services rendered by contractor providers. Despite this, it may not solve conflicts between patients and providers. Medical errors, misunderstanding and mis-communications between doctors and patients are the main causes of patient dissatisfaction and at times result in law suits. Local mechanisms for conflict resolution play an important mediating role.

> *"The conflict resolution centre in each hospital plays a vital role in reconciliation and case settlement between patients and doctors when these adverse events happen.*

Financial compensation is one of the most effective measures for case settlement. No doctors want to have medical errors, we try our best" (Public1)

At the operational level, NHSO has a clinical audit team, which randomly selects around 5-10% of medical records for on-site audit and audits of outlier cases. In addition, at the health system level, NHSO outsources various agencies such as Health Systems Research Institute, IHPP and Health Insurance Systems Research Office to assess the impact at household level such as impact of UC scheme on equitable access to care, financial risk protection, level of catastrophic health expenditure and impoverishment.

It should be noted that the National Statistical Office is a close collaborator in producing household level evidence on health equity (catastrophic health expenditure, impoverishment, equity in service utilization and government subsidies). Ownership of durable assets which facilitates the estimation of a wealth index is an important socio-economic stratifier [16] to reflect health inequity. A number of publications reflect a very low level of financial catastrophic health expenditure and impoverishment among UC members [17],

Providers' positive responses to Scheme

Both public and private providers earn profits from the SHI inclusive capitation payment, as SHI members are drawn from a relatively healthy, working age population which experiences less illness and fewer admissions. In addition, SHI capitation rates are estimated on a full cost-basis, including both labour and non-labour operating cost, in contrast to UC capitation rate which excludes salary costs which are top-sliced from higher level budgets. Providers are therefore happier to do business with SSO than NHSO, as NHSO deducts the salary component.

In addition, SHI capitation provides a steady financial flow to contractor hospitals, allowing more predictable financing and service planning. This steady income source is very important for private hospitals to finance their fixed cost items such as salary bills. Though the per capita margin may be small, this is preferred. The strategy is to boost the number of SHI members registered.

"My calculation is net loss of 200 Baht per capita for SHI scheme, but we can share cost of the existing investment and resources, for example doctors and nurses and other capital equipment, then we should have quite a margin" (Private3, Note that Private2 reported the same thing)

"SHI is almost the sole source of our hospital revenue, we have to have them, otherwise, we close our business. In the province there are some 300,000 to 400,000 SHI members. We don't have much out of pocket payment, so we have to maintain the SHI market." (Private1)

From the analysis of provider responses, it can be concluded that providers are willing to provide high cost services as long as the payment by purchasers covers the cost of care with some margin for the business. Although public providers' behaviour is not driven by profit motives, funding still needs to cover the cost of services.

Patient Assessment

Characteristics of respondents

During the initial screening phase, staff in seven hospitals identified 300 eligible diabetic and cancer patients from their medical records. The introductory interviews of patients were conducted, with 93 patients confirmed and invited to the first round of interviews at their homes. See Table 6 on the first round sample.

Table 6 Respondent profiles from the first round interviews

Hospitals in this study	Universal coverage scheme				SHI scheme			
	Diabetic		Cancer		Diabetic		Cancer	
	Worse off	Better off	Worse off	Better off	Worse off	Better off	Worse off	Better off
Public 1	4	1	4	1	3	2	3	2
Public 2	2	1	-	-	2	2	3	2
Public 3*	3	1	2	-	2	2	2	3
Total public	**9**	**3**	**6**	**1**	**7**	**6**	**8**	**7**
Private 1	2	2	3	2	2	2	-	3
Private 2	1	2	1	2	-	1	-	4
Private 3	1	1	2	2	-	1	-	-
Private 4	2	-	1	-	3	3	3	-
Total private	**6**	**5**	**7**	**6**	**5**	**7**	**3**	**7**
Total public and private hospitals	**15**	**8**	**13**	**7**	**12**	**13**	**11**	**14**
Grand total	**93**							

*public autonomous hospital

In the first round, a total of 93 respondents completed interviews at their homes. In the second round, only 65 patients were able to complete interviews. Twenty-eight patients were lost for various reasons: some passed away, in particular cancer patients, some were unable or unwilling to continue the study, some had moved out of town and we could not find their new address and were unable to reach some of them.

Of these 65 patients interviewed in the second round there were 34 and 31 patients covered by UC and SHI schemes, respectively. A total of 39 and 26 patients belonged to the worse-off and better off groups; and 51 out of 65 were female. The vast majority of patients (87.7%) had received only primary schooling or were uneducated. While SHI patients were private formal sector employees, most UC patients were unemployed or worked in the informal sector, odd jobs or earned daily wages. Twenty-eight cases used services from public hospital contractors, 12 cases went to autonomous public hospitals and 25 cases chose private hospitals (Table 7).

Table 7 Characteristics of 65 patients who completed the second interview

Demographic data	Universal Coverage Scheme				Social Health Insurance Scheme				Total
	Diabetes Mellitus		Cancer		Diabetes Mellitus		Cancer		
	Worse off	Better off	Worse off	Better off	Worse off	Better off	Worse off	Better off	
Gender									
- Male	1	2	2	2	2	3	1	1	**14**
- Female	7	6	8	6	11	3	7	3	**51**
Age; min-max (mean)	48-62 (56)	36-69 (55.2)	36-63 (51)	17-57 (45.9)	29-60 (45.9)	41-65 (52.8)	31-65 (47.2)	40-55 (46)	**17-69 (49.9)**
Education									
- No education	2	2	1	0	0	1	1	0	**7**
- Primary school	6	5	9	6	12	3	7	2	**50**
- Secondary school or Vocational diploma	0	1	0	2	1	0	0	1	**5**
- Bachelor degree	0	0	0	0	0	2	0	1	**3**
Occupation									
- Unemployed	6	2	5	1	4	1	3	0	**22**
- Informal sector	2	6	5	7	0	0	0	0	**20**
- Private formal sector	0	0	0	0	9	5	5	4	**23**
Type of hospital use									
- Public hospital	4	4	6	4	5	2	2	1	**28**
- Autonomous hospital	2	2	1	2	3	1	1	0	**12**
- Private hospital	2	2	3	2*	5	3	5	3	**25**
Total	**8**	**8**	**10**	**10**	**13**	**6**	**8**	**4**	**65**

*These two patients were UC members but opted out to pay out of pocket instead; therefore there is substantial payment by this group.

Choices of registered hospital

The SHI and UC contract models require members to register with providers. SHI members enroll annually with their preferred contractor hospitals, while UC members are obliged to register with the provider in their district of residence. Services must be sought from their contractor providers, otherwise patients are liable to pay in full all medical bills incurred if they bypass their registered contractor.

As the UC scheme covers 47 million of the population, all public providers entered in the contract with NHSO to provide services, while at the same time, eligible hospitals fulfilling all SSO criteria e.g. those with more than 100 beds, can also be contractor providers for SHI members. Smaller district hospitals can serve as sub-contractors to a main contractor, usually a provincial hospital. As UC members are mostly located in rural districts, only a few private hospitals have contracts with NHSO. Private hospitals have a stronger capacity to compete with public hospitals for SHI members, as evidenced by their market share of 65% of SHI members. This is because SHI members are employed and therefore more likely to reside in urban areas.

Samutsakhon, the study site, has an ample number of public (one provincial, one autonomous public and one district hospital) and private (five hospitals, but one refused to cooperate) hospitals eligible for SHI contracts. This provides seven public or private choices for SHI members, whereby UC members have a choice of only three public and one private hospital.

There were various reasons given by SHI members for their choice of registered hospital including a location close to their residence, commuting convenience, reliable service, quality medication as well as past experiences and trust in the hospital. An additional factor is the number and location of network clinics which serve as sub-contractor affiliates with a main contractor hospital, as availability of a clinic network facilitates better access. Once registered with a public or private hospital, SHI members tend to choose to continue registration with them for continuity in treatment of chronic conditions.

Although some SHI patients appreciate the better non-clinical service quality provided by private hospitals, many others prefer to register with public hospitals due to better clinical services and because they have more confidence in their non-profit motives.

> *"I feel that public hospitals can provide better care in the long term to patients having chronic disease or serious conditions. I believe that public hospitals can't and won't leave those patients." (SHI136)*

> *"Though you don't have money, public hospitals would still take care of their patients but this wouldn't happen in private hospitals" (SHI53)*

UC patients truly understood, and accepted the rule of registering with a public provider network in their catchment area or domicile district. They were satisfied with the registered provider network even though no free choice was given. Registration with the provider network required by UC Scheme in their home district does not affect the providers they are likely to use, or actually used prior to UC. Therefore the registration requirement does not make any difference, or create difficulties to UC members.

> *"…there is no problem to register at the public hospitals. We like it. We normally go to drug store and private clinic when illness is not serious. Only serious condition; we will go to public hospital. We seldom go to private hospital as we don't know how much we have to pay and, importantly, we could not afford..." (UC39)*

Access to and use of health services

Equal access and use of health services

This study found that neither differences in economic status nor health insurance scheme affects access to and use of health services by diabetic and cancer patients registered with public and private contractors. None of the respondents reported inability to use health services when needed. Regarding the quality of medical services, for diabetes patients who are UC members, almost all respondents felt that they could use health services irrespective of socio-economic status and health insurance scheme. From their experience, UC and SHI patients received a similar quality of medical services. They did not perceive large differences between the two schemes. However, some differences in non-medical services were reported. For example, SHI patients were hospitalized in private rooms while UC patients used ordinary wards; UC patients waited in longer queues and spent a longer time in getting health services while SHI patients had a special channel for themselves.

Other differences between public and private contractors were reported, for example, diabetes patients arrived at the public hospital before dawn and finished around noon, while in private contractor hospitals, patients received all their services within two hours.

Adequate referral backup

Where referral is required, the systems work well. Cancer patients who are UC members expressed positive views when they were referred to specialized hospitals, e.g. university hospital and cancer

centre, as they believed that this ensured quality of care when needs were beyond the capacity of the referring hospital.

> *"When my daughter was referred to Siriraj hospital (a famous teaching hospital in Bangkok), I didn't worry about anything. She could get proper care for sure…I trust in the quality of care here because there were lots of good doctors with more experience and I did not worry about treatment cost; it was covered by Bat Thong (UC). We were referred from there to here..." (UC41)*

Additional diagnosis and treatment and cost implications

Two cancer patients recounted similar experiences of seeking diagnosis from non-registered hospitals, especially university and private hospitals; seeking care from outside the contractor hospitals costs a lot of money. Seeking diagnosis or confirming diagnosis from various sources is understandable in particular for serious conditions like cancer. These two patients had colon cancer, see Box 1.

Box 1 Seeking additional services, apart from registered hospital [UC139]

Ms. J (not real name) owned a mango orchard and was classified as better-off. In April 2007, she had a stomachache and went to Kratumban, a district hospital, where she registered for the UC scheme. After 3 visits, she was diagnosed with a peptic ulcer and got some pain relief pills. However, her symptoms were getting worse. Her son took her to a private clinic and a special clinic at Siriraj hospital, and she still was not getting better. Finally, her son took her to a private hospital nearby. At this private hospital, she was investigated by special equipment such as x-ray and ultrasound, but still could not find the actual cause of her stomachache. The doctor at a private hospital decided to do an excisional biopsy and it turned out to be colonic cancer.

Ms. J was admitted at a private hospital for three days; it cost her 130,000 baht. After that she asked for referral back to Kratumban hospital, so she could get further medical services without incurring expenditure.

In this case, UC Scheme serves as a fall-back service for serious catastrophic illnesses that patients cannot afford to pay for outside the system.

In addition to services provided by registered hospitals several respondents reported experiences of using other services, for example, herbal and alternative medicines at the onset of diabetes. However, the perceived benefit from these alternatives did not outweigh the cost.

Some cancer patients used alternative care along with western medicines. The cost of these alternatives was absorbed by themselves. For some families, additional costs became a huge financial burden.

> *"I don't think it's wrong to try herbal medicines. It's medicine, so it's good. No matter how much it is or how far I have to go to buy it, I'll do. However, I won't take both modern and herbal medicine at the same time. In the morning, I take modern medicine but in the evening, I take herbal medicine." (SHI134)*

Psycho-social dimensions and barriers of access to care

Despite having adequate access to and use of health services as reported by respondents, at least three diabetic patients decided to stop treatment due to personal reasons not related to service quality, types of contractor hospitals or economic status. Some did not perceive that diabetes is a

serious illness, as they could still perform their daily activities and they were not affected by diabetic complications. They felt uncomfortable communicating with health personnel in public hospitals.

> *"I know I have many diseases and have to go to hospital regularly but I'm old. Whenever I go to hospital, I get confused with technical words! I don't understand what those doctors or nurses say. When my niece asks me why I don't go to hospital, I always say I have communication problem" (UC29)*

Patients' perception also matters, and is a barrier to effective use of services (see SHI 32). Some cancer patients decided to refuse health services because of information they received from other patients who experienced serious side effects from chemotherapy or radiation therapy. Usually these patients changed to alternative medicines or self care; See Box 2.

> *"Actually, I don't feel sick, why I have to see doctor? Every time I go to see doctor, I got shot or venipuncture (for blood sugar test), very painful!" (SHI32)*

Box 2 Patient's perspective and decision in stop treatment [UC39]

Mr. B, 63, a worse-off UC member lived with his wife in a small hut. He earned his meager living from collecting and selling recycled materials.

On March 2007, he felt pain in his neck; he went to Samutsakhon hospital, where he registered for UC. Doctor diagnosed that he had neck cancer. He received chemotherapy until the tumor shrank in size. All treatment cost was covered by UC scheme, he paid nothing except transportation.

The next step of treatment was radiation therapy. However, he decided to refuse the offer by the hospital to pay for his transportation to a radiation therapy centre elsewhere (transport to the treatment centre is not covered by UC scheme but the hospital was willing to pay for him).

His main concern was the bad perception of radiotherapy, gained from a friend who suddenly changed from healthy looking to terribly sick and shortly after the radiation therapy, his friend passed away.

He turned to herbal medicine instead of radiation therapy for a while. When the tumor grew bigger and felt very painful, he went back to Samutsakhon hospital following which he was referred to the cancer center in Rangsit. After 5 sessions of radiation therapy, Mr. B suffered seriously from pain and burning sensation and decided to stop the treatment course. He then turned to pain relief medicines and other palliative care instead.

Equal access and use of health services with referral backup does not solve all the problems faced by the patients, which are determined by other psycho-social dimensions. For serious conditions such as cancer, patients not only suffer from clinical problems; they also suffer from misinformation, discouraging life experiences from other patients, alternative medicines for which they incur costs, side effects from chemotherapy e.g. hair loss, bald head, and from radiation therapy e.g. painful burning. All of these other factors create huge barriers to effective care and influence their health seeking pattern.

Cost Burden

From the second interview, there were 65 patients with complete quantitative data to estimate the burden of health costs. All items of household expenditure in the previous 3 months were carefully asked for by recalling month by month to ensure accuracy, and on the basis of this information a monthly average expenditure was estimated.

Table 8 presents the analysis of health cost as a share of total monthly household expenditure. It clearly demonstrates that both the UC and SHI schemes provide protection from paying direct medical costs when patients sought care from registered hospitals. They paid a very tiny amount, ranging from 0% to 0.44%. Patients had to absorb transportation cost, which was still small portion for diabetic patients (0.31-0.49%) but quite a burden for UC cancer patients (3.26%).

Table 8 Health care cost burden of 65 patients

	Number of patient	Average Baht per month per patient				As % of monthly HH expenditure			
		Direct medical cost at registered hospital	Cost of alternative treatment	Non medical cost*	Total	Direct medical cost at registered hospital	Cost of alternative choice	Non medical cost*	Total
Diabetes Mellitus	**35**								
DM-UC	16	19	29	47	95	0.12	0.08	0.31	0.50
DM-SHI	19	3	333	73	409	0.02	0.97	0.49	1.48
Cancer	**30**								
CA-UC	16	13	322	880	1,215	0.44	1.06	3.26	4.75
CA-SHI	12	0	360	140	500	0.00	1.07	0.74	1.81
CA-OOP**	2	1,967	0	30	1,997	7.05	0.00	0.10	7.20
Total	**65**								

Note * Non medical cost mainly was transportation cost

** There were two cancer patients paid by their own, in a private non-registered hospital

There were two better off UC cancer patients, who decided to pay their own medical bills for treatment provided by a private hospital in Samutsakhon. These two UC members, who were registered with a district hospital in a neighboring province of Nakornpathom, decided not to use the public contractor's services because they could afford to pay for private hospital services, and because traveling to the contractor hospital across the province though affordable, was not convenient. As a result these two cases paid 7.2% of their monthly income on medical care in a private non-registered hospital. This was primarily on direct medical cost, 7.05% of household expenditure,.

Qualitative data from 65 patients confirmed that health insurance fostered patients' confidence in secure protection from healthcare cost, especially when compared to their uninsured status prior to the UC scheme or prior to becoming SHI members. They also felt that they could access and use high cost services and that the cost would be absorbed by health insurance schemes. Use of high cost services such as heart surgery would never have been possible without an insurance scheme.

> *"In 1997, there was no UC scheme. Each time I went to see the doctor I had to pay 400-500 baht. It was a quite hard time for me because I didn't have much money. But now I am in UC scheme, I don't have to pay for anything." (UC14)*

"In 2003, I had surgery due to diabetic foot at a registered private hospital. At that time I was in UC scheme, so I didn't have to pay for medical fee, though I was admitted for 12 days. In 2004, I had toe amputation due to tetanus and stayed in the hospital for 24 days and didn't have to pay for anything. These admissions would have been costly if there was no UC" (UC118)

"In 2008, I had acute renal failure and was admitted to the ICU at Banpaeow hospital (an autonomous hospital) for 4 days, followed by 16 days in a general ward. I didn't have any expense." (SHI34)

Before these two health schemes existed, patients had to pay huge expenses for medical treatment, so some patients who could not afford this excluded themselves from treatment and turned to self-care such as pain killers or other low cost palliative measures. When all costs were covered by these health schemes, many patients decided to get treatment at their registered hospital.

"Though the doctor can't guarantee that I will be fully recovered, I want to get all treatment. I don't have to pay, it's better than doing nothing." (UC129)

"If I was not in any health scheme, I would die. I don't have that much money for medical cost." (SHI157)

However, in the SHI scheme, a reimbursement ceiling was introduced on dental treatment, covering only two sessions per annum, and not all necessary services. Some SHI cancer patients had the experience of paying for their own prophylactic dental treatment before radiation therapy such as tooth extraction. In such cases, patients under the UC scheme have a better benefit package than SHI. SHI regulation results in a greater cost burden on patients.

"Before I got radiation therapy, my doctor suggested that I get a tooth extracted. I paid 1,800 baht for tooth extraction because the cost wasn't all covered." (SHI63)

One of major cost burdens absorbed by households was transportation costs. In many cases, patients were referred for advanced treatment in university hospitals or cancer centers located in other provinces. Patients and family had to travel for several rounds of treatment. Transportation costs became a financial burden for some households, especially those who had to receive several rounds of radiation therapy for a full course of treatment. Most public hospitals we interviewed solved these problems by offering free ambulance service for UC and SHI patients.

Evidence on the very low cost burden from direct medical expenses experienced by households demonstrates the outstanding performance of the two insurance schemes in providing effective financial risk protection to their members. Cancer treatment is extremely expensive, and would be catastrophic if there was no such insurance scheme. The two UC cancer cases who were better off and were willing to pay for non-contractor private hospital care not covered by UC demonstrate the potential for catastrophic expenditure, even for the rich. In some cases, such as patient UC139, high cost care outside the contractor provider was not affordable, so the patient returned to the contractor provider for free care. A key conclusion emerges: the UC and SHI schemes serve as a fall-back service or safety net for those who opted out to pay on their own in non-contractor hospitals. When medical bills become unaffordable, patients can return back to their entitlement anytime.

Moreover, because the rich have ample choices of quality private services, their opting out reduces competition with the poor for scarce resources, and results in pro-poor service utilization and benefit incidence.

Impact of illness and household coping strategies

Illness has major financial implications for households due to patients' inability to work and the time consumed by caregivers at home which shifts them from economically productive works. Some patients could not work as much as before and some had to quit their job or changed jobs which resulted in reduced household income. The burden from transportation costs for both patients and care givers cannot be under-estimated.

Generally, two main coping strategies emerged: reduce household expenditure or seek more income. Different coping strategies between the worse- and better-off emerged from this study. While the better-off spent their savings or sought help from relatives, the worse-off usually borrowed money, took out loans, sold assets such as agriculture equipments or reduced other expenditure items. Fortunately, none reported reduction in essential household expenditure items such as food or schooling of children. Nevertheless, some respondents had to reduce or stop providing financial support to their parents. See box 3 and 4.

Box 3 Coping strategy of better-off household [UC139]

Ms. J (see box 1) sought diagnosis and treatment services from various healthcare providers, both covered and not covered by UC scheme. Though J and her family spent a large amount of money in medical cost at a private hospital as well as huge expenditures for seeking diagnosis and treatment elsewhere, it didn't cause much problem for them. They had enough savings which could be mobilized. They did not have to borrow or take out loans.

Box 4 High indirect cost and coping strategies [SHI63]

Mr. P, a worse-off SHI nasal cavity cancer patient, lived with his wife, one step-son and one nephew. He was the major bread earner for the household - more than half of household income came from him. He worked for a fish market, with a part time job at a meatball factory. His monthly income was 15,000 baht; though not a large amount, it was adequate for his family.

In June 2007, he had bleeding over his nose and mouth. He was diagnosed with nasal cavity cancer and had received treatment at a private hospital since then. Even though all medical expenditure was covered by SHI, the household had to pay for transportation expenses from Samutsakhon to Bangkok for radiation therapy. Each trip cost around 300 baht; he traveled almost daily, receiving 47 rounds in two months. Moreover, he had to quit his job due to sickness. When he didn't have regular income, the burden of high transportation costs became much greater.

His family had to reduce their household expenditures as much as possible. His step-son used his savings to support the family. They took an informal loan of 10,000 baht with high interest (10% monthly). They suffered in paying back the loan. He negotiated successfully to repay 3,000 baht for 5 months instead of paying 10% monthly interest. They planned that if family ran out of money; he would ask his nephew to stay at home instead if going to school in order to reduce the expenditure.

4. DISCUSSION

Purchaser capacities on financial risk protection

Clearly, the design of the SHI scheme, launched in 1990, had an implicit aim of providing financial risk protection to its members, The scheme provides additional payment, based on a fee schedule, for a number of high cost services which are unlikely to be provided under the inclusive capitation provider payment method, such as dialysis, and antiretroviral treatment. Consequently, SHI members and their families were well-protected from the potentially catastrophic costs of these services, in particular universal access to ART and RRT. In addition to the comprehensive basic services which are fully covered by the package, for example outpatient and inpatient services inclusive of medicines, coverage of these high cost services such as life threatening cancer treatment, foster the outcome of financial risk protection. This results in low incidence of catastrophic health expenditure and impoverishment overall [17], and for these high cost conditions.

SHI is the predecessor of the UC scheme, which drew particularly on the design of the close-end provider payment contract model and benefit package design. The same group of individuals who designed SHI in 1990, based on evidence from a variety of different countries [18, 19, 20, 21, 22] ,also provided significant technical input to the design of the UC scheme. The same group of reformists influenced the formulation of the policy of universal access to RRT for UC members. Despite the fact that it does not meet conventional cost-effectiveness criteria, preventing financial catastrophe to families affected by renal failure and the need for equity across insurance schemes were two explicit justifications for the Cabinet Resolution of 2007. The notion of prevention of catastrophic expenditures and equity are of paramount importance, and these were given a higher priority than the cost-effectiveness criterion, despite the evidence of cost ineffectiveness and long term financial implications of RRT. Universal access to ART and RRT has significantly fostered the financial risk protection provided by the UC scheme for its members.

The institutional capacity to generate country specific evidence and the continuous interaction between researchers and partners outside NHSO and policy opportunists in the NHSO are two fundamental factors enabling evidence to be translated into effective policy decisions.

It is important to note the NHSO implementation capacity, for example the DMI, in translating program design into effective program delivery and health outcome for members. Most senior NHSO staff have public health and medical backgrounds and hands-on experience of implementing various health programmes when they were high level MOPH officials. This is an institutional asset that SSO does not possess, as there is no medical or public health skill base in the Office. Though the SSO medical committee can play such a technical role in advising SHI, there were serious concerns among outsiders that the representatives of private-for-profit hospitals tended to protect their own benefit rather than that of the SHI members. This reflected the conflicts of interest among decision makers in SSO committees which lead to an unhealthy organization.

In addition, SSO could be vulnerable due to its political independence and lack of strong evidence based policy making. Some proposals of the SSO are not technically justified and are politically driven. For example, in 2009 it was proposed that SHI cover the spouses and children of the SHI members (these are currently covered by the UC scheme). In fact, expansion of SHI to cover these groups was recommended by the International Labour Organization (ILO) experts many years prior to the commencement of UC scheme; but no progress has been made by the SSO. In 2009, the SSO proposed that the NHSO transfer these groups, about 10 million people who tend to be healthier, and their budget, to be managed by the SSO. This proposal was widely debated among key stakeholders e.g. MOPH, SSO, NHSO, academia, representatives of the employers and employees, in

a consultative meeting led by the Health System Research Institute. The meeting recommended retaining the status quo, as there was no additional advantage compared to the current situation. This reflected a participatory process of policy decision making which involved not only from the SSO and NHSO but also other key partners.

Undeniably, having rural district health systems and provincial health management background, the value and ideology of a pro-poor, pro-rural (who are mostly poor) system was clearly observed among NHSO leadership and its supporting partners, in particular the research community which generates evidence. While the two groups, the research community and the policy entrepreneurs who are leaders in the NHSO, share the same pro-poor ideology and convictions, a number of platforms were created to facilitate evidence based policy decision-making, such as the NHSO sub-committee on the benefit package and the national NEDL sub-committee as a key hub for "evidence interfacing policies". This was not seen in the conduct of SSO.

In the design of the benefit package and provider payment under UC, system designers had in mind not only harmonization across schemes, but also further steps in separating capitation for outpatient care from the global budget and DRG for admissions. The inclusive capitation[†] in the SHI scheme may result in providers dumping clinically indicated cases which should be admitted into lower cost outpatient services in order to retain the profit margin; this action can have negative consequences such as welfare loss or else patients may seek care and pay out of pocket for services elsewhere, leading to financial catastrophe.

Health reforms in Thailand in favour of the poor through continued extension of financial risk protection have been pragmatic without rhetorical statements of solidarity and ideology. The SHI and UC schemes launched innovations when political opportunities arose, guided by the evidence which is continuously produced by the research community. In addition, the policies are realised and rights and statements are not only endorsed on paper due to various contributing factors, including government effectiveness, health system resilience to absorb additional program activities in an integrated manner, and government financial commitment.

Though budget negotiation is a major annual hurdle faced by NHSO and its partners, NHSO manages successfully as politicians and budget people have become more receptive to evidence e.g. utilization rate and unit costs, while at the same time the general public shows strong ownership of the UC Scheme. However, the ultimate limit is imposed by the annual fiscal capacity of the government that may limit the budget size.

Provider responses

Based on evidence on cost of services, the introduction of special payments for treatment items in addition to capitation for outpatient and global budget for admission services, led to a positive response from public and private contractor facilities, who provide these services to their registered members at a high level of quality. The contractor providers for SHI gain higher margin due to the healthy worker effect, by which SHI members are younger and use fewer health services and have lower incidence of chronic conditions, while the white collar high wage earners have private insurance coverage and don't use SHI services. Due to the higher margin, and additional payment for high cost cases, these private for profit contractor providers did not behave badly. Though private contractors criticized the scheme for operating an uneven playing field, being allocated very small

[†] SHI inclusive capitation is pragmatic while in 1991 there was no capacity to develop DRG in Thailand. DRG only initiated and launch in a phasing manner in 1996 during the health care reform project.

portion of UC members as a result of the limited supply of private providers at district level where the majority of UC members resided, they are making a decent steady profit from SHI. Particularly in the long term, SHI will be the dominant scheme for Thailand when the formal employment sector gradually grows. SHI is the core business and one source of hospital income that both public and private contractors have to secure by all means.

Impact on patients

Evidence from cancer and diabetic patients clearly indicated no barriers in access to and use of health services. Referrals to high cost care were adequate, although there were some psychosocial barriers in use of services among the cancer cases. Household payment for direct cost was very minimal, 0% to 0.44% of household income at contractor providers in Samutsakhon province. This is also confirmed by population-based data indicating very low household expenditure on health, which mostly comprised purchase of self-prescribed drugs and other traditional medicines, and use of private clinics (see table 9). The Socio-Economic Survey regularly conducted by NSO is the foundation for such monitoring.

Table 9 Household expenditure on health, by income quintiles 2002, 2004 and 2006, current-year, Baht per month

Income quintiles	2002	2004	2006
First (20% poorest)	47	50	47
Second	55	52	60
Third	70	70	93
Fourth	100	110	120
Fifth (20% richest)	200	250	205
Households having positive health payment, million	10.9	11.3	11.0

Source: Socio-Economic Survey (various years)

There were some limitations of this study. In particular, our diabetes and cancer samples are biased towards those who used services in contractor hospitals. The size and the profile of unmet need among SHI and UC members is unknown. A new tool to assess unmet need based on OECD recommendations [23] will be introduced into the NSO Health and Welfare Survey questionnaire.

5. CONCLUSION

Both SSO and NHSO performed well in providing financial risk protection to their members. In addition to inclusive capitation in SHI and capitation and global budget and DRG in the UC scheme, separate fee payment for high cost services centrally managed by SSO and NHSO helped to provide adequate financial risk protection to their members. This is particularly seen in the contributions of universal ART and RRT.

SHI and UC members were similarly protected from health financial risk even though the schemes are managed by two different bodies. The SSO was criticized that it was not as strong as the NHSO, not only on the grounds of financial risk protection, but also that it failed to use its monopsonistic purchasing power to drive health systems efficiency and primary care development. Another interesting issue is the question of which stakeholders are the key drivers of financial risk protection. From this study, the healthcare providers seemed to have a more important role in implementing policy and achieving better financial risk protection of the patients they served. The purchasers play a key role in providing adequate additional financial support to contractor providers for high cost care while at the same time, monitoring their performance and outcome. The financial risk protection was strengthened when adequate incentives were given to provide high cost care. In addition, patients are also the key players as evidence from this study clearly showed that not only health insurance scheme but other factors affected patients' decisions on healthcare choices which lead to health expenditure being borne by the household.

The NHSO performed better than SSO in term of professional ideology and health systems and public health management background, competency and skill-mix, inclusive governance structure in the NHSO board including civil society representation, evidence based policy decision processes without conflict of interest and less political influence. While SSO was criticized that it was not as strong as NHSO, when Thailand becomes upper middle or high income in the future, SHI will become the dominant scheme, while the UC scheme will shrink due to the diminishing number of poor people and informal sector. The challenging questions therefore are: how can Thailand maintain good performance of financial risk protection? Should responsibility for health care purchasing remain with one of these two organisations, or with a new one, and what measures are needed to continue to strengthen purchasing functions.

To respond to the above challenging question, and sustain the pro-poor performance of the system and the high level of financial risk protection to the population, there appear to be three main options. First, SSO governance could be improved, but the likelihood of such an outcome seems low in the light of their rigid organization culture and vested interest among partners. Second, SHI could be managed by NHSO while SSO manages the non-health components, in particular old age pension, unemployment benefit, child allowance, disability and death compensations. The second choice is the hardest choice, though not impossible with strong political support. Third, a new organization which manages the single national scheme for the entire population could be established in order to harmonize all three public health insurance schemes into a single fund.

These will be issues of both academic and political debate. Evidence is needed not only of poor governance of SSO versus better performing NHSO, but also there needs to be a major political decision which requires amendments of various Laws. For any decision to be made in the future, political decisions must safeguard the benefit of the public, not the organizations. Continued generation of evidence is required to support informed decisions.

6. REFERENCES

[1] World Health Organization. WHA Resolution 58.3: Sustainable health financing, universal coverage and social health insurance. http://apps.who.int/gb/ebwha/pdf_files/WHA58/WHA58_33-en.pdf [access 15 March 2010]

[2] International Labour Office, Deutsche Gesellschaft fur Technische Zusammenarbeit, World Health Organization (2006) Berlin Recommendations for Action. International Conference on Social Health Insurance in Developing Countries, Berlin, 5-7 December 2005.

[3] WHO Regional Office for Western Pacific Region. Health Financing Strategy for the Asia Pacific Region (2010-2015). Manila: 2009. http://www.wpro.who.int/NR/rdonlyres/074ABF06-0DE5-4107-BC29-E82409F66079/0/HCFstrategy20102015.pdf [access 15 March 2010]

[4] WHO Regional Office for Africa. Health financing: a strategy for the African region. Report of the Regional Director for the Fifty-sixth session of Regional Committee Meeting in Addis Ababa, Ethiopia, 28 August-1 September 2006

[5] Xu K, Evans D, Carrin G, Aguilar-Rivera A, Musgrove P, Evans T. Protecting households from catastrophic health spending. Health Affairs 2007; 26:972-83.

[6] World Health Organization. Designing Health Financing Systems to Reduce Catastrophic Health Expenditure. Technical Briefs for Policy-makers Number 2, Geneva: World Health Organization; 2005.

[7] Thai Working Group on Observatory of Health Systems and Policy. Thailand Health Financing Review 2010. Nonthaburi: 2010.
http://ihppthaigov.net/publication/attachresearch/194/chapter1.pdf [access 23 June 2010]

[8] Social Security Act 1990. http://www.sso.go.th/sites/default/files/Social%20%20security%20act.pdf [access 15 March 2010]

[9] National Health Security Act B.E. 2545 (A.D. 2002)
http://www.nhso.go.th/eng/content/uploads/files/Thailand_NHS_Act.pdf [access 15 March 2010]

[10] Prakongsai P, Limwattananon S, and Tangcharoensathien V. The Equity impact of the universal coverage policy : lessons from Thailand. In: Dov Chernichovsky, and Kara Hanson, eds. Innovations in health system finance in developing and transitional economies, 57-81. London: Emerald Group Publishing Limited, 2009.

[11] National Health Security Office, Annual report 2008, Nonthaburi, NHSO 2008.

[12] Revenga A, Over M, Masaki E, Peerapatanapokin W, Gold J, Tangcharoensathien V, and Thanprasertsuk S. The Economics of effective AIDS treatment: evaluating policy options for Thailand. 1st ed. Washington DC : World Bank, 2006.

[13] News. Thailand: health care for all, at a price. Bull World Health Organ 2010; 88: 84–85

[14] Teerawattananon Y, Mugford M, and Tangcharoensathien V. Economic evaluation of palliative management versus peritoneal dialysis and hemodialysis for end-stage-renal disease: evidence for coverage decisions in Thailand. Value in Health 2007; 10: 61-72.

[15] Prakongsai P, Palmer N, Uay-Trakul P, Tangcharoensathien V, and Mills A. The Implications of benefit package design: the impact on poor Thai households of excluding renal replacement therapy. Journal of International Development 2009; 21: 291-308.

[16] Tangcharoensathien V, Limwattananon S, and Prakongsai P. Improving health-related information systems to monitor equity in health: lessons from Thailand. In Di McIntyre, and Gavin Mooney, eds. The Economics of health equity, 222-246. New York : Cambridge University Press, 2007.

[17] Limwattananon S, Tangcharoensathien V, and Prakongsai P. Catastrophic and poverty impacts of health payments: results from national household surveys in Thailand. Bulletin of the World Health Organization 2007; 85: 600–606.

[18] Mills A, Bennett S, Siriwanarangsun P, and Tangcharoensathien V. The Response of providers to capitation payment: a case-study from Thailand. Health Policy 2000; 51: 163-180.

[19] Towse A, Mills A, and Tangcharoensathien V. Learning from Thailand's health reforms. British Medical Journal 2004; 328: 103-105.

[20] Tangcharoensathien V. Contracting in practice: a low- and middle-income perspective. Bulletin of the World Health Organization 2006; 84: 913.

[21] Tangcharoensathien V, Prakongsai P, Patcharanarumol W, and Jongudomsuk P. Universal Coverage in Thailand: the respective roles of social health insurance and tax-based financing. In ILO; GTZ; and WHO. Extending social protection in health: developing countries' experiences, lessons learnt and recommendations, 121-131. Frankfurt: VAS, 2007.

[22] Tangcharoensathien V, Prakongsai P, Limwattananon S, Patcharanarumol W, and Jongudomsuk P. From targeting to Universality: lessons from the health system in Thailand. In Townsend P, editor. Building decent societies: rethinking the role of social security in development, 310-322. Houndmills, Basingstoke, Hampshire : Palgrave Macmillan, 2009.

[23] de Looper M, Lafortune G. Measuring disparities in health status and in access and use of health care in OECD countries. OECD Health Working Papers number 43. 2009. Paris, Organization for Economic Cooperation and Development; 2009.