Original Article

Paying Health Personnel in the Government Sector by Fee-For-Service : a Challenge to Productivity and Quality, and a Moral Hazard

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Abstract

The Ministry of Public Health has implemented increasingly complex payment schemes to cope with the internal brain drain situation among certain categories of health personnel. Non-private-practice allowances have been given to medical doctors, dentists and pharmacists since 1993 and a fee-for-service scheme for extra-office hour practices started since 1994. This research is to evaluate the impact of the fee-for-service payment on productivity and quality of care and to consider any resultant moral hazards amongs health providers. Qualitative research techniques, i.e. focus group discussions and in-depth interviews were carried out in 4 provinces. This was complemented by a before and after case-review to compare quality of care provided to 3 tracer conditions in 5 hospitals. A postal, self-administered questionnaire survey was carried out in 17 provinces to study attitudes towards fee-for service pay amongst doctors, dentists, pharmacists and nurses.

As expected, a fee-for-service payment increased productivity among procedure-based health services. Quality of care could be improved by the shortening of waiting time and length of stay. Moral hazards of providers occurred in various ways, by delaying of services to after office hours, increasing the lists of patients to be seen, etc. The management system played a minimal role in safeguarding medical ethics.

It is recommended that payments to health personnel should be simplified to achieve efficiency objectives. There should be a more stringent measure to manage non-private-practice allowances to achieve quality of services. Hospital management should play a more active role to increase hospital efficiency, quality of services as well as to limit moral hazards from the fee-for-service payment.

Key Words : Human resources; Productivity; Financial; Incentives; payment, Quality; Government; Fee-For-Service; Moral Hazard.

Introduction

Government health services still predominate the health sector in Thailand. The share of hospital beds in the public sector is about 4 to 5 times larger than the share of private sector beds even though private hospital beds have increased rapidly from 2% of the total beds in 1967 to 10% in 1978, 17% in 1992[1] and 25% in 1995[2]. The growth of private hospitals has siphoned certain types of health personnel from the public to private sector causing an imbalance of health manpower distribution between the public and private sectors and among geographical regions including Bangkok, urban and rural areas[3].

Apart from bureaucracy, the main explanation of the brain-drain of doctors from public to private hospitals is payment to doctors. A survey of the Thai Medical Council in 1990 showed that a private hospital doctor's earnings per hour of work was 4 to 5 times that of a public hospital doctor's earnings. It is customary that public hospital doctors work for the private sector after office hours to gain a rate of 4 to 5 times additional pay to their office hour earnings. In sum, in order to get about a half of a private hospital doctor's pay, public hospital doctors had to work 77 hours a week both in the public and private sectors, while private doctors worked only 54 hours a week[4].

Therefore, in 1992, the Thai cabinet approved the Ministry of Public Health's proposal to give a non-private practice allowance to doctors, dentists and pharmacists who work only for the public sector. It is a mechanism to maintain health personnel in the public sector and to enhance quality performance by refraining them from conducting private practice. Furthermore, since 1993, the Ministry of Public Health has introduced a fee-for-service payment to health personnel who work after office hours in public hospitals to increase the level of payment according to the workloads. These two initiatives have raised the level of payments especially to doctors who work with the public sector only. This paper aims to discuss the effect of the fee-for-service payment. A full account of the fee-for-service payment. A full account of the evaluation of both initiatives can be found elsewhere[5].

Since the Ministry of Public Health introduced the non-private practice allowance and fee-for service payments in public hospitals, there has been no systematic evaluation of the initiatives. People from non-health professions dislike the rationale of non-private practice allowance, with criticism that it is paid to keep doctors lazy. On the other hand, they accept the fee-for-service payment because it is form of performance-related pay. Because paying for health personnel is a complex issue, this paper will explore in detail only the consequences of fee-for-service payment according to the following aspects :

- the impact of fee-for-service payments on service behaviours of health personnel;
- the measure of satisfaction of health personnel towards the fee-for-service payment;
- the impact of fee-for-service payment on quality of services provided.

Methods

Three research methods were applied to investigate the impact of the fee-for-service payment on health personnel and on services provided. Qualitative techniques were used in four provinces to explore in depth the impact on service behaviour and provider satisfaction. This part was complemented by a questionnaire survey to a

larger number of health personnel in 17 provinces. A case-control study was designed to compare quality of services provided before and after the launching of fee-for-service payments in 5 hospitals.

Four provinces, one in each region, were purposively selected for the qualitative study. They showed signs of increases in payments for personnel between the fiscal years 1993 and 1994. The authors conducted in-depth interviews with provincial chief medical officers and hospital directors, and held focus group discussions with 10-13 groups of health personnel at provincial and district hospitals in each province. Questions on the impact of fee-for-service payments were raised in the discussions. Qualitative data collection was carried out from February to June 1995.

The quantitative survey employed a multistage sampling technique. The first stage selected 17 provinces form 4 regions. The second stage selected 4 categories of professionals who were closely related to this type of payment. The third stage selected a number of nurses to be surveyed. Finally, self administered questionnaires were mailed to 1,331 doctors, 254 dentists, 339 pharmacists and 1,019 nurses with the overall response rate of 51% (1,493 out of 2,943).

The third research method was to select tracer conditions to compare the quality of care before and after the introduction of fee-for-service pay. Tracers included appendectomies, fractures and peptic ulcer perforations. Two regional hospitals, 2 general hospitals and 1 community hospital were purposively selected by their willingness to participate in the study. The 'before' group consisted of patients who were admitted during 1993 and the 'after' group included those who were admitted during 1994. A systematic random sampling was used in order to have about 50 cases for each group in each hospital.

Results

The qualitative research technique in 4 provinces revealed that each hospital had set up its own rules to pay health personnel on a fee-for-service basis. Two broad categories were applied : the first group was the 'pay as you work' and the second was 'pay up to a ceiling'. The 'pay as you work' group was identified in two provincial hospitals and the 'pay up to a ceiling' was found in two others in our sample. As predicted, the fee-for-service payment stimulated productivity of surgeons in the hospitals under the pay as you work scheme but not under the pay up to a deiling.

1. **Productivity**

Hospitals R1 and R2 were regional hospitals (of more than 500 beds) with different payment policies. Hospital R1 paid according to workloads while hospital R2 set a ceiling pay for each over-time shift. Hospitals G1 and G2 were general hospitals (less than 500 beds) which paid their personnel according to workloads and up to a ceiling respectively. Table 1 shows the workloads of each physician per month, comparing the workloads within and after the office hours. The workload was calculated by dividing number of operations with the number of doctors in that specialty. Therefore, the workloads within the office hours can be influenced by the size of the hospital (which is a proxy for number of patients, number of doctors and operating tables) while workloads after office hours are less likely to be influenced by the number of operating tables. For general surgery and obstetrics and gynaecology, smaller hospitals tended to have higher workloads within office hours than bigger hospitals. The workloads within office hours for eye and ear-nose-throat

surgeons in hospital R1 were remarkably higher than the workloads in the other three hospitals (Table 1).

Table 1. Number of operations per physician per month

Hospital	General surgery		Orthopaedics		Obstetrics-gynae		Eye		ENT	
	Office hr	On call	Office hr	On call	Office hr	On call	Office hr	On call	Office hr	On call
R1	5.29	12.47	23.89	37.81	9.07	5.61	50.42	9.58	17.21	4.54
G1	21.50	15.80	19.00	11.20	11.40	4.80	11.40	1.50	3.10	0.00
R2	11.33	8.30	17.19	7.37	4.55	4.86	15.71	0.27	7.47	0.65
G2	26.73	9.33	15.92	2.47	15.94	7.35	10.00	0.92	8.81	0.61

R denotes regional hospital, G for general hospital
1 for hospital that uses a 'pay as you work' policy, 2 For hospital that uses 'pay up to a ceiling'

There were considerable variations of productivity between specialties and between hospitals that were following the same pay protocol for fee-for-service. The fee-for-service payment increased the productivity of orthopaedic and general surgeons after office hours in hospitals R1 and G1 that paid them as they worked, as compared to hospitals R2 and G2 that paid up to a ceiling. In the absence of the pre- and post-comparison figures in each hospital, the increase in hospitals R1 and G1, **without lowering the workloads of the same surgeons during office hours, implies that the shift of work from office hours to after office hours to get fee-for-service pay was less likely to happen.** It is very interesting that the effect of fee-for-service payment was not observed among obstetricians in these hospitals. This may be due to the fact that most deliveries are urgent, or obstetricians tended to get private doctor fees from patients long before the implementation of this initiative.

2. **Earning**

As the result of increases in productivity, different types of doctors earned differently according to their practices, workloads and the hospital policies. Table 2 shows that the highest earning doctors on the list were orthopaedists in hospital R1. Orghopaedists also had the highest number of operations according to the workloads after office hours in Table 1. Orthopaedists in hospital G1 were also the top earners amongst there specialties. This may be because cases of orthopaedic emergency operations were paid at a higher rate than cases of general surgery emergencies.

Non-procedure based physicians (internists, paediatrictians) usually earned less than procedure-based physicians (surgeons), unless they tried to increase their earnings by increasing the lists of patients they saw after office hours (discussed later in the section on moral hazards).

3. **Attitudes**

The questionnaire survey compared attitudes towards the impact of fee-for-service payments. Because doctors received the most advantage from fee-for-service pay, they usually responded with biases. More than 3 quarters of doctors agreed that fee-for-service payment increased the willingness to work after office hours. More than half of them agreed that they were quicker to respond and they paid good attention to emergency cases as well as delivered a high quality of care. Nurses could be a good reference for some issues, e.g., 27% of nurses admitted that some (doctors) produced false reports to claim for pay without working (Table 3).

Table 2. Monthly pay from fee-for-service and on-call duty for different types of physician

Hospital	R1	G1	R2	R2
General surgeon (staff)	4,000-10,000	7,600-10,260	15,000-18,000	3,100-11,000
resident	10,000-20,000	-	-	4,000
Orthopaedist	30,000-40,000	20,100-23,100	8,000-12,000	11,500-13,000
Eye	6,000-7,000	600-700	4,000-6,000	5,500
ENT	6,000-7,000	-	2,500-5,000	5,000-6,000
Ob-Gyn (staff)	5,000-8,000	6,000-8,000	5,000-7,000	4,000-6,000
resident	12,000	-	-	-
Anaesthesist doctor	15,000-20,000	-	7,000-14,000	11,000-12,000
Internal medicine (staff)	5,000-20,000	4,600-6,000	6,000-9,000	3,500-11,000
resident	15,000-24,000	-	-	3,130-17,000
Paediatrician	5,000-6,000	3,500-5,600	4,000-5,000	2,750-7,300
Radiologist	6,000	-	5,000-7,000	1,800

(-) no information

Table 3. Agreement (%) with the impact of fee-for-service payment among health personnel

	Doctor	Dentist	Pharmacist	Nurse
Willingness to work after office hours	76.2	66.7	73.0	62.7
Stop brain drain	42.6	40.4	44.6	34.3
Pay more attention to emergency cases	55.0	32.7	38.8	34.6
Quick response to come and see patient	60.3	37.6	37.7	37.2
Provide higher quality services	52.5	31.9	34.3	31.9
Do more unnecessary procedures after office hours	44.3	32.6	26.9	36.3
Provide false report to claim for pay without working	16.7	8.5	17.6	27.1

4. **Quality of care**

The impact of fee-for-service payments on the quality of case was studied in another set of hospital samples by using case-control design. Quality here focused mainly on professionally-defined quality: e.g. waiting time for surgeons (to be seen by a doctor before an operation), waiting time for an operation (time from admission to the start of operation), length of stay, type of operation and rate of complication. The comparisons were made between the care delivered to patients who stayed in the hospitals before and after the implementation of fee-for-service payments.

Three tracer conditions were compared as presented in Table 4. The average waiting times for general surgeons (appendectomy and peptic ulcer perforations) were shorter than waiting time for orthopaedists both before and after the introduction of the fee-for-service payment. However, after the introduction of the fee-for-service, orthopaedists provided quicker services in terms of waiting times after first seen at admission, and the time lag from admission to operation. This resulted in significant shorter lengths of stays in the after-implementation group. Non-statistical differences were found in the before-and-after comparison of appendectomy and

peptic ulcer perforations because, perhaps, they were "true emergency cases' and required prompt treatment.

Table 4. Time motion of cases before and after implementation of fee-for-service

Disease	Appendectomy		Fractures		Peptic ulcer perforation	
	Before	After	Before	After	Before	After
Number	222	280	271	189	85	96
Wait for doctor (hr)	2.87	2.21	5.55	4.03	2.52	2.22
SD	4.08	3.55	9.10	5.57	2.98	4.29
Wait for operation (hr)	9.16	8.22	*17.61	*11.79	8.44	9.1
SD	13.64	12.57	22.42	16.85	7.51	15.3
LOS (days)	5.99	5.62	**13.41	**8.39	9.67	10.34
SD	4.66	4.63	17.27	8.05	5.53	8.17

SD = standard deviation, * p = 0.02, ** p = 0.0002

Shortened lengths of stay in orthopaedic cases may also be the result of more definitive surgery being done on the first episode of operation. The higher pay the surgeon received, the more definitive operations were performed. The operations to set the fractured bones with some internal fixation were observed to be doubled in each hospital. Nonetheless, definitive surgeries did not increase complication rates[5].

5. **Moral hazards among health providers**

Focus group discussions and in-depth interviews with health personnel in four provinces had raised many concerns about moral hazards inherited with fee-for-service payments. Moral hazards can be found in both procedure-based and non-procedure-based health personnel. The most prevalent issues were: the shift of workloads from office hours to after office hours, giving treatment to incurable patients, making more visits to patients who did not benefit from them, etc.

'The doctors always say that their patients need emergency surgeries. We can easily find out that many cases should have been operated on before 4.30 p.m.'-Nurses' comment.

'He has many reasons to explain that his patients must be operated on at this time, otherwise complications may occur. He claimed that he selected minor cases to be operated on after office hours and long cases for office hours. This made him achieve a higher number of cases with fees after office hours and a few cases without extra payment within office hours'-a doctor's comment.

'Some doctors keep on putting patients under unnecessary operations. Today, bring the patient to fix with the plate, tomorrow, bring the patient to take the plate off, saying that there is an infection for example'-a nurse's comment.

'Now treatments of closed fractures are very expensive and cause financial losses to the hospital. A patient with a closed fracture of the clavicle is brought to the operating room for internal fixation. Or, a Colles' fracture is reduced in the operating room, so the hospital has to pay fees to the doctor and anesthetic nurse'-a hospital director's comment.

'Some doctors do resuscitation on a dead body, to get 200 baht for CPR (cardiopulmonary resuscitation)'- a nurse's comment.

'some doctors make rounds on the ward after closing their private clinics. They make small adjustments to the respirators and make notes that they have treated those cases to get the payment'- a doctor's comment.

'Only one community hospital uses the fee-for-service payment. At the provincial hospital, there were a lot of rumours. When I asked who were doing unacceptable things, they said, that guy was bad, that one moderate, but that one never did. (S)he was straightforward. …In my observation, when one had done it, the others would follow,'- a doctor at the Provincial Health Office.

Discussions

Fee-for-service payment increases productivity in the public hospitals that pay their personnel on a workload basis, because this kind of payment is similar to what has been practiced in private hospitals. The most obvious specialty to increase productivity is the orthopaedics department. Before the introduction of fee-for-service pay, orthopaedic patients would have waited for weeks to be operated on for their definitive surgeries. Patients who did not want to wait for that long would go to private hospitals, where definitive surgeries were performed by the same orthopaedists within a few days. This is less likely to happen after the introduction of fee-for-service pay, even though the level of pay per procedure in a public hospital is much less than the pay in private hospitals. Orthopaedists came to see patients earlier and brought the patients to surgeries earlier than before. The beneficial effect was a decrease in the average length of stay.

The shift of workload from office hours to after office hours was voiced very often by many groups of health personnel. There is no hard evidence to prove the magnitude of the shift. One anaesthesist doctor claimed that the number of cases operated on after office hours with fewer teams of scrub nurses and anaesthesist nurses, were higher than the number of cases operated on during the office hours with more teams. It is imperative that information on this issue should be monitored. Or the policy on fee-for-service payment for workload outside office hours should be revised.

Strong management practices are needed in each hospital to counteract the moral hazards of health providers, including the shift of services. Most hospitals used only financial measures to control moral hazards, e.g., hospital R1 set a ceiling of monthly payments for procedure-based doctors after the management felt that some doctors had conducted more operations than the expected workloads. The ceiling was easily agreed upon by related partners but had a side effect that productivity was inhibited. No hospitals applied clinical audit to counteract moral hazards of health providers as there was no incentive for the management to do so.

Alternatives to the fee-for-service payment can be arranged to reduce moral hazards. Salary-based payments reduce moral hazards as well as productivity. In the US, where physician payment formula are the most complex, payments range from prepayment capitation to service bundles and fee-schedules depending on the objectives of the health schemes[6]. Many countries accept that mixed payment systems are a good solution to increase productivity and control health care costs: doctors in Finland receive 60% salary, 20% capitation and 15% fees; in Norway 50% per capitation, 30% fees-for-service and 20% per user charges[7]. While the situation in this research is different, government hospitals are not free to set their own salary levels, a non-private -practice allowance can increase physician payments but may not increase productivity. The tradeoff between productivity and moral hazard should be managed more efficiently to prevent organizational failure in the public hospitals[8].

Recommendations

Moving payment systems towards performance related payments will increase productivity and quality of service to some extent, but adverse effects are also obvious. Public hospitals are not flexible enough to set the salary level, this leads to a complex payment system to increase the level of pay in order to prevent brain-drain. Physicians in public hospitals are paid on monthly salary, a non-private-practice allowance for not working in private practice, a deprivation allowance for working in remote area, an AIDS supplement for treating patients that are HIV positive, an overtime payment for working after office hours and a fee-for-service payment for treating or operating on a number of patients after office hours. This complex system prevents hospital managers from actively managing health personnel. It is recommended that the payment system should be simplified to achieve efficiency in providing health care. This will be feasible when public hospitals are given more autonomy to do so.

Hospitals management must be made more accountable to the services they are providing. Quality of care, productivity and efficiency should be the explicit objectives for public hospital management to achieve. In that circumstance, clinical audit and performance related pay will go hand in hand. The potential of health professionals will only be fully realized by a good management environment. If not, a fee-for-service payment will present a challenge to prevent moral hazards.

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