

CHAPTER V

DISCUSSION

With the purpose of carrying out the study on hospital behaviors responded to payment mechanisms of health insurance systems, this chapter elucidates interpretations of the main findings for each selected tracer diseases and particular viewpoints revealed by this study. The four selected tracer diseases for assessments of impacts of the payment mechanisms were ALBP, AUGIB, lung cancer, and epilepsy.

Summaries of the Main Findings from the Study

From the entire results, the foremost findings achieved from the study are explained in Table 5.1. On the one hand, health insurance payment methods are likely to influence various practice patterns and efficiencies of health care services for the four selected tracer diseases as follows:

- From Chi-square statistical test, there were significant associations between different payment methods and access to new drugs and high cost and high technology equipment. Fee-for-service patients gained access to advanced oral NSAIDs' products for ALBP and to advanced physical examinations with MRI and CT scan for lung cancer more than capitation patients.
- From Chi-square statistical test, there were significant associations between different payment methods and quality of practice patterns of lung cancer and epilepsy treatments. For treatments of lung cancer, fee-for-service patients were firstly diagnosed by chest CT scan in consistent with the standard treatment guidelines more than capitation patients. For treatments of epilepsy, fee-for-service patients with ADRs from antiepileptic drugs were appropriately managed as indicated by the standard treatment guidelines more than capitation patients.
- From Shorrocks indexes calculated for treatments of all four selected tracer diseases, inequalities in cost distribution were noticed.

On the other hand, the payment methods are not likely to affect access to care and quality dimension of practice patterns for some aspects in the study:

- From Chi-square statistical tests, there were no significant associations between different payment methods and access to required drugs, palliative drugs, and gastroscopy procedures.
- From Chi-square statistical tests, there were no significant associations between different payment methods and quality of practice patterns of AUGIB and lung cancer complied with the standard treatment guidelines. For treatments of AUGIB, there were no differences in appropriate diagnosis by gastroscopy procedures and appropriate prescription of PPIs provided to both fee-for-service and capitation patients. For appropriate drug regimens for treatments of lung cancer, similar findings to the treatments of AUGIB were observed.

Table 5.1: Summaries of the main findings

Tracer diseases	Dependent variable			Independent variable			Results
				Insurance payment methods			
	30-Baht Scheme	SSS	CSMBS				
ALBP	Access	New drugs	COX-II	Cap	Cap	FFS	<i>P</i> <0.5
Epilepsy			Antiepileptic drugs	Cap+DRGs	Cap	FFS	<i>P</i> <0.5
Lung cancer			Antineoplastic drugs	HC ₁	HC ₂	FFS	<i>P</i> <0.5
AUGIB		Required drugs	PPIs	DRGs	Cap	FFS	<i>NS</i>
Lung cancer		Palliative drugs	Anti-emetic drugs	HC ₁	HC ₂	FFS	<i>NS</i>
			G-CSF	HC ₁	HC ₂	FFS	<i>NS</i>
ALBP		Drugs in dosage form with high technology	NSAIDs in dosage form with high technology	Cap	Cap	FFS	<i>P</i> <0.5
AUGIB		High technology equipment	Gastroscope	Cap	Cap	FFS	<i>NS</i>
Lung cancer			CT scan and MRI	Cap	Cap	FFS	<i>P</i> <0.5
ALBP	Equity			Cap	Cap	FFS	<i>Inequality</i>
AUGIB				DRGs	Cap	FFS	<i>Inequality</i>
Epilepsy				Cap+DRGs	Cap	FFS	<i>Inequality</i>
Lung cancer				HC ₁	HC ₂	FFS	<i>Inequality</i>
AUGIB	Quality	Adherence with STG	Gastroscopy	DRGs	Cap	FFS	<i>NS</i>
AUGIB			PPIs	DRGs	Cap	FFS	<i>NS</i>
Lung cancer			First diagnosis by chest CT scan	HC ₁	HC ₂	FFS	<i>P</i> <0.5
Lung cancer			Appropriate regiments	HC ₁	HC ₂	FFS	<i>NS</i>
Epilepsy			Appropriate ADR management	Cap+DRGs	Cap	FFS	<i>P</i> <0.5
AUGIB	Efficiency			DRGs	Cap	FFS	Capitation
Epilepsy				Cap+DRGs	Cap	FFS	FFS
Lung cancer				HC ₁	HC ₂	FFS	HC ₁

Cap : capitation, *FFS* : Fee-for-service, *HC₁* : per item per visit with ceiling of the Thirty-Baht scheme for High cost care, *HC₂* : per item per year with ceiling of the SSS for High cost care, *NS* : non significant different

Further Considered Perspectives on Associations between Health Insurance Payment Methods and Treatments of each Certain Tracer Disease

From rigorous consideration of the findings, additional aspects of health insurance payment methods were pondered on each selected tracer diseases, as explicated below.

Acute low back pain (ALBP)

The further analyses for ALBP patients are shown in Table 5.2. From the findings about access to new drugs for treatments of ALBP, only two of 391 30-Baht patients (0.51%) could gain access to the COX-II inhibitors by particular out-of-pocket payment on their own. Therefore, it was really true to say that not any 30-Baht patients could gain access to these drugs. For the SSS patients, three of 13 patients (2.45%) could gain access to the drugs. It seemed likely that the SSS patients had access to these drugs more than the 30-Baht patients. When the subgroup analyses for selective and specific COX-II inhibitors were pondered, however, the access to selective COX-II inhibitors for both the 30-Baht and the SSS patients seemed to have no differences. An example of the selective COX-II inhibitors was meloxicam, that classified in list C of the National Essential Drug List, with the characteristics of lesser efficacy and higher ADRs but lower costs (around 17 baht/capsule) than the specific COX-II inhibitors. For the subgroup of specific COX-II inhibitors, such as celecoxib, with the characteristics of better efficacy and lesser ADRs but higher costs (around 23 baht/capsule), both the 30-Baht and the SSS patients equally gained no access to these drugs

Regarding costs of drug treatment in ALBP, the calculated Shorrocks Indexes showed inequalities in the treatments among patients with different health insurance systems. For 2-way ANOVA analyses to determine influences of each pertinent variable, it was found that payment method and interactions between payment method and age group had influences on distribution of costs of drug treatment while just the age group factor had no such influences.

Considering the subgroup of elderly patients with ALBP in the study, only one of 91 patients (1.10%) in the 30-Baht Scheme could gain access to COX-II inhibitors with out-of-pocket payment on his/her own. In fact, there were no official acceptable

standard treatment guidelines for ALBP in Thailand. Accordingly, this analysis referenced recommendations of the American Family Physician and the Prescribing Guideline for Primary Care Clinicians. Although these guidelines did not directly suggest COX-II inhibitors as drugs of choice for elderly patients with ALBP, they recommended these drugs for patients with high risk factors of gastro-intestinal bleeding including the factor of old age.

Table 5.2: Further analyses for ALBP patients

Access to COX-II inhibitors	Health insurance payment methods		
	30 baht scheme	SSS	CSMBS
	Capitation	Capitation	Fee-for-service
Number of patients with ALBP	391	532	4416
Number of ALBP patients with access to COX II inhibitors	2	13	1747
Percentage of ALBP patients in access to COX II inhibitors	0.51%	2.45%	39.55%
Number of ALBP patients who could gain access to COX II inhibitors by <i>out-of-pocket</i>	2	3	0
Number of elderly patients with ALBP	91	10	1027
Percentage of elderly patients with ALBP	23.27 %	1.88 %	23.26 %
Number of elderly patients with access to COX II inhibitors	1	0	473
Percentage of elderly patients with access to COX II inhibitors	1.10 %	0.00 %	46.06 %

When additionally looking carefully at the regimens of conventional NSAIDs, some patients were prescribed these drugs together with the gastro-protective drugs such as PPIs, H₂-antagonists, or misoprostal* that could help prevent gastro-intestinal bleeding caused by the NSAIDs. Although the incremental costs of conventional NSAIDs plus gastro-protective drugs (26.32 baht/patient/7 days of treatment) were increased only 21 baht/patient/7 days of treatment compared to the regimen of conventional NSAIDs alone (5.32 baht/patient/7 days of treatment), elderly patients in the capitation schemes obtained these gastro-protective drugs less than the fee-for-service patients, as shown in Table 5.3. This amount of the incremental costs for gastro-protective drugs seemed to be very low compared to the treatment costs of gastro-intestinal bleeding, the highly potential ADRs of using conventional NSAIDs in elderly patient, which might need hospitalization. It is implied that quality of care may be overlooked when costs of drugs are the only aspect of concern to both health care providers and health insurance payers.

(Note: * In the studied hospital, misoprostal was restricted for prescribing by only obstetrics and gynecology specialists.)

Table 5.3: Elder patients with ALBP who obtained conventional NSAIDs

	Health insurance payment methods		
	30-Baht Scheme	SSS	CSMBS
Number of elderly patients	91	10	1027
Number of elderly patients with conventional NSAIDs	47	3	262
Number of elderly patients with conventional NSAIDs +PPIs	3	1	35
Percentage of elderly patients with conventional NSAIDs +PPIs	6.38%	33.33%	13.36%
Number of elderly patients with conventional NSAIDs +H ₂ blocker	18	0	62
Percentage of elderly patients with conventional NSAIDs +H ₂ blocker	38.30%	0.00%	23.66%

These pieces of evidence reflect interesting actualities that

1. Health insurance systems do not open up an opportunity or do not provide choices for patients to access safer health care services?

This notion was drawn from the information from interviews with pharmacists working in the studied hospitals, for example,

- Hospitals would not let the 30-Baht or the SSS patients pay out-of-pocket for the expensive COX-II inhibitors, with normally restricted use in these patients, on their own for the reason that hospitals did not want to take the risk of being sue later by the patients for co-payments that against the rules and regulations of the health insurance payers under the government policy on public health care services.
- Normally, hospital pharmacists do not provide information on the disparity between the COX-II inhibitors and the conventional NSAIDs in the risk of gastro-intestinal bleeding for patients to make a decision to choose the drugs on their own.

These phenomena may signify that patients' choices and opportunities to learn about standards of care they received were certainly closed.

2. For the situation that almost all of the elderly capitation patients with ALBP were not prescribed COX-II inhibitors and there were no existent Thai standard treatment guidelines for ALBP, there are some doubts that physicians might not concern such recommendations of foreign countries or they might think that the recommendations might not appropriate for Thai patients. However, if COX-II inhibitors were prescribed for the elderly patients who took the risk of gastro-intestinal bleeding in this study, the incremental costs will be about 102 – 1,568 baht/person/7 days of treatment compared to the regimens of conventional NSAIDs only, as shown in Table 5.4. This amount of the incremental costs are likely to inexpensive compared to the treatments of gastro-intestinal bleeding caused by substandard treatments without COX-II inhibitors in patients with the risk of old age.

Table 5.4: Estimated costs of ALBP treatments

Type of drugs	Examples of drugs	Cost / DDD	Cost/7 days of treatment	Budget impact	
				30-Baht Scheme	SSS
COX-II inhibitors	Meloxicam	27.82	194.74	17,721.34	1,947.40
	Celecoxib	23.44	164.08	14,931.28	1,640.80
	Rofecoxib	29.42	205.94	18,740.54	2,059.40
	Parecoxib	224.7	1572.9	143,133.90	15,729.00
	Etoricoxib	23.72	166.04	15,109.64	1,660.40
	Valdecoxib	15.41	107.87	9,816.17	1,078.70
Conventional NSAIDs	Diclofenac	0.76	5.32	484.12	53.20
Conventional NSAIDs + PPIs	Diclofenac+ PPIs	3.76	26.32	2,395.12	263.20

3. There are questions that may have to put to health insurers, including
- Health insurance payers will pay much more for beneficiaries with ALBP to access COX-II inhibitors or not? For how much?
 - Or the payers will pay more for the patients to access conventional NSAIDs together with gastro-protective drugs such as PPIs?
 - Or the payers will not pay any more but will push these financial burdens of co-payments to the patients? And most of the elderly patients with high risk of gastro-intestinal bleeding who normally had no routine income after the retirement will be able to afford or not?

Acute upper gastro-intestinal bleeding (AUGIB)

Findings for treatments of AUGIB in the study indicated that health insurance payment methods had no association with access to required drugs, the PPIs. The plausible explanation was that the range of cost/DDD of PPIs products in the market

was vastly wide, 5 – 350 baht. Thus, costs of drugs were not the critical barrier to access these required drugs.

As for access to high cost and high technology equipment for this disease, it was found that payment methods had no association with access to the gastroscopy procedures. Concerning the expenditure on this procedure (1,500 – 3,000 baht/procedure), it was not rather expensive compared to the MRI procedure (8,000 – 1,500 baht/procedure). In addition, from the sampling of patients to review the medical records for information on quality of care, it was found that not all patients gained access to the gastroscopy procedure. When the severity of the disease was differentiated, it was indicated that most of the patients who were not ordered to get this procedure had low severity of the disease.

Accordingly, it may confirm that access to both PPIs and gastroscopy procedures were not different from scheme to scheme.

All findings for this tracer disease illustrated that there was the least variations in the practice patterns of this for the reasons that

1. The foremost drug for treatment of AUGIB were PPIs that had a characteristics of therapeutic class equivalent. Every kind of drug in the group of PPIs from the first developed drug – omeprazole – to the latest one – esomeperazole – had the same efficacy of inhibition of gastric acid secretion. In addition, there were no differences in the efficacy between the oral and the injection dosage forms of these drugs. However, costs of these drugs were extremely different from entity to entity and from dosage form to dosage form. As a result, every AUGIB patients should be able to access at least one of the most inexpensive choices of these drugs.
2. There were no significant differences between quality of the local made PPIs products and the original product because most of the local made products had already passed the bioequivalent test. Consequently, physicians had affordable options to prescribe for every patient.
3. The diagnosis and treatment procedures using specific equipment, the gastroscope, were moderately priced. Additionally, there were no restrictions in prescribing of this procedure for every patient. Therefore, physicians had no constraint on prescribing of the procedure.

As a consequence of these reasons, there is no doubt that efficiencies of health care services for the AUGIB patients with close-ended payment (1,804.54 baht per

cured case for the 30-Baht patients and 1,590.67 baht per cured case for the SSS patients) were astonishingly higher than for the AUGIB patients with open-ended payment (5,037 baht per cure case for the CSMBS patients).

Epilepsy

From the further analyses of the findings that health insurance payment methods had associations with new antiepileptic drugs (Table 5.5), it was found that only 15 of 116 epilepsy patients in the 30-Baht Scheme could gain access to the drugs. Only one of the 15 patients had access to the drugs without out-of-pocket payment on his/her own. At the same time, the SSS patients tended to be in the better situation that 13 of 68 epilepsy patients could gain access to the drugs. Nine of the 13 patients had access to the drugs without out-of-pocket payment on their own. These findings revealed the interesting points that even within the same health insurance system, there were inequalities in access to the new drugs with or without out-of-pocket payment of some patients. This observable fact may be random or systematic errors. However, the relevant discriminating factors affected these inequalities were not able to be comprehended by this study.

For the calculation of distribution of drug treatment costs, the calculated Shorrock indexes pointed out the inequalities in the treatments. From the 2-way ANOVA calculated to detect factors that influenced variance of the drug treatment costs, it was found that all factors of payment method, age group, and interaction between payment method and age group had statistically significant influences on the costs.

Regarding the sampling of patients to monitor quality of care by using ADRs' management patterns as an indicator, three momentous findings were revealed as follows:

1. The ADR rate of the antiepileptic drugs in patients with the close-ended payment scheme was statistically significant higher than in patients with the fee-for-service payment scheme.
2. Most of the ADRs were caused by conventional antiepileptic drugs (83.33%) recommended in the standard treatment guidelines in Thailand. These drugs were well-known for the high incidence of their ADRs.

3. The ADRs occurred in patients with epilepsy in the open-ended scheme were managed with more suitable approaches (complied with the recommendations of Steinhoff (2003)) than in the close-ended scheme with statistical significances, as shown in Table 4.30. Because the standard treatment guidelines for treatments of epilepsy in Thailand had no obvious recommendations for management of these ADRs, the criteria for evaluation of the ADRs management in this study were retrieved from recommendations in the guidelines of other countries.

Normally, quality of care could be determined by comparisons of the actual practices of treatment to the recommendations stated in the standard treatment guidelines. Accordingly, the fully comprehensive standard treatment guidelines should be established and implemented properly in every health care setting. From the process of determination of the ADRs management in this study, a great deal of incompleteness of the standard treatment guidelines in Thailand was noticed, as described below.

1. The guidelines defined the primary goals of treatments of epilepsy as seizure freed with no ADRs of the antiepileptic drugs.
2. The initial major treatment should be started with a single conventional antiepileptic drug previous to the multiple drug treatments.
3. The guidelines in Thailand at that time did not recommend the new antiepileptic drugs as the first line drugs because there were no evidence on long term use of these drugs and no evidence for use in pregnant women. In addition, costs of these drugs were very high. Therefore, the guidelines recommended these drugs for the only conditions of
 - a. Patients don't response to the conventional antiepileptic drugs
 - b. Patients were allergic to the conventional antiepileptic drugs
 - c. Patients who were not able to obtain surgical treatments or who were not improved by the surgical treatments
4. There were recommendations of the guidelines for monitoring of the ADRs, but no ADRs management approaches were recommended.

The recommendations in 2. and 3. were implied that most of the patients with epilepsy should receive the conventional antiepileptic drugs. As a result, the goals of treatments in 1. would not be able to meet. Therefore, the development of guidelines

should consider every part of the treatments scrupulously with regularly continual updates.

These findings of the incident rates of the ADRs and the appropriate ADRs management reflect the interesting aspects that health insurance payers should use the official standard treatment guidelines as indicators for monitoring of the quality of care provided by health care providers. The apposite guidelines should concern

1. The coverage and comprehensiveness of the guidelines, for example, the appropriate ADRs management should be included.
2. In reality, standard treatment guidelines should be classified as the minimal or the optimal standard in the perspective of health insurance payer?

– *As the optimal standards in the perspective of health insurance payers:*

If the existed guidelines were the optimal standards in the perspective of health insurance payers, the treatments with the conventional antiepileptic drugs would be categorized as the optimum care notwithstanding the occurrence of the ADRs. The payers would pay for only the required conventional drugs, not for the optional new drugs with lower incidence of ADRs but higher costs. If patients needed the new drugs, for example, they could not tolerate the ADRs of the conventional drugs or they wanted the new drugs, for example, they wanted to avoid the ADRs, who should be the actual payer for these surplus expenditure on the switching to the new drugs? If the answer was the health insurance systems, the next question was that where was the sources of money? If the answer was patients, the next question was that the patients would be able to afford these expensive drugs or not? These new drugs were very expensive and must be prescribed continuously to control the seizure.

– *As the minimal standards in the perspective of health insurance payers:*

On the contrary, if the existed guidelines were the minimal standards in the perspective of health insurance payers not the optimal ones, the health insurance payer should be the real payer for the surplus expenditure on the switching to the new drugs in order to reach the optimal requirement of exemption from the ADRs or not? If the health

insurance payer were urged to repudiate the surplus expenditure according to the concepts that hospital providers should be obliged to provide health care services with the optimal standard, how should the health insurance system design the benefit package for this kind of service? Or this financial burden should be pushed to the patients?

In relation to efficiency of the treatments, patients with epilepsy in the open-ended scheme obtained the treatments with higher efficiency (6,618.28 baht per case with seizure freed) than the patients in the close-ended schemes (6,805.42 baht per case with seizure freed for the 30-Baht patients and 15,312.75 baht per case with seizure freed for the SSS patients). Although patients in the open-ended scheme could gain access to the new drugs more than the patients in the close-ended scheme that resulted in the higher costs of treatment, the efficiency of this kind of treatment in the patients with the open-ended scheme were still higher than the efficiency of the treatment in the patients with the close-ended scheme. It was inferred that the incremental benefit in patients with the open-ended scheme was larger than the incremental cost. Moreover, the patients with the open-ended scheme simultaneously obtained the safer care with lower incident of the ADRs and more appropriate ADRs management than the patients with the close-ended scheme, as shown in Table 4.30 and Table 4.31.

These findings signified that payment methods of the 30-Baht Scheme and the SSS were appropriate or not? Because the incentives of these close-ended did not enhance the access to the new drugs with higher cost, higher efficacy, and lower incident of the ADRs in the disease that the success outcomes of the treatment depended on these kind of drugs.

Table 5.5: Access to new antiepileptic drugs in patients with epilepsy

Access to new drugs in each tracer diseases	Health insurance payment methods		
	30 baht scheme	SSS	CSMBS
	Capitation	Capitation	Fee-for-service
Number of epileptic patients	116	68	729
Number of epileptic patients with access to new antiepileptic drugs	15	13	224
Percentage of epileptic patients with access to new antiepileptic drugs	12.93%	19.12%	30.73%
Number of epileptic patients with access to new antiepileptic drugs by <i>out-of pocket</i>	14	9	-
Percentage of epileptic patients with access to new antiepileptic drugs by <i>out-of pocket payment</i>	93.33%	69.23%	-

Table 5.6: Incidence rates of ADRs from antiepileptic drugs

	Health insurance payment methods		
	30-Baht Scheme	SSS	CSMBS
	Capitation and DRG	capitation	Fee-for-service
Number of epileptic patients	116	68	729
Number of epileptic patients (sampling)	40	25	191
Number of epileptic patients with ADRs	9	10	24
Percentage of patients with ADRs	22%	40%	13%
Number of epileptic patients (sampling) with new AEDs	6	6	57
Percentage of epileptic patients (sampling) with new AEDs	15%	24%	30%

Lung cancer

From the further analyses of the findings that health insurance payment methods had associations with new antineoplastic drugs, only eight of 42 patients with lung cancer in the 30-Baht Scheme could gain access to these new drugs. Three of the eight patients could access these drugs without out-of-pocket payment on their own. As for the SSS patients with lung cancer, only three of 31 patients could gain access to these new drugs without the out-of-pocket payment.

For the palliative drugs including the anti-emetic drugs and the G-CSF, payment methods had no associations with the access to these drugs. On the contrary, payment methods had associations with the access to the high cost and high technology equipment such as the MRI and the CT scan.

Regarding the inequalities in costs of drug treatments of lung cancer, the calculated Shorrock indexes indicated the inequalities. From the 2-way ANOVA calculated to detect factors that influenced variance of the drug treatment costs, it was found that only factors of payment method had statistically significant influences on the costs.

Regarding the sampling of patients to monitor quality of care in consistent with the standard treatment guidelines, it was found that payment methods had an effect on quality dimension of practice patterns for the first diagnosis of lung cancer by the CT scan. One plausible reason was that the patients in open-ended scheme normally have freedoms to visit any public hospitals in Thailand that they selected without being controlled by the health insurance payers. Therefore, before they make a decision to be treated by chemotherapy in the studied hospital, they might be first diagnosed by CT scan from other hospitals they visited. Consequently, the number of the patients in open-ended scheme with the first diagnosis by CT scan in the study was less than the exact situation. At the same time, the patients in close-ended scheme have to obtain health care services only at the hospital they registered. As a result, the number of the patients in close-ended scheme with the first diagnosis by CT scan in the study was the actual number. Thus, percentage of the patients in close-ended scheme who were first examined by CT scan seems to be higher than of the patients in open-ended scheme.

From the findings that there were statistically significant differences among success rates of treatments of lung cancer patients in different health insurance schemes, it was indicated that the success rate in patients with close-ended schemes was lower than in patients with the open-ended scheme as shown in Table 4.36 and Table 4.37. As for the further analyses, it was found that most of the success cases obtained the new antineoplastic drugs. The access to these drugs had an effect on one-year survival with statistical significances as shown in Table 5.7. Therefore, the measurements of efficiency of lung cancer treatments by considering only the lowest cost per success case were ethically unacceptable. Because the high moral value of being alive should not be assessed on the monetary value, health insurance systems should not cut the opportunities of being alive down. Therefore, health insurance systems should consider that how much the insurance payers should pay in order to extend the opportunities of being alive.

For the further analysis on cost per success case, it was found that the average cost was 170,660.29 baht per success case. Nevertheless, this average cost was not the exact costs of treatment. It was the costs that reflect only the consumption of health care resources. If the 30-Baht Scheme intended to enhance the survival rates in lung cancer patients, the incremental costs of 122,587.41 baht per case based on costs

of treatment in the fail case should be allocated to the hospital providers. For the SSS, these incremental costs should be 108,416.50 baht per case, as shown in Table 5.7.

Table 5.7: Related factors with success outcomes

		success	fail
Number of lung cancer patients	n	63	55
	%	54.50%	46.60%
Access to new drugs	n	49	30
	%	77.78%	54.50%
	p value	0.011*	
Appropriate regiment	n	60	52
	%	95.24	94.54%
	p value	0.054	
final stage Severity level	n	51	47
	%	52.04%	47.96%
	p value	1.000	

Table 5.8: Costs of treatment for success and fail cases of lung cancer

	Health insurance scheme		
	30-Baht Scheme	SSS	CSMBS
Number of patients	20	13	85
Number of treatment fail (< 1yr)	12	10	33
Percentage of lung cancer patients with treatment fail (< 1yr)	60 %	76.92%	39.82%
Average drug cost per success case	170,660.29		
Cost per fail case	48,072.88	62,243.79	88,755.09
Incremental cost per success case	+122,587.41	+108,416.50	+81,905.20
Cost per case	44,268.82	54,646.89	156,282.86
Incremental cost per success case	+126,391.47	+116,013.40	+14,377.43

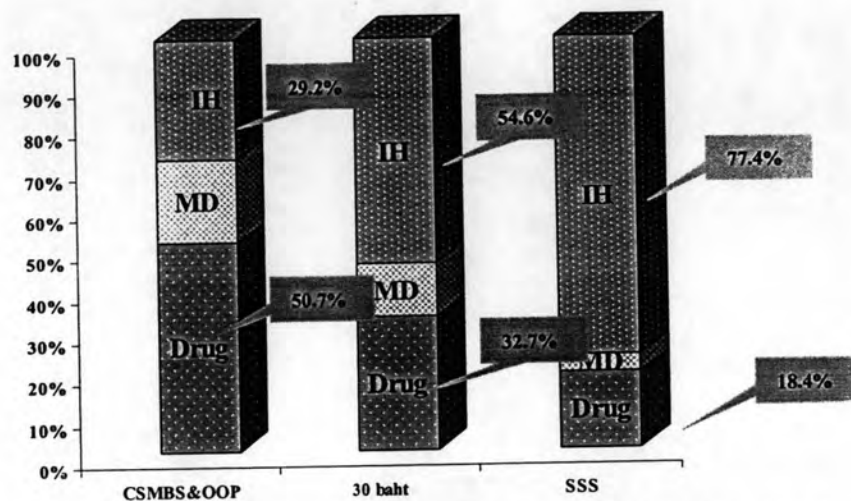
Particular Viewpoints on Consequences of Health Insurance Payment Methods

Drugs as the first target for cost containment

The findings of the study appeared to suggest that drugs are the first target of cost containment, especially for the 30-Baht Scheme. The reason for this is that

- 1) For the 30-Baht patients and the SSS patients, the proportion of the drug equivalent charge to other health care equivalent charge is lower than of the investigation and hospitalization equivalent charges. This type of proportion for the 30-Baht and the SSS patients was 32.7% and 18.4% respectively. On the contrary, the proportion of the drug equivalent charge to other health care equivalent charge for the fee-for-service patients is

higher than of the investigation and hospitalization equivalent charges, 50.7%.



Drug = Drug charges, MD = medical device charges, IH = cost of investigation and hospitalization charges

Exhibit 5.1: The proportion of drug charge, medical device charge and investigation-hospitalization charge

- 2) Magnitude of disparity between the average drug charges per person per year for the fee-for-service patients and for the capitation 30-Baht patients is much more than the average total charge of health care services per person per year. It may imply that drugs are the first target of cost containment.

Exhibit 5.2: Total charges per person per year

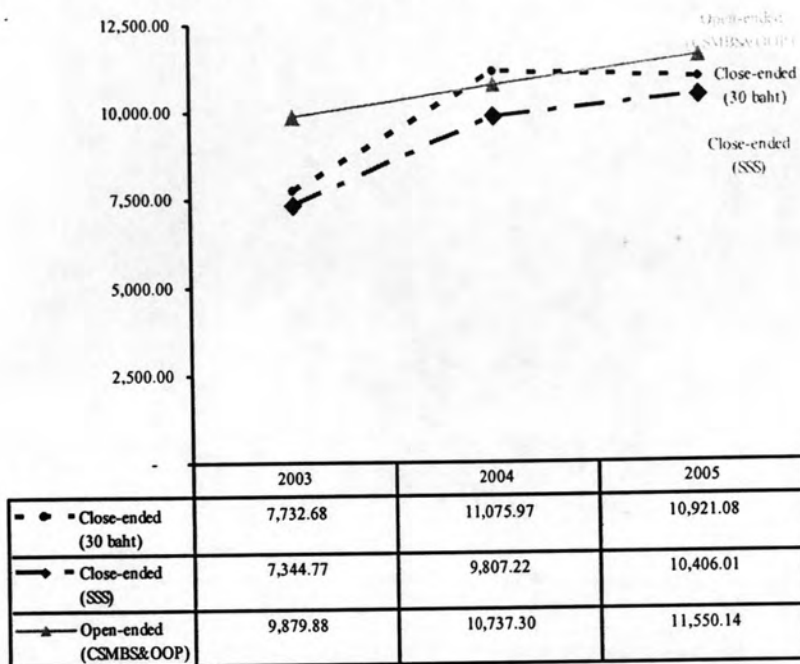


Exhibit 5.3: Average drug cost per person per year

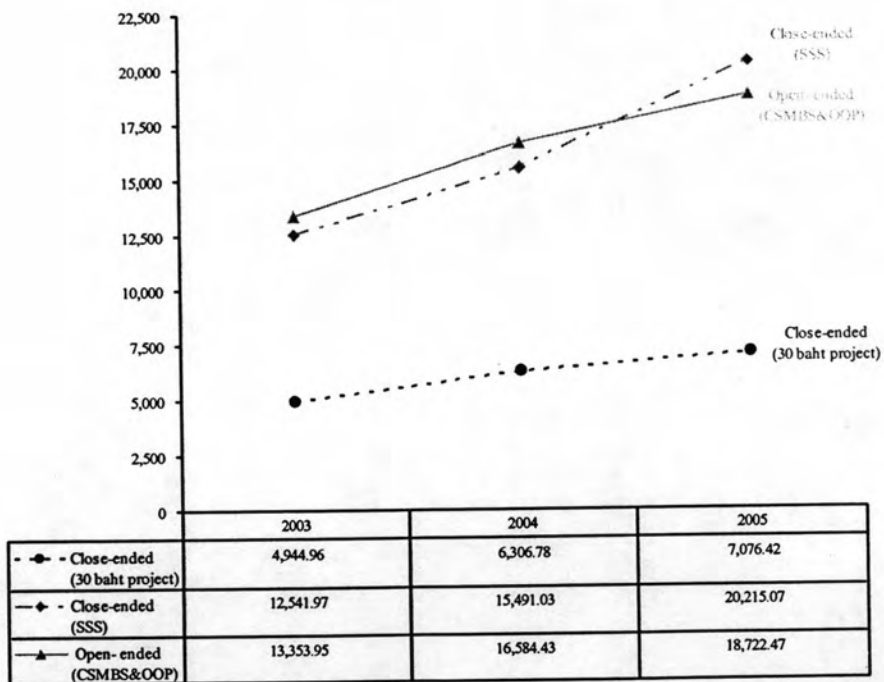


Table 5.9: Percentage of differences of total charges and average drug cost between different schemes

Year	CSMBS vs. 30-Baht Scheme		SSS vs. 30Baht Scheme		CSMBS vs. SSS	
	% Difference		% Difference		% Difference	
	Total charges	Drug cost	Total charges	Drug cost	Total charges	Drug cost
2003	27.77%	170.05%	-5.02%	153.63 %	34.52%	6.47%
2004	-3.06%	162.88%	-11.45%	145.55%	9.48%	7.06%
2005	5.76%	164.58%	-4.72%	185.67%	10.99%	-7.38%

Note: The number of patients cannot be show.

- 3) From the review of hospital drug formulary and restriction policies on drug use, it was found that
- There were different drug lists for patients in each health insurance scheme, including the lists for the 30-Baht, the SSS, and the CSMBS patients. The example of the differences was illustrated in Table 5.9.
 - There were policies on generic substitution for the 30- Baht and the SSS patients, not for the CSMBS patients.
 - There was the limitation on period of prescribing (visit interval): two-month drug supply for the 30-Baht and the SSS patients and four-month drug supply for the CSMBS patients.
 - There was a restriction on prescribing the MRI procedure for the 30-Baht patients only.

Table 5.10: An example of the different lists of drugs for the different schemes

Generic name	Hospital drug lists		
	30-Baht Scheme	SSS	CSMBS
Etoricoxib	×	×	✓
Valdecoxib	×	×	×
Celecoxib	×	×	✓
Parecoxib Inj.	×	×	✓

✓ = patients could reimburse from payer.

× = patients must pay out-of pocket.

Prices as major conditions that limit access to care

From the findings about access to new drugs, required drugs, palliative drugs, advanced drug product, and high cost and high technology equipment, it was found that only some kinds of drugs and equipment procedures affected the access differently among schemes, as shown in Table 5.11 and Table 5.12. It was likely that the associations ascertained from the study were relying on the level of costs of these things. Concerning analyses of subgroups of the expensive drugs such as the new drugs and the original drug products and of the inexpensive drugs such as the conventional drugs and the local made products, it was indicated that patients in the close-ended schemes were prescribed the inexpensive drugs.

Pertaining to subgroup analysis of the G-CSF drugs with exceedingly high costs for both the original and the local made products, surprisingly, there was no difference of access to these drugs for patients with different insurance systems. This finding conflicts with the earlier findings of the study that access to expensive PPIs, original anti-emetic drugs, and newer drugs for the fee-for-service patients was higher than for the capitation patients. The most plausible reason was that the hospital already had restrictions to limit access to G-CSF drugs on only patients with high risk of infection, for example, patients with neutropenia less than 0.1×10^9 /L. This restriction was enforced on every patient regardless of types of health insurance systems. Therefore, payment methods had no effects on access to G-CSF drugs.

Moreover, the percentages of patients who were prescribed these drugs were quite low, 0 to 12.9%, for patients with every insurance system.

Table 5.11: Access and cost comparisons for the comparable drugs in the study

Access to	diff	Cost /DDD		Comparator	Type
			Comparator		
COX-II inhibitors	Sig	15.41-224.7	0.76 -1.20 (diclofenac, ibuprofen)	Convention NSAIDs	New drugs
Sustain release Convention NSAIDs	sig	17	0.76 (diclofenac plain tablet)	plain tablet Convention NSAIDs	Advanced dosage drug
New AEDs	Sig	49.3-250.8	1-30.66 Phenobarbital -valpoic acid	Conventional AEDs	New drugs
New antineoplastic drug	Sig	8767.58 /1 gm (Gemtarabine)	1047.7/50 mg (doxorubicin)	Conventional antineoplastic drugs	New drugs
PPIs	NS	3-300	0.96- 37.04 (cimetidine, ranitidine)	H2 anatagonist	Required drugs
Injection PPIs	Sig	170-300	3-54	Oral PPIs	Required drugs
Original PPIs	Sig	54-300	3-5	Local -made	Required drugs
anti-emetic drugs	NS	11.98-1090.62	0	placebo	Palliative drugs
Original anti-emetic drugs	Sig	268.9-1090.62	11.98 – 24.61	Local –made anti-emetic drugs	Palliative drugs
G-CSF	NS	977.08- 1515.83/ 100 mcg	0	placebo	Palliative drugs

Note: 'sig' means payment methods had associations with the studied drugs

Table 5.12: Access and cost comparisons for the equipment procedures

Access to	diff	Charge
Gastroscope	NS	1500-3000
CT scan	sig	5000-8000
MRI	sig	8000-15000

Note: 'sig' means payment methods had associations with the equipment procedures