

Chinese barefoot doctors, a viable model today?

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Introduction

The International Conference on Primary Health Care in 1978, which took place in the Kazakh capital of Alma Ata, ratified an almost revolutionary manifesto known as the Alma Ata Declaration (WHO, 1978). In it, almost all the members of the WHO at the time agreed to a radically new approach to health, in which the need for a comprehensive health strategy included much more than traditional health care services, and went on to address the underlying social, economic, and political causes of illness (Werner, 1997, 18). It called for health being integrated into all government policies, equitable distribution of wealth as a prerequisite for good health outcomes, and for community participation and autonomy in deciding local health needs and solutions (WHO, 1978). All of this was a radical departure from the prevalent international health ideology, and was touted as a breakthrough in global health rights (Werner, 1997, 18).

The phenomenon of barefoot doctors in China provided one of the main inspirations for the Alma Ata conference (Roemer, 1993, 40). Partly a result of the Cultural Revolution, commune and county hospitals trained these farmers cum doctors in large numbers to provide simple primary care to their communities, and they were seen as partly responsible for the great improvement in health indicators that China had experienced since 1949. The model provided inspiration for other developing countries, who would be able to leapfrog the development of expensive Western technology and hospital facilities, as well as the training of fully qualified doctors. Even the name itself was popularized – India has both a barefoot college and barefoot teachers, and Bangladesh barefoot managers (Architectural Review, 2001; Ray, 2000; Dixon, 1978, 158). My research question is partly inspired by my own experience of living in China, and perceiving a very different reality today. There are private hospitals and advertisements for health services everywhere, and yet the medical services seem to be overused by urbanites and inaccessible to rural dwellers. Thus, I would like to examine how the barefoot doctors model came about, and whether it would be applicable to China today.

My research is based primarily on contemporary Western sources, including those written by several visitors to China, as well as some current retrospective accounts and surveys. At the time of the program, foreign visitors to China were only given access to clearly defined show areas. This, together with different authors diverging political and ideological views means that there are significant limitations in my source material.

Although I will try to overcome this by relying on a wide number of sources, both the quantitative information at the time, and the health outcome of the program, are very hard to ascertain (Hesketh & Wei, 2004). I will conclude that the barefoot doctors were the result of a very specific political/ideological and economical situation, and that although this model is not directly transferable neither to other developing countries, nor to China today, it could still provide the inspiration needed for developing current systems.

Since it is my belief that the model of primary health care implemented in China can only be understood within a very specific spatial and temporal context, I will attempt to give a background of China's general history, and specifically its health developments, first during the century leading up to 1949, and then during the period from the founding of the People's Republic of China to around 1965. I will then detail the political and ideological background, both regarding the Cultural Revolution in general, and the implementation of the barefoot doctors specifically. I will examine the selection, training and financing of the barefoot doctors, as well as their work tasks, and how they fit into a general model of health provision. I will close by evaluating different sources' evaluation of the success or failure of the program, looking at its demise and the transition to the current system, and finally evaluating the current situation in China. Throughout the essay, I will use the male pronoun *he* in referring to a barefoot doctors. This does not mean that barefoot doctors were exclusively male, but is merely a stylistic simplification.

Interesting Times (1900-1960)

Much has been attributed to China that is not theirs; both chop suey and fortune cookies were invented in the United States, and even the “famous Chinese curse” of “May you live in interesting times” turns out to be from a 1950s American science fiction novel (DeLong, 1998). Yet regardless of its origins, this proverb succinctly summarizes the century approximately from 1850 to 1950, a time of great upheaval and change in China. The first Opium War (1839-1842) was fought by England to guarantee access to Chinese markets for opium brought from India, in an attempt to restore its trade balance with China. The period between the treaty of Nanjing (1842), signed at the end of the war, and the Treaty of Tianjin (1858) saw a series of so-called unequal treaties being enacted, which opened up progressively larger parts of the Eastern Seaboard to international trade with foreign settlements, and extending extensive rights to foreign nationals in China, including the right to teach Christianity (Schoppa, 2000, 16). Schoppa (2000) explains that “[t]hey decided on taxes and collected them; they policed the area; their troops could patrol there; their law held sway there— all in areas where many Chinese still lived”, and concludes that “[a]lthough China never became a “colony,” its loss of sovereignty and control over its own territory and people transformed it into what has been called a semicolony, subject to the demands and pressures of many foreign nations.” (*ibid.*, p. 19).

In 1851 China exploded in the Taiping-rebellion (1851-1864), which has been characterized as the bloodiest uprising in history, devastating much of east central and southern China, and killing an estimated 20 million people. The causes were many and complex, and China has a history of bloody quasi-religious uprisings, but the fact that the uprising's leader Hong Xiuquan had received some training from missionaries, and termed himself the younger brother of Jesus Christ, indicates that the cultural upheaval caused by the Western powers might have had much to do with it (Boardman, 1951, 115).

China gradually began modernizing and entering the nation-state system; a self-strengthening movement arose which saw the creation of a foreign office and the

dispatching of ambassadors to major Western powers (Schoppa, 2000, 30). After the loss of Vietnam to the French in 1885 (*ibid.*, p. 33), and Korea to Japan in 1895 (*ibid.*, p. 37), an attempt was made to learn sciences and technology from the Western powers, without adopting their culture, but conservatives in the court held back and supported the Boxer rebellion. It all ended with the Western powers invading Beijing to suppress the rebellion and protect the Qing dynasty as a stable trading-partner (Spence, 1999, 143). The Manchus were unable to modernize, and the dynasty finally fell in 1912 (*ibid.*). This ushered China into four decades without a long-term stable national government. Yuan Shikai was made president in 1912, but died in 1916, and warlords began struggling to divide up the country (Koeller, 1996). The communist party was formed in 1921, and up until the Japanese invasion in 1938 their relationship with the Nationalist Party varied between cooperating, under the urging of the Soviet Union, and bitter fighting (Spence, 1999, 435).

Early Health Systems

The period from 1928-1937, when the Nationalist Party tried to build up a comprehensive health system, was the only pre-war period during which a national government was able to assert some measure of control (Yip, 1992, 395; Lampton, 1974, 1). Since China's population was largely rural, the idea of introducing Western public health to the villages was promoted, but it remained largely unrealized under the combined effects of foreign invasion, domestic strife, inflation and corruption (Yip, 1992, 396; Lampton, 1974, 1). The little that was done, was largely due to the work of Western missionaries, and they were also concentrated around treaty ports (Yip, 1992, 396). Health conditions were miserly; Sidel (1973) notes that the 1930's saw a large prevalence of venereal, infectious and nutritional diseases, with most unnecessary deaths stemming from gastrointestinal diseases and pulmonary tuberculosis, as well as infectious diseases in infants, and with an infant mortality rate of 20% (p. 17). This contributed to the idea that poor health was one of the reasons for China's backwardness, and the first calls for a national health system with universal access were made (Yip, 1992, 398-400)

In 1931, plans were made for rural health stations that would provide attention at the lowest level possible, using minimally trained village health aides (Yip, 1992, 403). This was supported by Andrija Štampar from the League of Nations Health Organization, who drew on his experience in rural Croatia (*ibid.*, 408; Fatovic-Ferencic, 2004). As for preventive medicine, Sidel (1973) notes that there was little attempt to prevent epidemics through individual or collective acts, except recourse to magic, before the founding of the Republic in 1912 (p. 99), however Thomson (1913) talks of well developed quarantine systems and fumigation at the ports of Shanghai and Hong Kong (p. 514). Free vaccinations programs were begun in 1903, and expanded in the 1920s and 30s, at the same time as the YWCA carried out health education campaigns. Yet all of these programs reached only a tiny subsection of the Chinese population, and were to be seen in Sidel's (1973) words as merely "*a declaration of intent*" (p. 99).

Before the founding of the People's Republic, health care in China was provided by a variety of traditional healers, and there was no licensing system or professional qualifications. Some of these may have been erudite Confucian scholars trained in the art of classical Chinese medicine, while others were itinerant herbalists who could not read or write (Sidel, 1973, 19). In 1932 there were 2,919 Western doctors in China, 65% of which were concentrated in the three Eastern provinces. In 1949, this number had risen to between 21,000 and 40,000 (Sidel, 1973, 20). The Chinese Medical Association was

established in April 1932 as a merger between the National Medical Association of China and the Chinese Medical Association. The latter was founded in 1886 as an association of Chinese medical missionaries, and even at the merger, half of the members were foreign nationals (Sidel, 1973, 178-179). One institution founded by missionaries, which would later go on to produce many of the leading health policy makers in China, was the Peking Union Medical College (PUMC), which was set up in 1917, and later funded by the Rockefeller Foundation (Horn, 1969, 70).

The medical system in the first decades after 1949 was based on a Soviet model of Western medicine, where hierarchies between different health care professions were maintained, and preventive medicine completely separated from curative (Sidel, 1973, 22). The Department of Health (weishengbu) was staffed with mostly PUMC graduates and other doctors trained in Western medicine, as well as having Soviet advisors in influential positions (Lampton, 1974, 66). The system that they created was mainly a continuation of pre-independence practices, using existing, mostly urban, facilities (Lampton, 1974, 14). In these first decades, China's strategy was that of heavy industrialisation based around the cities, and this led to the labor unions pushing for and gaining benefits for heavy industrial workers, which only added to the already existing urban bias (Lampton, 1974, 15). Sidel (1973) criticized this period as seeing "too much raising of standards, too little access" (p. 29).

“Knowledge is Less Important Than the Will” (1960-1981)

Already in 1937, Mao had stated the need for so called “learning by doing”, which included involving people in health care, and crucially the concept of mass mobilization (Sidel, 1973, 100). The Chinese Department of Health (weishengbu), although widely seen as a success abroad, was attacked for being too urban, focusing too much on curative care, not integrating traditional Chinese and Western medicine, hierarchical management system and too much copying of Soviet models (Lampton, 1974, 66; Sidel, 1973, 22&28). This was partly a result of the post-revolutionary need for bureaucracy to run the country, which had allowed people to be hired without concern for their ideological beliefs, and the Ministry of Health mostly being run by Western-trained physicians (Lampton, 1974, 94). A national health congress in Beijing in 1950 declared that medicine must serve the workers, farmers and soldiers (gong-nong-bing), focus on prevention over curative medicine, integrate Western and Chinese medicine, and integrate health work with mass movements (Hu, 1960, 400; Sidel, 1973, 22).

Big changes were afoot in the rural villages, with the creation of agricultural communes, and co-operative brigades which started forming in the 1950's. By the early 1960's, much of the farmland had been converted into these self-contained political units with their own internal governments (Sidel, 1973, 77). Late 1958 then saw rapidly increasing agricultural production, a bumper harvest and rising grain quotas, which encouraged cadres to try to achieve high levels of social programs (p. 75). The Great Leap Forward campaign, launched by Mao in 1958, aimed at using mainland China's plentiful supply of cheap labor to industrialize the country, partly through encouraging local production of steel using backyard furnaces (Schoppe, 2000, 112-115). Though initially successful, or at least reported as such, by 1960 it was clear that it had caused a major famine and sent the Chinese economy into a slump. For this, Mao lost prestige and leadership to a group led by Deng Xiaoping and Liu Shaoqi, who believed that China had to rely more on technical expertise and Western production methods to develop its economy (*ibid.*, 115). The Cultural Revolution launched in 1968 was Mao's way of

regaining power, through addressing the people directly (*ibid.*, 120-121). One of his stated objectives was to increase the influence of the proletariat in all matters of the state, yet Perry (1997) writes that the result was the opposite; “[f]ar from strengthening the position of workers, heightened controls in an arbitrary and military-dominated political system reduced worker autonomy and increased dependence on local and regional leaders.” (p. 145).

The Cultural Revolution, and the time surrounding it, was one of social upheaval in China. The cleavage lines dividing urban industrial workers from other workers, and rural dwellers had become even more pronounced by the time of the Cultural Revolution, and the thus disenfranchised urban workers had on occasions been militant to the extent of occupying medical facilities (Lampton, 1974, 16). This, together with the ideals that knowledge was less important than the will (Lampton, 1974, 102), or “*the conviction that ordinary people possess great strength and wisdom, and that when their initiative is given full play they can accomplish miracles*” (Sidel, 1973, 103), were all part of the urban backdrop to the Cultural Revolution.

This all happened simultaneous to attacks on the traditional medical structure and bureaucracy, with the Minister and six Vice Ministers of Health removed from office in June 1967 (*ibid.*). Mao later criticized both their urban bias and their focus on quality over quantity in his famous June 26th, 1968 speech on the eve of the Cultural Revolution: “*The Ministry of Health serves only 15% of the urban population. It should be renamed the Urban Health Ministry, or the Lords' Health Ministry.*”, “*In medical and health work, put the stress on the rural areas!*” and “*3 years in medical school should be enough. The more books you read the more stupid you become.*” (Sidel, 1973, 28; Rogers, 1980, 43). This was a part of the gradual removal of power from the Ministry of Health, with that power being given to the so called Nine Man Sub-Committee, an organization originally set up to control certain mass health promotions, which gradually gained scope and power (Lampton, 1974, 78). It functioned directly subordinate to the state council, to the extent that from 1967-1969 not a single directive originated with the Ministry of Health; instead most were issued directly by Mao or Zhou Enlai (*ibid.*, 106). Similarly, during the Cultural Revolution, the medical associations were viewed as elitist and disbanded, which Elmore (1980) believes led to a decline educational programs and standards (p. 79).

Genesis of the Barefoot Doctors program

Many different models of rural health care provision were tried in 1960-61, most without much success (Chen, 1976). Later, in Jiancun commune in Shanghai municipality from 1965-66 the idea of barefoot doctors was first tried out, and this experiment was received favourably by Mao, who found it consistent with his beliefs about local self-reliance and the selfless service of the individual (Unknown, 1968). An article about the commune in the People's Daily in 1968 included an endorsement from Mao (Rogers, 1980, 46). At a national conference on August 17th, 1967, the idea to train large numbers of farmer-doctors as key personell in a new rural health system was then revived (*ibid.*, 45). Several years of trial, experimentation, and local modifications ensued, and the development of the idea continued during 1965-70, while it was being implemented in the production brigades (*ibid.*, 46). Many of the attempts to integrate barefoot doctors into the medical system failed, partly because people were not ready to accept barefoot doctors as competent, and partly because of failures in financing programs sustainably (*ibid.*, 128). Throughout this period, two national models would be used to diffuse innovation through a series of so called “on-the-spot” conferences: Jiancun's example of barefoot

doctors, and Luoyan's example of equitable cooperative medical service (*ibid.*).

One important reason for the success of the barefoot doctors model, as compared to the attempts of other countries, was the issue of a “national political will”, something the WHO described as “*a confidence that age old problems of poverty, starvation, illiteracy and ill health could be resolved*” (WHO, 1978, 10). In many developing countries that subsequently tried implementing primary health care loosely based on the Chinese model, there was never enough commitment from the political system, and it ended up being a semi-autonomous system outside of the regular medical hierarchy, underfunded and with low status; it was also not connected to other improvements in villagers living standard (see for example the case of Zimbabwe in Woelk, 1994). As stated above, one of the main reasons that barefoot doctors were so efficient, was because they had a two-way link with the conventional medical system, with initial training, continuing training and community visits flowing one way, and referrals and criticism flowing the other way. Indeed, one cannot evaluate the barefoot doctors without looking at what was happening with the conventional medical system, since the medical profession has often been very critical to primary health care programs (see Agarwal, 1979; Woelk, 1994), and Lampton (1974) suggests that the program succeeded in China because the medical profession lost its power and institutions during the Cultural Revolution. This came together with a tendency towards egalitarianism, with reductions in the differing salaries, status and roles of medical personnel with different levels of expertise. Liu Shaochi is quoted as having said “*The higher ranking an official is, the less truth he has. As he is promoted his truth becomes even less... The lower a level is, the closer to the truth it is.*” (quoted in Sidel, 1974, 141).

Barefoot Doctors: Serve the People

The barefoot doctors were chosen by their peers in the production brigade, with the minimum requirements being six years of formal schooling, commitment to serve the people and a good class background (Rogers, 1980, 43). Shirley (1980) also lists willingness, a certain intelligence and ability among the criteria (p. 9). People were overwhelmingly chosen from the village they would go back to working in, since this made it much more likely that they would be content with staying in that area (Rogers, 1980, 61). This was also commensurate with the fact that a barefoot doctor was first a farmer, then a doctor; not the other way around (Werner, 1983, 2-1; Chen, 1980, 112). Itinerant herbalists were among those chosen, whereas no folk healers (shamans or priests) had access (Kleinman, 1980, 31). A survey conducted for the World Bank in 1990 on Chinese village doctors (after the end of the barefoot doctors program, see below), of which $\frac{4}{5}$ had worked as barefoot doctors before, showed that 73% had lower secondary school or less, and that they were overwhelmingly male. (De Geyndt, Zhao & Liu, 1992, 4-5).

The training varied from three months to one/two years of training in the commune hospital, and was given by both Western-trained doctors and experienced barefoot doctors (Shirley, 1980, 21; Chi, 1975). The study mentioned above shows that about half of the surveyed ex-barefoot doctors had less than one year of total training (De Geyndt, Zhao & Liu, 1992, 5). If possible, the training would be held in winter, during the agricultural off-season (Rogers, 1980, 55). It would be practical and focus on prevention, but also include anatomy, physiology, bacteriology, pathology, environmental sanitation, and epidemiology. Some would also learn birth delivery and care of pregnant mothers, and all would study acupuncture and production and use of traditional Chinese herbs, as

well as usage of 40-50 Western drugs (Rogers, 1980, 55). Special focus was placed on how to control locally prevalent diseases (*ibid.*, p. 66).

Yet the initial training was only the beginning; central to the barefoot doctors philosophy was the concept of continued in-service training, which would be provided by mobile medical teams. One of the ideas of the Cultural Revolution was that of urban intellectuals going into the countryside to serve and learn from the farmers, and in the late 1960's and early 1970's about 15% of all medical doctors would at any one time be stationed in rural areas, where they would both treat complicated cases and continue training barefoot doctors (Rogers, 1980, 51). Horn (1969) lists their tasks as follows: provide preventive and therapeutic services to the area, train peasant workers, promote planned parenthood, cooperate with and raise level of medical services available in village, cooperate with the patriotic health campaigns and finally deepend understanding of the Chinese situation, Mao's teaching and class struggle (Horn, 1969, 130-142). The barefoot doctor would in his turn train health aides who could assist him in his work (Shirley, 1980, 21).

In addition to all the training, practical manuals were produced, that could partly serve as a replacement for the close supervision of a physician that the barefoot doctors lacked (see example in Birch & Felt, 1999, 54). These manuals were usually local in scope, dealing with locally prevalent diseases and treatments (Rogers, 1980, 60). Finally, correspondence classes were also available for barefoot doctors wishing to upgrade their knowledge, perhaps hoping to get into medical school – many of which gave preference to barefoot doctors with experience (Deuschle, 1980b, 88; Rogers, 1980, 57).

Financing

During the first blush of the Great Leap Forward, all fees at time of treatment were abolished, and usage and costs of rural health services went through the ceiling (Lampton, 1974, 19). In addition, since 1949 the price of drugs had been lowered three times across the board, leading to high usage and problems of supply (*ibid.*, 25). It is likely that some of these problems could be ascribed to pent-up demand which would even out, but it was also attempted solved through a decentralization of financing. Throughout the Cultural Revolution, there was a movement of the basic accounting unit, which was gradually moved from the commune to the production brigade, and finally to the production team (Lampton, 1974, 19). This meant that cadres lower in the administrative and geographical hierarchy gained more power (*ibid.*). The costs of running and staffing the local health centres during the Cultural Revolution were paid through the brigade's welfare fund, to which all the farmers contributed (De Geyndt, Zhao & Liu, 1992, 1; Shirley, 1980, 17). I believe that the decentralization of funding down to the brigade level had the advantage of containing costs, as well as enhancing a feeling of ownership among health system users, and De Geyndt, Zhao & Liu (1992) suggest that this helped promote the principle of local self-determination of health care that would later be important in the Alma Ata Declaration (p. 1).

However, there was still a degree of wider cost-sharing by the county, which financed training of the barefoot doctors at commune facilities (Lampton, 1974, 18), sent some of its doctors into the countryside to do continuing education and some surgery (Horn, 1969, 130-142), and paid for the hospitals and other tertiary care institutions available by referral (Lampton, 1974, 18&22). In addition, the commune would some times underwrite the brigade's welfare fund, to avoid the possibility of a bankruptcy if many brigade members simultaneously fell ill (Rogers, 1980, 47). Lampton (1974)

criticized the decentralized model for using a too small unit (the production brigade) which could not equitably pool risks, and the vulnerability of the system to the vagaries of agricultural outcomes (p. 18). He went on to argue that in financing the health care system through the commune or the county, one would gain a wider pooling of risk, and insure a more equitable distribution of wealth, as well as be able to offer a more comprehensive health system (*ibid.*).

Farmer-doctor

If we want to compare the barefoot doctors' responsibilities with the rural health workers of other developing and developed countries, we must remember that the barefoot doctor was first and foremost a farmer. Rogers (1980) estimates that the barefoot doctors would spend approximately $\frac{1}{3}$ of their time each on farming, herb gardening and health work (p. 53; Sidel, 1972). The farming and growing of a herbal garden was partly to contain costs, and to guarantee full employment for the barefoot doctors (Rogers, 1980, 54). But the fact that the person providing health attention and advice had roughly the same socio-economic status as the ones seeking care was also significant for two reasons (*ibid.*, 54&57). Firstly, the difference in status and education between rural and urban China was vast, meaning that the gap between an illiterate farmer living in a thatched mud house seeking health care in the city, and the highly educated urban physician he would encounter, was huge. Also, traditional Confucian philosophy, which prescribes hierarchy and deference to authority, would serve to increase what was already a very unequal encounter. Trying to break down these hierarchical relationships was consistent with the Cultural Revolution's attack on Confucianism, and its campaign against the "Four Olds" (old ideas, old values, old customs, and old traditions) (Jiping, 1991, 101; Rozman, 2002).

This was part of what set the barefoot doctors model apart from village health workers in other developing countries – although the concept of a village health worker was not something new, the unique characteristic of the barefoot doctors was that he was simultaneously a farmer and a health worker, working in his own local village. This led to a degree of homophily not found in other systems – compare to the feldsher in Russia who would only work as a village doctor, and not even touch a farming implement, something Sidel (1973) calls “fake elitism” (p. 81), or the Indian attempts at rural health, where rich farmers would choose their sons as community health workers, thinking it was a job-creating scheme that would lead to a job in the public health care system (Agarwal, 1979). This also suggests that the surrounding economical situation is of prime importance – India was a highly stratified society, both economically and socially (castes), whereas China achieved some level of income equality (*ibid.*) – there were certainly large geographical inequalities, and Smith (2000) believes that the quantity and quality of health care provision mirrored this inequality, but the within the local communities, differences were not that big (p. 99).

Preventing, Curing and Referring

An important part of the barefoot doctors' training was to recognize what illnesses and conditions that he could treat successfully, and which needed to be sent to township hospitals for higher level care (Rogers, 1980, 49). Rogers estimates that about 75-90% of all cases were treated locally (*ibid.*), whereas Lampton (1974) criticizes the barefoot doctors as “vehicles for referring patients to urban hospitals”, and commented that “these paramedics have found more disease than many localities can afford to treat” (Lampton,

1974, 108). As to the quantity of patients treated, this varied widely with different locales, but one survey from Shenjiagang brigade stated that the barefoot doctor would see approximately 15 patients per day at the health centre, and make around 150 home visits every month (Shirley, 1980, 15).

The barefoot doctors also trained their own health aides, who were mostly young unmarried women between 18 and 25 years old that focused exclusively on preventive medicine (Rogers, 1980, 49). Most of the work in maternal and child care, and family planning, was performed by women, be they barefoot doctors or health aides (Kleinman, 1980, 24). The preventive part of the job would include adding bleach to village wells, to prevent infection (Foege, 1980, 103), cooperating with the national health campaigns to eradicate different pests, working with the farmers to develop waste disposal mechanisms, and improving lighting and cooking facilities (Shirley, 1980, 9). In addition, they would provide inoculations and distribute contraceptive pills (Rogers, 1980, 49).

The barefoot doctors would be equipped with about 40-50 different Western and Chinese medicines, and contemporary visitors reported that they seemed to know their uses and contraindications quite well (Rogers, 1980, 55). The attitude towards traditional Chinese medicine was an eclectic one; although the worldview providing a context for their use was no longer supported, the fact that they had been used for thousands of years still meant that it was worth investigating their use; thus traditional Chinese medicine would be integrated into an empirical scientific base, as opposed to the logical-deductive traditional health system (Connor & Samuel, 2001, 183). There was widespread experimentation, both at medical schools and research centers, and among barefoot doctors themselves (Rogers, 1980, 54). Sidel (1973) describes examples of medical workers experimenting on themselves with acupuncture, trying to enable deafmutes to hear and using acupuncture for anesthesia (p. 142-144). Hsu (1974) was very sceptical to these attempts, citing attempts to make hair grow by applying fertilizer as an example of frivolous and dangerous experimentation.

The barefoot doctor and his/her village aides were but the lowest rung in an integrated system, and much of the efficient outcomes obtained by the barefoot doctor stemmed from a highly organized system that provided specific lines of authority and responsibility, and clear pathways of referral of patients to sources for secondary care, and then back to primary care (Sidel, 1973, 194). Parallel with the barefoot doctors in rural areas, urbanites saw both worker doctors elected by their peers working within the factory clinics, and housewives trained to be area Red Medical Workers, who would mostly work on preventive medicine and coordination of health services (*ibid.*, 47&68). In addition, the barefoot doctor could not exist, or do his/her job efficiently without the training provided by the commune, the medical schools that taught the doctors at the commune and county hospitals, or even the high-level research and drug-production units that guided the barefoot doctor in their use of traditional and new treatments. (See *figure 1* for a schematic representation of the levels of health care institutions in rural and urban areas.) Smith (2000) claims that this kind of spatially integrated system was well suited for a totalitarian state, “*because it provided the infrastructure for maintaining law and order, disseminating political propaganda, and executing strategic campaigns*”, however he concedes that it proved highly functional for delivering health care services at the local level (p. 98).

Evaluation of the Barefoot Doctors Program

The health status of China's population both in the 1980's and today is far better

than what would be expected at its respective stages of development, and the World Bank calls it a spectacular success in reduction of infant mortality and increase in life expectancy (De Geyndt, Zhao & Liu, 1992, foreword&1). Deuschle (1980) reported that in the thirty year period from the establishment of the People's Republic until 1978, smallpox, cholera plague and venereal diseases were mostly eliminated as causes of death, with measles, diphtheria, pertussis, tetanus, poliomyelitis all brought under control (p. 5). Significantly, there was an almost total absence of malnutrition, and mortality rates were similar to the US (p. 7). Foege (1980) lists the campaigns against vaccine-preventable diseases in China as outstanding successes, partly because of the fact that unlike most other developing countries, no significant proportion of the Chinese population was out of reach of a disease surveillance system (Foege, 1980, 98;101). According to Chen (1980), 90% of China's rural villages had health care services in 1978 (p. 105), and China's health care system has been praised as unique in its enormous achievement in enhancing the quality of life (Lythcott, 1980, 136; Vogel, 1974, 23). In 1975, there were 1,6 million barefoot doctors in China (De Geyndt, Zhao & Liu, 1992, 1)

While these improvements in health status are undisputed, their sources are not. Improvements in living standard, including nutrition and housing, probably had as much an impact, if not more, than that of the barefoot doctors, and Western sources differ markedly in how they describe the program. Smith (2000) is enthusiastic praises the barefoot doctors, noting that "*The average life expectancy in China almost doubled, from 35 in the mid - 1960s to 68.9 at the beginning of the 1980s. Infant mortality fell to under 30 per 1,000 live births in the early 1980s (it was 200 before 1949)*", although he does criticize the significant spatial inequalities extant (p. 100). On the other hand, Zhou (1996) chides the West for swallowing Chinese propaganda wholesale: "*...China was regarded as a model for other Third World nations for providing health care to millions of poor farmers. In fact, the "barefoot doctors" were a hoax. Most of those doctors received little training at all, and many could not even perform the simplest emergency care. With the important exception of preventive vaccines [...] and some first aid services, farmers received little help from the state in terms of health care. The "barefoot doctors" camouflaged the lack of medical attention in the countryside.*" (p. 39).

However, arguing that improvements in living standard and nutrition were mostly responsible for the improvements in health status would not invalidate claims of success, for this could be seen as part of the greater program of rural development. China was committed to bettering the living standard, spending approximately 1% of GDP on grain distribution and subsidies, and massively improving schooling (WHO, 1978), with the WHO (*ibid.*) stating that full literacy might have contributed as much as any other factor to the improvement of health statistics (p. 10). Thus it was the combination of a wide range of factors – political mobilisation, mass campaigns, economic growth, the ability to assign university graduates on a compulsory basis, the control over medical professions, the sense of community, the integration of the barefoot doctor in an integrated medical system – that all contributed to the improvement in health status for the rural Chinese population.

Transition

The barefoot doctors were intimately linked to the ownership and production system in rural China, specifically the communal production brigades and farming communes known as *gongshe* – the barefoot doctor was a worker who got so called

"production points" like everyone else, which entailed him to a portion of the harvest income, and other medical expenses were mainly funded by the brigade's welfare fund. When the new economic policies of the late 1970's changed the village organisation into a system of individual small farm-owners, with the major production unit being the family, they also marked a turning point in the provision and financing of rural health care – the government decided to make cost-recovery the foundation of health care financing (De Geyndt, Zhao & Liu, 1992, foreword-2). However, in addition to the economical and structural changes happening, there was also an epidemiological transition taking place, partly because the program had been so successful; as Smith (2000) writes: "*The public health model of service delivery during the Maoist era -- [...] -- had been highly effective [...], yet the very success of such programs virtually guaranteed their demise in the 1970s and beyond. [...] the structure of disease in China had been altered, primarily by reducing the incidence of infectious and contagious diseases.*" (p. 103). Thus the beginning epidemiological transition, and the aging of the population, required more hospital beds, longer hospital stays and greater use of medicines and expensive treatment (*ibid.*). As for the barefoot doctors, their name was replaced in 1981 to village doctor, and in 1986 they were given the opportunity to pass a national exam to qualify as a village doctor. The level of the national exam was approximately on par with the level of county medical school graduates. If successful, they would receive certification as village doctors, otherwise they would have to call themselves village health aides (*ibid.*).

Situation Today

During the 1980's there was a large decline in the number of village clinic doctors, and the cost of health care rose from 3 to 25 yuan per capita from 1983-1990 (Yuanli, *et al.*, 1995). In 1988, 20% of rural households reported that family members could not obtain necessary health care because of financial limitations (*ibid.*) In 1990 about 60% of all health clinics were owned by doctors and health aides, turning the village doctor into a private entrepreneur. The fee-for-service model is dominant, and fees are mostly charged for dispensing drugs, seen as something tangible, with the charge for the intangible product of seeing the doctor being negligible (De Geyndt, Zhao & Liu, 1992, 11). As can be expected from this model, there is a wide-spread lack of preventive work by the village doctors – most ex-barefoot doctors, who certainly were trained adequately in prevention – and an overprescription of medication, because of the payment model (De Geyndt, Zhao & Liu, 1992, 11). The explicit intent of the fee structure is cost-recovery for the clinic, or even profit, not to contain costs or utilization. Early surveys show disturbing results, with illness as the leading cause of poverty among peasants, and one third of the poor rural families being poor because of illness (De Geyndt, Zhao & Liu, 1992, 11-12).

A World Bank report criticizes the Chinese government for allowing privatization without providing any kind of guidance or model, and concludes that the two ways out are either loading more of the curative care onto county hospitals, and letting the village doctor work on preventive and promotive activities, or to undertake a massive retraining of village doctors to enable them to cope with the modern disease profile of China (De Geyndt, Zhao & Liu, 1992, 13-15). Even the conservative magazine *The Economist* states that Mao Zedong did a much better job at providing health care, than the current market based solution; at his time 9/10th of the rural population had access to health care, but today 90% of them have no health insurance (*Economist*, 2004). Urban hospitals, mostly still state-owned, now receive only about 10% of their operational funds from the state, and the rest must be generated by selling (largely unnecessary) medicines and medical

tests, indeed even immunisation is not free, something that is unique to the Western Pacific region (*ibid.*). Smith (2000) concludes that the four factors that have impacted the health and well-being of Chinese people in the modern period are: a marked trend toward privatization and professionalization in the medical delivery system, as well as rapid technology transfers from the West; a widespread commodification of Chinese medicine and health care; a fundamental shift in the dietary habits of the Chinese people, particularly in the countryside; and the persistence of abject poverty in some parts of rural China (p. 105).

Conclusion

In stating this, we are also implicitly answering the logically following question: Do the barefoot doctors provide a viable and desirable model for rural health care in today's China? The answer is no, perhaps unfortunately so. As we reviewed above, the ideological and economical outlook in China has changed very markedly since the Cultural Revolution and the time immediately following. On one hand, there is much greater freedom and autonomy for personal realization and expression, but on the other hand, the state has been rapidly building down its social security network. This, coupled with the disintegration of the previous modes of production – cooperative farms in the countryside, and large work units in the cities, which traditionally were the base for funding and providing health care – means that there would be no ideological or institutional support for such a system. And as seen above, barefoot doctors were never a golden bullet which in itself could provide incredible health improvements. Indeed, WHO (1978b) states that the Chinese system cannot be transplanted to other countries, because of different historical, social, cultural and economic policy backgrounds (p. 16), well perhaps we can paraphrase that and say that barefoot doctors could not be transplanted to China today, because the factors above have changed so much.

We also see this reflected in the very varied track record of primary health programs in other countries; it all depends on the surrounding socio-economic context. At one time, China was one of the countries that, together with Kerala, Cuba, Costa Rica and a few others, inspired the world and showed that it was possible to improve health statistics far more than the GDP or level of development should predict. Today, China has made other choices, and the health status in the poorest regions might even be regressing, at the same time as economic growth is rapid (Economist, 2004). Barefoot doctors might be too closely linked to the Cultural Revolution, and Maoism, to be palatable or even relevant to current policymakers in Beijing, and in a new era with knowledge industries, economic growth, growing gaps between poor and rich, and a rapidly approaching epidemiological transition (Yuanli, *et al.*, 1995), China has to develop a new model for reaching its underserved population. Hopefully, barefoot doctors will not be entirely forgotten as at least an example of what is possible, when all sectors of society pull together.

Fig. 1

<i>Rural</i>	<i>Catchment area</i>	<i>Urban</i>
<i>City specialist hospital</i>	several million patients	<i>City specialist hospital</i>
<i>County town municipal hospital</i>	500 000 patients	<i>County town municipal hospital</i>
<i>County hospital/district hospital</i>	200 000 patients	<i>County hospital/district hospital</i>
<i>Commune</i>	40 000 patients	<i>Commune</i>
Brigade Health Station	2000 patients	Street Health Station
Barefoot doctors	100 patients	Factory Health Workers

Adapted from Smith (1974)

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