Disparity in Health: The Underbelly of China's Economic Development

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Abstract

Today, more than 500 million Chinese peasants lack adequate basic health care and risk impoverishment if they become seriously ill. Studies also show that more than one-third of drugs dispensed to peasants are counterfeit. Public health and disease prevention measures have been neglected, resulting in the SARS crisis and the spread of AIDS. This article explains how such dismal conditions emerged.

For the past decade, the Chinese government has recognized rural health care as problematic but lacks a good model for funding and delivering it. A Harvard team is conducting social experiments to develop an innovative strategy for funding and delivering rural health care. The government is to partner with peasants by establishing a prepayment plan, rather like an HMO, controlled by the peasants, since they would directly benefit from administering a program making health care both affordable and efficacious. This model is also described here.

Introduction

More than 500 million Chinese peasants have inadequate basic health care and face impoverishment when they are seriously ill. Surveys repeatedly found sickness and major medical expenses are the principal worries of peasant households. Chinese National Health Survey (1998) showed that 57% of these peasants had encountered serious barriers of access to basic care, and 71% of peasants who were admitted to hospital were unable to pay, so many decided to forgo therapy or asked for early discharge. Studies found that more than one-third of the drugs dispensed to peasants are counterfeit or expired drugs. Recent studies of low-income rural areas showed 5% of the households fell below the poverty line each year because of medical expenses. Moreover, public health and prevention have been neglected, resulting in the SARS crisis and the spread of AIDS to tens of thousands of people in Henan through tainted blood.

How did China, held up as an exemplary model around the world in its achievements for an equitable and better health for its people in the 1970's, fall into such dismal conditions? What brought about such a decline in the well being of the Chinese people? This article begins with a description of the historical and current condition in health care and health in rural China. We will compare the conditions between the urban and rural areas as an illustration of the tilted government policies that created the disparities between the urban and the rural, and between the rich and the poor. The proverbial saying that a rising economic tide lifts all boats certainly did not apply to the health sector. Evidence shows that infant mortality dropped for people in top income quartiles while rose for the bottom income quartile. After identifying the problems, we will examine the causes for these problems.

The Past and Present

From the early 1950's to 1980, China had a strategy for rural health care that emphasized prevention and public health, making essential drugs and basic health care provided by minimally trained health personnel (barefoot doctors) widely available, and creating an organized three-tiered health care delivery system—village health posts, township health centers and county hospitals. The rural Community Medical System (CMS) was established in 90% of the communes where the commune organized and funded the first two tiers of services. The funding came from the commune's welfare fund, peasants' premium payments, and patients' direct payments at the time of services rendered. The county hospitals were mostly funded by the governmental budget along with charges paid by patients. This strategy made basic health care accessible and affordable and enabled China to make enviable progress in enhancing peasants' health and well-being. It also offered peasants financial protection against large medical expenses. Statistics showed that from 1952 to 1985, infant mortality fell from 200 per 1,000 live births to 34 per 1,000, and life expectancy increased from about 35 years to 68 years. These achievements received worldwide acclaim.

The 1979 agricultural reform changed the Chinese collective farming system into individual household land lease and farming. When communes disbanded, the financial and administrative foundation of CMS disappeared as well. The CMS collapsed and no organized new system was put in its place. The government adopted a position of benign

neglect toward peasants' health care and let each community find their own way. The popular slogan became "let a hundred flowers bloom" in rural health care. Since local communities had vastly different levels of financial and human resources to fund and deliver health care, the end results could be easily predicted. In the meantime, the government also reduced its budget for public health services [this will be explained more fully in the section named The Causes].

Under this new environment, health providers—village health posts, health centers and hospitals—all tried to survive and thrive. Every institution competed with the other and used different means to obtain income from patients. The peasants, unfortunately, were not well-informed buyers of health services, often at the mercy of the providers when they became ill, particularly when they suffered a life threatening condition. Price became the allocative mechanism for rationing health services. Those who could afford health services had access and the poor did not. A common saying among the peasants was, "minor illnesses, you bear them. Major illnesses, you drag them out." Of course, peasants would hardly demand preventive services since they did not deal with life threatening conditions. The government provided very little funding for prevention and health education. These programs disappeared, and the government only tried to maintain the immunization program. Even the anti-epidemic stations had to turn away from preventive and public health activities, opening personal curative service clinics to generate income because their budget would not cover their salary.

By the early 1990's, strong evidence began to emerge on the disparities in health care and the poor state of health affairs. Data showed that health care and health of the urban population had improved significantly, particularly in the rich coastal regions of China. On the other hand the rural population experienced a much lower rate of improvement. More importantly, the health conditions of the lowest income quartile of peasants had deteriorated. In a national study that randomly surveyed peasants in thirty lower income counties, the study found the average real (adjusted for inflation) income of the peasant had increased by more than 50% from the late 1970's to 1980's. However, the median infant mortality rate had increased from about 50 per 1,000 live births to 72 per 1,000 live births.

By way of illustrating, Table A compares three aspects of health condition between the urban and rural population. It shows that only seven percent of peasants have any form of insurance. Almost all of them have to pay directly out-of-pocket for health care when they are ill. A much higher portion of the urban population has insurance coverage as wll as much higher income. The immunization rate for the rural population is lower than among urban residents, despite government efforts to immunize all children. As for infant mortality, there is a five-fold difference, on average.

Table A: Comparison of Urban and Rural Health Conditions

	Insurance Coverage, 1999	Immunization Coverage, 1999	Infant Mortality Rate, 2000
Urban	46%	96%	11.8
Rural- All	7%	84%	37.0
Rural- Western Region	3%	78%	52.3

Even among peasants, there have been significant disparities by income group. Table B presents a few statistics to illustrate the disparity. Ability to pay determines who has access to health care. The top third income group uses many more (50%) in-patient hospital services than the bottom third. The bottom third income group has to spend, on average, close to 20% of their income for health care. Recent studies found that, on average, peasants spend 8% of their income on health care.

Table B: Comparison by Income Group of Rural Residents: Hospital Use and Spending for Health Services

Income Group	Annual Hospitalization Rate, 1996	Percent of Net-Income Spent on Health Care, 1996
Bottom third	4.1	19.8%
Middle third	5.7	11.4%
Top third	6.4	6.6%

The Causes

These dismal conditions were largely due to two policies—fiscal and laissez-faire—that the government had adopted for the rural health sector since the early 1980's. Like other transition economies, when China moved from a socialistic central planning economy to a capitalistic market economy, the government's role had to change. Also, the government's revenue was expected to plump. China's newly decentralized fiscal policy assigned to local governments the responsibility for providing education and health services to the people. Yet, local governments had little taxing power to raise the revenue to support these activities. The formula used by the central government to share its tax revenue with local governments favored the rich regions. As a result, peasants, residing mostly in poor regions, had few health services.

The government's revenues as a percent of GDP had dropped drastically since the 1979 economic reform, declining steadily after the economic reform began from 35% of GDP in 1978 to 12% in the mid-1990's, and rebounding to 16% by the end of 1990's. With the decline in revenues, public financing for health was cut accordingly. More importantly, health was not a priority on the central government's agenda. The share of the government budget spent on health was also cut. For example, the government financed 28% of total health expenditure in 1978, but only 11% in 1999.

Regional disparities were exacerbated by the central government's tax sharing and transfer policies. Theoretically, a primary function of a central government involves equalizing the disparities within the nation. The central government ought to collect more tax revenues from rich regions and households, and redistribute the revenues to poor regions and households. Instead, China did the opposite. The tax sharing formula

favored the more economically developed regions. The tax transfers favored the urban residents, who on average were relatively wealthier. The central government's health budget was mostly allocated to the urban areas.

Coupled with this inequitable and inconsistent fiscal policy, the government adopted a laissez-faire policy with regard to rural health care. The health posts, health centers and hospitals were free to obtain large profits from selling drugs and use new expensive medical technology to fund their operations, since the government funding for health services was dwindling. Meanwhile, peasants were left without any insurance to pay for their health care, forced to pay whatever they could from their own meager incomes. Poor peasants could not afford to pay, and even the richer peasants could hardly afford the high cost of hospitalization.

China's laissez-faire policy privatized the basic health services and created a largely unbridled free health market system in the rural area. The privatization of health services and profit taking in the health sector became widespread in China. Village doctors (upgraded barefoot doctors) became private practitioners, practicing without adequate training and regulation. They earned their living by selling drugs and giving intravenous injections, and often bought the cheaper counterfeit drugs to dispense to patients. Peasants lacked adequate medical knowledge to provide checks and balances to the village doctors. Most of the township health centers continued as community-owned or public institutions, but they operated very much like private organizations because the government no longer regulated and monitored what they did. These centers obtained their income mostly from charges to patients. County hospitals remained public institutions, but again relied on charges to patients for their income and lacked sufficient regulation to control overuse of drugs, tests and other abuse. Since 95% of peasants had to pay their medical expenses out-of-pocket, they bore the high cost of medical services (many resulting from misuse of high cost drugs and tests). Excepting immunization, prevention was neglected. Health centers and hospitals earned revenues by using more expensive drugs and technology that gave them higher profits. These problems continue to exist today.

These policies have caused more than financial problems. The organization of health care delivery also suffers from significant inefficiency and poor quality of health care. Township health centers are overstaffed and facilities are underused. Facility and staff capacities are guided by government planning. These guidelines do not consider the demand side of the equation. Moreover, the funding of current operations has to come from fees, which peasants simply cannot afford. As a result, a health professional staff worker in one of these centers only sees an average of 2-3 patients per day, and the beds are occupied only about 30% of the time.

Another source of inefficiency comes from pricing policy. The most lucrative source of income is from drugs—the higher the price of the drugs and the more drugs dispensed, the greater the net income for the health providers. Consequently, health providers overuse drugs and use the more expensive drugs even if cheaper substitutes are available. Some experts believe that these practices inflate rural health care costs by at least one third.

The Future

For the past decade, the central government has recognized the serious health problems in rural areas, particularly in the central and western regions of China. However, the solutions to the problems are not obvious because there is ideology that lies behind each policy solution. Some policymakers believe that health care is a necessity of life. Economic development and people's ability to work and learn depends on their health. Thus, the government must assure equitable access to health care for its people. Other policymakers believe otherwise. They believe in self-reliance and suggest providing health care through the free market, leaving health care to the individual's ability and willingness to pay. Moreover, different solutions require different amounts of the government's fiscal commitment. Some solutions would mean a reallocation of government's resources between the urban and rural areas, and between the rich and the poor. The losers in such a reallocation naturally oppose such a move.

Nonetheless, the Chinese government made a major policy decision in late 2002 to remedy the above-mentioned rural health problems. This is presented in the following section.

The Harvard Social Experiments in Reforming Rural Health Care in China

Harvard School of Public Health has had a sustained research and education program in China for over twenty years. This program formed a network with eleven major universities throughout China to educate health economists and health services researchers. By the mid-1990's, the network completed several nationwide empirical studies that documented the dire rural health conditions. The evidence from these studies led the Chinese Communist Party Central Committee and the State Council to hold its first National Health Conference at the end of 1996 to formulate new policies to reform the health care for the peasants. However, these were rhetorical policies, since the central government provided little fiscal support. Finally, in 2002 the central government took a concrete step.

In October 2002, China announced a new funding strategy: community-based health insurance. The government will entice peasants to enroll in a prepayment scheme by providing each person a subsidy of $2.50, amounting to about 15% of the peasants' current out-of- pocket spending for health care. If a peasant prepays at least $1.25 into an insurance scheme, the government will pay the subsidy to the scheme to supplement the peasant's payment. The scheme will offer an insurance benefit package to the enrollees and manage how the payments will be made to providers. However, *how* such a scheme will address the multiple problems explained in earlier sections has been left open. The central government encourages local governments to experiment with different schemes and find the best ones that can be replicated throughout China.

Rural Mutual Healthcare

A team from Harvard had initiated the planning of social experiments on the rural health care system before the government announced its new subsidy policy. The experiments were designed to address several problems: inadequate financing of rural health care, lack of adequate access to prevention and basic health care, impoverishment of peasants from large medical expenses, poor quality of basic health services, use of counterfeit drugs, and inefficiencies of the current health care delivery system. We labeled the new system 'Rural Mutual Healthcare'. It is being conducted at two low-income rural counties in the western region of China: Zhenan county, Shaanxi province and Kaiyang county, Guizhou province. Zhenan's peasants have an average annual income of approximately $180 per person in 2002, and in Kaiyang, $220. The experiments cover about 60,000 people.

The basic premise of RMHC is to increase public funding for the peasants and significantly improve productive efficiency of health care. The strategy in achieving these outcomes is integration of funds from the government and peasants into a prepayment scheme, turning the decision-making power and control to peasants who have the greatest interest in making RMHC work and produce benefits at minimum cost.

While the Chinese government will allocate more funds for the health of the peasants, it will not provide an adequate amount. Meanwhile, the Chinese peasants are spending out-of-pocket an average of 8% of their income for health. Combining and integrating the two sources into a prepayment scheme could improve efficiency and equity, and reduce impoverishment. Under RMHC, the government funds the public goods, subsidizes low-income households to motivate the peasants to enroll, and pays the premiums in full for the very poor (approximately 15-20% of the population.)

The social experiments have to answer two critical questions that emerge: How much are farmers willing to prepay? How can a RMHC entice peasant to prepay for their health care? For farmers to be willing to prepay, certain basic conditions must be satisfied. We hypothesize that at least two factors influence their willingness to prepay: economic benefits and social capital. First, the expected economic value of health benefits and insurance, E(B), has to be greater than C, the premium. For this principle of E(B)>C to hold, the health services offered must be those preferred by the patients. For example, the RMHC has to assure that primary care services and drugs are accessible at locations close to the peasants.

Prepayment involves risk pooling and insuring people against large financial losses. However, pooling the risk among the people in a community leads to cross subsidy between the healthy and the less healthy. Healthy people expect fewer tangible benefits than the sick, so they will enroll only when premium is very low. Yet, the success and sustainability of a RMHC depends on its ability to attract a large number of healthy and young people to enroll along with the less healthy people. The social capital such as mutual concern for each other's welfare in a community could have significant influence on people's willingness to prepay, even when an individual household is uncertain whether the expected benefit would be greater than the premium. Peasants may enroll for community solidarity reasons.

Table C shows the skewed distribution of health expenditure. It illustrates the difficulty of pooling risks of a community on a voluntary basis and the potential adverse selection that can occur. In a given year, 1% of the households spent 20.7% of the total health expenditures in a rural community of approximately 10,000 people, 10% of the people spent about 61.0% of the total. Approximately 70% of the low spending households spent 14.8% of the total expenditure while 30% of farmers had no expenditure. The challenge for a RMHC is attracting a significant portion of those low users to enroll.

Table C: Contingent Table on the Distribution of Households' Total Annual Health Expenditure in Zhangjai Town, Zhenan County, China (population: 9784). 1999

Top % of households	Accumulated amount spent (in RMB)	Accumulated spending as a percentage of total health expenditure
1%	96,040	20.7%
5%	242,530	42.1%

10%	330,378	61.0%
20%	408,967	77.9%
30%	442,590	85.2%
40%	458,602	92.6%
50%	463,577	97.7%
60%	464,831	99.9%
70%	465,104	100%
80%	465,124	100%
90%	465,124	100%
100%	465,124	100%

Source: From claim data of Zhangjai Town's CMS, compiled by author

In order for a RMHC to attract a large percentage of households to enroll, it must satisfy three conditions. First, it must make its scheme attractive by improving the efficiency in producing health services and lowering the cost of drugs. By reducing the cost of production, the RMHC can offer peasants larger benefits for the same amount spent, and more peasants are likely to enroll.

Second, the location of primary care and drugs must be available within a reasonable proximity. However, local governments have not shown the capability to manage thousands of clinics at the village and township level. Achieving the efficiency gains and shifting the supply of primary care to the village level where peasants live require a major reform of the delivery organization and its management.

Lastly, farmers have another concern about prepayment. Household interview surveys consistently found that peasants do not trust local government officials. Corruption is a major concern, as well as excessive spending on staff compensation and services that have less value to the patients. Consequently, the organization that manages the fund must have peasants' trust and confidence before they will enroll. The RMHC could be sponsored and managed by any existing local community organizations, such as agricultural cooperatives. This third aspect—people's confidence and trust in the organization managing the fund—is a precondition for the RMHC's success.

In designing the RMHC scheme, our primary concern was to offer benefit packages that the peasants were willing to prepay. The considerations included the services preferred by the peasants, and assurance of drug safety, and a quality level that met peasants' expectations. We also had to improve efficiency to increase the ratio of E(B) over cost. To achieve these purposes, we turned the decision-making power and control to peasants who had the greatest self-interest to make RMHC work and produce desired benefits. We developed a democratic process in which peasants at each village elect a local committee that assists in the governance of the village health post. Each committee elects a member who serves on the Fund Board at the township level where the risks are pooled. Rather than having a government fiat, the Board decides on the package to satisfy peasant demand. This approach, we believe, will increase the sustainability of RMHC.

The peasants, through a Board, manage and control a Fund Office that finances and organizes village health posts that deliver prevention and basic health care—a mini HMO. The best-qualified village doctors are selected on a competitive basis, employed and compensated by a salary plus a bonus. Other than treating simple and common diseases, others will be referred. Village posts stock essential drugs, purchased through a central drug distribution system to assure safety of drugs at minimum cost. These measures remove the incentive for village doctors to over-prescribe or use counterfeit drugs. The Fund Office also contracts for services from health centers and hospitals.

Our early experiences show that more than 70% of the residents at the RMHC pilot sites are willing to enroll and prepay. The peasants, on average, are willing to prepay an amount that matches the subsidy. The total fund organized comes to $5.00 per person per year. With this fund, the RMHC assures peasants' access to preventive and basic health care, improves efficiency by at least 25% while improving quality of services and safety of drugs, and drastically reduces the chances of being impoverished by high medical expenses. Of course, the $5.00 can't cover the services in full, so the peasants must still pay approximately 50% of the cost of services and drugs when they receive the services.

We also discovered that the local community has greater managerial capacity to manage the services for the patients' benefit at the village level. The enrollees can monitor the efficiency and quality of services much more effectively because they can directly experience the availability of the staff, drugs and supplies, the technical competency of the practitioner, and the quality of custom services provided. Enrollees can also observe daily the cleanliness of the health facilities. Naturally, peasants have limited knowledge in managing larger organizations such as township health centers or medical affairs. Thus, medical professionals in township health centers and hospitals must manage the more complicated medical services.

The sheer number of poor Chinese peasants (500 million) makes it difficult to find one generic solution. Moreover, China is vast, with varied local traditions and beliefs, socioeconomic conditions, epidemiology, weather, health facilities, and human resources. Any generic rural health care model must be modified to suit local conditions. Going to scale with any successful pilot scheme requires that we know the generalizeable aspects—the fundamental features and dynamics that make the scheme successful. Then we will be able to replicate it and teach it to others, as the Harvard team aims to do. Our experiments aim to discover these essential aspects of RMHC, based on theory, practice and evidence. If RHMC proves to be successful, then it may become a major model to fund and deliver basic health care to the rural population in China.