Urban Health Service in China

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Abstract

After 20 years of economic reform and development, China's healthcare system has not improved as well as the economy has. Instead, it has deteriorated in many aspects, both in rural and urban areas. The present situation can be briefly summarized as "Low accessibility and high prices in healthcare service". In terms of quality, efficiency, and fairness of health care, China 's urban health care system is far behind the current economic status and people's demands. There are a lot of complaints about urban health care system.

Chinese government has done some urban health care reforms, however, most of these only focus on solving a particular problem while ignoring the connections to other problems. Thus, these reforms are fragmental rather than thorough and scientific. The objective of this research is to study China's urban health care system. Our study offers systematic and comprehensive review of China's urban health system. We discuss the health institutions China has, their functions, the frameworks of the governance structure and financing structure of the health institutions, the main problems in the urban healthcare delivery system, the reasons of the current problem in the urban healthcare delivery system, and the reforms currently being implemented.

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I. Introduction

After the People's Republic of China was founded in 1949, China imitated the former Soviet Union and created a national health care system where all health care institutions were owned, funded, and run by the government. In the urban areas, the government provided urban employees with two major health care programs. Both were established in 1952. GIP, the Government Insurance Program, which was financed by the government, provided health insurance for government employees, their dependents, veterans, educators, and college students. LIP, the Labor Insurance Program, which was financed through enterprise welfare funds, was retained as a certain portion of the total salary outlay (usually at a rate of 8%) and covered the employees and retirees of the state-owned enterprises (SOE) with partial coverage for their dependents. For over four decades after the programs were established, most of the urban population were covered by GIP (about 30 million beneficiaries) or LIP (about 140 million beneficiaries) for their basic health care needs, including both outpatient and inpatient services.

The government health programs, public hospitals and public health movement played a vital role in ensuring access to health care, improving public health, which contributed greatly to the improvement of the health status of the urban population in China. Population health indicators showed a significant improvement. From 1952 to 1982, the infant mortality rate fell from 200 per 1000 to 34 per 1,000 live births, and the average life expectancy increased from 35 to 68 years. But since the reform era, especially since the early 1990s, improvements in health status and health-related process indicators have been relatively slower.

While China is gradually adopting the market system, the health care sector is also pushed towards the market. Related industries, such as pharmaceutical and medical suppliers, have also been going through a rapid marketization process. The government is less responsible about insuring people's health. The lack of governmental planning, administration, funding, and regulations have caused many problems in the health care sector. .

China's transformation from a planned economy to a market economy requires the

adjustment of government and market functions in providing healthcare. Currently, China's healthcare system has become a "semi-public and semi-market" system. Unfortunately, this system has the negative aspects of both the governmental and market systems. This has led to many behavioral distortions in the health care sector.

The following are characteristics of the "semi-public and semi-market" health sector:

1. Although health care provided by public health institutions is defined as welfare work, they also pursue profits in the market due to the shortage of governmental funds. With the resources and market power gained though government funds and preferential policies, they have developed their own unique "cost advantage".

2. With the administrative and supervision power granted by the government, public health institutes are able to set up high entrance barriers and push out other competitors, which has reduced the general investment opportunity and reduced competition.

3. Although the price of some services and products are under government control, the health care costs have risen much more rapidly than the average price index and income, which has reduced the accessibility of health services.

4. Due to their public service nature and monopolistic power, they do not have much incentive to improve their operation and management.

5. Although competition has been introduced, it is inefficient due to distortions in the health market.

Problems in the health sector have been one of the issues to which people pay the most attention. The Chinese government has done some urban health care reforms, however, most of these only focus on solving a particular problem while ignoring the connections to other problems. Thus, these reforms are fragmental rather than thorough and scientific. There is much to be studied in China's urban health care system before China can solve the existing problems and provide a direction for future development. The objective of this study is to explore China's urban health care system. The rest of this paper proceeds as follows: Section 2 describes the health institutions that China has and their functions; Sections 3 and 4 describe frameworks

of the governance structure and financing structure of health institutions; Section 5 analyzes the main problems in the urban healthcare delivery system; the last section analyzes the reasons of current problems in the urban healthcare delivery system and discuss reforms currently being implemented or considered.

2. What Health Institutions China Have?

2.1 Number of Health Institutions

According to the *State Classification Standard of Industries* (MOH, 2002), health institutions can be classified by their functions: Hospital, Sanatorium, Health Center[1] (Urban Health Center, Township Health Center (THC)) and Health Service Center for Community (HSCC)[2], Outpatient Department[3] and Clinic, First-aid Station, Maternal and Child Health (MCH) Center, Specialized Disease Control Institute (SDC Institute), Center of Clinical Examination, Center for Disease Control and Prevention (CDC), Medical Research Institute and Others. See appendix table 1.1 for a concrete range of these health institutions.

The subset including Hospitals, Sanatoriums, Health Centers and HSCC, Outpatient Departments and Clinics, First-aid Stations, MCH Centers, SDCI, and Centers of Clinic Examination are called "medical institutions." The others we will call "public health institutions" in this paper.

Since 1949, the total number of health institutions has continuously increased up to the year 2001, when it began to decrease (See Figure 1). The main reason for the decrease in healthcare institutions was due to the decrease in outpatient departments, clinics and health centers. After 2003, it increased again, mainly because of the increase of public health institutions[4]. There is also a reduction during 1965-1975 that is so called the culture revolution, but we can see that the main reason of the reduction is decreasing of clinics, the number of hospital is still increasing during that period. There is a sudden increase after 1995 just because private clinics have not been reckoned in health institutions before 1995.

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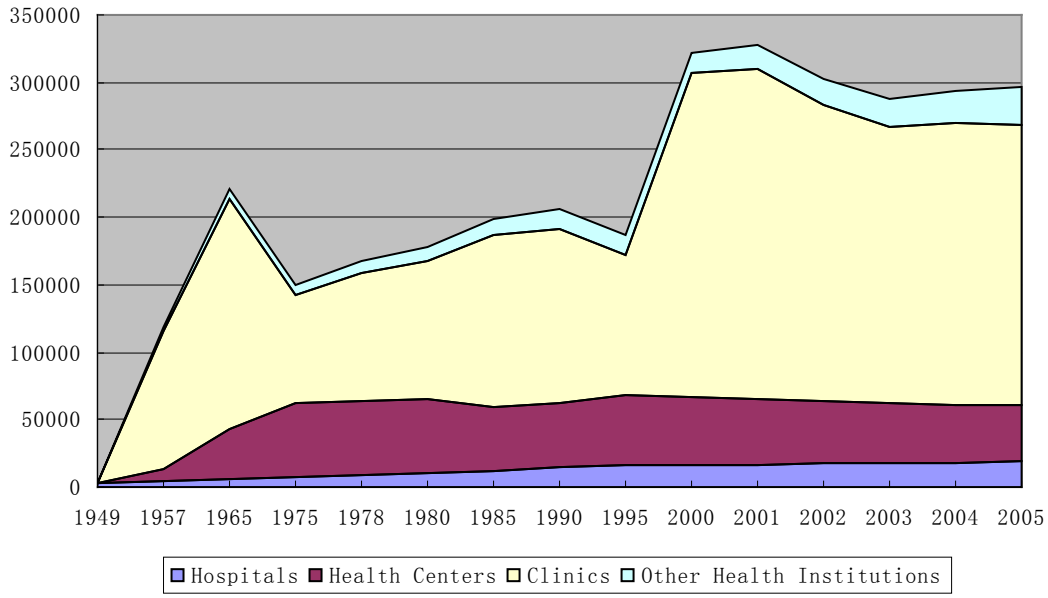
[1] Health centers are not clinics, but hospitals at the township/street level. There are five levels in local Chinese governments, i.e. provinces, cities, counties/districts, communities/townships, and villages. The hospitals at the county level and above are identified as "hospitals" in statistics.

[2] In urban China, some Streets have been reconstituted into another type of governing structure, called a Community. The hospitals in the Community are called Community Hospitals, and small-scale health institutions for primary health are called Community Health Service Centers.

[3] There are some hospitals in China whose inpatient and outpatient departments are separated. For example, inpatient and outpatient departments may be in different areas and not counted as one hospital. Inpatient departments are counted as hospitals, while the outpatient departments are counted as a kind of "Outpatient Department and Clinic." The difference between outpatient department and clinics is that the former is part of a hospital while the later is independent.

[4] After the SARS crisis, Chinese government pays more attention to the health issue, especially the public health, so investments on public health are increasing since 2003 and more public health institutions appears.

Figure 1: The Number of Total Health Institutions



Source. MOH, 1991, Selected Edition on Health Statistics of China 1978-1990, MOH, PRC.

MOH, Chinese Health Statistical Digest.

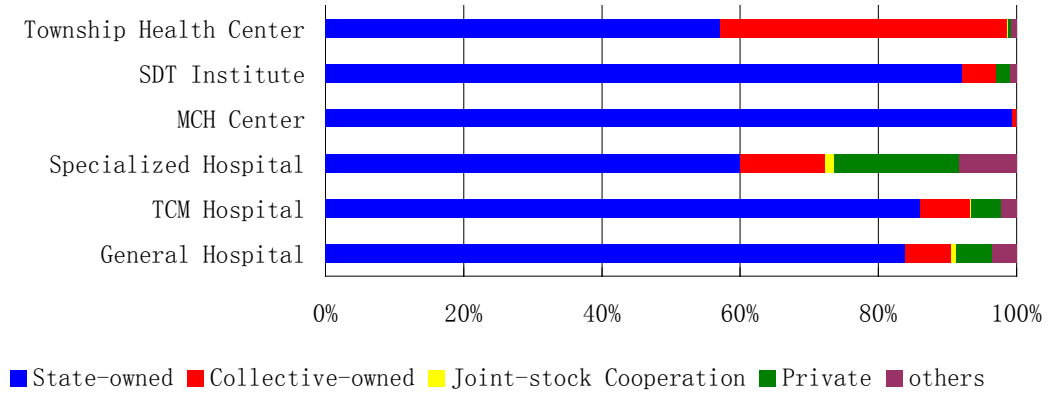
Generally speaking, all "public health institutions are stated owned. Medical institutions can also be classified by ownership into: State-owned, Collective-owned, Joint-stock Cooperation, Coalitions, Limited Liability, Private, HK、Macao & Taiwan (HKMT) Investment and Chinese-foreign Joint Venture hospitals[5].

At the end of 2002, of all medical institutions, state-owned institutions accounted for 32%, collective-owned accounted for 18%, Private accounted for 46%（mostly private outpatient departments and clinics）, other types accounted for 4% (HSIC, 2004b). Of all the 17,764 hospitals nationwide, state-owned hospitals accounted for

[5] State-owned means those assets exclusively owned by the state and are enrolled as Non-Enterprise Unit (excluding those created through combination of two or more state-owned hospitals). Collective-owned means those assets exclusively owned collectively, and are enrolled as Non-Enterprise Unit (excluding Joint-stock cooperatives, Limited Liability health institutions, and those created through combination of two or more collectively owned hospitals). Joint-Stock Cooperative means those based on the cooperative system, invested by employees and an appropriate proportion of private capital and they makes its own managerial decisions and takes full responsibility for its own profits and losses. Coalition are those combined from two or more hospitals of the same or different ownership, and based on the principle of willingness or voluntary, equality and mutual benefits. Limited Liability are invested by Limited Liability Company. Private are those Exclusively or holding through investment by a physical person, and they are enrolled as for-profit institution with contract employment. HK, Macao & Taiwan Investment means Institutions in which investment from HK, Macao & Taiwan reach a certain proportion determined by the government. Chinese-foreign joint venture means Foreign investments reach a certain proportion to be determined by the government. (*MOH, 2002. China Health Statistics System)*

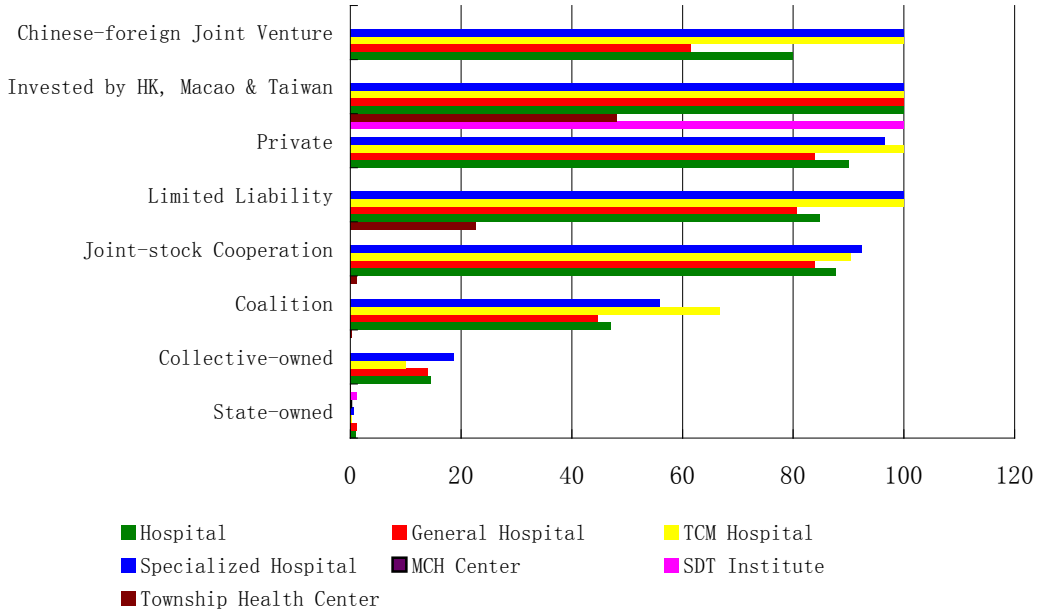
80.94% and of all the 45,204 township health centers, 57.08% are stated owned and 41.47% are collective-owned.

Figure 2: Ownership Structure of Medical Institutions（2002）



Data Source: MOH, Chinese Health Statistical Digest.

Figure 3: Proportion of For-profit Medical Institutions in Total Medical Institutions （2002）



Source: HSIC, 2004b. *The performance of Medical Institutions with Different Ownership*.

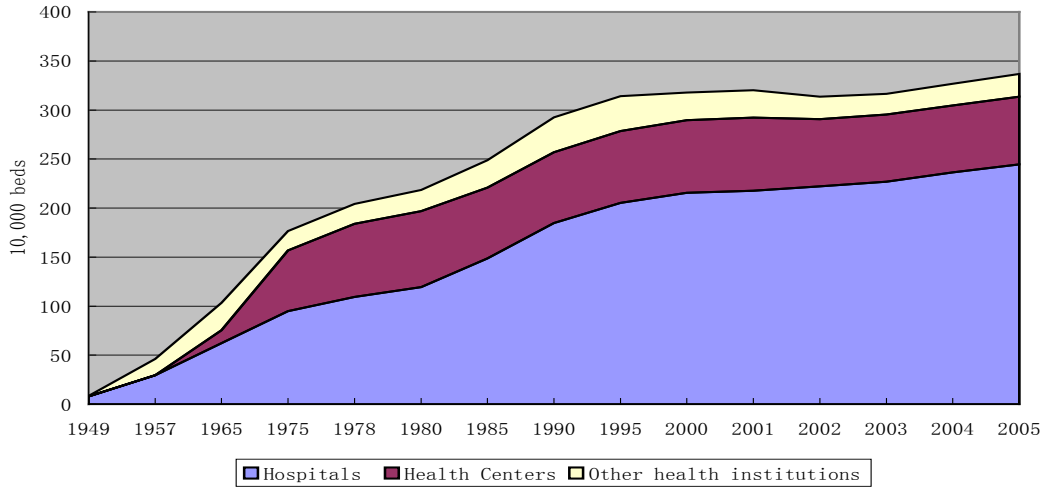
In 2000, the State Council (2000) made a policy to classify medical institutions as for-profit and non-profit institutions. At the end of 2004, the total number of medical institutions was 287,797. Non-profit institutions were about 134,061 and accounted for 46.58%; For-profit institutions were about 152,157, and accounted for 52.87%,

0.55% medical institutions had not applied or been approved yet. There were 18,396 hospitals, including 85.81% non-profit hospitals, 13.83% for-profit hospitals and 1.46% non-classified institutions. The total number of outpatient departments and clinics was 219,907, including 31.52%non-profit and 67.68%for-profit. Of all medical institutions, those for-profit have been more than half, but most of them are clinics and outpatient departments, accounting for 98.17% (MOH, 2005). This means that the scale of for-profit medical health institution is still small, which we will discuss later in this paper.

2.2 Size and Scale of Health Institutions

Generally speaking, the number of beds in health institutions is increasing, especially in hospitals. The beds in health centers are decreasing (See Figure 4), which coincides with the reduction in the number of healthcare centers. At the end of 2004, the number of beds in hospitals is 2.364 million, i.e. 72.3% of the total number, in health centers the number was 682 thousand, 20.9% of the total, and in urban health centers was 13.52 thousand, 0.41% of the total (MOH, 2005).

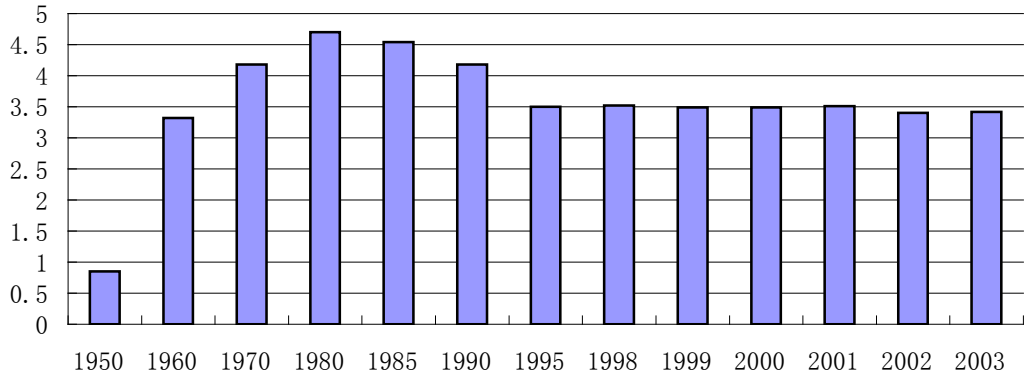
Figure 4: Number of Beds Health institutions, Hospitals, and Health Centers



Source: MOH, 1997,1998, 1999, 2000, 2001, 2002.Year Book of Health, The people's health press.
MOH, 1991. Selected Edition on Health Statistics of China 1978-1990, MOH, PRC.
MOH, 2005. Chinese Health Statistical Digest 2004, MOH, PRC.

Note: Total institutions do not include private clinics in 1995 and before; the number of health centers do not include urban health center in 1995 and before.

Figure 5: Number of Hospital Beds per 1000 Population in Urban Areas



Source: MOH, 2005. Chinese Health Yearbook 2005

Separated by ownership, State-owned hospitals have 2.073 million beds, accounting for 93.31% of total beds in medical institutions, Collective-owned hospitals have 75 thousand, accounting for 3.36%, private hospitals have 37 thousand, accounting for 1.67%, Joint-stock Cooperation hospitals and Health Institutions invested in by HK、Macao &Taiwan and Others account for 1.66%. So, among hospitals, private institutions have only 3.33% of total beds. For the health centers, only 1.31% beds are in the private institutions (see Table 1).

Table 1: Number of Beds in Medical Institutions (2002)

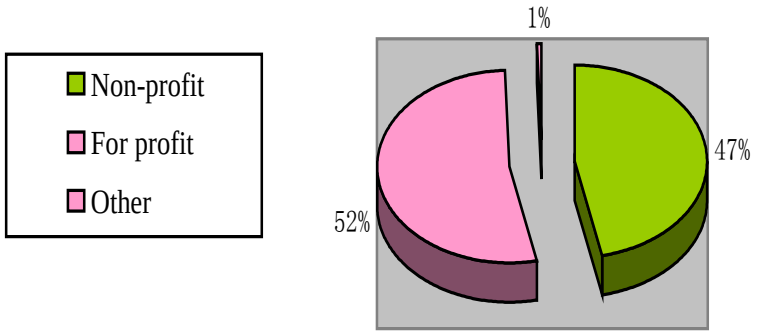
	Hospital	General Hospital	TCM Hospital	Specialized Hospital	MCH Center	SDCI Institute	Township Health Center
Total (beds)	**2,221,753**	**1,683,796**	**246,747**	**262,141**	**65,497**	**12,107**	**671,295**
Proportion as Total in the corresponding categories (%)							
State-owned	93.31	94.60	93.16	85.61	99.62	94.30	64.31
Collective-owned	3.36	2.70	4.20	6.61	0.33	5.01	34.15
Joint-stock Cooperation	0.62	0.48	0.88	1.21	-	0.52	0.59
Coalition	0.23	0.23	0.03	0.37	-	-	0.16
Limited Liability	0.22	0.23	0.10	0.30	-	-	-
Private	1.67	1.17	1.29	5.15	-	0.17	0.56
Invested by HK、Macao &Taiwan	0.03	0.04	0.01	0.01	-	-	-
Chinese-foreign Joint Venture	0.07	0.07	0.02	0.11	-	-	-

Source: HSIC, 2004b. *The Performance of Medical Institutions According to Ownership*.

From the standpoint of nonprofit and for-profit institutions, the difference between the numbers of non-profit and for-profit medical institutions is not notable, due to the rapid progress of the private sector. The proportion of for-profit institutions reached half of the total. However (Figure 6), over 90% of for-profit institutions are small-scale private clinics so the gap between numbers of beds in non-profit and for-profit institutions is obvious (Figure 7).

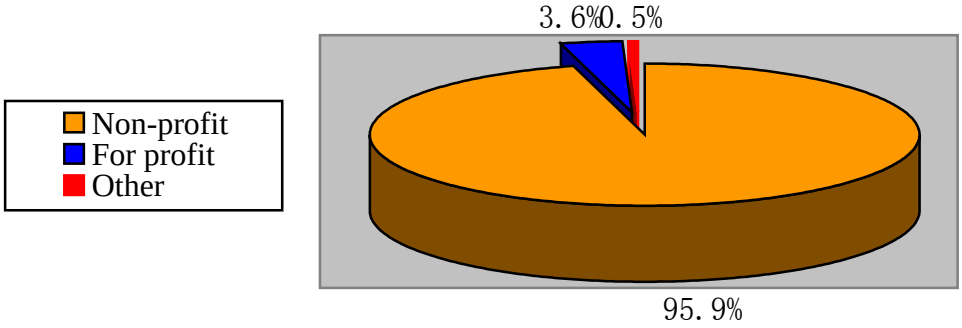
The number of doctors per thousand individuals increased most rapidly during the 1970s and the first half of 1980s. The number further increased by 70%, between 1985 and 2000, with a 31% decrease during 1990s. Thereafter the number of doctors per thousand individuals remained relatively stable with a slight decrease in 2002. (See Figure 8)

Figure 6: Number of non-profit and for for-profit Medical Institutions (2004)



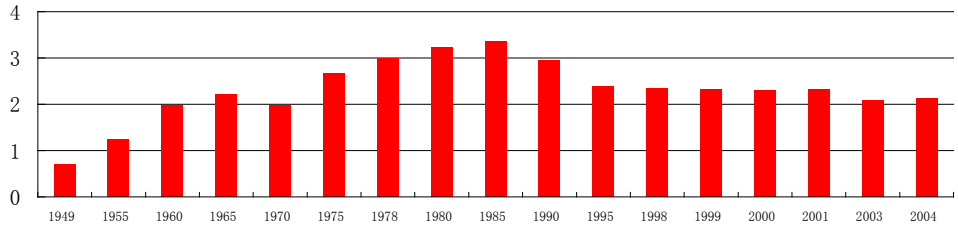
Source: Chinese Health Statistical Digest 2005, MOH, PRC

Figure 7: Number of Beds in non-profit and for for-profit Medical Institutions (2004)



Source: Chinese Health Yearbook 2005, MOH, PRC.

Figure 8: Number of Doctors per 1,000 Individuals (in urban areas, 2004)



Source:MOH, 2005. Chinese Health Statistical Digest 2003, MOH, PRC.

When compared according to ownership, health professionals in hospitals employed by state-owned institutions account for 94.3% (2.261 million), those employed by Collective-owned institutions account for 3.2% (76 thousand), those employed by private account for 1.3% (31 thousand) and those employed by Joint-venture Cooperative, Coalition, HK, Macao and Taiwan Invested and Chinese-foreign Joint Venture account for 1.0% (23 thousand). Almost all of the health professionals in hospitals and MCH Centers are employed by state-owned or collective-owned medical institutions (see Table 2).

Table 2: Number of Health Professionals in Medical Intuitions by Ownership

	Hospital	General Hospital	TCM Hospital	Specialized Hospital	MCH Center	SDCI Institute	Township Health Center
Total (persons)	**2,399,023**	**1,863,710**	**309,322**	**194,284**	**106,213**	**10,642**	**914,089**
(%)							
State-Owned	94.23	95.08	94.39	86.45	99.63	95.40	65.79
Collective-owned	3.16	2.67	3.98	6.34	0.32	3.90	33.18
Joint-stock Cooperation	0.52	0.40	0.64	1.33		0.45	0.43
Coalition	0.18	0.18	0.01	0.36			0.10
Limited Liability	0.20	0.20	0.05	0.44			
Private	1.26	1.02	0.71	4.26		0.24	0.33
HK, Macao and Taiwan	0.03	0.03	0.01	0.01			
Chinese-foreign Joint Venture	0.05	0.05	0.02	0.17			

Source: HSIC, 2004b. *The Performance of Medical Institutions According to Ownership.*

At the end of 2002, the total number of health professionals in medical institutions was 4.045 million, of which non-profit institutions had 3.64 million, accounting for

90.0%, while for-profit institutions had 335 thousand, accounting for 8.3%. The number of health professional in hospitals was 2.399 million, of which those in non-profit institutions accounted for 95.8% and those in for-profit for 2.8%. The number of health professional in township health centers was 2.399 million in which non-profit accounted for 97.9%. (See Table 3) 4.04 million health professionals were in outpatient departments and clinics, of which nonprofit and for-profit institutions accounted for 39.4% and 59.9% respectively.

Nationwide, the number of doctors was 1.718 million, 88.9% of which were employed by non-profit institutions and 9.3% by for-profit institutions. As for the education level of doctors, 18.6% of them obtained degrees above the undergraduate level, 69.2% of them obtained junior college or technical secondary school degrees, and 12.2 % of them were at the high school level or below. The average education level of doctors in non-profit hospitals is obviously higher than that of for-profit hospitals.

Table 3: Number of Health Professionals in non-profit and for-profit Medical Institutions

(persons)	Hospital	General Hospital	TCM Hospital	Specialized Hospital	MCH Center	SDCI Institute	Township Health Center
Total	2,399,023	1,863,710	309,322	194,284	106,213	10,642	914,089
#Non-profit	2,299,165	1,792,399	300,409	176,284	104,541	10,237	895,107
Profit	66,832	44,729	5,260	15,289	130	42	2,683

Source: HSIC, 2004b. The Performance of Medical Institutions According to Ownership.

As regards the titles of healthcare professionals, chief and assistant chief doctors account for 7.9%, doctors in charge account for 28.4%, resident doctors account for 38.8% and junior doctors account for 17.7%. The proportion of chief doctors and assistant chief doctors in for-profit hospitals is higher than that of non-profit hospitals. The main reason for this is that most of the for-profit hospitals are newly founded or newly restructured, and they could recruit the doctors independently and pay them a higher salary, so the rational choice is to select high-level doctors and nurses. Because of the imbalance of development in different regions, hospitals in eastern China are able to recruit high-level health professionals from western or middle China, which

attracted most of health resources to the developed areas, to big cities and bid hospitals, all these further intensified the imbalanced development of different regions.

The ages of doctors vary. Those between 25 and 44 account for 68% in nonprofit hospitals and doctors less than 35 years old account for 56% in for-profit hospitals. Hospitals held by Joint-stock Cooperatives, Coalitions, HK, Macao and Taiwan invested institutions and Chinese-foreign Joint Venture have over 60% of doctors under 35 and the average age of doctors are younger than that of state-owned and collectively owned hospitals (HSIC, 2004b).

On average, each hospital at the county level and above has 46 instruments (equipment) valued over 10,000 Yuan. The proportion of non-profit hospitals owning expensive instruments such as X-ray units above 800MA, CT scanners, Gamma-ray systems, MRI and ICU facilities are twice that of for-profit hospitals. The discrepancy between instruments possessed is very obvious between different types of hospitals. HK, Macao or Taiwan invested hospitals on average owned 89 instruments over 10,000 Yuan, while the number for state-owned hospitals was 54, for Chinese-foreign Joint hospitals the number was 27, and for private hospitals it was 9 (HSIC, 2004b).

Table4: Proportion of Medical Institutions Owning Instruments Valued Over 10,000 Yuan

(%)	X-Ray Unit (800mA and Above)	X-Ray Unit (10mA-800mA)	MRI	CT	ECT	Γ system	ICU	Respirator
Total	9.21	9.77	5.90	27.90	2.35	1.05	14.05	18.80
#Non-profit	9.53	10.14	6.19	28.96	2.41	1.06	14.68	19.95
Profit	5.10	4.72	2.17	14.41	1.66	0.89	6.12	3.32
Among total								
State-owned	10.01	10.62	6.55	30.16	2.58	1.10	15.36	20.83
Collectively-owned	3.31	3.72	1.10	11.57	0.55	0.55	4.82	6.61
Joint Stock Cooperate	6.83	4.35	1.86	15.53	1.24	0.62	7.45	3.11
Coalition	4.35	6.52	6.52	26.09	2.17	6.52	15.22	13.04
Limit Liability Co.	9.09	7.27	1.82	12.73	1.82	0.00	7.27	7.27
Private Ownership	2.65	3.54	0.66	11.06	0.66	0.44	2.88	1.99

Invested by HKHT		50.00	50.00	50.00			50.00	50.00
Chinese-foreign Joint Ventures	15.38	7.69	15.38	30.77	7.69	7.69	7.69	7.69

Source: HSIC, 2004b. *The performance of Medical Institutions with Different Ownership*.

The average asset value for hospitals at county level and above was 28.08 million Yuan[6], of which flowing (variable) assets accounted for 7.54 million Yuan and fixed assets accounted for 20.21 million Yuan. The others (0.33%) are unknown. The value of total assets for non-profit hospitals is 29.83 million, which is 1.9 times that of for-profit hospitals; the value of fixed assets is 21.66 million for non-profit hospitals, which is 2.3 times that of for-profit hospitals. Average asset values for township health centers was 2.39 million, of which liquid assets were 0.48 million and fixed assets were 1.89 million. Others (0.2 million) were unknown. The average level of total assets and flowing assets of state-owned hospitals, Chinese-foreign Joint hospitals and hospitals HK, Macao and Taiwan invested hospitals were higher than that of other types of hospitals. In 2002, the average debt for hospitals above the county level was 5.59 million Yuan; the amount for non-profit hospitals was 2.7 times that of for-profit hospitals. The average debt of township health centers was 0.31 million (HSIC, 2004b).

Generally speaking, the basic facility size, equipment and technical level of for-profit institutions are all relatively weak, and they lack sufficient capital, which makes it difficult for them to compete with state-owned medical institutions.

2.3 The Scale of Health Care Services

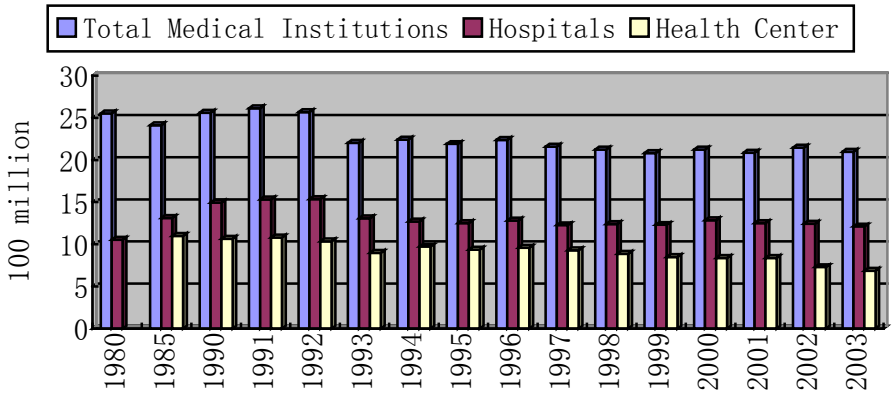
The total number of outpatient visits in 2003 reached 2.096 billion. Hospitals at the county level and above took on 1.21 billion with state-owned hospitals contribute 75.4% (0.91 billion).

The number of total outpatient visits of medical institutions has declined in 1990s comparing to the 1980s. (See Figure 11). Outpatient visits in non-profit medical institutions were dominant with 97.6% of the outpatients visiting non-profit medical

[6] All the values in this report are actual numbers. Please see appendix 1.54 for price indexes.

institutions in 2002; Outpatient visits in state-owned hospitals dominated the total visits in hospitals. 94.14% of the total number of outpatients in hospitals went to state-owned hospitals in 2002.

Figure 9: Number of outpatients in hospitals and health centers



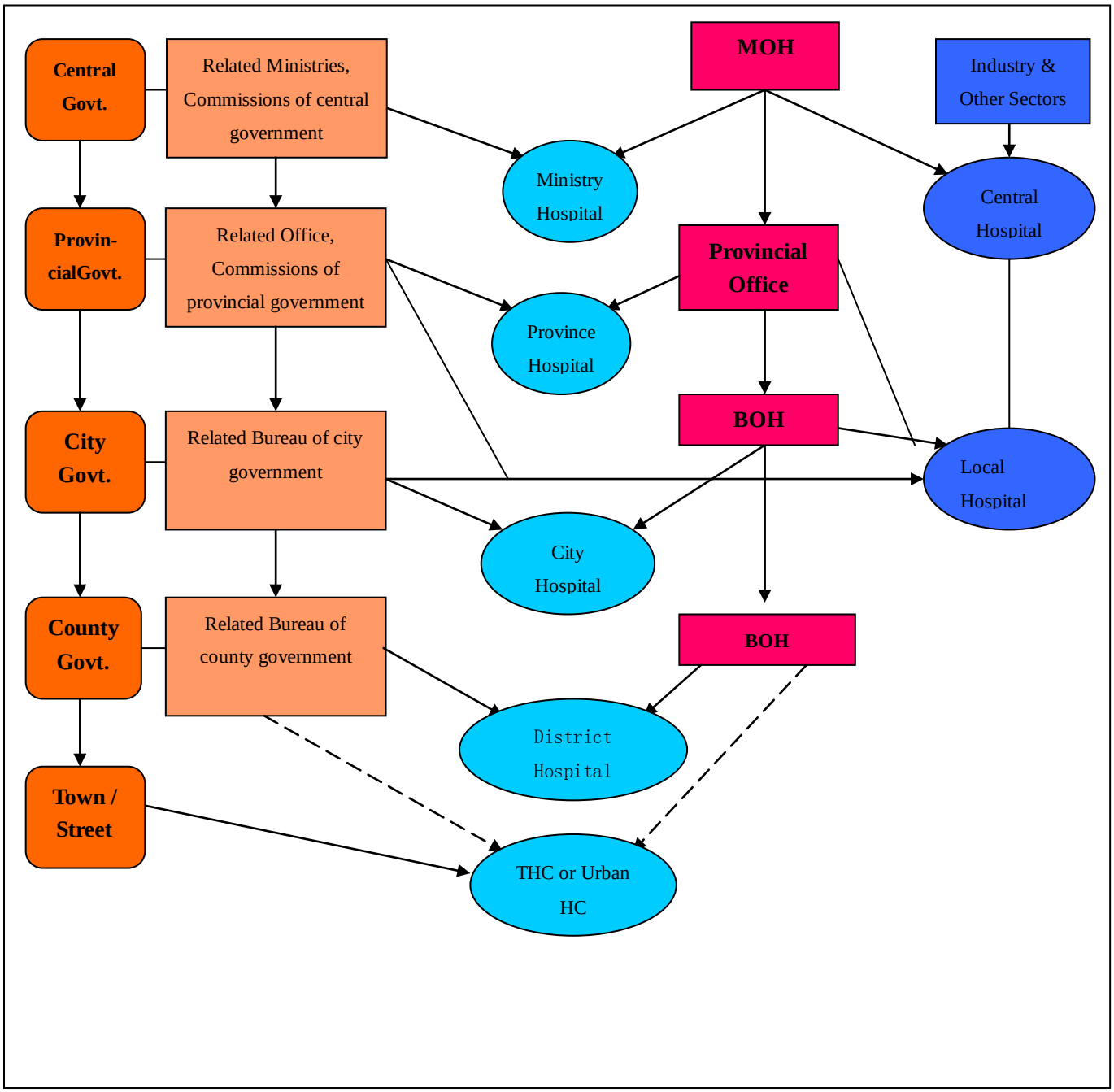
Total number of inpatients in medical institutions reached 60.92 million in 2003 with non-profit hospitals accounting for 97.2% (59.21million). Hospitals at the county level and above had 41.58 million inpatients and health centers had 16.26 million.

The total number of inpatients has grown over last 20 years. The non-profit medical institutions or stated owned medical institutions play dominant role in treating the inpatients, 97.2 % of the total inpatients in hospitals went to the stated-owned hospitals in 2003. The number of inpatients in hospitals at the county level and above have been increasing every year; from 14.16 million in 1978 million to 33.7 million in 2003.

3. Governance Structure of the Health Care Delivery System

3.1 Framework of Regulation in Health Sector

Figure 10: The Governance Structure of the Healthcare System in China (by hospital)



In the above chart, (Figure 10), the same row means the same government level. From top to button, they are respectively central government, province, city and township. Organizations in the same row are part of the same system. From left to right, they are respectively the governmental system, the governmental health

regulation system (including all of the organizations which have the responsibility of regulating the health sector), the health system within the health sector, the health administration system and health system under industry and other sectors. Here, we do not take the private sector into account.

An arrowhead represents regulation, through a range of mechanisms. A dashed arrowhead represents regulation within the same system. The central government leads local governments and related ministries lead its counterparts in local governments. The related bureaus in local governmental, such as the Bureau of Finance and the Bureau of Health (BOH) are not only led by the level immediately higher than them in the same system, but are also strictly controlled by the local government (Zhu Guanglei).

MOH acts as a leader and plays a national coordination role in policy and program development. BOH and local governments are responsible for hospitals at the corresponding level, including financial subsidies and regulation to the health sector.

The Three-tiered Healthcare System at the Regional Level.

There is a three-tiered healthcare system at the regional level. In urban areas, they are the community/street (sub-district), district and municipal level (city) hospitals.

3.2 Who takes responsibility of regulation and administration?

In China, the organization structures of governments are almost exactly the same at each level. We can use the healthcare regulatory organizations at the central government level as an example.

The Department of Finance allocates funds and subsidizes to hospitals. The Department of Planning (which is now called the Development and Reform Commission) regulates the price of medicine and health services. The Department of Health regulates the entries of health organizations and practitioners. The Department of Social Security manages social health insurance. The Department of Tax collects taxes from for-profit health institutes. The Department of Foreign Trade

manages import and export health supplies, drugs, and others. The Food and Drug Administration regulates the quality of food, medicine, and health related goods. The Department of Personnel appoints hospital directors, etc.

3.3 Administration and regulation

The regulations are administered through direct and indirect administration. The latter includes laws, regulations, departmental regulatory documents and technical standards (Zhong Dongpo, 2003.) They are enacted by the National People's Congress (or its routine committee), the State Council and various ministries.

(1). Professional Admission and Regional Health Planning (RHP)

Governments set strict standards to guarantee the quality of healthcare services. The fundmental standards of health organizations are eatablished by the MOH. The MOH authorizes the entry of national health organizations. Regional health care departments (county level and above) authorize the entry of local health orgainizaions (State Council, 1994).

Initially, resources and subsidies from different levels of the government were based on the level of its regional economic development and the willingness of the local government, which meant that the financial situation of the local government determined the amount of investment in the health sector. Such a mechanism causes health resources to be concentrated on big hospitals in big cities. Nearly all hospitals with high technology and expensive medical equipment are concentrated in big cities (Cheng, Siwei, 2000).

RHP was designed to allocate health resources according to the demand of health care in different regions or communities, beginning in 1997. But there are problems in implementing the policy.

Regional governments have limited power and lack the authority necessary for regulating hospitals held by other sectors (for example, military hospitals and industrial hospitals) and higher levels of the government. As financial support from the government has decreased over the past decade, the government and

administrative departments' power to control hospitals has weakened. Health institutions, even state-owned health institutons, make decisions based on their own agendas. This may sometimes be inconsistent with the basic pinciples of the RHP. Another one of the main difficulties of regional health administrations is that governments do not have much experience with the RHP.

(2). Industrial Stardard and Quality Control

In order to guarantee the quality of healthcare, quality controls are implemented by different organizations through corresponding standards and rules.

(3). Information Declaration and Patients' Rights

In order to reduce the imbalance of information between health care service providers and patients, and to gurantee patients' rights, health institutions must make some information public, such as lists of medicine prices. Since 2000, the policy of "patients are allowed to freely choose doctors" has been gradually implemeted in medical institutions across the country as one of the chief reform responses to the *Guidance to Reform the Urban Healthcare System* (State Council, 2000).

(4). Price Controls

Most countries use price controls in health care services to some extent, and it is carried out at different government levels and different regions in China. The National Development and Reform Commission establishes price policies and guidelines for regional Development and Reform Commissions (DRC), i.e. the Bureau of Price determines detailed prices for a variety of service items. In different areas, the items under regulation and their prices are not the same (Ren Yijiong et al, 2002).

Before the 1990s, the price of health care services was determined as the service cost minus government subsidies and the surplus from drug sales. Since 1990, the total labor cost of health institutions has increased rapidly and the price of health care services has slowly changed. The price differences among different levels of health

organizations are very small and are unable to reflect upon the quality and cost of health care. This distortion of the pricing system has brought a lot of trouble to all hospitals in China and caused distorted behavior in the health care sector.

In July 2000, the National Development and Planning Commission and Ministry of Health prescribed that non-profit healthcare institutions use the prices set under the guidance of the government, based on standards set by price regulation departments. For-profit health care institutions set prices according to market prices.

3.4 The Changing of the Regulation System

Under the planned economic system, health administration departments ran hospitals directly. They were responsible for almost all operation authorities including appointment of hospital directors, the decision-making regarding employment, as well as salaries and investments.

In 1992, the government gave more autonomy to hospitals. It was designed to give hospitals more decisional power on hiring staff, making construction decisions and setting wages. However, due to the lack of a suitable policy environment, such as match-policies and collaboration from the Department of Personnel and the Department of Finance, these policies were not successful. Instead, hospitals abused their power and caused the total cost of health care to increase considerably.

3.5 Brief Summary

(1) The functions of regulation in the health sector are distributed over too many departments as shown above. All these departments have their own interests, agendas and priorities. For example, the MOLS regards the balance of social insurance fund as its first priority, the MOF focuses on decreasing financial expenditure, and the MOH has to guarantee the availability and accessibility of health care services. There are conflicts between these goals and priorities, which causes the reform of the health sector to be more difficult.

(2) The health administration is both the owner of public health care providers and their regulator. This has two disadvantages. Firstly, they don’t have the capacity to

regulate so many hospitals. The other disadvantage is that it is difficult for them to carry out their duties as the direct “boss” of regulated hospitals.

(3) There aren’t enough measures for budget allocation to enforce the regulations to state owned hospital, neither there is any effective way to regulate the private hospitals. Comparatively speaking, the public health care providers are more regulated than the private ones.

4. Financing of the Public Health Institutions

4.1 The framework of financing

Public medical institutions and public health institutions are all Public Service Unites (PSU). Before 1955, PSUs in the health sector were fully funded by the government. All revenues were handed over to the government, and the government covered all costs, so there were no residuals for the health institution. Since 1955, the government changed to partial funding of PSUs in the health sector, and the residual must be hand over to the government. (MOH, MOF, 1995)

During the administrative system reform in 1979, the method of allocating subsidies was changed into one of "total management, quota subsidy and residual left for use." For PSUs, their residual no longer needed to be handed over to the government at the end of the year. The government fixed budgets, and the remaining balance could be left for future usage. PSU that had difficulties in staying within their budget were allowed to explore other methods of financing the institute.

After initiating the budget responsibility system, one year's residual could be transferred for use during next year. Residual capital (with exceptions for special project capital) was mainly used for improving working conditions and developing various programs. Every health unit was allowed to draw a part of its surplus to provide bonuses for its staff member. A certain proportion of the account balance of healthcare institutions should be used as a development fund (not less than 40% for healthcare institutions at county level and above). These were to be distributed independently by the units.

In 2000, medical institutions were classified as non-profit and for-profit. The for-profit institutions could distribute the residual revenue to shareholders, while non-profit institutions were only allowed to use their residuals for the development of their medical institutions.

Revenue of public medical institutions in urban China includes:

Government subsidies: the non-profit medical institutions managed by county level governments and above are subsidized by the corresponding government, while

community health service institutions are subsidized in fixed amounts by the corresponding government based on the quantities of health care and prevention services provided. Public healthcare institutions get subsidies from the government for which they provide public health services. (MOF, NDRC, MOH, 2000)

Revenue from services: This includes revenue from 1) medical services provided (The government controls the price of these basic services. The department of price establishes the prices based on the cost of the services, from which the government subsidies are deducted); 2) some fees charged for preventive healthcare services; 3) some medical examinations, tests and the other prescribed services.

Revenue from drug sales: Hospitals are allowed to mark drug prices up 15-20% and keep the revenue to subsidize the hospital operation. This has given hospitals the wrong incentive to over prescribe drugs and to charge high prices. Following the *Guidance to Reform of the Urban Healthcare System* (State Council, 2000), the *Mass Public Bidding of Medicine* policy was set up. The government sets the guilding price (retail price), while hopitals buy medicine at the bidding price (wholesale price), so hospitals are able to retain a surplus.

Other revenue: from non-medical services and donations.

From figure 11 we can obtain some basic information about the financing structure of PSUs in China's urban health sector:

(1) The total amount of revenue grew rapidly during the 1990s (almost 10%-20% per year). Between 1993 and 1996, the growth rate was even up to about 25% per year.

(2) The proportion of the government subsidies in the total revenue of urban medical and healthcare institutions has gone down since the late 1990s—below 10%, and has been declining every year. In 2000, it was only 6.30%.

（3）The primary financing approaches of urban medical and healthcare institutions are services and drug sales. The revenue from both accounts for a proportion of over 40% each , and about 90% together. Some policies and measures were carried out recently in order to rectify the financing structure of medical and healthcare institutions, such as to control drug sales, but the policies had little effect. The revenue

from drug sales declined for a short time, but rebounded again soon. The proportion of revenue from services has changed little.

Table 5 shows that the government subsidizes urban medical institutions in two ways: balanced budget allocation and special funds. Balanced budget allocation means funding according to the gap between institutions' revenues and the real costs. In 1996, a shift was made to fixed subsidies. In 1994, the Chinese government implemented the policy of a *"tax income distribution system"*, which divided taxes into central government taxes and local province taxes according to the principle of "consistency between accountability and financing". Then local governments take on financing responsibilities for local medical and healthcare institutions. That is one of the reasons why government subsidies have increased in urban hospitals since 1994. However, the ratio of government subsidies within the total revenue of hospitals still decreased.

Figure 11: Average revenue of general hospitals within health sector at county level and above (2000)

Service revenues of medical institutions in urban areas are from outpatient services, in-hospital services and other services. Outpatient service revenues are made up of registration fees, examination and treatment fees. In-hospital service revenues include in-hospital fees, operation fees, and examination and treatment fees. Outpatient and in-hospital services are ordinary services compared with special services including newly provided services for those with special needs, through which hospitals get a large amount of revenue (Table 6).

Table 5: Average government subsidies general hospitals within health sector at county level and above

	Total government Subsidies (million *yuan*)	Growth rate	Balanced allocation		Special funds	
			Amount (million *yuan*)	Proportion of total revenue	Amount (million *yuan*)	Proportion of total revenue
1991	0.792		0.53	7.25%	0.262	3.6%
1992	0.883	11.49%	0.621	7.25%	0.262	3.1%

1993	0.932	5.55%	0.626	5.62%	0.306	2.7%
1994	1.459	56.55%	1.138	8.12%	0.321	2.3%
1995	1.423	-2.47%	1.011	5.77%	0.412	2.4%
1996	1.5779	10.89%	1.186	5.62%	0.3919	1.9%
1997	1.4355	-9.02%	1.0289	4.45%	0.4066	1.8%
1998	1.5543	8.28%	1.1275	4.35%	0.4268	1.6%
1999	1.9456	25.18%	1.5097	5.28%	0.4359	1.5%
2000	2.0413	4.92%	1.5942	4.92%	0.4471	1.4%

Source: Annual Report of Health Statistics.

Table 6: Average revenue from service of general hospitals within health sector at county level and above

	Total service revenue (million *yuan*)	**% Of total revenue**		
		Revenue from outpatient service	**Revenue from In-hospital service**	**Revenue from other service**
1991	3.184	7.01%	14.31%	22.25%
1992	3.639	7.32%	15.32%	19.83%
1993	5.006	7.49%	16.77%	20.68%
1994	5.889	7.72%	17.29%	16.99%
1995	7.605	7.94%	17.37%	18.09%
1996	9.1371	5.65%	15.58%	22.08%
1997	9.8339	6.14%	16.01%	20.35%
1998	11.0251	6.60%	16.30%	19.59%
1999	12.3905	7.53%	18.10%	17.71%
2000	14.408	8.18%	19.18%	17.08%

Source: Annual Report of Health Statistics.

Table 7 reveals that hospital revenues from medicine are divided into two parts: clinic medicine revenues and in-hospital medicine revenues. Generally speaking, the proportion of revenue from selling medicine kept stable during the 1990s and increased together with the total revenues of healthcare institutions.

Table 7: Average medicine revenue of general hospitals within health sector at county level and above

	Total revenue from medicine (million *Yuan*)	**% of total revenue**	
		Outpatient medicine revenue	**In-hospital medicine revenue**
1991	3.333	22.75%	22.85%
1992	4.046	22.97%	24.25%

1993	4.898	20.24%	23.72%
1994	6.285	20.14%	24.68%
1995	7.993	20.68%	24.93%
1996	9.4202	20.68%	23.97%
1997	10.4851	21.60%	23.71%
1998	11.9914	22.48%	23.73%
1999	13.3728	22.71%	24.07%
2000	15.0055	22.65%	23.63%

Source: Annual Report of Health Statistics.

4.2 Change of financing structure

During the first 30 years of the PRC, the government managed almost all health care institutions. From 1949 to 1955, hospitals handed in all their revenues to the state and then received a fixed amount of subsidies from government. In 1955, "fixed subsidies" were changed to subsidies according to the gap between the cost and revenue of hospitals, which is termed balanced allocation. During the period between 1960-1979, the government financed hospitals by fixed subsidies according to the number of employees and the salaries of all the employees. In the 1980s, all health PSUs had fixed subsidies.

In 1994, the Chinese government initiated tax reform. Local governments have the responsibility of financing the local hospitals. The central government subsidizes poor and rural areas. However, in practice, the distribution of accountability and financial rights was unequal among different governmental levels, and the transfer-payment system had many problems, which caused huge regional differences in basic health services.

Overall, government subsidies have been decreasing since the 1980s. The total cost of medical services increased rapidly, while government subsidies have increased relatively slowly, accounting for around 6% of the hospital budget in 2004, while it was 11.58% in 1990. But for basic healthcare services, the prices are still regulated at a relatively low level. (MOH, 1985; MOH, MOF, MOP, SAOP, SAOT, 1989)

In order to compensate for the decrease in government subsidies and the loss in basic services, the prices of health care services rose slightly; fees charged for medical

diagnosis using high-tech equipment (for example, CTs and MRIs) could be set according to their cost, This policy gives health care providers incentives to create costly heath care programs, buy high tech equipment and overuse high-tech medical examination methods and tests. The overuse of high-tech services is very popular in Chinese hospitals. Incidentally, supply induced demand and moral hazard exist in the utilization of high-tech medical devices, resulting in rapidly increase healthcare costs for the government and the people.

The second policy is drug policy. As early as 1950, hospitals were allowed to finance themselves by keeping part of the revenue sales of medicine. The ordinary proportion was 15% for western medicine and 20-25% for Chinese medicine. After 1980, hospitals can keep the revenues to finance its budget, so hospital tended to over-sell medicine to patients. In the 1990s, the drug revenue accounted for over 60-70% of hospital revenues. In order to avoid the situation, the 2000 price reform contains policies on implementing *mass public bidding for medicine* (MOH, 2004) and the *separation of revenue and expense of medicine in hospitals*.

After the 2000 reform, the proportion of medicine sale revenue has been controlled to some degree, but the proportion is still high (around 50-60%). The reform policies only focus on reducing the proportion of medicine revenue as part of the total revenue, but as hospitals and doctors have the incentive to generate more revenues, they can induce patients to have more medical examinations and other services. Based on the evaluation results of this policy for five and a half years at seven hospitals in Shanghai, Wang Zhifeng, (2002), the proportion of medical technical expenditures in the overall budget has increased, while the proportion of drug expenditures has decreased. This verified the target income theory in health economics. So, it is important to design a policy to cut down overall medical expenditures.

4.3 Brief Summary

The decentralization of health administration in the 1980s to various levels of the government was a policy designed to give more responsibilities to the local governments. The consequence has been the accentuation of inequalities between

rural and urban areas, with resources concentrated in urban centers and sparse in rural communities.

The government has reduced the amount of financial support given to healthcare institutions, and only funds personnel wages (only part of employees' income) and new capital investments., The government has given healthcare institutions a large degree of financial independence, allowing the market to play a role in the health sector. Bonus payments have to be funded from the hospital's earned profits. Since the government usually sets primary health service prices at a level lower than its cost, hospitals use the sale of medicines and high tech medical services to generate profits, resulting in a lot of distorted behavior.

5. Main problems in the Urban Healthcare System

5.1 Main problems in the urban healthcare system

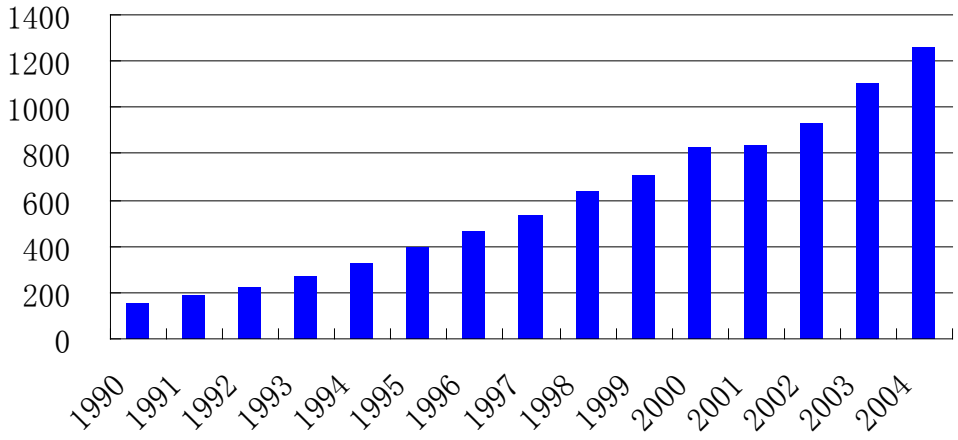
Since the economic reform began in 1978, China's economy has continuously developed at a rapid speed. Unfortunately, improvements in people's health status in such health-related process indicators, such as infant mortality rates and life expectancy, have been slowing down.

We examine the health sector from four angles: the efficiency of the allocation of medical resources (macro efficiency), the operational efficiency of healthcare institutions (micro efficiency), the accessibility of health care services, and the overall patient satisfaction level.

Reduction of health resource allocation efficiency

Growth in total health expenditure (THE) has outstripped economic growth, the THE increased from 14.3 billions Yuan in 1980 to 759 billion Yuan in 2004, increasing 52 times, while the GDP only increased about 29 times within the same period. In the 1990s and the early 21st century, the THE had a growth rate ranging from 8% to 29.1%. The proportion of the THE over the GDP increased from 3% in the 1980s to 5% in 1999. In 2005, it was 5.6%. The per capita THE has also increased with a high growth rate. The per capita health care expenditure in urban area increased from 158.8 Yuan in 1990 to 1261.9 Yuan (4.8 times) in 2004 (see figure 12).

Figure 12: THE per capita in urban areas (yuan)



Source: Statistic Yearbook of China, China Health Yearbook.

Although the resources allocated to the healthcare sector have increased, there is less accessibility of health care services. In the 1950s and 1970s, 85% of the population was covered by health insurance in some way. In 1998, only 20.6% of the total population was covered by any kind of insurance. In urban areas, the insurance coverage rate was 56.2% in 2003 (according to the results of the Third National Health Survey).

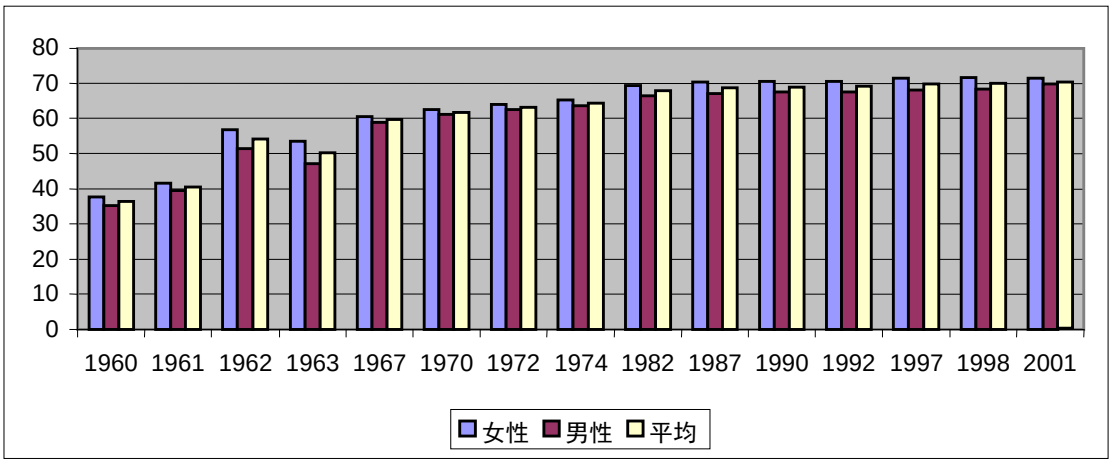
Health insurance coverage has decreased, but the cost of health care services, both outpatient and inpatient, have greatly increased. As in the case of general hospitals of Health Sector, the expenditure per patient of outpatients increased from 10.9 Yuan in 1990 to 126.9 Yuan in 2005, and the per patient expenditure of inpatients increased from 473.3 Yuan in 1990 to 4661.5Yuan in 2005. These amounts increased 10.64 times and 8.85 times respectively and were faster than the income growth in both urban and rural areas, which increased 5.95 times and 3.74 times respectively during the same period.

Since health insurance only covers around 20％ of the population, the majority of patients pay out of pocket for health services. For those with low income and without health insurance, the rise in the cost of health care directly affected their ability to acquire health services. Since the 1990s, outpatient visits per capita have annually decreased from 2.24 visits in 1990 to 1.54 visits in 2004 (see figure 14).

Have people become healthier than before? According to the results of the first,

second, and third National Health Surveys, from 1993 to 2003, the morbidity rate within a two-week period increased.

Figure 13 Chinese Life Expectancy: 1960-80 vs. 1980-2000

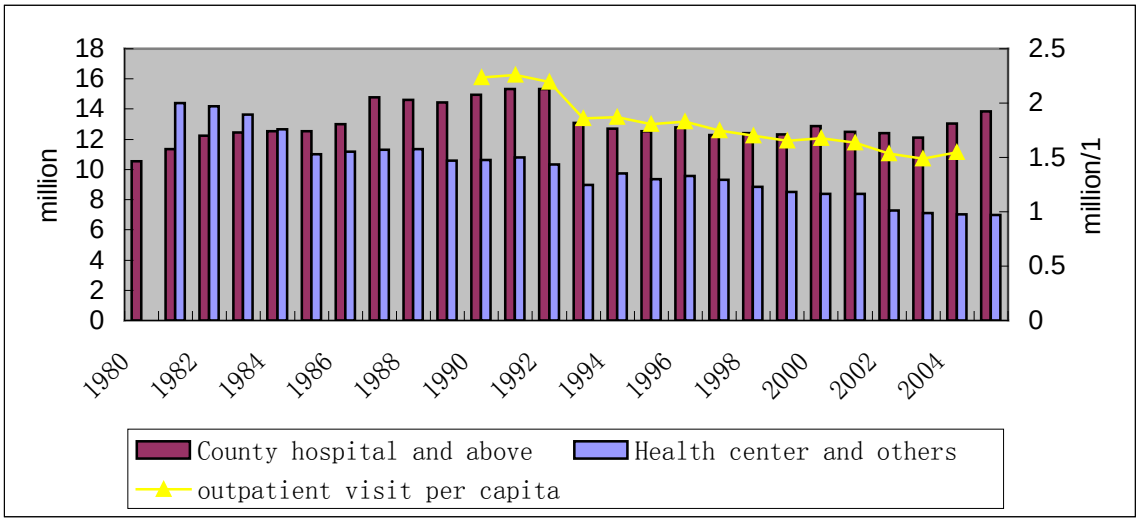


Source: Wang Shaoguang, 2003

Reduction of operational efficiency in healthcare institutions

Generally speaking, urban healthcare institutions have been developing very rapidly since 1980, as we discussed in part one, including the number of institutions, amount of personnel, as well as the capital and revenue. However, in recent years, the total number of outpatient visits has decreased and the number of inpatients has only increased slightly. This means the efficiency of the healthcare institutions has decreased. The utilization of hospital beds, the numbers of daily visits per doctor and the number of daily inpatients per doctor have all decreased notably. The total number of visits per doctor per year decreased from 1,652 visits in 1989 to 1,180 visits in 2001. The total number of inpatients decreased from 767 to 509 during the same period. Throughout the 1980s, the utilization of hospital beds remained above 80%, but it decreased in the 1990s. Now, it is about 60%. Since the revenues of healthcare institutions have not decreased, this means that each patient is spending more. Over-serving and over-prescribing have become common practice, which has resulted in low efficiency in using resources.

Figure 14: Number of Outpatient Visits in Medical Institutions



Source: MOH, 2005. Chinese Health Statistical Digest 2006.

Poor health care satisfaction

Neither high-income patients nor low-income patients feel satisfied with the health services. For people with low income, the most important factor that affects the accessibility of healthcare is economic restrictions. For those with higher incomes, they desire better service, shorter waiting times and special services etc, but it is unavailable at the current health institutes. Incidentally, patients often choose not to see a doctor. Table 8 shows the results from National Health Surveys. It shows that the percentage of people who should see a doctor, but chose not to do so because of financial reasons has increased from 1993 to 2003, despite the rapid economic growth during the same period.

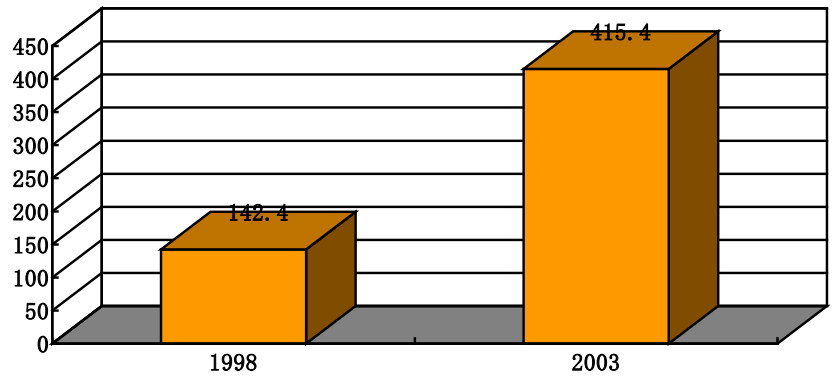
Table 8: Percentage of people who should see a doctor but choose not to do so because of financial reasons

	Big City	Middle-size city	Small City	Rural 1	Rural 2	Rural 3	Rural 4
Inpatient							
1993	34.09	33.87	53.47	47.95	63.15	61.14	67.72
1998	53.12	58.43	70.77	63.80	54.12	70.26	69.38
2003	64.40	35.60	74.80	77.60	74.90	75.50	73.60
Outpatient							
1993	3.21	2.40	9.58	15.10	21.36	19.55	24.42
1998	36.69	23.48	42.96	30.09	31.67	42.29	38.72
2003	30.80	32.70	47.00	29.20	33.90	41.20	49.10

Figure 15 shows the percentage of people who should see a doctor, but chose not

to do so because of the poor quality of health services, increased from 1.424 millions in 1998 to 4.154 millions in 2003 in Beijing city.

Figure 15: Percentage of people who should see a doctor but choose not to do so because of the poor service quality (10 thousands)



5.2 Reasons for the above problems

The main reasons for the above problems are a combination of government failure and market failure. Healthcare is a special sector, due to uncertainty, asymmetric information, public good, and monopoly, the market cannot allocate the resources efficiently, however, in the process of economic reform, the Chinese government gave up its responsibilities in the health care sector and abandoned healthcare to the market.

(1). Weaknesses of the public health system

Theoretical and empirical research has shown that public health has much higher returns than those of medical services. But when China was moving towards market economy in the late 1980s, the government no longer had the incentive to fund public health. Public health was pushed to the market. However, public health is a public good. Incidentally, there is market failure. There have had been less resources allocated to public health, resulting in a deteriorated public health system. The 2003 SARS epidemic revealed the weaknesses of the public health system.

(2). Irrational reimbursement mechanism of health providers

Hospitals are based on a fee-for-service reimbursement system. Government

subsidies to healthcare institutions decreased, but the price of basic health services were regulated, so the government allowed the healthcare institutions to be reimbursed by selling medicine, and charging high prices to new technology supplies, tests and special services. These policies gave health care providers the incentive to over-prescribe medicines and over-use high cost health supplies, and incidentally increasing overall healthcare costs.

Table 9: Structure of Hospital revenue per patient （general hospitals within health sector ）

	1990	1995	2000	2005
Revenue per outpatient（yuan）	10. 9	39. 9	85. 8	126.9
Revenue from medicine（%）	67. 9	64. 2	58. 6	52
Revenue from medical examination （%）	19. 3	22. 8	19. 6	29.8
Revenue per inpatient （yuan）	473. 3	1667. 8	3083. 7	4661.5
Revenue from medicine（%）	55. 1	52. 8	46. 1	13.9
Revenue from medical examination （%）	25. 7	30. 4	31. 7	36

(3). The break down of the three-tiered health system

Most of the prices of health services provided by public hospitals are controlled by the government, including the price of basic medicines, health service and the salary of personnel. Healthcare institutions at different levels do not have significant differences in pricing even though they obviously have different skills and expenses. In the 1990s, the mandatory refer system was abandoned, giving patients the freedom to go to any hospital they like. Predictably, patients choose to visit high-level hospitals directly, even with minor illnesses such as the flu. The execution of the three-tiered health system is not functioning. High-level hospitals and famous hospitals are overloaded while low-level hospitals, such as community health centers, lack patients and a great number of resources are idle. The medical institutions also lack the incentive to transfer patients to different level hospitals.

In order to control expenditures, the departments of social health insurance contract specific hospitals for patients, who will only get reimbursed for health expenses in these hospitals. The number of designated hospitals for each person insured is limited, for example, it is four in Beijing. On the payer side, the social insurance departments

have not tried using the three-tiered health system to control expenditures.

(4). Absence of Government and Third Party Regulations

When the government reduced health institute funding, they also lost adequate regulation methods. At the same time, the responsibility of enforcing regulations has been divided between too many different departments with inconsistent interests, so it is very difficult to coordinate the different departments. For example, the social insurance departments lack the incentive and capacity to control the cost of healthcare services. This is because the performance evaluation of social insurance departments is mainly based on the balance of the total health insurance fund, but not on controlling health expenditures, individual patients' costs on health care service and providers' adverse incentives.

(5). Lack of effective competition among healthcare institutions

It is often said that the lack of competition among healthcare institutions has lead to the lower performance of public hospitals. The truth is, there is competition among public hospitals and other hospitals. The competition, especially among public hospitals is not price-based competition, but patient or medical equipment (equipment and high-tech.) based competition. This means that hospitals compete to buy high-tech equipment and provide high tech treatments to attract patients and increase their revenues.

To increase effective competition between public hospitals and other hospitals, especially in the private sector, the government should give some policy support to private institutions so that the private sector would be able to compete on the same scale. As we mentioned in part one, the scale of the for-profit hospitals is relatively very small at the present. The main reasons for this are barriers to entry and policy discrimination.

(6). The high cost of medicines and health suppliers

The high cost of healthcare services is mainly because of the high cost of medicines

and health suppliers. The main reasons include:

a. There is a lack of competition among retailers, such as drugstores. Doctors make the decisions for patients, so medical institutions monopolize drug retail.
b. There is an irrational reimbursement system. Medical institutions can generate income through selling drugs and medical suppliers.
c. There are too many pharmaceutical firms, with similar product structures. Consequentially, the supply of medicine exceeds the demand. The firms use brokerage to doctors or hospitals as a main marketing strategy to enlarge their market share. Ultimately, these brokerages will be added into the price of the medicine.
d. The third party, government or health insurance, lacks control of these expenditures.

(7). Management problems in public hospitals

Not only are people dissatisfied with high medical costs, but also with the quality of hospital services provided. One of the key reasons is the poor management of public hospitals. The operations of public hospitals are still like the Public Service Unit, and lack human resources, financial, marketing and quality management. Public hospitals can improve their performance by improving its management.

6. Health Care Reforms Currently Being Implemented

Restructuring health care system is a major component of China's overall economic reform. During the past twenty years, there have been various experiments of reforming the health care system in China. The reforms are mainly focused on health insurance, health care delivery and medicine systems.

6.1 Health insurance reform

A proper health insurance system provides a risk sharing mechanism for people, prevents rapid increases of medical expenses, minimizes financial burden of enterprises and employees, improves labor mobility and enterprises' competitiveness in the market place, and therefore helps induce long term economic development and social stability.

Since January 1995, the State Council (the central government) has been experimenting the MSAs in Jiujiang city of Jianxi province and in Zhenjiang city of Jiangsu province. The main principle of these experiments is that each city should be an independent unit for providing health insurance, which consists of the individual medical savings accounts, and is supplemented by a city-wide medical pooling funds.

In Zhenjiang's program, employees will contribute one percent of their salary to their own individual medical accounts; the enterprise (employer) will contribute a sum equivalent to 10 percent of the employee's salary. Of the 10 percent, one half goes to the employee's individual account, and the rest enters the citywide pooling fund. The pooling fund will be administered by a city government agency. A participant of the program is issued an Employee Medical Insurance ID card and goes to a pre-assigned hospital for medical service. The medical expenses should be first paid by his individual account. When the individual account is exhausted, the participant pays out of his/her pocket. However, if the extra payment is over five percent of the participant's annual salary, the pooling fund will cover, together with co-payments by the participant. The ratio of the co-payment to the total extra payment

varies with the amount of the extra payment, very much in the way of a regressive income tax --- the co-payment rate is 10 percent for the part of the extra payment between five percent of annual salary and 5,000 RMB; 8 percent for the part between 5,000 RMB and 10,000 RMB; 2 percent for the part over 10,000 RMB. For retirees, if the individual account is insufficient, the pooling fund pays; moreover, the retiree's contribution to his individual account is only one half of the active workers (Li and Yuan, 2003).

The advantages of such a system are:

1) Because of the cost-sharing feature in the MSAs and the pooling funds, the tendency of abuse and over-consumption of medical services is under control, while medical risk shared among the population. In the old insurance system, all medical expenses were fully covered by the enterprise (or the insurance fund) and the patient (consumer) did not fully realize the cost incurred. Thus, the tendency of over consumption and abusing the health care system was rampant. In the new system, when one uses the individual account for medical services, it is as if using his money for other consumption goods, the cost must be taken into account. The patient also pays part of the costs when he uses the pooling fund. The MSAs are effective in reducing the cost. According to a survey conducted by the Ministry of Health in Zhenjiang city, after the implementation of the new medical insurance system, there was a significant reduction in the consumption of medical services. Among the seven hospitals, visits of patients with medical insurance were only 17.1 percent and the usage of CT examination decreased 208 patient times (Yu and Ren, 1995).

2) The patients have incentives to monitor the doctors' behavior. In the old insurance system, since the patients do not pay for any cost of medical service, doctors and hospitals have incentive to induce the patient to over consume medical services so as to generate more benefits for the doctors and hospitals. In other words, the demand for medical services is to a great extend determined by the doctor --- a lot of unnecessary tests, drugs, and in-patient care are prescribed. According to the Chinese statistics of health care, the per-capita medical expenses of those patients having medical insurance are twice as much as those without insurance; the duration

of in-patient care of those with medical insurance was 12.4 to 60.8 percent longer than those without insurance. (Yu and Ren, 1995). On average, a woman with medical insurance delivering a baby stayed in a hospital for seven days (in the U.S., the average is 48 hours).

When a patient pays for health care cost from his personal medical account plus a portion of the cost from his own pocket, he has more incentive to monitor the doctors' treatment and to choose more efficient treatment methods. This will lead to an overall improvement in efficiency and lower medical costs.

3) The treatment of major illnesses is mainly financed by the pooling fund and therefore, health risk is spread out and shared across the population in one city. In the new program, each firm's contribution only depends on the amount of its total salary but independent from the health status and age distribution of its employees. The system reduces the competitive disadvantage to the firms with a lot of employees exposed to risks of poor health. This will reduce discrimination against older and less healthy people in the society and lead to increases in social productivity.

An empirical study (Liu and Yuen et al., 2003) presents a preliminary assessment of Zhenjiang's experiment. Major findings show there are significant changes in health care cost and utilization patterns after the implementation of the MSAs. First, the incidence of using any health care services increased by 12% among the general population. Second, when looking into changes in the composition of different services, there was a shift from the likelihood of using inpatient care to outpatient care. Third, total health care expenditures decreased by 8% among the general population and 18% among users. And fourth, among respective service-specific users, the utilization rates consistently decreased by 14% for outpatient visits, 11% for inpatient admissions, and 17% for length of stay (LOS) per admission. Based on these findings, the experimental plan appears to be more cost effective than the previous health care programs.

Because of the successful experiment in Zhenjiang city, the Chinese government has advocated the MSAs scheme for the urban health care reform. In July, 2000, at the conference of China's Health Care and Insurance System Reform, Vice Premier Li

Lanqing declared that China would reform its health insurance system by the MSAs combining with citywide social pooling funds. The government has extended the MSAs scheme to all the cities in China. Up to 2005, there are 140 million urban employees participating in the new health insurance scheme.

The exiting problems are

1). For the citywide pooling funds, the risk-sharing function is very limited. First, the majority of Chinese cities are small cities. The citywide social pooling funds are not enough to provide adequate risk sharing function. Second, there are huge distribution disparities of income, age, and health status among Chinese cities. Currently, in the newly developed cities, like Shenzhen, there are large surplus of medical social pooling funds, because of the high income, younger and healthy population. But in the old large cities, like Shenyang- a heavy industry city, many state owned enterprises are bankrupted. The citywide pooling funds are in big deficit and can't provide risk sharing..

2). The management of the medical pooling funds and individual medical savings accounts is inefficient. In the medical reform experiments of Zhenjiang and Jiujiang, each city's metropolitan labor medical insurance management commission manages the cities' medical pooling funds. Under the supervision of the commission, each city sets up a medical pooling fund management center, which is responsible for the MSAs and the fund's fee collection, daily operation, and management. The pooling funds and individual accounts are deposited in banks. The return rate is very low. In practice, due to the system's excessive complexity, loopholes, and non-standardized management, the current system's management is inefficient.

3). The citywide pooling funds hamper labor mobility. Labor mobility is crucial for economic development. However, the current citywide medical pooling funds couldn't facilitate the labor movement. Since if workers leave a city, they only can bring their individual medical savings accounts with them, but they would lose all the benefit from the social pooling funds. So the citywide pooling funds that tie health insurance coverage to certain cities hamper labor mobility.

In conclusion, how to control the health care costs, and provide comprehensive health care coverage for the people is the future direction of the reform.

6.2 Health care delivery system reform

1. Reform of public hospital management

Since the 1980s, the contract management responsibility system and the comprehensive management target responsibility system have been implemented in health care institutions in China to improve the efficiency of public hospitals.

(a) The contract responsibility system

Hospitals that adopt the contract responsibility system sign a contract with the government to agree upon the annual agenda, the employment scale, the quality standard of health services and the budget. The hospitals can make decisions independently during the contract period. If a hospital achieves all the goals agreed upon in the contract, it can retain the entire surplus. Under this system, hospitals pay more attention to economic goals and sometimes ignore social responsibilities.

(b) The comprehensive target management responsibility system

In order to make up the loss in social welfare induced by the contract responsibility system, the government adds additional goals to the contract, such as quality of the health care, quality of service and social benefits.

(c) Leasing hospitals

During the late 1980s, when few big hospitals were in the contract responsibility system, some small hospitals, like health centers and community hospitals, became leased hospitals. In 1998, some health centers in Haicheng in Liaoning Province adopted this method, in which the longest lease period was 15 years (Li Weiping, 2002).

(d) Trusteeship

This reform separated of the right of management from ownership letting the director and the managers or professional management groups/organizations to run state-owned hospitals. The health administration department delegates state-owned

hospitals to hospital managers based on an agreement of providing health care services and the operation of state-owned capital. If basic medical services are ensured, then the hospital manager will enjoy the rights of making business decisions, setting inner organizations, hiring and firing employees and the setting of wages and bonuses.

In 2001, the Health Bureau in Wuxi began to experiment with trusteeships in nine of its municipal hospitals. From the collected data, we have found that they have succeeded in motivating hospital operations, promoting the management level and increasing profits. (Yang Yaping, 2003).

(e) Hospital groups

During 1990s, hospital groups emerged in some of the big cities. Hospitals united to acquire economies of scale and economies of scope. The basic types can be classified as:

Loose Cooperations**:** Different hospitals cooperate to share technology, human capital and the "brand". Generally speaking, their connections are relatively loose. For instance, the Drum Tower Hospital in Nanjing (serving as the flagship) united with the Children's Hospital and the Dental Hospital to form the "Drum Tower Hospital Group of Nanjing". In the early stages, the group mainly cooperated by setting up a janitorial center, sharing advanced equipment, having close internal consultations, transferring assistant doctors between the hospitals and setting up an integrated dosing department. Meanwhile the Ruijing Hospital of Shanghai also set up a group in July 2000, collaborating with the Central Hospital of Taizhou in Zhejiang province. .

Chain-stores**:** By means of capital expansion and market exploitation, hospitals expand themselves and form a linkage. Hospitals of this type have comparatively clear property rights.

(f) Privatization

Privatization means changing the public hospitals into private hospitals. The manager, who is appointed by the director, enjoys full rights to appoint and remove individuals from employment, as well as the right to distribute income.

This kind of transformation is going on in China, but the results of the reform for

different areas and different hospitals are not consistent. In 1998 and 2000, the Hospital of Traditional Chinese Medicine and the People's Hospital in Dingnan County of Guangzhou City were privitized, but the results in these two hospitals were very different. In the Hospital of Traditional Chinese Medicine, profits increased and efficiency improved, but in the People's Hospital the opposite happened. (Xiong Derong and Zhu Xu, 2003). According to local economic development, the modes of reform in Xiaoshan district and Chun'an County in Hangzhou were different. They were "the integer transfer of capital" and "leasehold estate and sold chattel" respectively. Both policies succeeded in raising funds and improving operational systems, personnel systems, control of medical expenditures and preventive medicine (Zhen Mingfang and Zhen Yanna, 2003).[7]

Research (Jiang Zhen et al, 2002) has shown that the shareholding-cooperative transformation in township health centers was correlated with their own basic condition[8]. Capital collected in the transformation was mainly used to build houses and beautify the facilities; medical equipment and facilities were not the main investment agendas. Research has also shown that given that managers have management rights in the hospitals, the reform is successful at the present. (Tan Xuan etc., 1999)

Jin Chenggang and Li Weiping (2003) compared three hospitals, which have been reformed, with two hospitals that have not been reformed in Haicheng. They use the method of Posttest-Only Design with a Nonequivalent Group to study costs of the surgical procedures of appendix removals and cesarean sections. The results indicate the cost of surgical treatment of appendicitis was increased by 16%, while the costs of delivery by c-section increased by 7%.

2. Incentive system and accountability

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[7] The models of reform in Xiaoshan district and Chun'an County in Hangzhou are "entire property transfer model" and "part property transfer model,"respectively. The former means that the hospital is sold to private holders. The later means that the floating assets are sold to private persons, while fixed assets are still owned by the government and rented to the owner of the floating assets.

[8] "Basic condition" here means the fixed assets, the equipment and the operational performance. The better these conditions are, the more successful the reform will be.

(a) Contract Employee

Implementing Guidance on Further Reform of Personnel System in PSUs in the Health Sector (CPCDOO, CPCDOP, MOH, 2000) proposed reforms of the personnel system in PSUs in the health sector, such as:

(1) Setting up adequate positions and a system of competition for recruitment;

(2) Using different methods for different positions, for example, administrative personnel being appointed as administrative staff, health professionals being appointed as technical staff;

(3) Recruitment is completely open to the market;

(4) Set standards for termination of employment.

Competition already existed in some medical and healthcare institutions in areas such as Guangdong province, Sichuan province where some experimental reform had been carried out in order to create a system that is open, equal and fair, which would break the tradition of tenured positions for managers.

(b) Incentive reform

Salary depends more on performance, so the difference in salary is in accordance with individual contributions. In some areas, the directors and some famous doctors are paid by annual salary.

Wang Chunming (2003) has explored the mechanisms for motivational management in hospitals by sending out questionnaires to seven top hospitals in Shanghai, sometimes also accompanied by additional interviews with the presidents and directors of the selected hospitals. He has found that the effects of current motivational management are obvious but not remarkable and more emphasis should be put on authorized management, the practice of annual salary and the promotion of hospital culture.

3. Management Information system

In 2002, the MOH took a survey about instituting information management in 6,921 hospitals in China, 2,179 of which have built up the Hospital Information

System (HIS). According to geographic distribution, 80% of hospitals in Eastern China have HIS, while in most other regions the proportion is between 30% and 35%, and in Northwestern China, it is less than 20%. 84% of provincial hospitals, 37% of hospitals at county level have HIS. According to the type of the information system, 85% of the hospitals have built up the Management Information System (MIS), focusing on financial management, 10% of them are beginning to build the Clinical Information System (CIS) focusing on the doctor's workstation and 5% of them are testing a Picture Achieving and Communication System (PACS). More than 50% of the top hospitals are participating in the HIS. In April 2002, the new "Criteria for the Basic Functions of the HIS" put forward by the MOH will guild the further development of the HIS for next five years. (He Yusheng, 2003)

4. Outsourcing support services

In order to improve efficiency, some hospitals are experimenting with contracting support services. One way is to combine departments from different hospitals providing the same service to form corporations independent of the hospitals. The other way is to purchase the services from professional corporations. For example, a janitorial service, in charge of cleaning the six main hospitals, has been set up in Nanjing. It relieves the management pressure and burden on hospital managers (From Lijie Wang "The Reform of PSUs in the Health Sector in China" from Cheng. Siwei. 2000)

As discussed in Part I, we can see that the proportion of support service workers in total health professionals in private healthcare institutions is lower than that in stated-owned and collectively owned hospitals. The decreasing of service support workers is one of the reasons for the increase in state-owned hospitals' efficiency (Li Guohong, Hu Shanlian, et al, 2001). Ye Jiongxian et al (2003) conducted an investigation in the Shenzhen Hospital affiliated to Peking University by sending random questionnaires to 150 patients and 200 medical care providers about the degree of satisfaction on socializing logistics services. Through a comparison between the two groups, they found that the degree of satisfaction of both groups on hospital

environments such as cleanness and hygiene, parking, hospital decoration, guiding service for medical care, security service and restaurant services is very high. This suggests that comprehensively contracting out logistical services in hospital is a correct initiative and has significant effectiveness.

5. Payment system reform

(a) Diagnosis Related Group (DRGs) payment

China has realized that the method of payment will affect the medical expenditure of the payer (patient or insurance organization) due to asymmetric information between the providers and the payers. Under the fee-for-service system, although service prices are controlled by the government, and doctors and hospitals have the incentive to make money, some medical institutions create items by using a different name for the service or dividing the service into multiple parts in order to increase revenue. There are some experimental payment reforms in different areas by the payer (insurance department, companies and hospital). And these experimental payment systems are increasingly similar to DRGs.

Standard fees for some ordinary diseases have been gradually established. For example, the city of Zhangjiajie measured fees for some common diseases from 1992 to 1993 and determined standard fees for ten common in-hospital diseases and put them into practice in 1996 (Tao Jiaqing and Liu Chunyan, 2001). This resulted in the average hospital stay being shortened by 4.5 days and the growth rate of costs per inpatient days and per person both decreased.

(b) Maximum price limitations on some special disease categories

Some cities or hospitals have set limitations on some special disease categories. For example, the 2nd Hospital Affiliated to Harbin Medical University began to put maximum price limitations on 50 categories of diseases in March 2000. Yu Qiubin, Jiang Yin and Zhao Junyi (2000) used a sample of sixteen categories to conclude that there was a remarkable decrease in both the inpatient costs and the number of days in hospital, while keeping the result of treatment constant.

As the payer of health costs, employers also care about medical expenditure. They have begun to try to invite hospitals to bid for the right to provide services where the employer determines the upper limit before bidding. For example, in March 28, 2003, 28 corporations (nearly 500 thousand employees) in Nanjing held a serious-disease-treatment "auction" in order to pay for these diseases by the bidding price.

(c) Global budget

A global budget is one popular way to control expenditures in the health sector. For example, the payment system in the city of Zhenjiang has initiated "Total Budget Control". Research has found that it effectively controls the total expenditures of hospitals, because some hospitals have reduced the quality and quantity of their service (Jiang Licheng, 2002).

(d) Capitation

Since 1998, the Government Employee's Insurance Office in the Putuo district of Shanghai has launched the reform of governmental medical payment ways through capitation in outpatient items. A study led by Yang Wei (1999) assessed the effectiveness of capitation and concluded that such a payment method has decreased the speed at which medical expenditures grow and has controlled waste. It plays active roles in enhancing internal hospital management, changing management strategies, controlling medical costs and promoting utilization efficiency of medical resources.

China has made commendable strides towards improving the average health status of its population. Transformation from a planned economy to a market economy means the formation of market mechanisms, as well as the transformation of the government's function. This adjustment of government and market functions has resulted in many behavioral distortions in the health care sector. This paper provides an overview of China's health care delivery system, including the health institutions

that China has, their functions, the frameworks of the governance structure and financing structure of the health institutions, the main problems in the urban healthcare delivery system, the reasons of the current problem in the urban healthcare delivery system, and the reforms currently being implemented. China is rich in regional variation and policy experimentation. Unfortunately, few studies have used this variation and experiment to help to identify the effect on service delivery of potential policy variables (payment method, insurance system, or a new regulation, for example). This gives many challenges and opportunities for future study of China's health care reform.

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