Adapting by Learning:The Evolution of China's Rural Healthcare Financing

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Abstract: Adaptive capacity is essential for any human social system, because human societies are full of unique circumstances, genuine uncertainty, novel complexity, conflict of values and interests, and structural instabilities, and, more important, the environment under which the systems exist are always changing, while everyone, including policy makers and policy experts, operates under conditions of "bounded rationality". Learning is the base of adaptive capacity. The first section of the paper distinguishes four learning models by their location along two dimensions: the promoters of learning (policy makers or policy advocates) and the sources of learning (practical experiences or controlled experiments). By studying the evolution of healthcare financing in rural China in the last 60 years, the remaining five sections attempt to illustrate how policy makers react to newly emerging problems, imbalances, and difficulties by "fine-tuning" or altering policy instruments, or adopting a new goal hierarchy according to lessons drawn from past and present experiences as well as deliberate policy experimentations. The study reveals that the resilience of the Chinese system lies in its deep-seated one-size-does-not-fit-all pragmatism.

Key words: Learning model, adaptive capacity, China model, cooperative medical system, healthcare financing

The year 2008 marks the thirtieth anniversary of the launch of China's reform and opening-up drive. Admittedly, China still faces a multitude of problems but as a gigantic economy of 1 billion-plus people, it has sustained economic growth at an average annual rate of 9.9% for 30 years and drastically reduced the population below poverty line. In the meanwhile, it has largely maintained political stability. Such an achievement could hardly be explained by sheer luck. Therefore, an increasing number of domestic and foreign pundits have begun to ponder over China's recipe for success (Ramo, 2004; Lin, 2007; Yao 2008). In his recent works, Sebastian Heilmann does not allude to the "China Model" but points out that China's "experimentation under hierarchy" is a "distinct mode of governance." As a result, China has acquired an extraordinary adaptive capacity that enables the country to eliminate obstacles that have long plagued its economic development, adapt to the changing internal and external situations and seize any transitory opportunity to create the institutional conditions for China's economic rise (Heilmann, 2008).

Adaptive Capacity and Learning Model

The so-called "adaptive capacity" is the capacity of a system to discover and remedy the existing defects, obtain new information, learn new knowledge, try new methods, respond to new challenges and improve system operation in the face of uncertainty as the environment where the system exists is changing (Folke, Colding & Berkes, 2003). Adaptive capacity is essential for any human societies because they are full of unique circumstances, genuine uncertainties, novel complexities, conflicts of values and interests, while everyone, including policy makers and policy experts, operates under conditions of bounded rationality. People cannot make the best choice because they are unable to predict all possible emerging situations and the potential consequences of their own actions. What they can do is first to diagnose and treat the most urgent issue and eventually find a satisfactory but not necessarily optimal solution by comparing different options identified through trial and error. For a country like China that has been undergoing rapid and multiple transitions, adaptive capacity is of vital importance because it has to navigate through uncharted waters with turbulent waves, reefs and dangers lurking on all sides and facing the risk of capsizing at any time.

The adaptive capacity of China's political system is surely the most critical component of the "China Model" if such a model does exist at all. Otherwise, it would be impossible to explain how China has been able to overcome countless institutional and policy obstacles once regarded as dangerous passes that might cause overall catastrophes if mishandled during its transitional process in the past 30 years.

Social scientists know little about adaptive capacity but one thing is certain: learning is the basis of adaptive capacity (North, 1990). There are many policy and institutional learning-related concepts in social sciences (Heclo, 1974; Rose, 1991; May, 1992; Wolman, 1992; Hall, 1993), which mean roughly the same thing though they are given different names. In essence, policy and institutional learning means using the experiences and lessons about a policy or an institution at another time/place to adjust the policy or institution at this time/place. For the sake of discussion, I distinguish four learning models (Table 1) by their location along the two dimensions: the promoter of learning (policy makers or policy advocates) and the source of learning (practical experiences or controlled experiments).

Table 1 Four Learning Models

Promoter of Learning	**Source of Learning**	
	Practices	Experiments
Policy makers	1	2

Policy advocates	3	4

Promoters of learning can be divided into two major categories: policy makers and policy advocates. Why are policy makers interested in learning? As neatly put by Heclo (1974) who pioneered the study of the effects of learning on policy and institutional evolution, "Politics finds its sources not only in power but also in uncertainty-men collectively wondering what to do?" As a result, policy makers will try every means to diagnose the nature and severity of problems facing them and seek the potentially effective methods of solving the problems. This requires learning. Especially in the event of policy failure and institutional failure, policy makers are more prone to act on a sudden impulse to draw inspiration from their own or others' past experiences.

In addition to policy makers, there are others who are also likely to become the promoters of learning, including bureaucrats, policy experts, media practitioners and social stakeholders (Dolowitz & Marsh, 1996). In the event of sharing similar attitudes towards certain issues, these people may form a tangible or intangible "advocacy coalition" in a specific policy area. The advocacy coalition will learn through various means to seek evidence in support of their proposition. Meanwhile, it will also persistently promote their learning results to policy makers to influence the direction of policy and institutional change (Sabatier & Jenkins-Smith, 1993).

Sources of learning can also be divided into two categories: practice and experimentation. The former includes the past and present experiences and lessons drawn from different regions in the home country as well as from foreign countries. The latter refers to controlled experiments conducted within a small scope to discover effective problem-solving tools. In human society, it is normally impossible to conduct experiments similar to those done in laboratory context. In some specific policy areas, however, it is viable to conduct controlled experiments at different observation points or at different time intervals of the same observation point. Key policy or institutional parameters-controlled experiments can help discover which policy and institutional options are desirable and feasible. As long as experiment is treated as a learning path, it implies that the system allows for failure. Of course, practices and experiments cannot be completely separated. Different practices often become the basis for policy and institutional experiments.

The four learning models in Table 1 are by no means mutually exclusive. It is likely for one country to learn using more than one model. The adaptive capacity of a system depends on whether it can make full use of all models to learn. Logically speaking, a system with strong adaptive capacity should have the following features.

First, the system is arranged in a way to make policy makers very sensitive to any emergent problems, difficulties and imbalances, and willing to take responsibility for responding to the challenges.

Secondly, policy makers firmly believe that the best way to find the path of solving policy and institutional problems is to learn through practice and experiment rather than simply emulating foreign models or fashionable theories.

Thirdly, while preserving political unity, it allows for decentralized decision-making in as many areas as possible and thus creates an institutional condition for seeking different problem-solving methods through decentralized practices and experiments. In other words, the system fosters diverse sources of learning without losing overall coordination.

Fourthly, it allows or encourages decentralized horizontal diffusion of new things generated from practice and experiment before conducting centralized vertical diffusion, especially in the early stages of decision-making.

Based on the foregoing theoretical analysis, how should we assess the adaptive capacity of China's political system? In his recent works, Heilmann implies that China has paid special attention to the second learning model (Table 1) or "experimentation under hierarchy" in his words. As early as at the beginning of the post-Mao era, however, Everett M. Rogers (1983), a pioneer of diffusion of innovation theory, believed that China deserved to be called a model of decentralized policy or institutional innovation and diffusion. In other words, China is also well versed in the other three learning models.

Chen Yun's famous saying: "groping for stones to cross the river" has been well recognized but many people merely regard it as a "gradualist" tactics. Actually, the speed of "crossing the river" is not the crux of issue. "Gradualism" is only a necessary condition for smoothly "crossing the river". If acting rashly, one might have fallen into the river before having learned to adapt. However, "gradualists" may not land on their feet either if they fail to learn and adapt while "crossing the river". Only learning and adapting simultaneously while crossing the river constitutes a sufficient condition for safely "crossing the river".

This study attempts to explore how China "gropes for stones to cross the river". By using the technique of "dissecting a sparrow", it conducts an in-depth dissection of a policy/institutional area, i.e., the rural health financing system. China's rural health financing system has since 1949 undergone the four stages fraught with vicissitudes: 1) the rise of the cooperative medical system (hereafter CMS, 1949-1968); 2) the universalization of the CMS (1969-1978); 3) the decline of the traditional CMS (1979-1985); 4) the exploration of new CMS (1986-2008). During the past 60 years, the CMS has evolved more or less in line with China's overall policy/institutional direction. It is

therefore of universal significance to review what has happened in this area. The purpose of this paper is not to assess the pros and cons of each health financing system but to analyze how policy makers and policy advocates pursue learning through practice and experimentation to adjust policy tools and policy objectives and to respond to the changed environment.

The Rise of the CMS

Before 1949, user-pay was the only health financing option available in rural China, which deprived the vast majority of farmers opportunities for healthcare. Consequently, China's infant mortality rate was as high as 250‰ (Yip, 1992) and the average life expectancy was only 35 years (Seifert, 1935).

Soon after the People's Republic was established, the new regime laid down a guideline for healthcare: "serving the workers, peasants and soldiers" (Xu, 1997). Even during the Korean War, the new government made rapid progress in developing rural medical organizations. By the end of 1952, the number of county-level health institutions rose to 2,123 from 1,400 in 1949, covering over 90% of regions nationwide (Yao, 2007a). Despite progress in healthcare provision, however, there was no significant change in respect of health financing. The user-pay health system still dominated rural China prior to 1955.

In 1955, an all-round upsurge of cooperative transformation swept across rural China, which served as a catalyst for institutional innovation in rural healthcare. More specifically, mutual-aid cooperatives in production, capital, farm implements and technology inspired farmers to expand cooperative approach into the area of health financing. It is fair to say, "The rural cooperative medical movement might never have happened without the agricultural cooperative movement" (Zhang, Zhu, Wang & Zhang, 1994).

In the existing literature, there has been disagreement as to where the earliest cooperative medical scheme emerged. Evidence shows that different forms of healthcare financing cooperatives floated up in Shanxi (Yue & He, 2007), Henan (Song, 2004), Jiangsu (Wang & Xu, 2005), Zhejiang (Qian, 2006) in the same year of 1955. It is perhaps pointless to argue where the "first" CMS was borne. During the all-round upsurge of rural cooperative transformation, the healthcare financing cooperative would emerge sooner or later. One thing is, however, clear that such new practice came from farmers rather than policy makers and experts.

Take Mishan Village, Gaoping County of Shanxi as an example. Gaoping County was an old liberation area that had come under the control of the communist party since 1945. In 1953, three private drugstores and 10 private doctors of Mishan Village formed the first united clinics of the county on a voluntary basis. During the heyday of cooperative transformation, the Mishan United Clinics converted itself into a United Healthcare Station in May 1955. Unlike a united clinic, the healthcare station was established and financed by three parties, i.e., the agricultural production cooperative, farmers, and doctors. Its fund thereby came from three sources: "healthcare fees" paid by farmers, the public welfare funds contributed by the agricultural cooperative, and the medical proceeds (mainly charges for medicine). By paying an annual "healthcare fee" of RMB 0.5, a farmer was entitled to receiving preventive healthcare services and exempted from all kinds of fees (i.e., registration, home visit, injection, and the like) except for drug charges.

Mishan's cooperative medical system soon received utmost attention from the government. The officials of the Ministry of Health and the Provincial Department of Health went to Mishan to conduct field investigation for multiple times and concluded that Mishan had "established a reliable socialist organizational basis for providing preventive healthcare in rural areas". With the approval of the State Council, the Ministry of Health began to disseminate the Mishan experiences (Zhang, 1992). By 1957, China had more than 10,000 cooperative medical stations (Xu, 1997).

The commune movement launched in the summer of 1958 provided more robust institutional infrastructure for cooperative health financing. Article 18 of *The General Regulations* of China's first people's commune-the Chayashan Satellite People's Commune, Suiping County of Henan-stated:

"The Commune adopts a cooperative medical system under which members shall pay annual fees based on household size and will not pay any additional charges when visiting a doctor. The commune hospital shall refer special patients it cannot treat to an appropriate hospital for further treatment and assume travel expenses and medical expenses for them. For the time being, no referral shall be made for aging disease and chronic disease patients. When the economy becomes strong enough, the Commune will provide free healthcare."[2]

This was the first time "the cooperative medical system" was mentioned in China. On September 13, the Health News, a newspaper under the Ministry of Health, published an article entitled "Let the Cooperative Medical Scheme Blossom Everywhere," which claimed:

The scheme "is a new medical system for the people and a public welfare undertaking of communist nature. It affords convenience to the people and boosts production. Meanwhile, it can help implement the prevention first principle and strengthen prevention and treatment. So it shall be vigorously promoted nationwide" (Li, 2007).

By the end of September, at least 963 communes in Henan had set up the cooperative medical system, accounting for 71.1% of the total number of communes in the province (Cao, 2006).

During the commune movement, Jishan County of Shanxi was held as a "red banner of rural health". In January 1959, the Sun Village of this county began to implement a cooperative medical system, under which each member shall pay an annual healthcare fee of RMB 2 and receive free medical service. Any difference shall be subsidized by the public welfare funds. Subsequently, this practice was rapidly disseminated across the county (Yue & He, 2007). In November 1959, the Ministry of Health submitted to the CPC Central Committee *A Report on the On-the-Spot National Meeting on Rural Healthcare at Jishan County of Shanxi* and its appendix *"Opinions on Several Issues Pertaining to the People's Commune Health Services"*. The report stated:

"The People's Communes have two major medical systems at the present time. One is user-pay medical service on an individual basis; the other is collective medical service for commune members. On-the-spot meeting attendees unanimously considered it more appropriate to adopt the collective healthcare system for commune members based on the present level of productivity and people's awareness...The collective healthcare system has been sometime refereed to 'collective healthcare' approach or the 'cooperative medical system'" (Zhang, 1992).

This was the first time when the phrase of "cooperative medical system" was mentioned in the central government's document. *The Opinions* advised:

"A small number of economically affluent communes can continue to offer community-run free healthcare but we shall not rush to disseminate this practice. In addition, some communes adopt a user-pay healthcare system; we shall not change it overnight either. Instead, it shall be gradually transformed into the collective healthcare system based on the communes' economic development level and people's awareness" (Zhang, 1992).

Nevertheless, due to the strong push of the CPC Central Committee and the direct intervention of Chairman Mao, the rural CMS grew rapidly. The proportion of production brigades (administrative villages) providing cooperative medical services increased from 10% in 1958 to 32% in 1960 and to 46% in 1962 (Figure 1), according to Anhui Medical University School of Health Management, which has conducted long-term tracking research on the rural cooperative medical system.

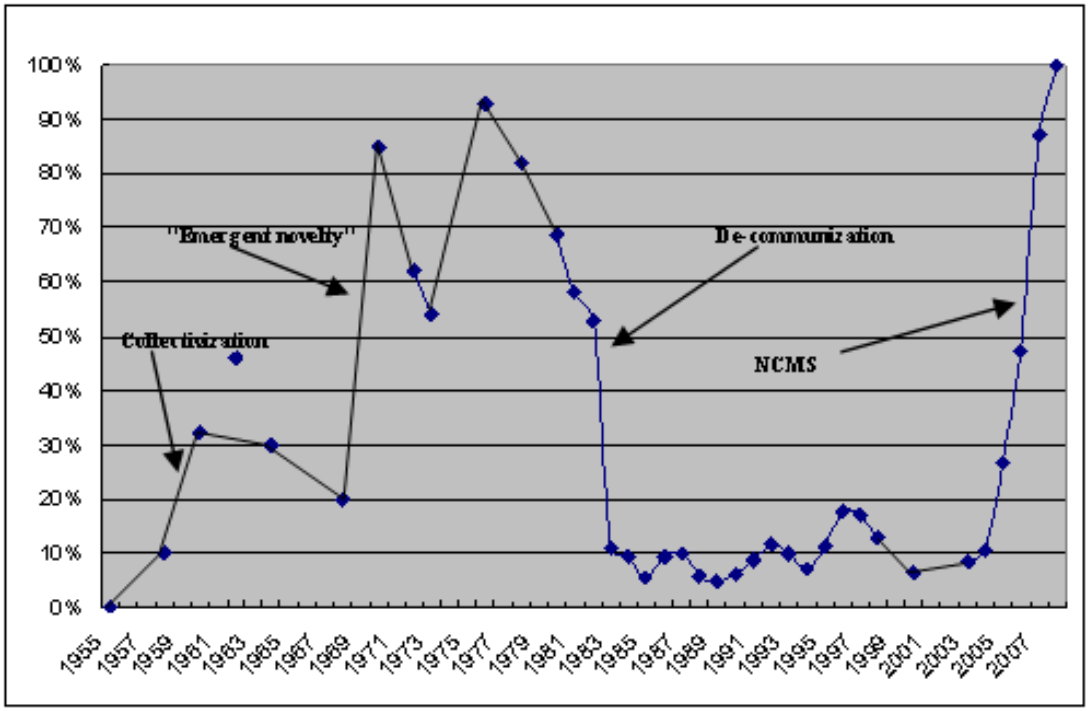

Figure 1: The Proportion of Villages Adopting the CMS (1955-2008)

Sources: The author's databank.

After 1962, the central government drastically readjusted its policy orientation, including its attitude toward rural medical system. In August 1962, the Ministry of Health issued *The Opinions on Adjusting Rural Grassroots Health Organization*, criticizing "some communes for their disposition to provide free medical services". This document stated: "The medical institutions originally established and invested by communes or production brigades can be transformed into entities run by doctors in the event of any difficulty to operate them on an as-is basis". After the

transformation, those entities were supposed to provide user-pay medical services and to assume sole responsibility for their profits and losses (Xu, 1997). With a drastic decline in collective investment, except in a small number of affluent areas, most communes and brigades halted or suspended the cooperative medical scheme. Consequently, the cooperative healthcare coverage plunged into a downward spiral. By 1964, less than 30% of communes and brigades still maintained cooperative medical system (Cao, 2006).

The rural health condition and urban-rural disparity drew Mao's attention in 1964-1965. This turned out to be a period in which Chairman paid utmost attention to healthcare. In those two years, he lashed out at the Ministry of Health for no less than four times, the most famous of which was his "*June 26 Directive*". In a conversation with his medical staff on June 26, 1965, Mao Zedong accused the Ministry of Health of working only for 15% of the population, namely, urban residents, while leaving peasants with few doctors and little health service. He called on "shifting the focus of health work to the countryside" (Yao, 2007b).

It is widely believed that Mao's *June 26 Directive* drew national attention to rural healthcare, thereby resulting in a quick recovery of the CMS that had ground to a standstill since 1962 (Cao, 2006; Xia, 2003). This is simply untrue. Although Mao paid unprecedented attention to rural healthcare around 1965, he concentrated his attention on providing medical services for farmers and training medical practitioners for the countryside, while organizing mobile medical teams to the countryside held key to realizing both objectives. However, mobile medical teams did not provide free medical services for farmers and instead "charged fees at reasonable rates" (Party Committee of the Ministry of Health, 1965). In other words, Mao's *June 26 Directive* did not bring about much change in the rural health financing. As a matter of fact, the proportion of production brigades providing cooperative medical services declined further to 20% in 1968, which was lower than the level in 1964 (Figure 1). Cooperative medical system did not become truly universalized in rural China until after 1969.

Universalization of the CMS

In the summer of 1968, reporters of Wenhui Daily conducted a field investigation in Jiangzhen Commune, Chuansha County of Shanghai and published a report entitled "*Gauging the Direction of Medical Education Revolution from the Growth of 'Barefoot Doctors' in Jiangzhen Commun*e". The report was referred to Mao Zedong by Yao Wenyuan, who was then in charge of the national propaganda machine. After Mao revised the report, it appeared on *The Red Flag* magazine and republished by the *People's Daily* on September 14 (Mao, 1968). Henceforward, "barefoot doctors"

became well-known all over the world. However, "barefoot doctors" addressed only the issue of whether rural basic medical services were inexpensive without touching the issue of health financing. Medical services could hardly be universalized no matter how inexpensive they are without sharing risks.

One month after the "barefoot doctor" investigation report was published, Yao Wenyuan submitted to Mao another report about the CMS operated by the Tiantang Commune, Changyang County of Hubei. The Dujiacun Brigade of the Tiantang Commune had since 1966 practiced the cooperative medical scheme, under which each farmer paid cooperative medical fee of RMB 1.00 per year and the production brigade contributed RMB 0.5 for each participant. As brigade clinic was engaged in growing, harvesting and making Chinese herbal medicine, the costs of cooperative medical services were very low. As a result, peasants only needed to pay RMB 0.05 registration fees each time when they saw a doctor. The herbal medicine was then provided free of charge. The peasants loved this kind of cooperative medical system. In 1967, the CMS was adopted by every brigade under the Tiantang Commune.

After reading the "barefoot doctor" story on the People's Daily in mid-September 1968, Ni Bingwan, a staff member of the Medical Administration Section of the Health Bureau of Changyang County, considered it worthwhile to disseminate the Tiantang Commune's cooperative healthcare experiences nationwide. After conducting a 20-day field investigation at Tiantang Commune with two of his colleagues in early October, Mr. Ni wrote an investigation report. The report highlighted the major benefits of the cooperative medical system，the most important of which was to "resolve the difficulty facing poor and lower-middle peasants who cannot afford to see a doctor or buy medicine".

Once the People's Daily received the report, it held a symposium on the outskirt of Beijing to collect rural residents' feedbacks on the Tiantang Commune's experiences. The symposium reached a consensus that the CMS was a good way of overcoming the rural residents' difficulty in seeing a doctor and buying medicine and it was worth being disseminated nationwide. Referred to by Yao Wenyuan and consented by Mao Zedong, the People's Daily published an article entitled "*The CMS Welcomed by Poor and Lower-Middle Peasants*" on December 5, 1968 together with an *Editor's Note* hailing, "the CMS as a great revolution on the medical battlefront as it has overcome the difficulty facing rural residents who cannot afford to see a doctor or buy medicine" (Revolution Committee of Changyang County of Hubei, 1968). Subsequently, the article was republished by all newspapers and periodicals nationwide. During the next eight years, the Tiantang Commune received more than 50,000 visitors seeking its experiences from every corner of the country (Hu, 2006).

To promote vigorously the cooperative medical system, the People's Daily opened a special column and published 107 editions of *Discussion on the Rural Medical System* in eight consecutive years thereafter (Cao, 2006). Local newspapers also published a multitude of articles aimed at introducing, discussing, and disseminating cooperative medical services and barefoot doctors. In addition, there were also a large number of books published for the same purpose. Under the powerful media push, China saw an all-round upsurge of rejuvenating the rural cooperative medical scheme after 1969 and as a result bringing to life the CMS that had once ground to a standstill. By 1976, the CMS had been adopted by 92.8% of production brigades nationwide and covered 85% of the rural population (Figure 1).

The CMS has three major characteristics that also constitute three necessary conditions for its existence. Firstly, the CMS expenses were shared by collectives (public welfare funds) as well as individuals (fees). Secondly, cooperative medical services were not legally mandatory, but in communes and brigades that adopted the CMS, participation was compulsory and user fees were deducted by collectives before making income distribution at year end. Thirdly, cooperative medical services relied on low-cost barefoot doctors who helped reduce medical costs to an affordable level by growing, harvesting and making Chinese herbal medicine on their own.

Even during the most radical period of the Cultural Revolution, however, the Chinese government never imposed a single model of the CMS nationwide. Instead, the cooperative medical scheme varied significantly by region, brigade, commune and county. First, the risk sharing pool was different as the CMS might be run by brigade, commune, or by both. The brigade-run system was most common. Second, the portion of collective contribution to the medical funds was different. It normally ranged 30%-90% of the funds. Only in a few cases, the total medical costs were covered by the collectives, while in most localities farmers were required to pay a certain amount of fees, usually in the range of RMB 1-3 per person/year (Fu, 2005; Gu, 2006).

It is worth noting that even during its heyday the CMS never covered all communes and brigades nationwide because the government never forced all them to implement such a scheme. Moreover, the CMS did not proceed smoothly even in areas where it was adopted. During the period 1969-1971, the CMS flourished everywhere though without a solid foundation. The proportion of rural areas adopting the CMS fell to 62% in 1972 and 54% in 1973 (Figure 1). Subsequently, the grass-roots rural entities took the initiative in controlling costs, toughening procedures, strengthening management and eliminating waste. Only when extensive experiences in these respects had been accumulated could the CMS coverage rebound to 92.8% of brigades in the nation by 1976.[3]

In the 1970s, China was still a poor country but the nearly universal healthcare coverage afforded basic medical security for majority of rural residents, thereby resulting in a significant

improvement in the Chinese people's health indicators. For example, the average life expectancy surged from 35 years before liberation to 68 years in 1980, while the infant mortality rate fell from approximately 250‰ before liberation to less than 50‰ in 1980. China's healthcare services were internationally recognized for its fairness and accessibility (Newell, 1975; WHO & United Nation Children's Fund, 1975; Stiefel & Wertheim, 1983; Jamison, 1984; World Bank, 1993) and became a model for the World Health Organization to enhance the primary healthcare movement globally (WHO, 1978).

A review of the evolution of rural medical services during the Mao's era indicates that rural China started from scratch with no doctors and drugs and ended up with a CMS characterized by low costs and wide coverage. In this process, inputs from grass-roots played a vital role.

The Decline of the Traditional CMS

When the Cultural Revolution officially ended in August 1977, nobody predicted the CMS to decline swiftly. On the contrary, it was listed in *The Constitution of 1978* as a cause that needed to be enhanced by the nation to safeguard people's health rights. In 1979, the Ministry of Health and other four ministries even jointly released *The Rural CMS Regulations (Trial)*, which was the first regulatory document enacted by government authorities in this regard. *Regulations* defined the CMS as "a socialist medical system established by the People's Commune members through collective forces on a voluntary and mutual-aid basis." It further pointed out: "The Constitution prescribes that the country actively support and develop CMS and tailor medical work to the needs of protecting the health of commune members and developing agricultural production" (Ministry of Health, Ministry of Agriculture, Ministry of Finance, State General Medical Administration & Chinese Supply and Marketing Cooperatives, 1979).

In fact, the second half of 1978 already saw cracks to emerge in the CMS. *Document 37* issued by the CPC Central Committee on June 23 barred commune and brigade from "allocating and transferring human, financial and material resources to conduct non-productive construction" and requested them to "cut non-productive expenditures" (Wu & Zhang, 2006). Subsequently, some localities regarded cooperative healthcare as a system of "the poor eating the rich" and "adding burden to the people". Consequently, "the rural cooperative medical services drastically declined in some Northeastern provinces and were blown away by a gust of wind even in many brigades that possessed strong economic strength." "As cooperative medical services were shut down, barefoot doctors were dismissed as non-productive personnel or brigade clinics were contracted to barefoot doctors who assumed sole responsibility for profits or losses; in many brigades, the peasants found

it difficult and expensive to see a doctor" (Zhang, 1982). Other provinces reported similar problems (Fujian Health Administration, 1979). In 1980, for instance, "the cooperative medical services of many brigades were halted or ground to a standstill" across Henan Province so that some people issued a strong appeal for urgent action to salvage the CMS (Fang, 1980).

Nationally, the proportion of brigades covered by the CMS fell from 92.8% in 1976 to 52.8% in 1982, a 40% drop in six years. During this period, some provincial governments (e.g., Heilongjiang, Jilin, Qinghai and Fujian) enacted regulations aimed at "unswervingly promoting cooperative medical services" but the central leadership was busy implementing the household responsibility system and failed to take a stand on the issue. Then the Constitution of 1982 deleted "the cooperative medical system" from its text. As a result of abolishing the People's Communes in 1983, the rural CMS collapsed like an avalanche and its coverage plunged to 11% (Figure 1).

In the mid through late 1980s, cooperative medical services still existed in the areas of suburban Shanghai and southern Jiangsu where the collective economy was well developed.[4] Elsewhere, however, such services were retained only in a few localities such as Macheng County of Hubei and Zhaoyuan County of Shandong (Rural Economy Team of China Health Economics Association, 1986). As the CMS broke down, the vast majority of village clinics became privatized and the user-pay medical system became dominating again.

Why did the once booming cooperative medical services cease to exist after reform?

The most important reason was the change in the economic basis on which the CMS operated. Only under the institutional environment of a collective economy, could the funds for cooperative medical services be withdrawn and retained directly from the collective economy to ensure a smooth financing path. After the household responsibility system was put in place, the collective economy was very weak and even non-existent in most villages except in some regions where collective enterprises flourished. It was therefore no longer feasible in most localities to support cooperative medical services by withdrawing and retaining collective public welfare funds. The importance of collective economy can be seen by a 40% decrease in CMS coverage as of 1983 when the people's commune system was abolished. In the 1980s when the national cooperative medical services shrank, the rural cooperative medical coverage of southern Jiangsu had long been kept at a level of more than 85% but could hardly be sustained in the 1990s when the collectively owned village and township enterprises there were restructured through "privatization". The experiences of southern Jiangsu confirm that collective economy was the backbone of the traditional CMS.

In addition, barefoot doctor changed its name and nature. *The Rural Cooperative Medical Regulations (Trial)* ratified in 1979 stated that "barefoot doctors should work both as farmers and as doctors and participate in collective distribution" and they should "actively gather, grow, make

and use Chinese herbal medicine and make full use of local medicine sources to prevent and treat diseases". Only under such conditions could the CMS provide basic medical services for farmers at low costs. As a result of the breakdown of collective economy, however, most villages could not afford to pay barefoot doctors reasonable salaries and had no alternative but to sell or contract village clinics to individual doctors, offering them the motivation to seek profits. Meanwhile, it was no longer possible to collectively grow, gather, and make Chinese herbal medicine after the land had been contracted to individual households. The foregoing two changes increased healthcare costs. In early 1985, Health Minister Chen Minzhang officially announced to stop using the name "barefoot doctor" (Chen, Zhang & Chang, 2007).

Another reason was that in much of the 1980s China's top leaders decided to let the rural CMS take its own course. Although they never expressly refuted the rural CMS, some health officials renounced the CMS as an offspring of the Cultural Revolution that had been completely repudiated. These people advocated dissolving the CMS and contracting village clinics to barefoot doctors. They asserted that this was an "inevitable trend" of development (Li, 2007). When the CMS collapsed, they took pleasure in such misfortunes, saying, "This is a great progress". They believed that "the user-pay medical system is here to stay for some considerable time in China" (Zhang, 1985; Zhang, 1987).

The doubt about the CMS caused policy-makers to neglect the past experiences and thus affected the formulation of rural health reform policies (Subcommittee of Medical, Health and Sports of the CPPCC National Committee, 1995). In the early 1980s, carefully worded official documents tried every means to avoid using the phrase "CMS" and replaced it with other terms such as "pooling medical resources" (Cao, 1993). As the central leadership assumed an ambiguous attitude, local officials were no longer interested in supporting cooperative medical services. In a farmer's words, "With no push from the top and no action in the middle, the base simply falls apart" (Zhang, 1987).

Exploring New Models of CMS

That policy-makers took ambiguous attitudes towards the CMS does not mean China's public and private sectors stopped exploring suitable rural health financing models. On the contrary, debates emerged in the mid-1980s as to what financing system should be adopted for rural healthcare. One school of thought argued that China's rural health financing system should adapt to the "world trend" of health insurance; the other school contended that it was imperative to reinforce China's unique CMS (Zhou, 1987). The central leadership still took an equivocal attitude.

In order to adapt to the new situation of invigorating the domestic economy and opening to the outside world, the CPC Central Committee, in September 1985, issued *The Guidelines for Formulating the 7th Five-Year Plan for National Economy and Social Development* requesting to explore a variety of new social security models. Subsequently, the Ministry of Health formulated *The Outline of Health Reform during the 7th Five-Year Plan Period* requesting that China's rural healthcare system should be restructured gradually according to the economic conditions and public willingness of each locality by adopting either the CMS or any other approach. The *Outline* underscored the necessity of actively exploring and developing a health financing system suitable for rural areas (Ministry of Health & State Administration of Traditional Chinese Medicine, 1987).

The Ministry of Health itself leaned towards implementing a health insurance system in rural areas. It endorsed, in 1985, the World Bank's proposal of establishing health insurance in rural China and agreed to conduct "China Rural Health Insurance Experiment" in Jianyang and Meishan Counties of Sichuan under the technical assistance of RAND Corporation. To push forward the experiment, the ministry organized an academic seminar on the rural health insurance in Emei County of Sichuan, the purpose of which was to set the tone that it was imperative to implement the health insurance system in rural China.

"China Rural Health Insurance Experiment" was the first controlled experiment conducted in the area of rural healthcare. It was undertaken in two phases. During Phase 1, Chinese and American experts formed a task force aiming at designing rural health insurance schemes after conducting investigation and research in Jianyang and Meishan Counties for 26 months. At the early stage of Phase 2, the task force conducted pilot experiments in four administrative villages; in the latter stage of Phase 2, the task force undertook experiments in 26 administrative villages. The controlled nature of experiment was reflected in testing seven different insurance schemes in different administrative villages so as to examine the pros/cons and feasibility of each.

Compared with the traditional CMS, "China Rural Health Insurance Experiment" has some distinctive features. First, risk sharing was based on township rather than administrative village for the purpose of enlarging insurance pools and boosting risk-bearing capability. Second, in the areas where experiment was conducted, villagers participated in the health insurance scheme on a voluntary rather than mandatory basis; but to avoid "moral hazard" and "adverse selection", the unit of participation was household rather than individual. Third, insurance premiums could be assumed by collectives or individual households, or shared by both. Fourth, focusing on catastrophic diseases, those insurance schemes covered more inpatient expenses and less outpatient expenses (Shan, Williams & Sine, 2006). As we will see in the following paragraphs, the four features of this experiment influenced the thought of late rural health reforms even though the health insurance scheme itself was eventually refuted.

In addition to the experiment conducted by the Ministry of Health, there were plethoras of health insurance practices pursued nationwide in the late 1980s. Examples included the general health insurance program in Jinshan County of Shanghai and Jianli County of Hubei, the preventive care insurance plan for mother and child in Pengxi County of Sichuan, maternal and child health insurance in Jinzhai County of Anhui, Jicheng County of Shanxi and Shangshui County of Jiangsu, the dental insurance scheme for elementary and middle school students in Yuncheng County of Shanxi (Commentator, 1987). Jintan County of Jiangsu experimented both general health insurance and single item insurance on a piloting basis (Jintan County Health Administration, 1987). Based on a survey of 62,571 peasants in 20 counties, the Rural Healthcare System Research Team of the Expert Committee on Health Policy and Management of the Ministry of Health recommended, in January 1988, four rural health insurance schemes (Luo, 1989). Subsequently rural health insurance exploration was conducted in more localities (Li & Shao, 1994).

It is worth noting that the health insurance experiments conducted in many areas still smacked of a strong CMS flavor even though some experts vigorously advocated for individuals to participate in different insurance plans at their own costs amid the "transition from CMS to rural health insurance system" (Hu, 1987). Under the health insurance scheme of Yuhang County of Zhejiang and Jintan County of Jiangsu, for example, more than 90% of insurance costs were covered collectively with a symbolic amount of money paid by individual participants (Cheng & Zhang, 1987). These counties regarded the call for introducing "health insurance" as an opportunity to "add new contents" to "enhance the vitality" of the CMS (Jintan County Health Administration, 1987). In addition, the CMS was still retained in some areas such as Guangji County of Hubei, Changshu City and Taicang County of Jiangsu, Zhaoyuan County of Shandong and the suburban counties of Shanghai (Cai, 1987). Meanwhile, the user-pay medical system was implemented in the vast majority of rural areas in China.

The diversity of practices makes it possible to explore the superiority and feasibility of different health financing systems. In addition to the health insurance experiments mentioned above, the academia began to conduct a comparative study of different health financing systems in the mid-1980s. In 1987, working together with the Department of Medical Administration of the Ministry of Health, the Anhui Medical University conducted a comparative study of the CMS and user-pay system by surveying around 40 villages with the matching conditions (per capita income, illiteracy rate, age composition, topography and nationality factors) in Hubei, Shandong and Beijing, a half of which practiced CMS and the other half practiced user-pay system. This survey found that CMS was superior to user-pay system in 15 out of the 19 indicators (Research Group, 1988). During 1988-1990, the Ministry of Health set up a task force to make a comparative study of the feasibility and effectiveness of several rural health financing systems using the data collected from a sample survey of 20 counties in 16 provinces. The study again confirmed the superiority of the CMS over others (Research Taskforce of China's Rural Medical and Healthcare System, 1991). In addition to such

nationwide surveys, there were numerous local surveys conducted at the regional, county and township levels. With no exception, all surveys reached the same conclusions: the CMS was superior to the user-pay system; and the vast majority of farmers favored the CMS over others (Zhou, 1987).[5]

At the 58th World Health Assembly held in 1986, the Chinese government pledged to "afford everyone entitlement to basic healthcare by 2000" (Wu, 1988). It was of course impossible to fulfill this pledge within 14 years in the event of keeping the user-pay medical system unchanged for most rural residents. Research results showed unmistakably that only by restoring the CMS could China provide its farmers with adequate access to basic medical services and preventive health services.

To let more people understand this point, Zhu Aorong (1988), a professor who had long engaged in rural medical system research, rebutted point by point many arguments against the CMS and attributed the CMS' downfall to "the result of health regulatory authorities censuring the CMS as a product of 'leftism' and using the propaganda machine to demonize it nationwide". He used survey data to prove that the CMS was well supported by rural residents, while refuting the idea that "the CMS has been outdated and only health insurance represents the 'world trend'". He recommended the central government to reestablish cooperative healthcare as the basis of China's rural medical system.

Facing the fact that over 90% of farmers had no medical security, those who were concerned with the rural health problem gradually reached two consensuses. Firstly, the user-pay medical system not only deprived poor rural residents of the opportunity to access basic healthcare but also caused farmers to fall back to poverty due to ailments (Feng, Tang, Gu, Bloom & Segall, 1994). Secondly, health insurance was not suitable for rural China because the insurers were not interested in rural health insurance due to low profit margins while farmers did not trust the insurers and blamed them for installing complex and incomprehensible formalities. [6]

Under this background, starting from the end of 1988, the central government began to reiterate repeatedly its pledge to realize universal rural healthcare coverage by 2000 and to lay a solid foundation for universal health coverage by "restoring and improving the rural collective health financing system". By 1991, the central authorities began to extensively use such buzzwords as "cooperative medical system" and "collective health financing" and "cooperative health insurance" in official documents (Li, 1991). The frequent use of "cooperative medical system" in central government documents helped put an end to the decade-long dispute on the CMS. However, the vague term "collective health financing" and "cooperative health insurance" suggests that the central policy makers were still hesitating or hovering between CMS and health insurance system and hoping to find to way to combine them together.

Nevertheless, the subtle change in the central government's attitude provided an opportunity for CMS advocates. At the end of 1991, former Health Minister Qian Zhongxin wrote a foreword "Rejuvenating the Cooperative Medical System" for *China Rural Healthcare Management* magazine (Editor, 1991). The magazine also published an article written by Prof. Zhu Aorong and his colleagues, which claimed: "On behalf of more than 900 million farmers, we sincerely and urgently request the ruling communist party and State Council leaders to pay equal attention to the CMS concerning the birth, illness, senility and death of 900 million farmers as to family planning, education and science and technology, to make a decision and communicate it to political leaders at all levels, concretely to press ahead with the cooperative medical system nationwide." This article also pointed out that the CMS was "fundamentally different" from health insurance and recommended replacing the "cooperative health insurance" with the "cooperative medical system" in any policy statement (Zhu, Wu & Ye, 1991). Those scholars directly appealed to top policy-makers because they knew that the Ministry of Health officials had "overemphasized the lack of decision making power and taken a wait-and-see attitude" (Zhou, 1990). Restoring the CMS required more than the change of mind on the part of the Ministry of Health officials and more importantly an explicit support from the highest level of the party/state.

To fix and repair the CMS as the "mesh bottom" of the rural healthcare system, the central government appropriated RMB 20 million to support the reconstruction of rural cooperative medical services in 1991. The budgetary appropriation rose to RMB 75 million in the next year. Meanwhile, 28 provinces and municipalities matched the central budgetary allocation with RMB 2.5 billion appropriated from local treasury over the next two years. Government capital infusion gave a shot in the arm to the rural CMS at the verge of death gasping for its last breath (Bo & Dong, 1993). As a result, the CMS entered into an "Indian Summer" in 1992 (Figure 1).

After Deng Xiaoping paid an inspection tour to south China in 1992, however, the market-oriented reform regained upper hand. In September, the Ministry of Health (1992) reset the tone with *The Opinions on the Deepening of Health Reform*, saying: "In rural areas, we should vigorously push forward cooperative health insurance." The point was driven home by the director general of the Department of Health Policy and Legislation of the Ministry when he said: "Generally speaking, China must follow the health insurance approach, which has been adopted by more than 100 countries worldwide. Of course, our tactics will be different but the basic strategy must be the same" (Zhi, 1992). In consequence, the CMS coverage shrank drastically (Figure 1).

In 1993, the CPC Central Committee issued *The Decisions on Several Issues of Establishing the Socialist Market Economic System* requesting to develop and improve the rural CMS in lieu of "rural health insurance". During the year, based on a nationwide investigation, the Office of Research under the State Council as well as the Ministry of Health submitted a research report entitled *"Speeding up the Reform and Construction of the Rural Cooperative Medical System"*. The

report set out an objective of raising the national rural CMS coverage to 50% during "the 9th Five-Year Plan" period (1996-2000) but the national coverage was less than 10% at that time. How to solve the financing problem? The report recommended "setting up a mechanism of raising funds jointly from the state, collectives and individuals". The crux of issue was how the state would "make joint investment." Would the government use its funding to support the CMS? The report did not elaborate in this respect (Yuan & Chen, 1994).

During the period 1994-1996, the Office of Research under the State Council and the Ministry of Health conducted a special survey on the CMS in 14 counties of 7 provinces, especially in Kaifeng County and Linzhou City of Henan. In July 1996, at the National Workshop on Rural CMS held in Linzhou, State Councilor Peng Peiyun (1996) refuted various "erroneous notions" in a bid to eliminate ideological obstacles to cooperative healthcare. Health Minister Chen Minzhang (1996) said: "The central government now takes a very supportive position on developing and improving the CMS. The question is not whether to go ahead with the CMS but how to get it well done. We should put developing and improving the CMS on top of the agenda of rural healthcare". How? Chen Minzhang was full aware that "financing is the focal and difficult point of cooperative medical services". However, at this point, the official guideline was still to follow a "user-paid, collective-subsidized and government-guided and supported" approach.

Subsequent to the workshop, local governments launched hundreds of pilot projects to promote CMS. All of a sudden, the CMS appeared to have gained strong momentum (Zhang & Yu, 1997). By the end of 1996, the proportion of administrative villages offering cooperative medical services rose to 17.59% (the highest level since 1983), up 6.41% from a year earlier (Figure 1).

The CMS regained traction at that time. At the National Health Work Conference held in December 1996, policymakers reached consensus that the key to strengthen rural healthcare was to develop and improve the rural CMS. After the meeting, the CPC Central Committee and the State Council issued *The Decisions on Health Reform and Development* making it clear that the state encourages all rural areas nationwide to establish and develop the rural CMS on a private-run/government-support and voluntary participation basis with funds raised mainly from farmers and subsidized somewhat by collectives. The role of governments was merely to "support" such endeavors (CPC Central Committee & State Council, 1997).

From mid-1996 to mid-1997, the Chinese government took numerous initiatives aimed at restoring and developing cooperative medical services and hoped to launch a new movement to rebuild the CMS. The results were, however, disappointing. By the end of 1997, cooperative medical services covered only 17% of the administrative villages nationwide, virtually no change from a year earlier, and the proportion of rural residents participating in the cooperative medical scheme was merely 9.6%. "The Second National Health Service Survey" undertaken by the Ministry of

Health in 1998 indicates that the proportion of rural residents participating in the cooperative medical scheme fell to 6.5% in 1998 (Zhang, 2005).

Government's support for cooperative medical services after 1996-1997 was beyond reproach. Then why was it still difficult to restore the CMS?

One reason was that while the central policy-makers encouraged rebuilding the CMS, various central ministries enacted regulations barring any forced attempt to raise cooperative medical funds from farmers, thus pouring a barrel of cold water on the emergent cooperative medical scheme. For this reason, even in Kaifeng and Linzhou, the two cities selected by the Office of Research under the State Council and the Ministry of Health on a piloting program, the cooperative medical scheme was halted (Wang & Ye, 2004).

More important, the traditional CMS might not be able to function even with consistent government policy support because in rural communities without the support of collective economy it was no longer feasible to run the CMS solely by collecting funds from farmers. However, the government failed to realize this point at that time. In the 1990s, the government reaffirmed the CMS mainly because it did not depend on government funding. In statutes enacted prior to 1996 on the channel of cooperative health financing, the central government repeatedly emphasized, "funds raised mainly from farmers together with subsidies from collectives and policy support from governments at all levels". Actually, state budgetary allocation to rural cooperative medical services were miserably meager (RMB 35 million in 1999 or less than RMB 0.5 per head) (Liu, 2004). The problem was that without financial support from the government it was virtually impossible to universalize cooperative medical services nationwide. Before the central government finally decided to lend financial support to cooperative medical services, it had to acquire the willingness and ability to do so.

What shattered the illusion of restoring the CMS without government funding were a series of surveys and controlled experiments conducted in poverty-stricken regions (Table 2). If the practices and experiments conducted across rural China in the 1980s helped the government realize the necessity of rebuilding the CMS, then the practices and experiments conducted in the 1990s led the government to conclude that the traditional CMS was fraught with grave deficiencies in the new situation. Government had no alternative but to provide financial support; otherwise, it will never be able to realize its objective of "setting up various cooperative medical systems in most rural areas by 2000."

Table 2 Selected Rural Healthcare Experiment Projects in the 1985-2005

Project	Organizers	Time	Location	Key Findings
China Rural Health Insurance Experiment and Research	Ministry of Health (MOH), RAND Corporation	1985-1991	Jianyang and Meishan Counties of Sichuan	Insurance premium rates can be set in the range of 1-2% of the per capita income of farmers but it is very difficult to collect insurance payments from farmers
China Rural CMS Reform	State Council, MOH, WHO	1993-1998	14 counties in 7 provinces	Government and collective financial support can boost farmers' enthusiasm for participating in the cooperative medical schemes; otherwise such schemes can hardly survey.
Health Financing and Organization in China's Rural Poverty-Stricken Regions	China Health Economics Training and Research Network, and Harvard University	1992-2000	114 counties of 14 provinces;	• § In poverty-stricken areas, most households can afford to pay less than RMB 10 cooperative medical fees per person per year. • § Government funds infusion played a significant role in smoothly carrying out the project.
CMS Reform and Development under the Conditions of Market Economy	MOH, United Nations Children's Fund	1999		Government funding holds key to the sustainability of medical security for farmers

Strengthening Basic Health Services in China's Rural Poverty-Stricken Regions	Chinese Government and World Bank	1998-2005,	71 poor counties of 7 central and western provinces	Government funding is a necessary condition for running the cooperative medical scheme.
The Best CMS Practices in Rural China	Commission of Planning and Finance, MOH, WHO and UNDP	2000-2002,	Areas where the CMS has been well established	Developing cooperative medical services shall be defined as "government behavior"

In addition, China adopted a different rural medical system in Tibet. Prior to 1997, the residents of Tibet Autonomous Region enjoyed free healthcare services provided by public medical institutions subsidized by the central government. After 1997, using central fiscal transfers, the government of Tibet Autonomous Region set up the cooperative medical funds, subsidizing each farmer and herdsman with RMB 15-30 per year if she/he took part in CMS. Participants themselves only needed to contribute RMB 10-20 per person/per year to the funds. For those poor households that could not afford to pay the fee, the county/township government and village organization would split such costs among them at a specific ratio. This medical system covered the vast majority of population in Tibet. The Tibetan experiences showed that cooperative medical services could be universalized even in poverty-stricken rural areas so long as the government provides strong financial support (Mao, 2002).

All the foregoing experiments and Tibetan experiences pointed to the same conclusion: establishing and maintaining a rural CMS with extensive coverage requires financial support from the government. This completely shattered the illusion of rebuilding a CMS "funded primarily by individual farmers".

Around the mid-1990, a consensus emerged among rural healthcare researchers: Government should assume rather than deny or eschew responsibility for funding the cooperative medical scheme. Otherwise, the universalization of cooperative medical services was unlikely. However, this consensus was not immediately incorporated into government policy because the Chinese government was experiencing the most horrendous financial crisis at that point: the government's fiscal revenue as a percentage of GDP barely exceeded 10% and the proportion of the central

government's fiscal revenue in GDP was merely 5% (Wang & Hu, 2001). At that time, even if the government accepted unshirkable responsibility for the farmers' health security, it was financially incapable of funding the cooperative medical scheme.