

## Primary Care Reform in the Peoples' Republic of China: Implications for Training Family Physicians for the World's Largest Country

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*Just as China has struggled with bringing an expanding economy to a country with large areas of economic underdevelopment, the Chinese health care system is experiencing tension between tradition and modernization. Because of this tension, health care in the Peoples' Republic of China has been undergoing significant reform since the beginning of the 1980s. Experiments in market-based health systems have been unsuccessful and have exacerbated disparities. New reforms, announced in 2006, stress the role of family physicians in leading the health care system. This paper discusses the history of the developments that led up to the new reforms and the educational challenges of training sufficient numbers of family physicians to meet the requirements of the new system.*

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To the world, the Peoples' Republic of China represents a combination of tranquil ancient culture and bustling modern economic development. Similarly, the Chinese health care system is experiencing tension between tradition and modernization. Health care in China has been under significant reform since the beginning of the 1980s. According to Hesketh and Zhu, who wrote a series of articles describing the changing aspects of health care in China,<sup>1-4</sup> "The most dramatic result of the introduction of the market was the disappearance of a system of universal access to free basic health care, which at its best was a model for the developing world."<sup>4</sup>

Due to the huge success of market-driven economic reforms, the Chinese people's nutritional status, housing, and sanitary conditions have been significantly improved. As a result, longevity has increased, and the major causes of mortality have changed from infectious diseases to coronary heart disease and other chronic illnesses.<sup>5</sup> The reemergence of previously controlled infectious diseases, such as sexually transmitted diseases, along with new infectious diseases, such as the

Severe Acute Respiratory Syndrome (SARS), also poses a threat to the public.

"Expensive to receive health care and inconvenient to access health care" have become two major complaints among Chinese people.<sup>6</sup> In an effort to address these concerns and provide high-quality, affordable, and accessible health care to its people, the Chinese government has explored a number of approaches to remodeling the country's health care system. Chinese officials have explored the American private pay model. They also examined government-sponsored public models in the United Kingdom, Israel, Australia, and Canada, as well as other Chinese models in Hong Kong and Macao. After considering these various models, the government has resolved that family medicine will be the key to the solution of the health care crisis.

The Chinese use the term 全科 to describe what is variously translated into English as "general practice" or "family medicine." In our experience, Chinese consider the two English terms interchangeable. For the sake of consistency, however, we will use the latter term in this article.

The concept of family medicine was introduced into China in the late 1980s. In 1994, the Chinese Society of General Practice was founded as a new academic discipline within the Chinese Medical Society.<sup>7</sup> At the beginning of the new millennium, three pioneer family medicine training sites were established in China. They

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In 2001, Nieman et al<sup>9</sup> published an article in *Family Medicine* describing the establishment of the discipline of family medicine in China. While it may seem that 6 years is too short a time to for an update, the pace of change in China and the scope of the changing health system for the world's largest country warrants a re-examination of the plans and how they affect Chinese family medicine. Further, since 2001, new government policies relevant to the role of family medicine in the health care system have created new demands for educating the first generation of Chinese family physicians. With the increasing importance of China on the world political and economic stages and the growing interest in traditional Chinese medicine throughout the world, decisions that China makes regarding health care policy are likely to influence medical policy in the developed as well as the developing worlds. Therefore, it is of particular value to understand the latest developments relevant to family medicine and the training of family physicians in China.

The information in the present article is based on a number of sources. Over the last 5 years, the three US-based authors (JW, KK, and JF) have had an ongoing exchange with the China-based authors and their home institutions. Members of the University of Wisconsin Department of Family Medicine have traveled to China on multiple occasions and have met with their counterparts in Beijing, Shanghai, Fujian, and Gansu Provinces. They have also participated in the annual Beijing Symposium on Family Medicine and Community Health Services, sponsored by Capitol University of Medical Science, FuXing Hospital, and the journal *Chinese General Practice*. In addition, they have hosted a number of Chinese physicians, health educators, and government health officials, including two of the China-based authors (XD and NQ). Many of our impressions are based on these professional interactions. Finally, we have reviewed the recent English and Chinese language literatures on family medicine and recent health reforms in China.

### The Chinese Medical Education System

To understand the challenges facing the establishment of family medicine in China, it is essential to understand the Chinese medical education system, which, to a North American observer, can seem quite complicated. One of the major points of confusion to an outsider is that the Chinese equivalent of the term "physician" (医生) refers to professionals who come from a wide range of educational backgrounds.

The Soviet Union's medical educational system was adopted by China after the Cultural Revolution.<sup>9</sup> The system consists of a shorter, 3-year post-high school

program (roughly equivalent to an American associate degree) and a longer, 5–8-year post-high school training program, roughly equivalent to Western medical school. However, graduates from both types of programs are still recognized as physicians. The barefoot doctors from the cultural revolution era were given the opportunity to take an examination after further training to become "country doctors" (乡村医生), allowing a third track to become a physician.

Further complicating the system, there are two types of medical schools in China. Traditional Chinese medical schools teach traditional Chinese medicine. The curriculum of these traditional schools includes herbal medicine, acupuncture, and therapeutic massage. Western-style medical schools, on the other hand, teach Western medicine, similar to medical schools in North America. The students from the Western-style medical schools in China also receive up to two semesters of lectures on basic principles of traditional Chinese medicine.

After graduation, the majority of the top-ranked students will continue to pursue specialty and subspecialty academic residency training in tertiary hospitals affiliated with the medical schools from which they graduated. The quality and the depth of postgraduate training for physicians who are assigned to local hospitals or community health centers may differ substantially, based on geographic location.

Currently, there are 2,000,000 health care professionals who can be referred to as physicians. The majority of these physicians have 3 years or less of professional training. In rural areas, the educational level of physicians is even lower.<sup>10</sup>

Despite the fact that family medicine was introduced into China in the late 1980s, implementation of new programs has been slow, and there are, as yet, no national standards for the curricula or standards of training for family physicians. Liang<sup>11</sup> described the two models currently being used to train family physicians in China. The first is a 3-year family medicine postgraduate residency training program. This type of program has only been piloted in Beijing, Zhe Jiang, and Shanghai. The curriculum of FuXing Hospital is outlined in Table 1. Nationally, a limited number of trainees have enrolled and, as yet, few physicians have graduated from the programs. The small numbers of residency graduates have not had any sizable effect on the demand for high-quality family physicians and faculty members to staff new programs.

The second model of education involves retraining the majority of the less-educated physicians currently working in local community health centers and transforming them into family physicians. However, without national training standards, the quality of these programs is quite variable. For example, the lengths of the training programs range from 3–48 months.

Table 1

## The FuXing Hospital 3-year Postgraduate Family Medicine Training Program Curriculum

<i>Setting</i>	<i>Inpatient Specialty Rotations</i>	<i>Outpatient Community Health Center</i>
Content	Cardiology, pulmonology, endocrinology, oncology, neurology, emergency medicine, surgery, obstetrics, pediatric dermatology, coronary care unit, electrocardiogram reading, radiology, or traditional Chinese medicine	Outpatient medical care, preventive medicine, health education, physical rehabilitation, family planning
Time	Each rotation ranges in duration from 1–3 months, for a total of 30 months	6 months longitudinal

Further, completion certificates are awarded by different organizations, including the central ministry of health, provincial ministries of health, provincial-level training centers, city-level health bureaus, and individual training facilities.<sup>11</sup>

### Current Health Care Reforms

In 2005, Blumenthal and Hsiao<sup>12</sup> commented that the market-driven health care reforms in China have failed. In our experience, similar commentary was also prevalent in the Chinese media at the time. According to Blumenthal and Hsiao, privatization of the Chinese health care and public health sectors widened the health disparity between the wealthy coastal and rural provinces. Lack of government funding for health care facilities has forced many hospitals and physicians to rely on the sales of new drugs and technologies to boost their incomes. The collapse of the cooperative medical system for the rural, mostly poor, Chinese peasants created overnight some 900 million uninsured citizens. The government's slow response to the SARS outbreak also reflected the effects of decentralization of the public health system.

The three American authors of this article attended the Beijing Symposium for Family Medicine and Community Health Services in the fall of 2005. We were struck by the Chinese physicians' frustration at how little trust patients have in them. This mistrust and increasing conflicts between patients and the hospitals and physicians partly reflect the huge disparity of health care between the rich and poor. The majority of the physicians we interviewed expressed a desire to provide high-quality, accessible, and cost-effective care to their patients. The Chinese government has realized that an affordable and easily accessible health care system will be essential for the stability of the country. Also, an effective public health system, based on access to quality primary care, will be crucial in an era of emerging infections and, possibly, bioterrorism.<sup>12</sup>

As a result of the admission of the failure of market-driven health care reforms, the Chinese government established new initiatives in 2006 that are certain

to have a considerable influence on the role of family medicine in the health care system and on the training of family physicians. The central government published guidelines on the development of community health services.<sup>13</sup> The key point of this reform is that community health service should be a public service.

The goal is to have at least one community health center for every 30,000 to 100,000 citizens. The local governments will be the main sources of funding; additional funds will come from institutions such as trade unions and factories. The main roles of the community health centers will be to deliver basic health care and to increase the public's responsibility for maintaining good health. The centers will integrate Western and traditional Chinese medicine. There will be collaboration between the community health centers and the local public health departments. The scope of services of the community health centers is described symbolically by the government as "one body, six aspects." The body is the community health center. The six aspects consist of prevention, health education and promotion, birth control, outpatient evaluation and management of common illnesses, case management of chronic disease, and physical rehabilitation.

Recently, Liang has articulated the optimal skill set for family physicians working in community health centers. These include the ability to provide diagnosis, treatment, and referral of patients with common illness; pre-hospital (ie, stabilization) and post-hospital continuity care for emergency and seriously ill patients; health maintenance for a designated community; management of chronic illness; home health care; health education; basic behavioral health services including counseling and treatment; physical rehabilitation; family planning; establishment and management community health service information networks; and supervision of other team members for services such as home health nursing, immunization, and basic community health prevention.<sup>14</sup>

The government also plans to pilot a transition from the current "three-tiered" hospital system to a "two-tiered" community health center system in selected

cities. The existing three-tiered system involves local neighborhood hospitals, district-wide secondary hospitals, and city-wide tertiary hospitals. This existing system is inefficient and expensive due to its reliance on inpatient and subspecialty care. The new two-tiered system will consist of ambulatory care in community health centers and inpatient care in referral hospitals. This new system, which will use family physicians in community health centers as gatekeepers for hospitalization and specialty care, will be piloted in cities that have well-established community health infrastructures. The goal is that by 2010, most municipalities will have community health service networks consisting of community health centers plus satellite clinics. The core providers in the community health centers will be family physicians, public health specialists, and community nurses. Both Western and traditional Chinese medicine will be provided.<sup>15</sup>

### Educational Challenges

Based on numerous discussions with health administrators and educators from China, it appears that the short- and mid-term governmental priorities will be to retrain practicing community health center physicians to become competent family physicians. The Chinese government understands that the cornerstone of ensuring the success of this new initiative will be high-quality physicians, nurses, and other staff who work at the community health centers. Thus, the emphasis will be on continuing education and certification programs for practicing community health center physicians rather than on full-time residency programs in family medicine. It has been suggested that 600 hours of training would be sufficient to ensure the competency of community health physicians.<sup>10</sup>

A major topic of discussion at the 2005 International General Practice/Family Medicine Conference in Beijing was the importance of establishing family medicine departments and of introducing family medicine into Chinese medical school curricula.<sup>16</sup> It is the same argument that family medicine used 3 decades ago in US medical schools. As of 2006, only 25 of the 90 Western-style medical schools in China had departments of family medicine. If medical students are not exposed to the concepts of family medicine during their education, they are less likely to choose family medicine as a career choice after graduation. There are ongoing debates in China on whether family medicine should become a new, separate major track in the medical school as opposed to a postgraduate specialty.<sup>16</sup> We anticipate it will be some time until this issue is resolved.

However, even though funding priorities will be directed toward retraining community health center physicians, we assume that a limited number of full-time family medicine residencies will continue in parallel to the retraining programs and graduates of

these programs will become the leaders of academic family medicine in China. There is a growing body of research on family medicine in China that will form the intellectual basis of the discipline. There are at least two journals dedicated to family medicine: the *Chinese Journal of General Practice* and the *Chinese Journal of General Practitioners* (the term "general practice" is used in the official English translations of the titles of both journals). Examples of recent research include an analysis of curricula and teaching methods for retraining community physicians in Shanghai<sup>17</sup> and an investigation of the disparities in the services that community health centers provide throughout China.<sup>18</sup>

### Conclusions

With a quarter of the world's population and an increasing role in world economic development, the success of China's health care reform will have a major global influence. The Chinese government recognizes the size of the task of providing affordable and accessible health care for its 1.2 billion people. The success of developing family medicine in China's complicated health care system will also provide valuable insight on how to bring about changes in other countries. The concept of a population-based community health center, which provides both prevention and treatment, could become a model for community-based medical practice. With the United States attempting to address the same issues of providing accessible, quality care for the growing number of uninsured citizens, its government, too, has to solve the issues of training, medical workforce, and cost that China shares on a grander scale. Additional research is needed to evaluate the outcome of the implementation of the new health reforms in China as well as the outcomes of programs designed to train enough family physicians to meet the needs of the world's largest country.

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