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Health care in China: The role of non-government providers

Yuanli Liu [a,*], Peter Berman [a], Winnie Yip [a], Haocai Liang [b], Qingyue Meng [c], Jiangbin Qu [c], Zhonghe Li [d]

[a] *Department of Population and International Health, Harvard School of Public Health, SPH1-1210, 665 Huntington Avenue, Boston, MA 02115, USA*
[b] *Sun Yat-sen University of Medical Sciences, Guangzhou, China*
[c] *Institute of Social Medicine and Health Policy, Shandong University, Jinan, China*
[d] *Department of Health Policy and Management, Harvard School of Public Health, MA, USA*

Abstract

While China's health services are primarily financed by out-of-pocket spending (private financing), health care providers, especially the hospital industry, are still dominated by state ownership and government control (public provision). Even though the private sector plays an increasing role in the ambulatory sector, private services are not included in the social insurance benefit package, and thus, it primarily serves self-paying patients. The ambiguity of the government policy toward private provision stems from concerns that an increasing private sector would drive up costs and its services may be of questionable quality. This paper tries to gather evidence on the relative performance of private and public sector in China. Neither literature review nor our primary data analysis provides any support for the notion that the private sector charges a higher price and they serve primarily the better-off people. Quite on the contrary, available data seem to suggest that not only the private sector tends to serve disproportionately the low–middle income groups (this may well be due to its relative lower direct and indirect costs), consumer satisfaction also seems to be higher with regards to certain dimensions of the private than public sector.

Keywords: Non-government provider; Private sector; Relative performance; Consumer choice; China

1. Introduction

Developing countries continue to face difficult challenges in meeting the health needs of their populations and in achieving the Millennium Development Goals [1]. The problem is not just lack of resources, but also how to use existing resources more equitably and more efficiently [2]. Due to equity considerations as well as considerations of market failures, governments of most countries have become central to health policy and health systems during the 20th Century, often engaging in both the financing and provision of a wide range of health services, including public health, ambulatory and hospital services [3]. However, largely motivated by ideological and technical arguments during the 1980s and 1990s, non-government health care has become more visible and increasingly recognized as a significant part of national health systems [4–8]. This is especially true for the "transitional countries"

* Corresponding author.
E-mail address: yuanliu@hsph.harvard.edu (Y. Liu).

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such as China, which have undergone transformation from a command to market economy [9].

The extent to which the non-government sector is involved in financing and provision of health care varies widely across countries. One of the central policy debates for health system reform around the world is whether or not and how the government should mobilize this sector to help achieve improvement in access to better quality care and better health outcome of the populations. In part, the ambiguity of the policies regarding the proper role of the private sector stems from the lack of understanding of the rationale for and performance of the private sector. For example, China's economy as a whole is now dominated by the non-government sector [10]. But the role of the private sector in health care provision is still very limited. Since profit motive may cause private providers to ignore the needs of the poor and induce demand by those who are able to pay, policy makers in China are concerned about the negative consequences on access and efficiency of health care, if the private sector is allowed to proliferate. Are those concerns warranted? Is there empirical evidence on the relative performance of the private and public sector in health care? Answers to these questions will not only enhance our understanding of the private sector, but also have direct implications for new policy development regarding the proper role of the private sector.

Based on both secondary and primary data analysis, this paper first provides an overview of China's health system and the overall scope of private sector in health care in Sections 2 and 3. Section 4 addresses the question of why people choose private providers in China. Then, in Section 5, we analyze evidence on the performance of private providers, compared to the public providers. The performance criteria include perceived quality by the consumers, average costs, and satisfaction. In Section 6, we conclude the paper by discussing the major findings and issues that should be considered for future studies in this field.

2. An overview of China's health system

2.1. Health care supply

In 2002, China had over 306,000 health establishments and a wide array of supporting research organizations. The country has 5.2 million health professionals, including 1.8 million physicians with various levels of training (about 1.5 physicians per 1000 people) and 1.2 million nurses. Averaging 2.4 beds per 1000 people, there are over 17,844 hospitals with some 3.1 million hospital beds. About 8200 urban community health centers and 46,000 rural township health centers (a township health center usually has 15–20 beds) mainly provide outpatient services. In addition, there are 213,000 clinics. Preventive services are provided by 3463 Centers for Disease Prevention and Control at the national, provincial, city and county levels. China also has specialized facilities for preventing and treating specific health conditions or caring for special populations. Nearly 1840 Institutes for Prevention and Treatment of Special Diseases (e.g. TB) and 3067 Maternal and Child Health Stations [11] have been established.

2.2. Health care financing

The 2001 National Health Account study estimated that China spent 515 billion Yuan on health in 2000. As seen in Table 1, government spending accounted for 14% and individual out-of-pocket spending accounted for 60%. The rest was spent by insurance schemes and enterprises. Despite escalation of medical costs, insurance coverage did not change much in the past decade. According to the two national health services surveys conducted by the Ministry of Health in 1993 and 2003, the percentage of populations with any health insurance coverage changed from 53 to 46% in urban areas, and from 12% to only 21% in rural areas [12,13].

Table 1
Health care spending in China (1990–2000)

	1991	1995	2000
Percentage of GDP spent on health	4.11	3.86	4.82
Percentage of total health expenditure by government	22	17	14
Percentage of total health expenditure by individuals (out of pocket)	38	50	60
Percentage of government health spending on public health	75	72	70

Source: Ref. [25].

3. The scope of private sector in China

The development of private health care sector in China is closely related with China's overall political, social and economic systems development. Before the People's Republic of China was founded in 1949, there were about 520 private hospitals (mostly mission hospitals operated by churches, especially by American missionaries), which outnumbered the 248 hospitals run by the government. Additionally, there were more than 200,000 private medical practitioners at the time. From 1950s to late 1970s, with collectivization and nationalization of the economy, a movement of socialized medicine was launched, where majority of the health facilities had been owned and operated by the national, provincial, city and county government, and by "collectives" and by the State-owned industrial enterprises.

When China embarked on economic system reforms in the early 1980s, resulting in remarkable economic growth and rising of people's standard of living, China found itself faced with the challenge of a supply shortage of health facilities, relative to the ever increasing demand. Realizing that the government cannot increase supply to meet the excess demand due to budget constraints, private medical practice was allowed in 1982. Later in 1987, dual practice was also allowed, while private hospitals were still restricted. In 2000, China issued the first regulation on non-profit and for-profit health care organizations, whereby private for-profit hospitals were also allowed.

During the period of economic system reforms, the scope of private sector in health care has steadily increased. For example, in 1984, there were only about 80,000 private practitioners in China. By 2002, the number of private medical practitioners reached more than 200,000 [11]. The majority of China's private practitioners are located in rural areas. Ever since the agricultural system reforms in the early 1980s, which resulted in the weakening of collective financial support of local health services and collapse of the cooperative medical system (CMS), a community-based model of organizing and financing health care, many of the former "barefoot doctors" either left the health profession for full-time farming or converted to private practice, relying on fee-for-service revenues. According to China's 1998 National Health Services Survey in Table 2, 41% of the rural village health posts are independent and private practices (17% in group practice and 24% in solo practice). Even though 45% of the village health posts are still owned by the village collectively, there are no significant differences in the behavior and institutional constraints among village health posts owned by the village or privately owned. Except for the responsibilities for the immunization and other public health services, which are provided by the collectively owned village health posts with some compensation from the government, both sets of practices have to rely on revenues charged to the largely uninsured patients for their income [14]. It is safe to say that majority of the ambulatory services at the rural grassroots level are provided by the private practitioners.

Table 2
Ownership of village health posts in China

Ownership type	Percentage of health posts
Owned by township	5
Owned by village	45
Group practice	17
Solo practice	24

Source: Ref. [13].

Today, the private sector penetrates almost all the areas of health services, except for public health. Table 3 lists major types of health facilities by profit status. Under current regulation in China, "for-profit" is synonymous with "private" because there are very few private non-profit health care organizations. As is shown in Table 3, the private sector plays a major role in ambulatory services, while its role in the hospital market is still minuscule. A few published studies in China on private sector also indicate that private providers tend to compete with the public sector on price and product differentiation. For example, private hospitals provide private wards and other amenities more often than public hospitals [15].

4. Why do people choose private providers in China?

As indicated by Table 3, the supply conditions in China are such that people do have a choice between public and private providers when it comes to ambulatory services. Models of demand for medical care indicate that the major factors affecting people's choice behavior include perceived quality of the providers,

Table 3
Number of organizations and beds by type of facilities (non-profit and for-profit status)

Type of facilities	Beds			Facilities		
	Non-profit	For-profit (%)	Total (%)	Non-profit	For-profit (%)	Total (%)
Hospital	17844	88	12	2.2 million	95	5
Rehabilitation	365	78	22	68600	73	27
Community health station	8211	87	13	12031	97	3
City neighborhood health center	1022	94	6	14105	93	7
Rural township health center	44992	97	3	671295	97	3
Ambulatory clinics	212888	30	70			
Maternal and child health clinics	3067	88	12	79774	95	5
Specialty clinics	1839	85	15	31812	91	9

Source: Ref. [11].

compared to the costs (including monetary and time costs) [16]. Conventional wisdom also tells us that services provided by the private sector may tailor consumers' diverse demand, charge a higher price, and thus, usually serves the people who are able to pay [17]. Is this borne out by the data available from China? According to China's 1998 National Health Services Survey, about 10% of both the urban and rural residents reported private providers being their most frequently used providers, as shown in Table 4. Urban residents are more varied when it comes to their usual source of care, while the majority of rural residents go to village posts at 60%, then town centers at 23%. Furthermore, as indicated in Table 5, people most frequently cited short distance and high quality for choosing different providers. We used these findings to guide us in conducting a multivariate regression analysis, using the baseline survey data from the China Health Surveillance System in 2001 [18].

Following a multi-stage stratified random sampling framework, the China Health Surveillance Survey collected information from 5402 households and 18,924 individuals from 10 cities and counties, representative of China's high-income, middle-income and low-income communities. Information on people who were 15 years younger was collected from an adult in the household. For our purpose in examining what factors prompt the choice of using private clinics, we will exclude people 15 years younger in this study considering that they were not actively making that choice. In total, 14,997 people are included for this study. Among them 5670 are qualified as "urban residents", namely with an official urban household registration card, 8516 are "rural residents", primarily engaged in agriculture and finally 794 people are of mixed household types.

Table 6 gives descriptive statistics on the characteristics of the people interviewed by the China Health Surveillance Survey and who used the health care

Table 4
Percentage of people citing different providers as their usual source of care

	Private doctor (%)	Village post (%)	Town center (%)	County hospital (%)	City + hospital (%)
Urban	10	18	19	9	32
Rural	10	60	23	4	0.4

Source: Ref. [13].

Table 5
Major reasons for choosing the usual source of care

Percentage of people cited	Nearby (%)	Price low (%)	Quality high (%)	Contract (%)	Know people there (%)
Urban	46	5	13	30	2
Rural	73	4	14	2	3

Source: Ref. [13].

Table 6
Utilization rate of the private sector by characteristics of the study sample from the China Health Surveillance Survey

Characteristics	Urban population			Rural population		
	$n = 5458$			$n = 9187$		
	# of people	# Private	% with private practices	# of people	# Private	% with private practices
Gender						
Male	2609	245	9.39	4587	364	7.94
Female	2840	293	10.32	4600	372	8.09
Education						
Illiterate or half illiterate	341	48	14.08	1831	144	7.86
Primary schooling	648	122	18.83	3187	229	7.19
Junior high	1385	197	14.22	3178	295	9.28
Senior high	1130	98	8.67	672	45	6.70
Vocational	513	31	6.04	179	4	2.23
College and above	635	14	2.20	20	2	10.00
Living arrangement						
Never married or living alone	1236	145	11.73	2343	155	6.62
Married or cohabited	4181	390	9.33	6812	575	8.44
Age groups						
15–30	1147	121	10.55	2455	187	7.62
31–45	1902	186	9.78	3060	253	8.27
46–55	882	112	12.70	1861	162	8.70
55 and above	1527	120	7.86	1814	134	7.39
Insurance type						
No insurance/self payment	2213	411	18.57	6833	713	10.43
Social insurance	1800	101	5.61	165	0	0.00
Rural CMS	173	1	0.58	2136	18	0.84
Government insurance	635	10	1.57	16	3	18.75
Other insurance	598	15	2.51	40	2	5.00
Reasons to choose practices						
Close in distance	2312	270	11.68	6638	595	8.96
Cheaper in price	410	220	53.66	483	36	7.45
Better quality	1143	12	1.05	1557	62	3.98
Designated by payer	1257	6	0.48	57	0	0.00
Having acquaintance	143	22	15.38	318	27	8.49
Other reasons	167	7	4.19	137	20	14.60
Self-perceived health						
Poor (0–50)	60	6	10.00	167	27	16.17
Fair (50–75)	1209	111	9.18	2117	205	9.68
Good (75–90)	1616	124	7.67	2288	184	8.04
Best (90–100)	2573	298	11.58	4618	320	6.93
Income groups						
<1630	512	145	28.32	3646	401	11.00
<2500	734	153	20.84	2225	176	7.91
<5000	2007	175	8.72	2581	138	5.35
≥5000	2205	65	2.95	738	21	2.85

Note: in both urban and rural areas, only age groups and gender are not significant at .05 level. *Source:* Ref. [18].

services in the two weeks prior to the interview survey. This table serves to indicate correlations between the percentage of people using private providers and their major characteristics. Some trends observed by inspecting the descriptive statistics such as higher percentage of people using private providers coming from low-income and low-education groups are confirmed by multivariate regression analysis.

Tables 7 and 8 summarize the regression results on the probability of choosing private provider for their ambulatory service need. Interviewees were asked about their basic household information, health insurance coverage, experience with recent illnesses and utilization of medical care, and health-related daily lifestyle questions. Self-rated health was also included in the survey and pertained to a rating of their own health from 0 to 100, with 0 being least healthy and

Table 7
Results of the regression analysis on the probability of choosing private provider (urban sample)

	Odds ratio
Self-rated health	0.994
Gender	
Male (reference)	
Female	1.047
Marital status	
No (reference)	
Married	1.314*
Age groups	
(15–30) (reference)	
(30–45)	0.947
(45–55)	1.150
>55	0.991
Education	
Illiterate or half illiterate	
Primary	1.005
Junior high	1.398*
Senior high and above	1.094
Insurance type	
No insurance (reference)	
CMS	0.086***
Other	0.204**
Reasons for private	
Close in distance	
Cheaper in price	0.967
Better quality	0.372***
Other reasons	0.781
Income	
<1630 (reference)	
<2500	1.212*
<5000	0.895
≥5000	0.553*

Source: Ref. [18].
* Indicates that the coefficient is significant at 0.05 level.
** Indicates that the coefficient is significant at 0.01 level.
*** Indicates that the coefficient is significant at 0.0001 level.

Table 8
Results of the regression analysis on the probability of choosing private provider (rural sample)

	Odds ratio
Self-rated health	1.009*
Gender	
Male (reference)	
Female	1.007
Marital status	
No (reference)	
Married	0.822
Age groups	
(15–30) (reference)	
(30–45)	1.228
(45–55)	1.396
>55	0.851
Education	
<Primary (reference)	
Junior high	0.903
Senior high	0.574**
College and above	0.371***
Insurance type	
No insurance (reference)	
Basic	0.567***
CMS	0.056**
Public	0.475*
Other insurance	0.256***
Reasons for private	
Close in distance	
Cheaper in price	4.928***
Better quality	0.082***
Designated	0.061***
Having acquaintance	1.472
Other reasons	0.376*
Income	
<1630 (reference)	
<2500	1.293
<5000	0.635**
≥5000	0.271***

Source: Ref. [18].
* Indicates that the coefficient is significant at 0.05 level.
** Indicates that the coefficient is significant at 0.01 level.
*** Indicates that the coefficient is significant at 0.0001 level.

100 most healthy. The odds ratio measured whether or not these factors were significant in the probability of choosing versus not choosing a private provider. In Table 8, cheaper price was significant, as it was five times more likely for those among the rural sample to choose a private provider.

Although the regression results are not completely identical for the urban and rural samples, there appears to be some convergence on the significant predictors for using the private sector. For both urban and rural samples, lower education level, no insurance coverage and lower–middle income are associated with a higher probability of using a private provider. These results are interesting because they indicate that provision of health care by the private sector may not be as inequitable as one would imagine. Indeed, one of the significant reasons for choosing the private sector is cheaper price, as shown in Table 8. Furthermore, some private clinics have been reported to provide charity care to communities [19].

5. Preliminary evidence on performance of the private sector

There have been a very limited number of studies in China on private providers. Fewer still are studies on the relative performance of the private and public sector in health care. Let us look at some international literature. Berman and Rose identified the problem of the lack of a consistent definition and role of private providers across 11 developing countries and found that private providers were significant factors in family planning services and children's health using DHS surveys [20]. However, evidence on the equity, cost-effectiveness and quality of private provision continued to be mixed.

Mills et al. conducted recent research on a variety of primary care provision models in South Africa that included the public integrate model, individual general practitioner contract, company contract and pure private sector models, such as the independent practice association and clinic chain [21]. Using three tracer conditions – STIs, diabetes and hypertension – and knowledge of correct treatment to measure the quality of care, correct STI treatment was poor among most private providers and some public providers. On the other hand, from conducting interviews, the level of customer satisfaction was found to be very high among private providers, mostly due to less waiting time, cleaner facilities and the staff's polite attitude and thorough practices. Reviews on public service providers' attitude and competency varied and often criticized staff in large urban public clinics for "their attitude and treatment of patients, rudeness, lack of confidentiality and blatant favoritism towards those that they knew or perceived to be better off patients."

In south–central India, the comparison of quality of care to female outpatients in public and private sectors revealed a higher level of quality in the private sector, yet at higher costs [22]. In fact, the average private sector consultation, which was used to explain the diagnosis and prognosis to the patient and even offer dietary advice, was at least double the amount of time than in the public. While the frequency of dispensing and prescribing drugs was comparable between sectors, the cost of drugs in the private sector was more than twice as expensive. The private sector was also observed to order fewer laboratory tests for their patients.

Of the few studies on China is a recent one conducted by the Beijing University School of Public Health, sponsored by the UNDP/China [23]. This study, including an institutional survey on 720 informants and a household interview survey on 3730 individuals, asked 22 questions about people's satisfaction with the care provided by public and private providers. On most of the attributes of the care received by the surveyed individuals (e.g. waiting time, patience, responsiveness, price, etc.), private providers received a higher satisfaction score from the people than the public providers. Thirty four percent of the urban residents and 56% of the rural residents interviewed agreed with the statement that "government should encourage establishment of more private practices". However, the most frequently cited problem with the private providers was relatively lower quality.

In addition, a study on China's rural clinics by Meng et al. [24] found that there was no significant difference in the quality of services provided by public and private providers. The quality was measured mainly by qualification of the personnel, total value of medical equipment and hygienic conditions of the workplace. However, one of the major concerns regarding the rural private providers is lack of supervision [25]. Due to capacity and organizational constraints, neither

Table 9
Results of comparative analysis on performance of private and public providers: one-way ANOVA on cost, outcome and satisfaction

	Sample size	Average number/score	S.D.	*p*-Value
Cost: RMB				<0.0001
Non-private	1270	95.58	1.5	
Private	127	38.09	1.18	
Outcome				0.0085
Non-private	1916	1.01	0.7	
Private	171	1.15	0.65	
Satisfaction				0.0011
Non-private	1555	5.35	1.95	
Private	147	4.8	1.83	

Note: A total of 2177 people reported sick in the past 2 weeks. A large proportion of missing data makes the results suggestive rather than conclusive. The outcome ranges from 0 to 3: 0 = getting worse or no change, 1 = getting better, 2 = recovered, satisfaction ranges from 0–9, with a higher score indicating greater satisfaction. *Source:* Ref. [18].

rural health administrators nor health professionals at higher-levels (e.g. township and county health facilities) were providing adequate technical guidance and supervision of the village-level medical practice. This may be one of the reasons for the efficiency and safety problems that are prevalent among the village health care providers, discovered by a recent study supported by the UNICEF [26].

We also examined the performance issue by analyzing data from the China Health Surveillance Survey. We focused on the utilization behavior, costs, self-perceived health status after treatment and satisfaction of 2177 people who reported being ill in the weeks prior to the household interview. As indicated by Table 9, the average costs of services provided by the private providers are significantly lower than those of the non-private providers. The rate of self-perceived recovery after the medical treatment is found to be lower among people who used public providers than those who chose private providers. On the other hand, people who use public services tend to be more satisfied than those who use the private sector. While this may seem contradictory to previous results, it may be that expectations for the public sector are lower and that for the private higher as the private is an emerging industry. Lastly, due to missing data, we were only able to use two thirds of the sample, making the results reported above suggestive, but not conclusive. However, it should be noted that the excluded sample was not significantly different when analyzed with the rest of the sample.

6. Discussion

As China is gradually transforming itself from a planned to market economy, private ownership and competitive forces are already dominating the economic sector. Currently, more than 60% of the country's GDP is produced by private enterprises [10]. China's health sector, however, presents an interesting public and private mix. While health services are primarily financed by out-of-pocket spending (private financing), health care providers, especially the hospital industry, are still dominated by state ownership and government control (public provision). Even though the private sector plays an increasing role in the ambulatory sector, private services are not included in the social insurance benefit package, and thus, it primarily serves self-paying patients. The ambiguity of the government policy toward private provision stems from concerns that an increasing private sector would drive up costs and its services may be of questionable quality.

This paper tries to gather evidence on the relative performance of private and public sector. Neither literature review nor our primary data analysis provides any support for the notion that the private sector charges a higher price and they serve primarily the better-off people. Quite on the contrary, available data seem to suggest that not only the private sector tends to serve disproportionately the low–middle income groups (this may well be due to its relative lower costs and convenience), consumer satisfaction with regards to the quality and price of health care also seems to be higher with the private sector than with the public sector. It may be that the private sector charges lower and has better services due to competition among other private providers. The policy implications of our findings are significant, as there is no solid evidence that the public sector is better.

These findings on the private sector in China summarized above are suggestive. Knowledge gaps still exist regarding the relative performance of the private and public sector because of a significant confounding factor in the previous studies, which is not controlled for, is health condition. Therefore, one of the major tasks for future studies is to compare performance of

the private and public sectors on the quality (structural, process and outcome) and efficiency by controlling for health conditions. A better understanding of the performance and constraints of the private sector, in relation to public sector, would have important implications for developing policies to better harness the productive force of the private sector to help achieve efficiency and equity goals in the health sector, while avoiding the potential pitfalls of market failures.

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