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The Great Reversal: Transformation of Health Care in the People's Republic of China

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On October 1, 1949, Mao Zedong proclaimed the founding of the People's Republic of China (PRC) from the Gate of Heavenly Peace (*Tienanmen*) of its capital, Beijing. During the three decades after 1949, the PRC, under Mao's leadership, developed a central planning socialist system that emphasized public ownership and welfare, mass-based collectivism and egalitarianism, and de-emphasized the role of the market in the delivery of various services and products. But in 1978 Deng Xiaoping took over the leadership of China and set China onto a new course: the PRC has been undergoing dramatic market reform, privatizing formerly public systems, enterprises, and institutions, de-collectivizing rural communes, emphasizing individual responsibilities, and allowing an increase in social inequality (Hinton 1990; Leung 1994; Wong 1994; Weil 1996; MacFarquhar 1997; Meisner 1999). This political, economic, and social transformation was described as "the great reversal" by Hinton (Hinton 1990), the author of the classic, *Fanshen: A Documentary of Revolution in a Chinese Village* (Hinton 1966).

During Mao's era, the PRC impressed the world by developing an innovative and successful health care system, with a great emphasis on preventive public health. This system included the development of the cooperative medical system; the use of barefoot doctors; the implementation of health programs through mass movements; the integration of traditional Chinese medicine and western medicine; and increased emphasis on the health of the rural population. However, during the past two decades of market reform, the PRC transformed its health care system into a very different one. Increasing emphasis has been placed in curative medicine and the cooperative medical system has been mostly dismantled. Barefoot doctors no longer exist – most have been professionalized by becoming village doctors and many moved to more profitable jobs. Mass mobilization is no longer an official imperative and there is a new focus on medical

technology. The policy towards the integration of traditional Chinese medicine and western medicine has been shifting toward a greater reliance on western medicine; and increasingly, resources have been shifted from rural to urban areas. Indeed, the drastic transformation of health care in the PRC since the market reform was launched in 1978 represents "the great reversal" of the former health care system developed during Mao's era. In this chapter, we will (1) discuss the major components of the health care system before reform and its impact on health status; (2) describe the changes in the health care system which occurred after the reform and the consequences of these changes on health and health care; and (3) the implications of the great reversal of health care for China and the world.

Health Care Before Market Reform

In the century before the PRC was founded, China suffered from many devastating civil as well as anti-imperialist wars. The PRC inherited a land of depressed economic and social conditions and of people with rampant infectious, parasitic, and nutritional diseases (Sidel and Sidel 1973). Life expectancy in the immediate postwar period is estimated to have been less than 35 years and the infant mortality rate, about 250 per 1000 life births (Jamison et al. 1984). The health and medical workforces then were woefully inadequate in the face of the enormous health problems facing the Chinese people. The majority of the medical providers were traditional Chinese medical practitioners and herbalists, many of whom lacked adequate training for preventing or treating epidemic diseases (Sidel and Sidel 1973; Sidel and Sidel 1982). Nationwide preventive programs did not exist (Sidel and Sidel 1973).

Confronted with these conditions, the PRC had to develop a health care system which could effectively deal with its people's immediate health problems. The most common model adopted by developing countries facing similar health conditions at that time was a western model or modified western model. The major characteristics of this model are (1) its heavy dependence on expensively trained and highly skilled and specialized medical personnel; (2) its emphasis on high medical technology; (3) its curative orientation; and (4) its focus on individual health care rather than public health projects (Li and Wang 1995; Wilenski 1976). This model may be suitable for the industrialized countries where mortality rates have fallen along with the increase in the standard of living, level of nutrition, and sanitation. However, for the developing countries, this model proved inappropriate. Limited national resources prevented these countries from training sufficient numbers of highly-skilled western medical providers fast enough to meet urgent health care needs. Moreover, once graduated, the majority of these medical providers clustered in the urban areas, leaving rural residents with inadequate care; costly medical technology is mostly available for urban residents; curative-oriented medical services and personal health care provided by small numbers of highly-skilled medical personnel cannot effectively resolve the uncontrolled infectious and nutritional diseases of the poverty-stricken population in particularly poor rural areas (Wilenski 1976).

The PRC was one of the few countries which moved away from the conventional western model and developed an innovative system which depended heavily on less skilled health workers, whose training can be completed in a much shorter time; developed labor-intensive approaches rather than capital-intensive medical technology; emphasized prevention and primary care; and concentrated more on public health programs than on individualized care (Rifkin 1972; Rifkin 1973; Wilenski 1976; Maru 1977; Wilenski 1977; Blendon 1979; Sidel and Sidel 1982).

Soon after the revolution, the PRC developed four guidelines for its health and medical work (Wilenski 1976; Sidel and Sidel 1983). These guidelines set the framework for the development of PRC health care system for the following three decades. They are as follows:

1 The health care system should serve the workers, peasants, and soldiers;
2 Prevention should be put first;
3 Traditional Chinese medicine should be integrated with western medicine; and
4 Health work should be carried out through "mass movements."

Serving the Workers, Peasants, and Soldiers and Prevention First

Before the PRC was founded, peasants and workers were, socioeconomically, the most disadvantaged population and infectious, nutritional, and parasitic diseases were most prevalent among them. The PRC, in building a socialist country, held peasants, workers, and soldiers[1] to be the most important groups served by the state, and this was reflected in the orientation of its health care system (Sidel 1975; Wu 1975). Prevention, rather than the treatment of diseases, was also emphasized. During the three decades after 1949, the PRC, compared to virtually all countries in the world, placed much greater emphasis on preventive rather than curative health services (Jamison et al. 1984).

Major public health campaigns were launched to improve environmental sanitation; to eliminate "four pests" – rats, flies, mosquitoes, and bedbugs;[2] to eliminate venereal diseases; to control the vectors of major endemic disorders such as malaria and schistosomiasis; and to immunize the population against many infectious diseases such as smallpox, diphtheria, and tuberculosis (Heller 1973; Sidel and Sidel 1973; Wilenski 1976; Jamison et al. 1984; The Editorial Committee for New China's Historical Experience of Preventive Medicine 1991). To ensure the successful implementation of these campaigns, the PRC developed a basic preventive health infrastructure throughout the country. Many public health workers were trained and sanitation and epidemic prevention centers or stations were developed in rural communes[3] and urban districts (Heller 1973; Rifkin 1973; Sidel 1975). These centers/stations carried out and managed these public health campaigns by coordinating with health workers from production brigade health stations, commune health centers, and other health and medical institutions (Rifkin 1972; Heller 1973). The most unique feature of these campaigns was that they were carried out through mass mobilization. This mass mobilization was essential for the successful implementation of the public health campaigns and will be discussed in the later section.

Cooperative Medical System

Cooperative Medical System (CMS) (*Ho-zuo Yi-Liau*) is a financing and delivery system in rural China which provided peasants in communes with preventive services, primary care and curative services. In 1949, about 85 percent of the 800 million Chinese lived in rural areas (Sidel 1975; Hu 1976). Before the CMS was fully developed, peasants had to pay for their medical care on a fee-for-service basis (Feng et al. 1995). However, with the rural area undergoing agricultural collectivization, this fee-for-service system was becoming an anomaly within the collectivized system (Zhang 1960). Subsequently, experiments with cooperative health care organization and financing began in the mid-1950s, when the trend of agricultural collectivization was on the rise (Zhang 1992; Feng et al. 1995). Because CMS was effective in implementing preventive programs, ensuring the early diagnosis and treatment of peasants' illnesses, and consolidating the commune health organization, the Communist Party and the government encouraged and facilitated its development in rural areas (Zhang 1959). CMS was developed further and expanded rapidly in many rural communes during the Cultural Revolution in the 1960s and 1970s. Up to 1976, about 93 percent of communes had established CMS (Zhang 1985; Feng et al. 1995; Carrin et al. 1999).

Commune welfare funds and membership fees were the two major funding sources for CMS. The contribution from collective funds varied among communes, from 30 to 90 percent, with an average of 50 percent. The annual membership fees ranged from 0.5 percent to 2 percent of peasant income (Carrin et al. 1999). The membership fee was calculated from the commune's previous year's CMS expenditure and thus could change over a period of time.[4] In most communes, peasants had to pay a nominal registration fee and part of the hospital fees if they were referred to the county hospitals for the treatment of more serious diseases for which the CMS clinic did not have the appropriate skills or facilities. CMS provided health education, family planning, immunization, communicable disease reporting, and other preventive services, and basic medical care (Zhu 1989). A management committee composed of brigade leaders, barefoot doctors, and peasants managed the CMS (Zhang 1966; Zhu 1989). The barefoot doctor – to be discussed later – was the key health worker for the CMS.

Because the commune financed CMS itself (primarily with collective funds and membership fees), it was highly motivated to contain the cost of CMS (Wen and Hays 1976). The cost-containment strategies were carried out at four levels. First, the central state and local governments encouraged communes to ensure a successful implementation of the "prevention first" policy and public health campaigns so that fewer diseases would occur in the commune and consequently would reduce the medical expenses of CMS. Secondly, the CMS endeavored to provide patients with preventive or primary care before peasants' disease became worse as they were aware that it is more costly to treat diseases once they have become more serious. Thirdly, in order to reduce the cost of drugs, CMS avoided the over-use or abuse of drugs and the communes grew, collected, manufactured,

and utilized extensively local herb medicine rather than more expensive western medicine. Fourthly, CMS limited the referrals to county hospitals where the cost of care was higher than that provided by the CMS clinics. The barefoot doctor served as the gatekeeper for these referrals (Zhang 1965a; Zhang 1965b; Kwangchow Provincial Institute of Maternal and Child Health Care 1978; Hu 1981; Zhu et al. 1989).

CMS provided peasants with access to basic care regardless of their economic situation. It also saved the peasants' time which they previously had to spend in traveling long distances to seek medical care; CMS made the primary care services accessible and available from the barefoot doctors or other health workers at the level of production team and production brigade, geographically close to the peasants. In addition, it strengthened the status of the commune health center and the training of its personnel as funding was ensured (Zhang 1965a; Feng et al. 1995).

In urban areas, the two major types of health financing and delivery systems were the Public Expense Medical Service (*Qong-fei yi-liao*) and Labor Insurance Medical Service (*Laobao yi-liao*). The former, introduced in 1951 and financed by the government, covered the state cadres and students, accounting for approximately 2 percent of the population in China. The latter, also introduced in 1951 and financed by the factories and firms, covered fully the medical expenses of their workers and staff members and 50 percent of those of their family members (Hu 1976).

Barefoot Doctors

The term, "barefoot doctor (Chi Jiao Yi Sheng)"[5] was the nickname the peasants in Shanghai rural area affectionately gave to their fellow peasants who spent part of their time farming and part of their time doing medical work (*ban nong ban yi*) in the late 1950s (Report of An Investigation from Shanghai 1968). In 1958 – at the beginning of the Great Leap Forward[6] and at the peak of agricultural collectivization and socialist idealism (Zhu et al. 1989; Meisner 1999) – a large number of physicians in Shanghai organized themselves to go to the rural areas and train, in short term classes, a great number of peasants as health-workers. The idea was that the peasant health-workers, while providing their fellow peasants with health and medical services, would not be divorced from production (Report of An Investigation from Shanghai 1968; Peking Review 1974; Peking Review 1975). During the Cultural Revolution, at the same time as the CMS was expanding rapidly in rural communes, the number of barefoot doctors was also increasing dramatically (Zhu et al. 1989). By 1978, there were 1.8 million barefoot doctors in rural China (Chen et al. 1993). On average, there were about 3 barefoot doctors in each production brigade (Wang 1975).

Each production team chose its barefoot doctor. The most important criteria was his/her willingness to "serve the people" in an unselfish way. Other criteria such as education, age, and personal interests were secondary (Sidel 1972a; Ronaghy and Solter 1974; Huang 1988). The pattern of training of the barefoot doctors differed among communes. However, all emphasized prevention and the treatment of common illnesses and the training period was about three to six

months (Wang 1975). The training program was carried out most often in the county hospitals and sometimes in commune health centers or in the production brigade by a mobile medical team coming from the urban areas (Lyle 1980). Great emphasis was placed on the on-the-job supervised experience and continuing education,[7] of which the expenses were paid by CMS (Wang 1975; Lyle 1980).

The work of the barefoot doctors varied among communes or among production brigades within the commune (Sidel 1972a). However, they had in common certain duties including preventive work such as health education, immunization, environmental sanitation, first aid, and public health campaigns and the provision of primary care for common or less serious illnesses (Sidel 1972b; Hu 1976). Note that these duties are also the major work of the CMS, as barefoot doctors were responsible for carrying out the work of the CMS. The barefoot doctor received his/her income similarly to his fellow peasants. The commune worker's income depended on the total income of his/her commune and the number of "work points" that he/she collected. The barefoot doctor's health and medical work was also considered part of agricultural work and calculated by "work points" (Sidel and Sidel 1983; White 1998).

The system of barefoot doctors in rural China, in comparison with the western model of health personnel training, has several unique features. First, a large number of barefoot doctors can be trained in a short period of time to meet the urgent health and medical personnel needs of rural areas. Second, because the barefoot doctors work together with their fellow peasants, they know who is ill and what diseases to watch for at various seasons better than western-trained medical providers coming from urban or other areas. Third, the barefoot doctor, having the same role (i.e. being a peasant) as the patients treated by him/her, can serve better as the advocate of his/her patients than a highly-skilled medical provider coming from a different area. Further, engaging both in farming and health work helps reduce the gap between manual and intellectual work and consequently avoids the problem of the elite medical provider having a much higher status than that of patients, as is often the case in a society based on the western medical model (Report of An Investigation from Shanghai 1968; Wei 1975; Miao 1976; Sidel and Sidel 1983). Fourth, the use of barefoot doctors popularized not only health care but also health knowledge, and consequently health care was no longer a privilege for certain groups and medical providers were not the only ones who had access to medical knowledge (Chinese Medical Association 1974; Chu and Tien 1974; Wang 1975).

Lastly, the use of barefoot doctors de-professionalized medical providers and revolutionalized the conventional western medical education.[8] The western medical professions are usually resistant to the training of less-skilled health workers who can perform simple health work and treat common diseases on the ground that these health workers would lower the professional standard (Kao 1974; Wilenski 1976). The use of barefoot doctors broke this professional resistance and created a new role for health workers. In sum, the PRC, using its imagination, trained a great supply of barefoot doctors within a relatively short period of time by maximizing its use of its most abundant resource – labor, and minimizing its dependence on expensive high technology or highly-skilled

medical personnel. As a result of this policy, the PRC was able to successfully meet the great challenge of the serious lack of medical personnel in rural areas (Wang 1975; Wilenski 1976).

Mass Mobilization in Health Work

To the CCP, the revolutionary war could only be waged and won by mobilizing and depending on the masses (Mao 1934; Xu 1960; Wilenski 1976). This tradition was based on the conviction that ordinary people, given the right kind of knowledge, appropriate motivation, and power, can resolve complex problems (Horn 1972; Chin 1973). The "mass line" approach was applied to health work because Chinese leaders recognized that rapid and dramatic improvement in the health status of the masses could not be achieved without the full participation of the masses (Yang 1958; Sidel and Sidel 1983). By getting the Chinese people involved in the health campaign, they became more knowledgeable and more conscious about their own health problems and thus were more likely to change their behavior in order to protect their health. Another dominant theme for the PRC's nation-building under Mao's leadership was the national pursuit of "self-reliance (*zi li geng sheng*)." The mass line approach in health is also based on China's "self-reliance" policy, in which ordinary Chinese people were mobilized to solve their own health problems (Sidel 1975; Wilenski 1976).

Mass mobilization was realized mainly through "patriotic health movements." These health campaigns were usually nationwide. Although the campaigns were conducted about four to five times throughout the year, the most intensive mobilization was usually carried out during the slack season of the agricultural and industrial work. The patriotic health movement committee at each of the national, provincial, county, commune, and brigade levels was responsible for the implementation of the movement (Guizhou South East Miao and Dong Minority Autonomy Region Local History Editorial Committee 1993; Guangzhou Local History Editorial Committee 1995). The committee at the brigade level was often chaired by the brigade barefoot doctor (Jamison et al. 1984). During the campaign, all means of communication (e.g. newspapers, radio, pamphlets, wall posters, cartoons, lectures, group discussions, drama, street propaganda, exhibits, etc.) were used to encourage the people to engage in simple public health activities from street cleaning to burying snails (Wilenski 1976; Sandbach 1977; Schwartz 1977; Sidel and Sidel 1982). The campaign stressed preventive work including immunization, environmental sanitation, and the elimination of disease-causing pests.

Integration of Traditional Chinese Medicine with Western Medicine

Traditional Chinese Medicine (TCM) is the oldest form of medical knowledge and practice in world history. Over four thousand years of Chinese civilization, TCM has been essential to the maintenance of the health and thus the survival of the Chinese people. With the introduction of western medicine into China in the late nineteenth century, however, the efficacy of TCM and its practitioners have

been under critical challenge. Strongly influenced by western scientific ideology and impressed with the remarkable advancement of western technology, many Chinese people favored western scientific medicine over their own traditional medicine. Western medical practitioners and others in Chinese society have criticized TCM as "unscientific," "superstitious," and "unreliable" (Croizier 1968; Lee 1981). Traditional medicine has been similarly undermined in many other developing countries. Very few countries, in developing their national health care system, were able to maintain the status of the practitioners of their national traditional medicine. Nor were they able to incorporate these practitioners into their formal health care system successfully (Wilenski 1976). Indeed, the health care system the PRC inherited was based on the western model which greatly suppressed TCM practitioners (Chen 1947; Wilenski 1976).

When the PRC was founded, China had very few western- trained medical providers and the majority of them practiced in urban areas. Nevertheless, more than ten times the number of traditional practitioners were available in both rural and urban areas (Sidel and Sidel 1973; Wilenski 1976). It was necessary to rely on them in order to serve the people more effectively. As a result, the PRC declared in the early 1950s the integration of traditional and western medicines as one of the four basic guidelines for the organization of the PRC's health care system (Wilenski 1976; Sidel and Sidel 1982; Guangzhou Local History Editorial Committee 1995). From 1954 to 1960 Mao intensified the PRC's policy of promoting traditional medicine. State policy stipulated that western medicine must learn from TCM in their practices as a part of their continuing education. Further, schools of western medicine were required to include TCM in their curricula. Many national TCM colleges were built and TCM practitioners trained (Croizier 1968; Hillier and Jewell 1983; Huang and Lin 1986). Intensive research into the efficacy of TCM, including acupuncture and various herbal remedies, was conducted and the new discovery of TCM remedies were made (Wilenski 1976; Anching Local History Editorial Committee 1996).

Rural Emphasis in Health and Medical Work

Many of the PRC's public health programs such as patriotic health campaigns started right after the founding of the state in both urban and rural areas. However, the PRC's policy toward the provision of rural medical services was not firmly established until 1965 (Hu 1976; Wilenski 1977). A greater proportion of the public health workers trained during the 1950s were concentrated in urban areas and many more medical and sanitation facilities were built in urban areas (Heller 1973), while most of the resources of the Ministry of Public Health were spent in urban areas as well (Lyle 1980). This situation was becoming dissatisfactory for some state leaders who were concerned about the rural population's needs. By 1955, Mao had started criticizing the Ministry of Public Health for being more responsive to urban than to rural medical needs (Lampton 1977). Indeed, until the mid-1960s, only 20–40 percent of the physicians were located in rural areas where about 85 percent of the population resided (Hu 1976). The famous June 26 directive issued by Mao in 1965 initiated severe

criticism of the urban bias of the Ministry of Public Health and set the new directions for rural emphasis in medical and health work:

> Tell the Ministry of Public Health that it only works for 15 percent of the entire population. Furthermore, this 15 percent is made up mostly of the "overlords." The broad ranks of the peasants cannot obtain medical treatment and also do not receive medicine. The Ministry of Public Health is not a people's ministry. It should be called the Urban Public Health Ministry or, the Ministry of Public Health for Urban Overlords. . . . In medicine and health, put the stress on the rural areas! (Wilenski 1976; Mao 1974)

Mao's directive also inspired a huge flow of urban physicians and health workers into the countryside in the "rotation" *(Xia Xiang)* (Qien 1965; The Chinese Communist Party Committee of the Peking Tuberculosis Research Institute 1975; Yuan 1975). It was estimated that in some urban hospitals, up to one-third of the staff was practicing in rural areas. These medical providers spent about six months to one year – usually in mobile medical teams – in rural areas. During their rotations, they provided medical care and preventive services, trained barefoot doctors, organized and educated the community in health protection and promotion, and obtained their own "re-education" by learning about the peasants' health problems (Sidel 1972b). Many of these urban medical and health providers – approximately 100,000 – settled in rural areas (Maddin 1974; Wu 1975). After Mao's directive was issued, the state placed much greater emphasis on the health and medical work of the rural areas. For example, the central government allocated about 60 percent of the national health expenditures to the rural areas after the Cultural Revolution. This compared to 20–30 percent before 1965 (Hu 1980).

The Impact of the Health Care System

The above-described health care system developed in PRC before market reforms, although impressive in many aspects, also had its problems. For example, even a decade after Mao's criticism of the Ministry of Public Health for its urban bias, medical care remained more accessible and of higher technical quality in urban areas (Sidel and Sidel 1983). The financial self-reliance of the CMS gave the commune the total control of its own people's medical care and health protection but also led to disparity of care among communes, with the rich ones having an adequate system but the poor ones receiving inadequate care (Huang 1988). The quality of barefoot doctors was uneven because of their highly decentralized training (Hsu 1974). Some barefoot doctors were criticized for occasionally attempting to perform tasks too complex for their level of skill and training (Hsu 1974; Sidel and Sidel 1983). In addition, in the poor communes, barefoot doctors' turnover rates were high because of their low income and heavy workload (Hsu 1974). Further, despite the national policy of encouraging the integration of TCM and western medicine, traditional medical practitioners continued to have less status than western medical doctors (Sidel and Sidel 1983).

Nevertheless, as pointed out by Sidel and Sidel (1983), the above problems are small compared to the internationally-recognized achievement the PRC made in developing a successful health care system, breaking with the conventional western model, and developing innovative programs suitable for the unique conditions which China faced during the first three decades after the founding of the state. Indeed, impressed with this achievement, the World Health Organization made the PRC's health care system the model for its worldwide Primary Health Care initiative formulated at the 1978 Alma Ata conference (Jamison et al. 1984; Yang et al. 1991; Chen et al. 1993; White 1998). Furthermore, the PRC's unique health care innovations have profoundly influenced how the health care professionals in other developing countries think about designing health care programs suitable for their own countries rather than copying blindly the western model (Jamison et al. 1984).

The improvement in the Chinese people's health status after 1949 is also internationally recognized: many epidemic diseases such as smallpox, cholera, and venereal diseases have been eliminated and parasitic diseases such as schistosomiasis and malaria have been greatly reduced; life expectancy rose from less than 35 years in the immediate post-1949 period to almost 70 years in the early 1980s; infant mortality rate declined from an estimated 250 per 1000 life births in 1950 to a rate lower than 50 in 1981. In 1980, the PRC's life expectancy was longer than many countries with substantially higher income levels. The increase in life expectancy in the PRC between 1960 and 1980 exceeded other countries in the world to a very significant extent.[9] The World Bank report on China's health sector hailed this success in health to be the "first Chinese health care revolution (Jamison et al. 1984)." It should be noted, however, that the PRC's success in health care was not the only factor contributing to this great improvement in health status. Increasing levels of education, availability of food, more equal distribution of food, and the improvements in water supply and sanitation all contributed to this impressive advancement in Chinese people's health status (Jamison et al. 1984). Indeed, the PRC's health and medical work was only one part – albeit an integral part – of the restructuring of the whole Chinese society.

The characteristics of any country's health care system are determined by the country's political and economic system (Hsu 1977; Albrecht and Tang 1990). The unique public health programs and health care system the PRC developed during the three decades after 1949, as pointed out by many researchers (e.g. Liang et al. 1973; Vogel 1973; Hsu 1977; Blendon 1979; Parmelee et al. 1982; Sidel and Sidel 1982), were possible because of the particular configuration of political, economic, social, and ideological conditions during that period of time. However, the market reform orchestrated under Deng's leadership completely undermined these foundations and the health care system based on these foundations would soon crumble. The reformed health care system would in turn reflect the political, economic, social, and ideological characteristics of the new societal structure developed by Deng and other market reformers.

HEALTH CARE SYSTEM UNDER MARKET REFORM

The health condition faced by the PRC in the late 1970s, when Deng and his government launched the market reform, was substantially better than that confronting the PRC in 1949. Nevertheless, the Chinese people in this period continued to be afflicted by many old and new health problems. Parasitic and infectious diseases were still prevalent in some part of China, particularly in rural areas. Furthermore, China was undergoing a health transition, with chronic diseases such as cancer, heart disease, and stroke replacing infectious and endemic diseases as leading causes of deaths (Jamison et al. 1984; Bumgarner 1990; Zhang and Chen 1996; Ministry of Health 1997).

This change in health condition, although serious, should have been a manageable challenge for the PRC's market reformers, considering that the reformers had inherited from Mao's era (1) a well-organized health care system which had been proved to be effective in improving Chinese people's health; and (2) a much larger health care workforce than in earlier decades after 1949.[10] Therefore, it seemed logical that the PRC would use the already-established health care system to continue the nation's previous endeavor to eradicate the infectious and endemic diseases still prevalent particularly in rural areas. For the prevention, control, and treatment of the newly-emerging chronic diseases, it might also have seemed natural for the health sector to continue adopting the existing programs (such as the "prevention first" emphasis and the mass mobilization program) while further upgrading and refining the health workers' skills and developing new programs for the prevention and control of chronic diseases. However, the PRC's reformers did not follow this path.

As a result of the market reforms that were underway, the system of rural communes had by the early 1980s been largely dismantled, agricultural production was de-collectivized, and a new "household responsibility system"[11] was introduced. The market reform and the responsibility system also swept through urban areas. The PRC devolved economic decision-making to individual enterprises and institutions that would operate on a profit-making basis (Meisner 1999). The market reform in both the rural and urban areas undermined the political, financial, economic, and ideological foundation of the health care system and consequently the former system has been collapsing. Furthermore, the reformers, many of whom were victims of the Cultural Revolution (the most prominent being Deng Xiaoping himself who was ousted from power twice during 1966 to 1976 (Weil 1996)), dismissed all policies – including health care innovations – developed, expanded, or popularized during the Cultural Revolution (Zhu et al. 1989; Chen et al. 1993). The health policies and programs described earlier were consequently abandoned rapidly after the reform. Instead, the reformers moved the PRC's health care system toward a western model – curative-oriented, personal care-oriented, high-technology-oriented, hospital-based, capital-intensive, commodified, and urban-biased – the exact model that the PRC had rejected during the early years of the founding of the state (Yang et al. 1991; Smith 1993; Henderson et al. 1994).

The Neglect of Public Health Programs and the Move toward Curative Services

Along with the market reform, the government stipulated that health care financing be based on the principle of financial self-sufficiency (*Zi Fu Ying Kui)* (World Bank 1992). As a result, the economic environment created by the reform all over China has become inhospitable to public health goals. The epidemic prevention center no longer has adequate funds from the government[12] for widespread surveillance, sanitation, control, or immunization programs. In an effort to become self-sufficient financially, the center has been providing services that have few health benefits but which can help the center recover costs,[13] rather than providing essential preventive services or implementing public health programs that are not profitable[14] (World Bank 1992). Further, the center has been charging fees for preventive health services such as immunization and treatment services for infectious diseases such as tuberculosis. As a result, the access to such services, particularly for the poor, has been reduced (Hsiao 1984; World Bank 1992, 1997; Tang and Gu 1996). Organizationally, because each health institution is financially independent, the center no longer has the power to solicit the collaboration from other health institutions[15] (World Bank 1992).

Many other health institutions have been oriented toward treatment and curative services with a relative neglect of preventative public health programs because the former are more profitable (Wegman 1982; World Bank 1992; Cheung 1995; Bloom 1998; Cai et al. 1998; Henderson and Stroup 1998). The health sector has increased the percentage of health expenditure for hospitals and treatment costs but decreased that for prevention programs. Increasing amounts of health-care funds are being used to purchase advanced medical technology while the funding for disease prevention has stagnated (Henderson et al. 1988). In short, prevention now has very low priority in health budget planning (Hu 1987; World Bank 1992).

The Dismantling of the Cooperative Medical System

The CMS was integrally linked to the collectivization system (White 1998). "Without the agricultural collectivization movement, there would not have existed a rural cooperative medical system," Qien Xinzhong, PRC's former Public Health Minister, candidly pointed out (Qien 1993). With the disappearance of communes and the completion of the de-collectivization in rural areas, the political and ideological backing and financial support for the CMS from the state was eroded (Young 1986; Zhu et al. 1989; Chen et al. 1993; Liu et al. 1995). Regardless of the strong support for the CMS among peasants, the CMS were entirely dismantled. In fact, some villages wanted to maintain their CMS but were discouraged from doing so (Chen et al. 1993). As a result, the percentage of villages having CMS decreased from more than 90 percent in 1976 to 4.8 percent in 1986 (Feng et al. 1995). In the 1990s, even with the backing of local government and the encouragement of the central state, this percentage was only increased to 7 percent in 1997 (Tang 1997).

With the collapse of CMS, most villages could not afford to pay their health workers a salary and thus these workers had to move on to other jobs. Many village health clinics (formerly brigade health stations) were sold to individual medical practitioners or contracted out to them. Before the market reform, all health clinics were collectively owned but by 1990 this proportion had been reduced to only 47 percent (Feng et al. 1995). Primary health care in rural areas has largely fallen under private control (Aldis 1989; Hillier and Zheng 1990). By the late 1990s, about 90 percent of peasants were paying for their health care out of their own pockets on the fee-for-service basis (Aldis 1989; World Bank 1997). This lack of insurance protection and limited access to care is particularly serious in poor rural areas (Henderson and Cohen 1982; Gu et al. 1993). The profit-orientation of the private practitioners leads to the neglect of preventive services and the move toward the provision of curative services because the former are not as profitable as the latter. Peasants even have to pay for preventive services such as immunization and maternal and child health services (Aldis 1989; Zhu et al. 1989; Chen et al. 1993; Feng et al. 1995).

Alarmed by the serious problem of financial access to health care in rural – particularly poor – areas, the PRC government has been promoting rural health prepayment schemes – similar to the Health Maintenance Organization in the US (Cretin et al. 1990; Ho 1995; Tang 1997; Bloom and Tang 1999). Nevertheless, participation in such schemes is voluntary, and studies have reported that few peasants are persuaded of the value of insurance schemes and consequently many are reluctant to engage in the risk-sharing these schemes are based upon. In fact, some such plans have collapsed (Tang 1997; Bloom and Tang 1999; Carrin et al. 1999). This insurance plan may be possible in villages with sucessful enterprises which generate high profit rates (Khan et al. 1996) but is difficult in poorer areas (Gu et al. 1993; Tang 1997).

The market reform has also had significant impact on health care in urban areas. Two major insurance systems – the Public Expense Medical Service and Labor Insurance Medical Service – have been undergoing profound changes. The cost of these two insurance systems has been escalating since the reform due to, among other reasons, general inflation, aging of the population, rapid adoption of high-tech medicine, and the abusive use of expensive drugs (Liu and Hsiao 1995). For example, the annual rate of increase for the periods 1952–78, 1978–85, and 1985–9 was 3.1, 8.2, and 24.4 percent respectively (Liu and Hsiao 1995). This cost escalation and the eroding ability of the state to transfer sufficient funds to the insurance system has led the state to rationalize the systems by instituting a nationwide copayment policy and decentralizing the financial responsibility to cities and enterprises (Bo and Dong 1993; Gu and Liang 1993; Ding 1994; Cai 1995; Grogan 1995; Zhou 1995).

Consequently, public employees and state enterprise workers are no longer guaranteed free health services. Further, this rationalization also led to a great inequality in financial access among cities and among enterprises; the public employees in the poorer cities and workers in the enterprises with low or no profit rates have to pay a higher percentage of copayments and are covered by fewer services. In addition, as an increasing number of people migrate to the cities and the number of joint ventures and collective and private enterprises

grows (which the government does not require to provide health insurance coverage for), an increasing number of people in urban areas are left uncovered by any form of health insurance (Grogan 1995).

From "Barefoot Doctors" to "Village Doctors"

Before the reform, the commune's work point system and the collective funding of the CMS supported the work being done by barefoot doctors (Cheung 1995). Unsurprisingly, with the dismantling of the communes and the CMS, the number of barefoot doctors decreased from 1.8 million in 1975 to 1.4 million in 1982 and then to 1.2 million in 1984[16] (Sidel and Sidel 1983; Zhu et al. 1989; Smith 1993). The household responsibility system and the increase in the price of agricultural products after 1978 made agricultural work more lucrative. Therefore, many barefoot doctors spent less time in health work than on farming. Further, many found jobs in township or village enterprises, engaged in trades, or migrated to cities to find higher-income jobs (Zhu et al. 1989).

One of the most important themes of Deng's reform is its emphasis on "expert" (professional skills) over "red" (political attitudes) (Meisner 1999). With the reform underway, barefoot doctors are required to take examinations and once passed, they are certified as "village doctors." The training period has become longer – six months or more (Zhu et al. 1989). Upgrading the barefoot doctors' skills is imperative as the demand for better quality health services grows stronger and the treatment of the more prevalent chronic diseases is more complex. However, the training now focuses more on theoretical rather than practical issues and more on clinical and curative treatments than on prevention (Sidel and Sidel 1982; Koplan et al. 1985). Many barefoot doctors want to become certified because certification advances one's reputation and brings higher income, possible government employment, promotion, or subsidies (Chen et al. 1993; Smith 1993; White 1998). Most village doctors are in private practice and thus are profit-driven. There have been many reports of over-prescribed drugs, unnecessary injections, and other artificially induced demands and as a result, practitioners neglect less profitable activities like providing preventive services (Young 1989). In sum, the professionalization of barefoot doctors, in which they were transformed into village doctors, and the subsequent privatization of health-care has led to the loss of the innovative essence of the barefoot doctor system – the fact that it was designed to be a de- professionalized grass-roots health care system, intended to meet the needs of peasants. Health care is back under the control of medical professionals.

Mass Mobilization Dropped out of Health Work

The integration of health work with mass movements has been ostensibly dropped out of the national guidelines for health work (see, e.g., World Bank 1992; Xu 1995). In Mao's era, the commune would subsidize peasants, based on the work point system, for participating in the patriotic health campaigns (Cheung 1995). Now that this system no longer exists, the number of peasants involved and their time spent in the health programs decreased dramatically

(Sleigh et al. 1998). The patriotic health movement committees at various levels lack the authority to call for the participation of the health workers and peasants. This is partly due to the shortage of funding and the decreased integration between levels – village, township, and county – of health authorities (Cheung 1995). The mass-based organizations that helped mobilize people for health campaigns before the reform, including the Women's Federation and Communist Youth League, do not have the government's support for their involvement in the campaigns (Cheung 1995). Most organizations have been streamlined under the market reform and as a result their ability to get involved in additional activities such as health mass-movement is greatly reduced.[17] The inspiring atmosphere of cooperation for the community's health promotion and the ideology of "serving the people," which were an integral part of the success of the mass-mobilization for health in Mao's era, have been replaced by competitive value of the market and an ideology which holds that "getting rich is glorious" (Sidel 1993; Cheung 1995).

From the Integration of Traditional Chinese Medicine with Western Medicine to a Greater Reliance on Western Medicine

The support for TCM remains an important aspect of the PRC's national health policy (World Bank 1992; Xu 1995). But there are clear indications that, in comparison with the before-reform era, TCM is not as prominent and in contrast, there is increasing reliance on western medicine (Zhang 1981; New 1982; Sidel and Sidel 1982; New and Cheung 1984; Zhu et al. 1989). As a result of the reforms herbal gardens are nowadays not as common as they were before the reforms (New 1982). Many herbal medicine stores have been closed. The research on TCM or herbal medicine is now a lower priority in the local government's health agenda (Zhang 1981). With the dismantling of the communes, there is no more collective support or funding for organizing the mass-scale expeditions to collect, grow, and produce traditional Chinese or herbal medicine. A study of the villages of southwest of Yunnan Province, for example, revealed that before the reform 40–80 percent of the medicines used in these villages were based on TCM. But by the 1990s about 80 percent of their medicines relied on western pharmaceuticals (White 1998). Foreign pharmaceutical companies, in collusion with hospital interests, have been importing a great quantity of western pharmaceuticals into the Chinese medical care market. The manufacturers of TCM, not as competitive, are losing their market share (China Times 1998).

The Shift of Emphasis from Rural to Urban Areas

The inequality between rural and urban areas in health resources and health status declined during Mao's era, particularly after Mao's June 26 directive was declared in 1965. However, this trend has been reversed under Deng's market reform (Henderson 1990). After the reform, the state health budget for the urban areas increased significantly at the expense of the rural areas (Smith 1993; Liu et al. 1995; Hillier and Shen 1996; Bloom 1998). The state has been providing and allocating greater resources to train highly-skilled medical personnel, construct capital-intensive medical facilities and hospitals, and purchase capital-intensive

equipment, all of which tend to be concentrated in urban areas (Young 1989; Hsiao 1995; Bloom 1998; Liu et al. 1999). As a result, the local and national governments have been withdrawing their resources from rural areas. The ratio of health expenditure per capita between urban and rural areas increased from three times in 1981 to five times in 1990s (Hillier and Shen 1996). Rural health centers have also experienced serious shortage of skilled personnel. Moreover, their personnel receive little supervision and in-service training (Young 1989; Shi 1993; Liu et al. 1995).

Although "serving peasants, workers, and soldiers" is still part of the national rhetoric, peasants and workers are no longer the major national health care concern. Peasants must for the most part provide for their own in their health maintenance and promotion. The "iron rice bowl" (*Tie Fan Wan*) policy, in which workers are guaranteed of free health care and other welfare benefits, has been completely dismantled (Leung 1994; Wong 1994). Most workers have to pay a significant portion of their medical costs and many do not have insurance coverage. Furthermore, the protection of workers' health and safety in the workplace, an issue taken seriously by the state during the rule of Mao, has been deteriorating as the central state and particularly the local governments are now driven by an overriding economic imperative to generate high rates of profit (Chen and Chan 1999). Given this significant decline in health and welfare benefits, it is not surprising that many peasants and workers have been reportedly feeling betrayed or abandoned by the state (Weil 1996; Hinton 1990).

The Impact of the Market Reform on Health Care Access and Health Status

The market reform after 1978 has led to impressive economic growth in China. The gross national product has increased 9 percent annually since the reform was launched (Liu et al. 1999) and the per capita disposable income (income after tax) has increased 6.1 percent annually (after adjusting for inflation), more than three times the rate in the US (Hsiao and Liu 1996). Nevertheless, this economic growth has not brought equally improved access to health care or better health status to the Chinese people. Although the PRC's total health expenditure has been increasing rapidly – 10.9 percent per year between 1978 to 1993 (Bloom 1998) – access to health care has not improved for majority of the population. The percentage of the population uninsured has increased considerably, from 29 percent in 1981 to 79 percent in 1993 (World Bank 1997). The majority of the uninsured population live in rural areas. Furthermore the central state and local governments have exacerbated this problem by shifting health care resources to urban areas.

Consequently, the gap in access to health care and health status between rural and urban areas has been widening drastically (Shi 1993; Liu et al. 1995; Bloom 1998). Further, while the two urban health insurance systems, Public Expense Medical Service and Labor Insurance Medical Service, cover only 15 percent of China's total population, they absorb two-thirds of the state's budget on health (World Bank 1997). This inequity of health care access between urban and rural areas is growing worse. In a recent study of poor rural counties it was found that

30 percent of the county villages had no village doctors; 28 percent of peasants did not seek medical care because they could not afford the costs; and 25 percent had to borrow money and 6 percent had to sell their assets to pay for their medical care (Hsiao and Liu 1996). Another survey conducted in 1994 indicated that about 59 percent of rural patients refused professional recommendations for hospitalization because of their inability to pay, compared to 40 percent of urban patients (Liu et al. 1999). In addition, about 30–50 percent of the rural poor become poor because of the financial losses incurred from their illness (Hsiao 1995; Liu et al. 1999). The gap in access to health care between various socioeconomic groups within both rural and urban areas has also been increasing as the income disparity between socioeconomic groups widens (World Bank 1992; Grogan 1995; Hsiao 1995; Bloom 1998; Liu et al. 1999).

The change in Chinese people's health status after the reform is mixed. The overall health status of the Chinese people has generally improved after the reform but at a much slower pace than during Mao's era. The incidence of infectious diseases has decreased while that of chronic diseases has increased (Liu et al. 1999). A recent study indicated that the height of children aged two to five increased from 1975 to 1992 but the increase has not been equal for rural and urban areas (Shen et al. 1996). Changes in other health status indicators are in fact alarming. Despite the rapid economic growth, the infant mortality rate has stopped declining since the early 1980s (World Bank 1997; Liu et al. 1999). The under-five mortality rate, a robust and reliable national health indicator, has stagnated since mid-1980s. This causes concern, as the rate for many countries undergoing similar economic growth did not plateau as PRC's did. There have been reports of unexpected outbreaks of communicable diseases in some areas (Zhang 1985; Zhu et al. 1989; Liu et al. 1995; Hillier and Shen 1996; World Bank 1997). The average life expectancy has changed little, from 68 in 1982 to 69 in 1993 (Hsiao and Liu 1996).

In almost every health status indicator, urban population does better than the rural population and this gap is clearly increasing (Bloom 1998; Liu et al. 1999). For example, while the infant mortality rate in urban areas has been steadily declining since the early 1980s, the rate in rural areas increased in the 1990s. In fact, a study of 30 poverty-stricken counties in China found a distressing trend: the infant mortality rate in these poor regions increased from 50 per 1000 live births in the late 1970s to 72 in the late 1980s (Liu et al. 1999). With income inequality increasing in both rural and urban areas (Hinton 1990; Weil 1996; Meisner 1999), health inequality between different income groups in both areas is also likely to grow worse.

Implications of PRC's Health Care Transformation

The great reversal of the health care system in China before and after the market reform represents a dramatic example of how a health care system can be affected by drastic changes in the political, economic, and social systems. Most studies on the PRC's health care system and its transformation have praised the design and implementation of effective public health and medical care programs and the improvement of Chinese people's health status up to the reform and

lamented the dismantling of such programs after the reform was launched. Some researchers warned the PRC of the potential problems of adopting the western medical model – i.e. the development of curative and tertiary care at the expense of public health programs and primary and secondary care; the emphasis on urban medical care at the expense of rural health care; increasing health inequality between urban and rural areas and between income groups; escalating health care costs; and other problems confronting the industrialized countries whose health care system is run primarily by market forces and on the western medical model. The authors of the three major World Bank reports on the PRC's health care (Jamison et al. 1984; World Bank 1992; World Bank 1997) present the most significant example of researchers[18] who both praise the PRC's previous health care achievement and warn of the dangers of health care reform. These authors warned the PRC not to follow the western medical model which relies greatly on curative and high-tech medicine[19] and not to let market forces dictate health care provision.[20] Indeed, for reasons yet to be studied – probably in response to the suggestions of the World Bank and other foreign researchers or because of a fear that the health care may deteriorate to the extent that it might endanger the state's legitimacy – the PRC has reinitiated and encouraged the rural cooperative medical systems since 1994 (Bloom and Tang 1999; Carrin et al. 1999).

Is it possible for the PRC to reestablish the successful health care programs developed and carried out before market reform? Several factors make it rather unlikely. First, the reversal of the PRC's former political, economic, and social system under the market reform, as mentioned previously, has undermined the foundation of the former health care system. Secondly, another important factor leading to the PRC's unique health care system was the strong national confidence derived from Mao's policy of self-reliance. This instilled in popular consciousness the conviction that the Chinese people could mold a unique future by their own efforts. In a great contrast, after the reform, there has been a rebirth of blind admiration of the West and subsequently, a loss of national confidence (Meisner 1999). In health care, the PRC ended its policy of strict technological self-reliance and started importing medical technology from the West shortly after the reform. Furthermore, there is widespread admiration for the western medical model among health professionals and within the state (Blendon 1981; Sidel and Sidel 1983). Moreover, the fact that the PRC will soon be joining the World Trade Organization, thus becoming more integrated with the world system, makes China even more vulnerable to western influence. Thirdly, while "serving the people" and working for the collective good was the ideological norm in Mao's era, the competitive values of the market dominate the reformed society. Fourthly, the reformed health care system has already generated great disparity between regions and socioeconomic groups and created vested – both domestic and foreign – interests which have benefited and are still reaping profits from the new system (see, e.g., Bell 1998; China Times 1998). In the light of the above factors, this chapter has to end on a pessimistic note: short of another social revolution, it may not be possible to reintroduce the former health care system developed during Mao's era. Consequently, the current reformed western model-oriented system may well continue to determine the course of development of China's health care system.

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Notes

1 Majority of soldiers were from peasants in rural areas.
2 Originally sparrows were designated as one of the four pests. However, when it was found that elimination of sparrows led to ecological problems, bedbugs replaced sparrows as one of the four pests (Horn 1969).
3 Communes, with about 10,000 to 60,000 population, were the basic economic, political, and social units in rural China. They developed during the late 1950s when land reform was implemented and collectivization was carried out. The smallest subdivision of the commune is the production team, with several hundred members who live close to each other. Several teams combine to form production brigade, which usually have wider responsibility in health and other collective responsibilities. A commune is typically composed of about ten to thirty production brigades. The commune is the lowest level of formal state power in the rural areas and is responsible for its people's education, welfare, health, and other collective matters. Above the commune are the county and provincial authorities (Sidel and Sidel 1982).
4 For example, in 1972, a commune in Chekiang Province had fewer serious illnesses than before and grew and used herbal medicine more extensively and, as a result, the annual membership fee in 1973 was reduced from 1 yuan (equivalent to US $0.45 then) to 0.35 yuan (Hu 1976).
5 The term "barefoot" reflects the fact that the role of these medical workers is mainly peasants. But they did wear shoes most of the time particularly when they perform health and medical work (Sidel and Sidel 1982).
6 Great Leap Forward was an ideological and economic movement PRC carried out in China from 1958 to 1960. The ideological basis of this movement is that the economic development should rely on the "revolutionary enthusiasm" of the masses. The economic aspect of the movement aimed at the industrialization of the rural areas in order to resolve the potential problems of unemployment in the cities and the underemployment in rural areas (Meisner 1999).
7 For example, in a production brigade in Fujien, a barefoot doctor's continuing education regarding gynecology, internal medicine, surgery, immunization, and Chinese medicine accumulated to more than four years within her 16 years of practice as a barefoot doctor (Huang 1988).
8 Under the western medical model, medical providers are professionalized: only those who have a long professional education and are licensed or certified to practice are legally allowed to provide medical services.
9 According to World Bank's estimates, PRC's life expectancy increased by 27 years between 1960 to 1980, in comparison with 15 years for low-income countries, 9 years for middle-income countries, and 4 years for industrial capitalist countries (Jamison et al. 1984).
10 For example, in the 1980s, with the exception of dentists, the medical personnel (including western medical doctors, medical assistants, traditional medical practitioners, and nurses) to population ratios were better than the average in developing

countries (Jamison et al. 1984) and these ratios were a result of an increase of many folds since 1949 (Sidel and Sidel 1982).

11 In the household responsibility system, a peasant family is held responsible for the production of a given lot and can sell the production over the quota paid to the local government to the free market and keep the profit (Weil 1996).

12 For example, the funding for the Epidemic Prevention Service, the national level institution for prevention programs, as the percentage of GDP reduced from 0.11 percent in 1978 to 0.04 percent in 1993 (World Bank 1997).

13 For example, the epidemic prevention center had been testing water quality for factories, certifying foods and cosmetics for hygiene for the enterprises' commercial use, and conducting physical examinations of industrial workers for which a fee could be charged (World Bank 1992). Further, a 1994 survey revealed that the county epidemic prevention stations, by charging for preventive service and other specialized services such as lab tests or physical examinations of enterprises' employees, raised 56 percent of their budgets themselves and the county maternal and child health centers raised 67 percent (Bloom 1998).

14 For example, the environmental sanitation programs have been neglected (World Bank 1992). Using the control of schistosomiasis as an example, it was reported that, due to the neglect of the public health programs, snail habitat was increasing and the spread of heavy infestation was wide and persistent since the early 1980s (World Bank 1992).

15 During Mao's era, the barefoot doctors and other health workers from the production brigade health station and commune health center were the major workforce for public health campaigns. These health workers, under the market reform era, are independent providers and thus the epidemic prevention center no longer has the power to engage them in the public health programs.

16 The number of barefoot doctors reported in various studies differed slightly. For example, Young's study (Young 1986) indicated 1.6 million in 1975 and 1.28 million in 1986, different from those of other studies. Nevertheless, all studies reported the general trend of decrease.

17 Chronic diseases are partly related to unhealthy lifestyles, such as smoking, heavy salt intake, and increased dietary animal fat consumption. Because these behaviors are prevalent among the Chinese population, the individualized approach to promote healthy behavior will not be efficient. The more effective approach is the mass mobilization, the old strategy used before the market reform. The workplace and environmental pollution also contributes to chronic diseases such as cancer and respiratory diseases. Mass mobilization is also an effective method to raise the awareness of the mass of the problem and resolve the problem through mass participation.

18 World Bank's authors represent an outstanding example particularly because its three reports on PRC's health care warned PRC of the problems of privatization and market forces in health care. This position is curious because it contrasts, in fact contradicts, with World Bank's long-time position of promoting privatization of the health care and welfare system in Latin American and other countries (for World Bank's promotion of privatization, see, for example, Danaher (1994) and Paul and Paul (1995)).

19 World Bank reports pointed out the ineffectiveness of the western medical model which relies greatly on curative and high-tech medicine in dealing with chronic diseases.

20 World Bank report (World Bank 1992) warned that if PRC continued with the current fee-for-service system and let the market forces run the system, a disastrous

situation – an uncontrollable skyrocketing health care expenditure and serious health inequality – would occur.

References

Albrecht, Gary L. and Xiaoyin Tang. 1990. "Rehabilitation in the People's Republic of China: A Reflection of Social Structure and Culture." *Advances in Medical Sociology* 1: 235–67.

Aldis, William L. 1989. "Privatisation of Care in China." *The Lancet* 2: 1456–7.

Anching Local History Editorial Committee. 1996. "Medical and Health Organizations (in Chinese)." Pp. 1091–112 in *The History of Anqing*. Anhui: Huangshan Books.

Bell, Allison. 1998. "Opportunities in Chinese Health Reforms." *National Underwriter* 102: 37–9.

Blendon, Robert J. 1979. "Can China's Health Care be Transplanted without China's Economic Policies?" *The New England Journal of Medicine* 300: 1453–8.

——. 1981. "Public Health Versus Personal Medical Care. The Dilemma of Post-Mao China." *The New England Journal of Medicine* 304: 981–3.

Bloom, Gerald. 1998. "Primary Health Care. Meets the Market in China and Vietnam." *Health Policy* 44: 233–52.

Bloom, Gerald and Tang Shenglan. 1999. "Rural Health Prepayment Schemes in China: Towards A More Active Role for Government." *Social Science and Medicine* 48: 951–60.

Bo, Xianfeng and Jianzhen Dong. 1993. "Analysis and Forecast of Medical System Reform (in Chinese)." Pp. 191–211 in Jiang Liu, Lu Xueyi, and Dan Tienlun (eds.), *China in 1992–1993: The Analysis and Forecast of Societal Situations*. Beijing: Chinese Social Sciences Press.

Bumgarner, J. Richard. 1990. "Public Policies for the Health Transition in China: Preventing Exposure to Behavioral and Environmental Risk." *Environmental Impact Assessment Review* 10: 405–16.

Cai, Renhua. 1995. "The Interest Group Relations in the Public Expense Medical Service Reform (in Chinese)." Pp. 16–29 in Ministry of Health Policy and Management Expert Committee (ed.), *The Health Insurance System for Public Employees and Workers: Reform Papers*. Beijing: Ministry of Health, People's Republic of China.

Cai, Wen-Wei, James S. Marks, H. C. Charles, You-Xien Zhuang, and Jeffrey R. Harris. 1998. "Increased Cesarean Section Rates and Emerging Patterns of Health Insurance in Shanghai, China." *American Journal of Public Health* 88: 777–80.

Carrin, Guy, Ron Aviva, Hui Yang, Hong Wang, Tuohong Zhang, Licheng Zhang, Shuo Zhang, Yide Ye, Jiaying Chen, Qicheng Jiang, Zhaoyang Zhang, Jun Yu, and Xuesheng Li. 1999. "The Reform of the Rural Cooperative Medical System in the People's Republic of China: Interim Experience in 14 Pilot Counties." *Social Science and Medicine* 48: 961–72.

Chen, Meei-shia and Anita Chan. 1999. "China's 'Market Economics in Command': Footwear Workers' Health in Jeopardy." *International Journal of Health Services* 29: 793–811.

Chen, Xiao-Ming, Teh-Wei Hu, and Zihua Lin. 1993. "The Rise and Decline of the Cooperative Medical System in Rural China." *International Journal of Health Services* 23: 731–42.

Chen, Yunliang. 1947. *An Outline of History of Medicine in China* (Chinese). Guangzhou: Kwongwah Printing Co.

Cheung, Yin-Bun. 1995. "Community Mobilization and Health Care in Rural China." *Community Development Journal* 30: 317–26.

Chin, Robert. 1973. "The Changing Health Conduct of the 'New Man.'" Pp. 113–23 in Myron E. Wegman, Tsung-Yi Lin, and Elizabeth F. Purcell (eds.), *Public Health in the People's Republic of China*. New York: Josiah Macy, JR. Foundation.

China Times. 1998. "Imported Western Medicine Occupied the Market; China's Local Medicine Lost Its Market (in Chinese)." Section 14, November 23, 1998.

Chinese Medical Association. 1974. "Child Health Care in New China." *American Journal of Chinese Medicine* 2: 149–58.

Chu, Li and Chieh-Yun Tien. 1974. "Medical and Health Service." Pp. 194–208 in Chu Li and Chieh-Yun Tien (eds.), *Inside A People's Commune*. Peking: Foreign Languages Press.

Cretin, Shan, Naihua Duan, Albert P. Williams, Xingyuan Gu, and Yuanqiu Shi. 1990. "Modeling the Effect of Insurance on Health Expenditures in the People's Republic of China." *Health Services Research* 25: 667–85.

Croizier, Ralph C. 1968. *Traditional Medicine in Modern China: Science, Nationalism, and the Tensions of Cultural Change*. Cambridge, MA: Harvard University Press.

Danaher, Kevin. 1994. *50 Years is Enough*. Boston. MA: South End Press.

Ding, Yendi. 1994. "The Thoughts on the Reform of the Public Expense Medical Service (in Chinese)." *Sociological Research* 3: 121–4.

Feng, Xueshan, Shenglan Tang, Gerald Bloom, Malcolm Segall, and Xingyuan Gu. 1995. "Cooperative Medical Schemes in Contemporary Rural China." *Social Science and Medicine* 41: 1111–18.

Grogan, Colleen M. 1995. "Urban Economic Reform and Access to Health Care Coverage in the People's Republic of China." *Social Science and Medicine* 41: 1073–84.

Gu, Shengzu and Zhexi Liang. 1993. "The Medical Services Utilization by the Elderly and the Reform of the Medical Care System in China (in Chinese)." *Sociological Research* 6: 56–65.

Gu, Xingyuan, Gerald Bloom, Shenglan Tang, Yingya Zhu, Shouqi Zhou, and Xingbao Chen. 1993. "Financing Health Care in Rural China: Preliminary Report of A Nationwide Study." *Social Science and Medicine* 36: 385–91.

Guangzhou Local History Editorial Committee. 1995. "The History of Physical Education and Health Work (in Chinese)." In *The History of Guangzhou*. Guangzhou, Guangdong: Guangzhou Press.

Guizhou South East Miao and Dong Minority Autonomy Region Local History Editorial Committee. 1993. *History of Health Work* (Chinese). Guiyang, Guizhou: Guizhou People's Press.

Heller, Peter S. 1973. "The Strategy of Health-Sector Planning." Pp. 62–107 in Myron E. Wegman, Tsung-Yi Lin, and Elizabeth F. Purcell (eds.), *Public Health in the People's Republic of China*. New York: Josiah Macy, JR. Foundation.

Henderson, Gail. 1990. "Increased Inequality in Health Care." Pp. 263–82 in Deborah Davis and Ezra F. Vogel (eds.), *Chinese Society on the Eve of Tiananmen: The Impact of Reform*. Massachusetts: The Council on East Asian Studies.

Henderson, Gail, John Akin, Li Zhiming, Jin Shuigao, Ma Haijiang, and Ge Keyou. 1994. "Equity and the Utilization of Health Services: Report of an Eight-Province survey in China." *Social Science and Medicine* 39: 687–99.

Henderson, Gail E. and Myron S. Cohen. 1982. "Health Care in the People's Republic of China: A View from Inside the System." *American Journal of Public Health* 72: 1238–45.

Henderson, Gail E., Elizabeth A. Murphy, Samuel T. Sockwell, Jiongliang Zhou, Qingrui Shen, and Zhiming Li. 1988. "High-Technology Medicine in China: The Case of

Chronic Renal Failure and Hemodialysis." *The New England Journal of Medicine* 318: 1000–4.
Henderson, Gail and Scott T. Stroup. 1998. "Preventive Health Care: Privatization and the Public Good." Pp. 184–269 in Andrew G. Walder (ed.), *Zouping in Transition: The Process of Reform in Rural North China*. Massachusetts: Harvard University.
Hillier, S. M. and J. A. Jewell. 1983. *Health Care and Traditional Medicine in China, 1800–1982*. London: Routledge and Kegan Paul.
Hillier, Sheila and Xiang Zheng. 1990. "Privatisation of Care in China." *The Lancet* 335: 414.
Hillier, Sheila and Jie Shen. 1996. "Health Care Systems in Transition: People's Republic of China Part I: An Overview of China's Health Care System." *Journal of Public Health Medicine* 18: 258–65.
Hinton, William. 1966. *Fanshen: A Documentary of Revolution in A Chinese Village*. New York: Random House, Vintage Books.
——. 1990. *The Great Reversal: The Privatization of China, 1978–1989*. New York: Monthly Review Press.
Ho, Lok Sang. 1995. "Marker Reforms and China's Health Care System." *Social Science and Medicine* 41: 1065–72.
Horn, Joshua S. 1969. *Away With All Pests: An English Surgeon in People's China, 1954–1969*. New York: Monthly Review Press.
——. 1972. "Building A Rural Health Service in the People's Republic of China." *International Journal of Health Services* 2: 377–83.
Hsiao, William C. 1984. "Transformation of Health Care in China." *The New England Journal of Medicine* 310: 932–6.
——. 1995. "The Chinese Health Care System: Lessons for Other Nations." *Social Science and Medicine* 41: 1047–55.
Hsiao, William C. L. and Yuanli Liu. 1996. "Economic Reform and Health-Lessons from China." *The New England Journal of Medicine* 335: 430–2.
Hsu, Robert C. 1977. "The Political Economy of Rural Health Care in China." *Review of Radical Political Economy.* 9: 134–40.
——. 1974. "The Barefoot Doctors of the People's Republic of China – Some Problems." *The New England Journal of Medicine* 291: 124–27.
Hu, Teh-Wei. 1976. "The Financing and the Economic Efficiency of Rural Health Services in the People's Republic of China." *International Journal of Health Services* 6: 239–49.
——. 1980. "Health Care Services in China's Economic Development." Pp. 229–57 in Robert F. Dernberger (ed.), *China's Development Experience in Comparative Perspective*. Cambridge: Harvard University Press.
——. 1981. "Issues of Health Care Financing in the People's Republic of China." *Social Science and Medicine* 15: 233–7.
——. 1987. "Western Technology for China's Hospitals." *The China Business Review* 14: 29–31.
Huang, Xizhe and Xishiao Lin. 1986. *The Health Career of Contemporary China, Vol. 1* (in Chinese). Shanghai: China Social Science Publishing Co.
Huang, Shu-Min. 1988. "Transforming China's Collective Health Care System: A Village Study." *Social Science and Medicine* 27: 879–88.
Jamison, Dean T., John R. Evans, Timothy King, Ian Porter, Nicholas Prescott, and Andre Prost. 1984. *China: The Health Sector.* Washington DC: The World Bank.
Kao, John J. 1974. "Psychiatry in the People's Republic of China: A Prospectus." *American Journal of Chinese Medicine* 2: 441–4.

Khan, M. Mahmud, Naisu Zhu, and Jack C. Ling. 1996. "Community-Based Health Insurance in China: Bending to the Wind of Change." *World Health Forum* 17: 58–62.

Koplan, Jeffrey P., Alan R. Hinman, Robert L. Parker, You-Long Gong, and Ming-Ding Yang. 1985. "The Barefoot Doctor: Shanghai County Revisited." *American Journal of Public Health* 75: 768–70.

Kwangchow, Provincial Institute of Maternal and Child Health Care. 1978. "Rural Child Health Care in Kwangtung Province." *Chinese Medical Journal* 4: 85–8.

Lampton, David M. 1977. *The Politics of Medicine in China*. Boulder, CO: Westview Press.

Lee, Rance P. L. 1981. "Chinese and Western Medical Care in China's Rural Commune: A Case Study." *Social Science and Medicine* 15A: 137–48.

Leung, Joe C. B. 1994. "Dismantling the 'Iron Rice Bowl': Welfare Reforms in the People's Republic of China." *International Journal of Social Policy* 23: 341–61.

Li, Weiping and Mei Wang. 1994. "A Comparative Study of the Health Status and Its Influencing Factors between China and U.S.A. (in Chinese)" *Technology and Development, Special Issue on the Development in China* 4: 36–9.

Liang, Matthew H., Philip S. Eichling, Lawrence J. Fine, and George J. Annas. 1973. "Chinese Health Care: Determinants of the System." *American Journal of Public Health* 63: 102–10.

Liu, Xingzhu and William C. L. Hsiao. 1995. "The Cost Escalation of Social Health Insurance Plans in China: Its Implication for Public Policy." *Social Science and Medicine* 41: 1095–101.

Liu, Yuanli, William C. L. Hsiao, Qing Li, Xingzhu Liu, and Minghui Ren. 1995. "Transformation of China's Rural Health Care Financing." *Social Science and Medicine* 41: 1085–93.

Liu, Yuanli, William C. Hsiao, and Karen Eggleston. 1999. "Equity in Health and Health Care: The Chinese Experience." *Social Science and Medicine* 49: 1349–56.

Lyle, Katherine Ch'iu. 1980. "China's Health System: Determinants." *American Journal of Chinese Medicine* 8: 199–220.

MacFarquhar, Roderick. 1997. *The Politics of China*, 2nd edition. New York: Cambridge University Press.

Maddin, W. Stuart. 1974. "Integration of Tradition and Modern Medicine." Pp. 3–11 in Joseph R. Quinn (ed.), *China Medicine As We Saw It*. US Public Health Service: DHEW Publications.

Mao, Zedong. 1934. "Be Concerned about the Mass's Life and Pay Attention to the Work Method (in Chinese)." Pp. 122–7 in The Publication Committee of the Selections of Mao Zedong in the Central Committee of the Chinese Communist Party (ed.), *Selections of Mao Zedong*. Beijing: People's Press.

——. 1974. "Directive on Public Health Work (in Chinese)." Pp. 232–3 in Stuart Schram (ed.), *Chairman Mao Talks to the People*. New York: Pantheon.

Maru, Rushikesh M. 1977. "Health Manpower Strategies for Rural Health Services in India and China: 1949–1975." *Social Science and Medicine* 11: 535–47.

Meisner, Maurice. 1999. *Mao's China and After.* New York: The Free Press.

Miao, Yu. 1976. "Stabilize and Expand the Achievement of Rural Health Revolution (in Chinese)." *Red Flag* 9: 57–60.

Ministry of Health. 1997. "The Work on Health Statistics (in Chinese)." Pp. 419–33 in *The Annual Review of Public Health in China*. Beijing: Ministry of Health, People's Republic of China.

New, Peter Kong-Ming. 1982. "Changing Health Policies in the PRC: Another Perspective." *Medical Anthropology Newsletter* 13: 1–2.

New, Peter Kong-Ming and Yuet-Wah Cheung. 1984. "The Evolution of Health Care in China: A Backward Look to the Future." *Medicine Anthropology* 8: 169–79.

Parmelee, Donna E., Gail Henderson, and Myron S. Cohen. 1982. "Medicine Under Socialism: Some Observations on Yugoslavia and China." *Social Science and Medicine* 16: 1389–96.

Paul, Susanne S. and James A. Paul. 1995. "The World Bank, Pensions, and Income (In)Security in the Global South." *International Journal of Health Services* 25: 697–726.

Peking Review. 1974. "Growth of 'Barefoot Doctors' in the Country." *Peking Review* 17: 6.

——. 1975. "Co-operative Medical Service and Barefoot Doctors in China's Rural Areas." *Peking Review* 18: 20–1.

Qien, Xinzhong. 1965. "Several Problems Concerning the Work of Rural Mobile Medical Teams." *Red Flag* 13: 1–9.

——. 1993. "Preface (in Chinese)." In Zhang Zikuan (ed.), *On Cooperative Medical System*. Taiyuan, Shanxi: Shanxi People's Press.

Report of an Investigation from Shanghai. 1968. *An Assessment of the Orientation of the Revolution in Medical Education as seen in the Growth of Barefoot Doctors* (Chinese). Beijing: People's Press.

Rifkin, Susan B. 1972. "Health Care for Rural Areas." Pp. 137–49 in Joseph R. Quinn (ed.), *Medicine and Public Health in the People's Republic of China*. USA: DHEW Publication.

——. 1973. "Public Health in China – Is the Experience Relevant to Other Less Developed Nations?" *Social Science and Medicine* 7: 249–57.

Ronaghy, Hossain A. and Steven Solter. 1974. "Is the Chinese 'Barefoot Doctor' Exportable to Rural Iran?" *The Lancet* 1: 1331–3.

Sandbach, F. R. 1977. "Farewell to the God of Plague – The Control of Schistosomiasis in China." *Social Science and Medicine* 11: 27–33.

Schwartz, Dan. 1977. "A Comparison between the Chinese Approach and 'Western' Health Education Principles." *International Journal of Health Education* 10: 1–15.

Shen, Tiefu, Jean-Pierre Habicht, and Ying Chang. 1996. "Effect of Economic Reforms on Child Growth in Urban and Rural Areas of China." *The New England Journal of Medicine* 335: 400–6.

Shi, Leiyu. 1993. "Health Care in China: A Rural–Urban Comparison after the Socioeconomic Reforms." *Bulletin of the World Health Organization* 71: 723–36.

Sidel, Victor W. 1972a. "The Barefoot Doctors of the People's Republic of China." *The New England Journal of Medicine* 286: 1292–300.

——. 1972b. "Some Observations on the Health Services in the People's Republic of China." *International Journal of Health Services* 2: 385–95.

——. 1975. "Medical Care in the People's Republic of China." *Archives of Internal Medicine* 135: 916–26.

——. 1993. "New Lessons from China: Equity and Economics in Rural Health Care." *American Journal of Public Health* 83: 1665–6.

Sidel, Victor W. and Ruth Sidel. 1973. *Serve the People: Observations on Medicine in the People's Republic of China*. New York: Beacon Press.

Sidel, Ruth and Victor W. Sidel. 1982. *The Health of China*. Boston: Beacon Press.

Sidel, Victor W. and Ruth Sidel. 1983. "The People's Republic of China-Mass Mobilization." Pp. 209–39 in Victor W. Sidel and Ruth Sidel (eds.), *A Healthy State: An International Perspective on the Crisis in United States Medical Care*. New York: Pantheon Books.

Sleigh, A., Xueming Li, S. Jackson, and Kengling Huang. 1998. "Eradication of Schistosomiasis in Guangxi, China. Part 1: Setting, Strategies, Operations, and Outcomes, 1953–92." *Bulletin of the World Health Organization* 76: 361–72.

Smith, Christopher J. 1993. "(Over)Eating Success: The Health Consequences of the Restoration of Capitalism in Rural China." *Social Science and Medicine* 37: 761–70.

Tang, Sheng-Lan. 1997. "Community-Based Health Insurance." *World Health Forum* 18: 63–4.

Tang, Sheng-Lan and Xing-Yuan Gu. 1996. "Bringing Basic Health Care to the Rural Poor." *World Health Forum* 17: 404–8.

The Chinese Communist Party Committee of the Peking Tuberculosis Research Institute. 1975. "Implementing Chairman Mao's Directive 'In Medical and Health Work, Put the Stress on the Rural Areas'." *Chinese Medical Journal* 1: 237–40.

The Editorial Committee for New China's Historical Experience of Preventive Medicine. 1991. *The Historical Experience of New China's Preventive Medicine, Vol. 1*. Beijing: People's Health Press.

Vogel, Ezra F. 1973. "Organization of Health Services." Pp. 51–61 in Myron E. Wegman, Tsung-Yi Lin, and Elizabeth F. Purcell (eds.), *Public Health in the People's Republic of China*. New York: Josiah Macy, JR. Foundation.

Wang, Virginia Li. 1975. "Training of the Barefoot Doctor in the People's Republic of China: From Prevention to Curative Service." *International Journal of Health Services* 5: 475–88.

Wegman, Myron E. 1982. "Public Health in China." *American Journal of Public Health* 72: 978–9.

Wei, Ge. 1975. "Further Improve Rural Health Work (in Chinese)." *Red Flag* 9: 36–8.

Weil, Robert. 1996. *Red Cat, White Cat*. New York: Monthly Review Press.

Wen, Chi-Pang and Charles W. Hays. 1976. "Health Care Financing in China." *Medical Care* 14: 241–54.

White, Sydney D. 1998. "From 'Barefoot Doctor' to 'Village Doctor' in Tiger Spring Village: A Case Study of Rural Health Care Transformations in Socialist China." *Human Organization* 57: 480–90.

Wilenski, Peter. 1976. *The Delivery of Health Services in the People's Republic of China*. Canada, Ottawa: International Development Research Center.

——. 1977. "Health Organization in Developing Countries: Innovations in the People's Republic of China." *The Medical Journal of Australia* 1: 29–31.

Wong, Linda. 1994. "Privatization of Social Welfare in Post-Mao China." *Asian Survey* 34: 307–25.

World Bank. 1992. *China: Long-Term Issues and Options in the Health Transition*. Washington, DC: The World Bank.

——. 1997. *Financing Health Care: Issues and Options for China*. Washington, DC: The World Bank.

Wu, Chieh-Ping. 1975. "Medicine and Health (I) For Workers, Peasants and Soldiers." *Peking Review* 8: 9–22.

Xu, Wenbo. 1995. "Flourishing Health Work in China." *Social Science and Medicine* 41: 1043–5

Xu, Yunbei. 1960. "Develop the Great People's Health Work (in Chinese)." *Red Flag* 6: 9–22.

Yang, Jie. 1958. "The Victory of the Control of Four Pests is the Victory of Mass Line (in Chinese)." *Red Flag* 4: 31–4.

Yang, Pei-Lin, Vivian Lin, and James Lawson. 1991. "Health Policy Reform in the People's Republic of China." *International Journal of Health Services* 21: 481–91.

Young, Mary. 1986. "Changes in Rural Health Care in China." *Hospital Practice* 21: 107–9.

——. 1989. "Impact of the Rural Reform on Financing Rural Health Services in China." *Health Policy* 11: 27–42.

Yuan, Yung-ts'ai. 1975. "Brilliant 'June 26' Directive Shows Me the Way Forward." *Chinese Medical Journal* 1: 241–6.

Zhang, Kong-Lai and Wei Chen. 1996. "Health Care System in Transition: People's Republic of China. Part II: The Chinese Health Care System's Response to HIV-AIDS." *Journal of Public Health Medicine* 18: 226–68.

Zhang, Zikuan. 1959. "Concerning the Medical Care System for the People's Commune (in Chinese)." P. 1 in *On Cooperative Medical System*, edited by Zikuan Zhang in 1993. Taiyuan, Shanxi: Shanxi People's Press.

——. 1960. "Aggressively Promoting Collective Health Care System (in Chinese)." Pp. 3–5 in *On Cooperative Medical System*, edited by Zikuan Zhang in 1993. Taiyuan, Shanxi: Shanxi People's Press.

——. 1965a. "Strengthening the Management of the Cooperative Medical System (in Chinese)." P. 8 in *On Cooperative Medical System*, edited by Zikuan Zhang in 1993. Taiyuan, Shanxi: Shanxi People's Press.

——. 1965b. "Many Benefits for Cooperative Medical System (in Chinese)." P. 13 in *On Cooperative Medical System*, edited by Zikuan Zhang in 1993. Taiyuan, Shanxi: Shanxi People's Press.

——. 1966. "The Tentative Management Rules for the Cooperative Medical System in Ma Cheng County (in Chinese)." Pp. 38–47 in *On Cooperative Medical System*, edited by Zikuan Zhang in 1993. Taiyuan, Shanxi: Shanxi People's Press.

——. 1985. "Strengthening the Research on the Rural Health Care System (in Chinese)." Pp. 67–75 in *On Cooperative Medical System*, edited by Zikuan Zhang in 1993. Taiyuan, Shanxi: Shanxi People's Press.

——. 1992. "The Review of the Early Historical Situation of Cooperative Medical System (in Chinese)." Pp. 102–9 in *On Cooperative Medical System*, edited by Zikuan Zhang in 1993. Taiyuan, Shanxi: Shanxi People's Press.

——. 1981. "Please Save the Herbal Medicine and Pharmaceuticals: The Investigation of the Herbal Medicine and Herbal Pharmaceuticals in Fujian Provice (in Chinese)." Pp. 58–64 in *On Rural Health and Primary Health Care*, edited by Zikuan Zhang in 1993. Taiyuan, Shanxi: Shanxi People's Press.

Zhou, Caiming. 1995. "In the Reform of the Medical Insurance System (in Chinese)." Pp. 3–15 in Ministry of Health Policy and Management Expert Committee (ed.), *The Health Insurance System for Public Employees and Workers: Reform Sections*. Beijing: Ministry of Health, People's Republic of Health.

Zhu, Jianhua, Yang Zhu, and Yungjun Guo. 1989. *The History of the People's Republic of China* (Chinese). Harbin, China: Heilongjiang People's Press.