Community Healthcare's Future in China: An American Student's Perspective

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ABSTRACT

The objective of this study was to investigate, in Chinese counties differing in economic development, the extent of the improvement in community healthcare since the 2009 Health Sector Reform and to explore the legacy of the historical barefoot doctors, who were non-profit, government-funded physicians who successfully served the primary healthcare needs of the Chinese rural population of the 1960s and 1970s. For this investigation, ten personal interviews were conducted in each of two different counties in Zhejiang province. Interviewees were primary care doctors, some of whom were also barefoot doctors. The findings revealed that in both counties, doctors reported that the majority of their work was dedicated to public health services, with very little time spent on clinical services, as a result of the implications of the 2009 Health Sector Reform. Many physicians also reported not having adequate medicine provided by the National Essential Medicine List. In this way, the 2009 reforms created a new manifestation of the well-known Chinese saying that criticizes community healthcare, "Lack of clinical doctors, shortage of medicine." In conclusion, looking ahead to the future of community healthcare and reflecting on the practices of the barefoot doctors, policy should be implemented to increase the provision of clinical services by community doctors, who could then incorporate their public health responsibilities into their medical services.

INTRODUCTION

The "barefoot doctor" program created the first community healthcare workers after the establishment of the People's Republic of China in 1949;[1] the program was officially implemented in rural China in 1968 and introduced to the public by the Communist Journal Red Flag. Under the program, rural farmers were recruited and trained in basic medical procedures. Upon the completion of three to six months of training, the new doctors began to see patients at village health stations, which represents the lowest level of the three-tier health system in rural China, consisting of (in decreasing order of size) the county, township, and village.[2,3] The barefoot doctors were so named because as farmers, they had often worked without shoes.[4] Organized by the central government and incorporated into the collectivized agriculture industry, the Cooperative Medical Scheme (CMS) offered healthcare to rural residents during the 1960s and 1970s and funded the barefoot doctors.[2,5] In this way, the nonprofit doctors, despite earning lower incomes, receiving less formal training, and having fewer resources than the township and county doctors, served many of the health needs of the rural villagers and farmers by providing effective local primary care to village residents.[2] The work of the barefoot doctors received commendation from the World Health Organization (WHO) and influenced the Declaration of Alma-Ata in 1978, which called for all world governments to promote the health of all people, and the "Health for All" program of the 1970s, which called for an improved level of global health by the year 2000.[5-7]

Nevertheless, by the late 1970s, China was in great need for economic reform at the conclusion of the Cultural Revolution. Urbanization and industrialization efforts led by Deng Xiaoping in 1978 included the "decollectivization" of the agriculture industry, which ultimately led to the collapse of the nationally-funded and agriculturally-based CMS in the early 1980s; the reforms thus ended the financial support of the barefoot doctors.[5,8] Deng Xiaoping called for the further education of the barefoot doctors, and in order to continue their medical practices, these doctors were then required to pass a formal examination sponsored by the Chinese Ministry of Health (MOH).[2] Those who passed the examinations were subsequently renamed "village doctors" and deemed fit to retain their healthcare professions. However, without proper government funding, these physicians, no longer the barefoot doctors supported by the CMS, were forced to resort to fee-for-service payments for their medical services and impose a 15% markup on drugs prescribed to their patients.[5] As many rural residents lacked health insurance prior to 2003, the new for-profit village doctors brought new issues to the primary healthcare system in China.[5] In fact, many residents now seek primary care in the township and county hospitals instead of the local village health stations, increasing work pressure for the healthcare workers at the

hospitals due to the increase in patients.

Recent government health policies implemented to resolve the healthcare issues of China's rural population include the New Cooperative Medical Scheme (NCMS) issued in 2003, which offers voluntary health insurance to all rural residents.[9] As of 2016, almost all rural residents have health insurance.

The 2009 Health Sector Reform has been the most significant health reform in the past decade, implemented to combat the issues which arose in Chinese healthcare after the discontinuation of the barefoot doctor program. The Reform called for community-level, primary care doctors to provide basic public health services to all residents, including, but not limited to, chronic disease management, the creation of health records for all residents, and immunizations.[5] The 2009 Reform also called for the establishment of the National Essential Medicine List, which lists the 307 "generic medicines" that all "public primary health-care institutions" would be permitted to sell, with no deviations from the list.[10] In addition, to combat the markup doctors have placed on drugs, the Reform established a zero-markup drug policy, restricting doctors to sell drugs at purchase price. Doctors could then be subsidized by local governments to cover this loss in their income. Doctors would, however, be paid a fixed medical fee. They would also be paid based on performance assessment, but with a ceiling on their income.[10]

With regard to the state of the modern village doctors, the Health Sector Reform issued the addition of subsidies to village doctors' income, including for their work in public health.[10] The New Rural Social Pension Insurance System issued in 2009 established a pension of 55 renmibi (RMB) for all rural elderly, but a 2014 study argues that a nationwide pension system for village doctors must be established, as it has become clear that the village doctor population is aging.[3] For reference, the current standard retirement age in China is 60 years old for men; for women, the retirement age is 55 for government workers and 50 for other professions.[11]

Looking ahead to the future of community healthcare, what major issues still exist in Chinese primary healthcare after the 2009 Reform? The objective of this study was to investigate, in counties differing in economic development, the extent of the improvement in community healthcare since the latest health reforms and the legacy of the barefoot doctors.

METHODS

Study Sites

The counties used in this qualitative study were Jinyun County, located in the city of Lishui, and Jiashan County, located in the city of Jiaxing, both in Zhejiang Province. As of 2015, Jinyun County has a population of 463,883 and total area of 1503.52 sq. km. As of 2014, the GDP in Jinyun is 18.406 billion RMB, with rural residents' per capita income amounting to 13,416 RMB. As of 2015, Jiashan County has a population of 387,538 and total area of 506.62 sq km. As of 2014, the GDP in Jiashan is 40.259 billion RMB, with rural residents' per capita income amounting to 25,048 RMB.[12-15]

In this way, the counties have similar population sizes, but the GDP in Jinyun (a significantly larger county in area) is less than half of that of Jiashan, and the rural residents' per capita income in Jinyun is also approximately half of that of Jiashan. Jiashan is thus more economically developed than Jinyun, and this difference in economic development was viewed as a logical independent variable in this study investigating community healthcare improvement.

The study's subjects were 22 primary care doctors, including former barefoot doctors; 11 doctors were selected from each county. Due to modern China's rapid urbanization, many newer urban areas retain rural qualities; thus, both "village doctors" from rural townships and "community doctors" from officially urban "streets" were evaluated. In Jinyun, 6 doctors were selected from Xinjian Township (including a village doctor pair), and 5 were selected from Wuyun Street. In Jiashan, 5 doctors were selected from Luoxing Street, and 6 were selected from Yaozhuang Township (including a village doctor pair). Xinjian and Wuyun public health directors and Jiashan Health Bureau staff assisted with parts of the data collection process including interviewee selection and contact, as well as transportation to the interview sites.

Data Analysis

Data were collected in July 2016 through in-depth, face-to-face interviews with the primary care doctors. Interview questions were targeted to gather basic information about the doctors, information about the doctors' daily work routine, the doctors' opinions on the current state of Chinese healthcare, and their evaluation of their profession over time (Appendix 1). The questions, written in English by Raymond Guo, were translated into Mandarin Chinese by Hengjin Dong, who then asked the questions to the doctors. All interviews were conducted in Mandarin Chinese. Three Xinjian interviews were conducted at the Xinjian Township Health Center due to a concurrent village doctor conference at the Center. All other interviews were conducted in the doctors' own health stations.

In Jinyun, the Xinjian interviews occurred on one day and the Wuyun interviews the next day. In Jiashan, the Luoxing interviews occurred on one day and the Yaozhuang interviews the next day. Interviews lasted approximately twenty minutes, and data collected from the interviews were analyzed by Raymond Guo. A Sony ICD-PX440 Digital Voice Recorder and an iPhone 6s recorded all interviews. Yuhang Zeng, Xuemei Zhen, and Hao Zhang assisted with the note-taking.

Written informed consent was received to conduct and record the interviews. No reimbursements were given to the interviewees. The study protocol was approved by the School of Public Health at the Institutional Review Board of Zhejiang University.

RESULTS

Characteristics of Sample

64% of the doctors were male, and 50% of the interviewed doctors

were working past retirement. The most common education level was health school or high school graduate (10 doctors); only 1 doctor graduated from a university, and 4 doctors had only attended primary school. 68% of the doctors reported earning an income above that of the average member of their communities. 64% of the doctors had pensions, and 55% of the interviewed doctors had worked for over 30 years and were thus former barefoot doctors. Most primary care facilities were either public village health stations selling medicine only from the National Essential Medicine List (50%), or equivalent urban counterparts to these village health stations, called "public community health stations" (35%). Three Jinyun doctors belonged to private, "Non-essential Medicine" village health clinics, could sell medicine not on the National Essential Medicine List, and could include markups in their sales (Table 1). However, because patients could not use their government-provided health insurance at these clinics, these doctors reported a scarcity of daily patients. Also, unlike their Jinyun counterparts, the majority of Jiashan doctors had above average incomes, and more Jiashan doctors currently had pensions or were in the process of obtaining one (Table 1).

Income Breakdown

Doctors' income came from the following sources: medical services, subsidies for public health services, facility operational costs, and subsidies from the zero-markup drug policy. Following the 2009 Health Sector Reform, doctors from both counties were paid a fixed medical service fee of 5 RMB per patient.

For public health services, Jinyun doctors were annually subsidized under capitation: in villages/communities with a population greater than 1,000, the doctor was subsidized 10 RMB annually per village/community resident. Otherwise, the total subsidy was 10,000 RMB. In villages/communities with multiple health stations, the 10,000 RMB would be split evenly among the stations. Jinyun doctors were additionally subsidized 10,000 RMB annually for health station operational costs and 20% of the purchase price of drugs. Jiashan doctors generally reported receiving subsidies from township hospitals.

Community Healthcare

Many physicians reported that the majority of their work was devoted to public health services instead of clinical services. Public health services generally included managing hypertension and diabetes, making and receiving phone calls, and managing electronic health records, and some Jiashan doctors also reported conducting field work. As one Jiashan physician explained, "Patients sometimes think that all I do is sit at my computer the whole day."

Doctors from both counties reported providing less clinical services than before. An older Jinyun doctor explained, "As a barefoot doctor, I performed more than a dozen trauma suture surgical cases, but now, patients with even slightly serious diseases must be referred to larger hospitals." All but two health stations observed in Jinyun demonstrated the capacity to provide intravenous drip. In Jiashan, however, one community doctor explained, "I earn 5 RMB per patient, regardless of what clinical services I provide. Intravenous drip thus added to my net operational costs, so I discontinued the service." Another Jiashan doctor explained how he was no longer authorized to perform intravenous drip because of the 2009 Health Sector Reform.

There was great variation in the number of patients received daily in both Jinyun and Jiashan. In both counties, some doctors reported seeing "sometimes not even one patient per day" while others, who held excellent reputations within their villages and communities, reported seeing up to 50 patients per day. Several doctors from Jiashan described how the number of residents who stopped by the health station only to check their blood pressure contributed greatly to the daily patient count.

In both counties, many patients tended to either be referred to township and county hospitals due to the severity of their illnesses or directly seek medical aid at these larger facilities either due to the township/county hospitals' relative proximity to residents or due to community doctors' limited ability to provide clinical services. Nevertheless, physicians reported having good relationships with their patients, who generally trusted and appreciated the doctors. However, two Jiashan doctors, upon calling patients to monitor chronic diseases, occasionally confronted a frustrated patient exclaiming, "Why are you calling me? You cannot even treat my disease [due to limited services and medicine]!"

Doctors' Reflections

In both Jinyun and Jiashan, the doctors expressed mixed responses when considering if their healthcare profession was better now or in the past. Some doctors reported earning a higher income in the present era, while others explained that their income had decreased due to a decrease in the number of daily patients. The three doctors working in Jinyun private health clinics especially expressed this latter sentiment; patients tended to visit the township hospital instead of the primary care institutions due to the proximity of the hospital to the clinics and their inability to use their health insurance at the clinics.

In both counties, the most common job complaint among doctors above the retirement age was the absence of an adequate pension program for primary care doctors. The physicians who had pensions either privately purchased them or had the equivalent of the common villager/community member pension. A Jinyun former barefoot doctor explained, "I am only working in my old age because I do not have an adequate pension." One Jiashan physician lamented, "After working as a doctor for almost 50 years, where is my pension?"

Of the doctors below the retirement age, the most common job complaints were an inadequate essential medicine supply, the tedium of public health services, and the lack of patients. Many of the doctors attributed these problems to the 2009 Health Sector Reform, as the outlined policies set standards for the National Essential Medicine List and requirements for public health services. One Jiashan doctor, who described her daily routine as primarily

		Jinyun	Jiashan	Total
Sex	Male	9	5	14
	Female	2	6	8
Age	Under retirement age	6	5	11
	At least retirement age	5	6	11
Education	Primary School Graduate or Unspecified	3	1	4
	Junior High Graduate	2	5	7
	Health School Graduate or High School Graduate	5	5	10
	University Graduate	1	0	1
Income (compared to other members of the community)	Below average	6	1	7
	Above average	5	10	15
Pension Status	Has pension	6	8	14
	No pension	3	1	4
	Pending/Unknown	2	2	4
Years worked as a primary care doctor	Under 15	1	2	3
	15-30	4	3	7
	Over 30	6	6	12
Type of Primary Care Facility	"Essential Medicine" Village Health Station (Public)	5	5	10
	"Non-essential Medicine" Village Health Clinic (Private)	3	0	3
	Community Health Station	2	5	7
Total		**11**	**11**	**22**

Table 1: Characteristics of Sample

making phone calls and selling an inadequate supply of medicine, explained that she "didn't feel like a doctor anymore."

Other noteworthy complaints included "the ceiling placed on my earnings based on performance assessment [which lowered job incentive]" (from a Jiashan doctor) and "less job excitement due to less clinical services, such as intravenous drip" (from a Jiashan former barefoot doctor).

Of the three Jinyun doctors who were truly "satisfied" with their profession, two have witnessed increases in patient numbers and income. One of these doctors explained, "I have grown happier with my job because I am now more experienced and more familiar with the villagers."

DISCUSSION

Village/community doctors provide a very limited range of clinical services and instead spend most of their efforts on public health services. This trend has ultimately resulted in a decrease in the number of clinical doctors and available medicine at primary care institutions. This study thus demonstrates a new manifestation of the common Chinese saying, recognized by Chinese healthcare experts, criticizing the nation's primary healthcare system, "Lack of clinical doctors, shortage of medicine."

The reason for this development points back to the 2009 Health Sector Reform, which emphasized the provision of basic public health services and established the National Essential Medicine List. The shift in primary doctors' profession focus from clinical services to public health services has significantly decreased their ability to treat patients and the number of patients visiting the health stations, subsequently lowering the doctors' income and job satisfaction. The patients who cannot be treated by the primary care doctors thus seek medical aid at the township and county hospitals, and this trend thus places more work pressure on township/county hospital healthcare workers, as these institutions receive more patients seeking primary care.

The 2009 Reform even adversely affects the provision of public health services. Unpleasant phone calls from patients who criticize physicians' ability to treat illnesses and the self-described tedium of responsibilities such as electronic health record management, as seen in our study, lower doctors' job incentive to perform tasks, including public health services, at a high level.

Doctors' dissatisfaction toward public health services suggests that the physicians prefer to provide clinical services, reflecting the duties of the traditional barefoot doctor (e.g., one Jinyun barefoot

doctor once provided stitches to his patients). After all, it is through the traditional provision of clinical services that doctors foster solid patient relationships, which then reduce unpleasant confrontations related to public health service provision.

The most significant differences between Jinyun and Jiashan doctors, as mentioned before, relate to income level and pension status, due to Jiashan's being more economically developed than Jinyun. No other noteworthy county-related difference was observed. Indeed, while Jinyun and Jiashan counties were initially selected for this study based on their differing economic development, this difference proved not to be influential of the study results. This is most likely because Chinese primary healthcare is essentially controlled by the central government and not by area-specific economic development.

Study limitations include the limited number of study subjects. The inclusion of more doctors from Jinyun and Jiashan, more counties, and/or more provinces into our study would have made the findings more conclusive.

POLICY IMPLICATIONS

We recommend for village/community doctors to provide more clinical services, similar to the practices of barefoot doctors. Indeed, many current doctors are able to provide more clinical services but are not authorized to do so. These impositions should be removed, while doctors should be evaluated to ensure that they can properly administer clinical care.

The income ceilings based on job performance should be abolished, and monetary incentives should be implemented to promote the provision of clinical services. The increase in clinical care would result in more patients at primary care institutions, which would in turn decrease the number of patients at township and county hospitals and reduce work pressure on the hospital staff. Primary care doctors would also enjoy higher incomes and better job satisfaction.

Health station assistants should be employed to perform the more tedious tasks of public health, such as electronic health record management. Primary doctors would then have more time to provide clinical care. Indeed, the youngest Jinyun doctor already delegates these tedious responsibilities to another health station worker, and this doctor reports a high job satisfaction and a large number of patients.

In addition, to address the latter half of the saying, "Lack of clinical doctors, shortage of medicine," we recommend an augmentation of the National Essential Medicine List to include more drugs to better treat both clinical and chronic diseases.

These first two propositions will greatly improve primary care doctors' job satisfaction. A 2016 study found that village doctors were most dissatisfied with "pay and the amount of work that had to be done, opportunities for job promotion and work conditions" and that future policy should include "appropriate remuneration and approaches that incentivise village doctors to achieve the goals of the health reforms."[16] While our study has reached similar conclusions, we emphasize the importance of expanding clinical services and essential medicine.

Primary care doctors should still provide public health services, due to patients' general trust of doctors. Therefore, our third proposition is the incorporation of public health services into clinical care. For example, a doctor could measure a patient's blood pressure and use the records for hypertension management, a public health responsibility.

Furthermore, due to the strong complaints from elderly doctors, a nationwide social pension program for primary care doctors should be established. A 2014 study also reached this recommendation due to its findings that the village doctor population was definitively aging.[3]

Moreover, retired primary care doctors with valuable work experience should be reemployed to combat the "lack of clinical doctors," as described in the common saying. From our study, a Jiashan doctor who had retired in 1997 was in fact rehired due to her experience and solid patient relationships. One former Jinyun barefoot doctor, who often receives patients outside of his community due to his experience and excellent reputation, would also be willing to work in his old age.

Older doctors should be evaluated to ensure that they can still properly provide clinical services. To incentivize former doctors to reenter the workforce, doctors' income should be directly increased, possibly through larger public health subsidies.

CONCLUSIONS AND REFLECTIONS FROM THE PRIMARY AUTHOR (RAYMOND GUO)

To an American college student, it is truly impressive that the grassroots barefoot doctor program of the 1960s and '70s, operating in a primarily agrarian country at a time when other nations had already fully industrialized, successfully met many of the healthcare needs of China's rural residents and garnered recognition from the WHO. While I have observed many current Chinese healthcare issues, brought to light through physicians' poignant comments like "I don't feel like a doctor anymore," I believe that Chinese community healthcare can once again achieve success through the addition of clinical services, reflecting the practices of barefoot doctors, into the work routine of modern primary care doctors. Indeed, the proposition of incorporating public health services into clinical care would be an excellent union of the past with the present to solve major issues in Chinese primary healthcare.

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STORIES

"We're here to ask you a few questions concerning your opinions about the recent health reforms…" The doctor receives the informed consent form, signs it, and begins to tell us his story.

It starts out simple enough, as he tells us his age, his highest education level, where he went to school. But the light begins to sparkle in his eyes when we start discussing his life as a barefoot doctor of the mid-twentieth century, for he remembers to this day, more than forty years later, exactly how much he was paid and subsidized for his services. What begins as an interview for a qualitative study quickly turns into an immersive story-telling experience, as the doctor answers every single question with detailed descriptions of his daily work routine, switching back and forth between anecdotes from his youthful barefoot doctor days to recent accounts of his current professional life as a seasoned, 21st century village doctor.

He fondly reminisces about his past, describing how he would perform "more than a dozen trauma suture surgical cases," a clinical service that only larger township and county hospitals are allowed to perform in the present era. He eventually concludes that the historical barefoot doctors worked harder than their modern counterparts, and yet he, a man to whom his income is unimportant, is still satisfied with his current healthcare profession.

Completely awe-struck, I shake his hand at the conclusion of the interview and realize that I have met a man, albeit leading a simple lifestyle throughout his long life, who is a full-fledged hero. He has spent nearly the past half-century selflessly devoting his time to improving the lives of the members of his village, despite lacking an extensive education or a large income. Through his story, the doctor surprisingly glorifies the primary care doctor profession in China.

About one week and several interviews later, I visit the health station of another village doctor in a different county. Like the first interviewee, this man is also a former barefoot doctor, but the story he tells us in his one-room facility carries a different tone. When asked about his pension status, he replies, "After working as a doctor for almost 50 years, where is my pension?" He attempts to chuckle this comment off, but I already see the pain in his eyes and the frustration he feels regarding the absence of a government-sponsored pension program for primary care doctors. The doctor pleasantly tells the rest of his story, at one point playfully showing off the small pot he uses to prepare his lunch every day. Nevertheless, through the subtle hints of dissatisfaction of this second doctor's accounts and his more subdued personality, I begin to see the cracks within the job of a primary care doctor.

In this second county, I visit the health station of another doctor: a woman in her mid-thirties with two young children. She enjoys a spacious work area with brand-new facilities, but as we sit down to begin our interview, I notice her tired eyes and her sad smile, facial features that usually do not appear on a young woman's face. And so she begins to tell her story, told from a perspective markedly different from those of the barefoot doctors; she recounts how excited she was when she first started working with and assisting her now retired father and fondly remembers her interactions with the patients they received. She explains how her daily work routine now primarily consists of making phone calls, some of which are dedicated to public health services, and selling drugs from a limited supply created by the National Essential Medicine List. Considering the very low number of daily patients who visit her health station, the doctor sums up her current experience, "I don't feel like a doctor anymore."

When I think back on her story, these are the only words that I remember, along with her sad smile and her tired eyes; this story is one of jaded disappointment. As an American undergraduate student, I cannot help but consider how physicians here in the United States can enjoy the most exciting time of their careers during their mid-thirties; many doctors will have just started their own practices after finishing long years of schooling, residency, and the like. It is unjustifiable that halfway around the world, the Chinese counterparts to the fresh, optimistic American physicians can grow tired of being doctors, not due to any fault of their own, but rather due to the current situation of the Chinese healthcare system.

Indeed, the three stories of "glory," "cracks," and "disappointment" point to the flaws of the healthcare system in China. The first story primarily reflects the glorified historical profession of the barefoot doctor, while the second story demonstrates the cracks which begin to form in the healthcare profession once the modern state of Chinese healthcare catches up with the aging barefoot doctor. Finally, the third story paints a stark picture of a doctor too young to have personally enjoyed the benefits of being a barefoot doctor and instead thrown into a healthcare system desperately in need of further reform. For this new generation of young adults, who have never tasted historical glory, the faults in their healthcare profession are too serious to be mere cracks. Quite simply, there is disappointment.

Nevertheless, through the correct implementation of further health reforms, there exists hope for the Chinese healthcare system. The key lies in bringing the historical glory back into the present. That is, primary care doctors need to provide more clinical services, reflecting the practices of the traditional barefoot doctor. Other new policies, such as the extension of the National Essential Medicine List and the incorporation of public health responsibilities into medical care, should be instituted in order to alleviate the "disappointment" of the present. To fix any remaining "cracks" in the healthcare system, we propose additional measures such as the establishment of a nationwide pension program.

From the perspective of an American student, I recognize that many issues in the Chinese healthcare system must be resolved, and my writing reflects my desire to bring awareness to the doctors who "don't feel like doctors anymore," to those who painfully experience cracks and disappointment in their profession. My sincerest hope is for our proposed policy to be considered and implemented in order to improve the lives of the primary care physicians. After all, every story deserves a happy ending.

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APPENDIX: INTERVIEW QUESTIONS

The following basic information was acquired from each village doctor:

- Gender
- Age
- Highest level of education
- Income
- Length of time being a primary care doctor
- Annual training time
- Method of training
- Training content/medical specialty
- Pension (yes or no)
- Prevalence of NCMS insurance in the village

The following questions were asked to acquire information about the doctors' daily work routine:

- For how much of the day do you work at your health
- station? Do you ever visit patients' homes? Do you ever see patients in your own home? Do you come to the health station daily? How many patients do you see daily?
- Who else works in your village health station? Is the station privately owned, part of a larger township or county facility, or other?
- How many people live in your village, and are there any other village health stations in your village?
- Describe the primary care services you offer to your patients. Do you use Western medicine, traditional Chinese medicine (including acupuncture and fire cupping), or a combination of both? Why? Are there pharmacies in your village which provide traditional Chinese medicine?
- How are you paid for your medical services? Describe the breakdown of your income.
- Describe your provision of basic public health services. Do you keep health records for all residents? Describe your management and treatment of chronic diseases, including diabetes and hypertension.
- Describe the prevalence of illnesses in your village. What are the most common diseases that your patients have, and how do you treat them? How is your own health?
- How often do you use computer technology?

The following questions were asked to acquire the doctors' opinions on the current state of healthcare in China:

- How often do you refer your patients to township and county hospitals? How often do patients go directly to these larger facilities for primary care?
- What is your opinion on the recent developments in health policy in China, including the NCMS and the 2009 Health Sector Reform?

- Do you treat diseases such as HIV/AIDS and mental health?
- In your opinion, what are the biggest issues with your profession (i.e. low salary, poor working facilities, lack of formal training, etc.)?

The following questions were asked to evaluate the village doctors' opinion on their healthcare profession in the past:

- Are you more satisfied and/or excited with your profession now, or when you first started working?
- Do you feel you are more appreciated and respected as a primary care doctor now, or when you first started working?
- Do you have better relationships with your patients and other community members now, or when you first started working?