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TAPPING INFORMAL NETWORKS “GUANXI” WITH ICTS

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Tapping Informal Networks “Guanxi” with Information and Communication Technologies: Empowering Rural Doctors in Xi’an, China

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FYP Supervisor: Dr. Arul Chib

A Final year project submitted in partial fulfillment of the requirements for the Bachelor degree of Communication Studies (Honors)

Wee Kim Wee School of Communication and Information
Nanyang Technological University
Academic Year 2009-2010
Acknowledgments

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We are also indebted to Dr. May O. Lwin who has kindly and generously funded the expenses of our overseas trip to China. Without your support, our research would have been impossible.

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Special thanks also go to our Chinese collaborator Zheng Wan Song for sacrificing his time and effort, helping us in the liaising of key contacts for the interviews, and accompanying us on the field trips. Thank you for your friendship, one which we truly appreciate and treasure.

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Abstract

The significant investments of governments in the area of ICTs has been concentrated in the delivery of urban-based health information systems (HIS) (Chiasson & Davidson, 2004). However, rural healthcare in China has been neglected during the development of such market-based health services. Thus, this research paper seeks to investigate the effective use of information and communication technologies (ICTs) within the rural healthcare system, specifically in Xi’an, China. The benefits of, and barriers to, the effective use of these ICTs were analysed using the theoretical model -Value of ICTs Model (Chib, Lwin, Ang, Lin, & Santoso, 2008). In particular we assessed the health information needs, the existing healthcare structure, and the use of informal networks—“guanxi”—to acquire health information. Focus group discussions and in-depth interviews (N=74) were conducted over a period of one month from both the urban and rural healthcare sectors in Xi’an. Respondents included village doctors (30), rural patients (10), urban doctors (17), and 17 other stakeholders in the healthcare sector in Xi’an.

Analysis of transcripts showed ICT-utilization benefits, including the facilitation of communication, greater time efficiency, and better access to medical information. As suggested by the theoretical model, infrastructural, economic, socio-cultural, and technological vulnerabilities were also observed. In addition, the use of informal networks “guanxi” was found prevalent amongst Chinese rural doctors, particularly in mobile phone and QQ online social network usage. The implications of these findings for research and policy-making are discussed.
Healthcare in China

In recent years, the world had witnessed the rapid growth of China as an economic giant. The World Bank announced in 2009 that China’s growing economy had lifted half a billion people out of poverty from 1981 to 2004. Similarly, a larger cake did not mean a fair distribution of the cake to all. For example, medical costs remained one of the top financial threats to low-income rural residents (Ramzy, 2009). The enlarged economic capacities did not seem to have benefited those who are less well-off. This is especially so for the healthcare sector (Wong, Tang & Lo, 2007). Hence in this research paper, we had chosen to turn the limelight from China's economy, instead choosing to examine China's healthcare system specifically in the central province of Shaanxi, around the city of Xi'an.

China's healthcare system had undergone several reforms dating back from the 1980s. However since the reform, decentralisation and fragmentation of the system resulted in several problems, one of which concerned the widening disparity between urban and rural healthcare. This paper focused on rural doctors and their service quality when considering their important role in enabling the improvement of rural healthcare. As guanxi relationships of trust and exchange were a prevalent cultural phenomenon in China, especially when the need for sharing information arose, we anticipated the employment of informal guanxi networks amongst rural doctors. Finally, we examined the potential information communication technologies (ICTs) used to facilitate health information exchange in China.

Healthcare System in China

The Chinese healthcare system from the early 1950s to 1980s was typical of 20th century communist societies, where all facilities were government owned and funded. The equal distribution of resources resulted in an overall enormous improvement in healthcare. Infant mortality fell from 200 to 34 per 1000 live births, and life expectancy increased from about 35 to 68 years (Hesketh & Wei, 1997). Though its main emphasis was on primary care
and prevention, China was able to control widespread diseases such as malaria and schistosomiasis (Ramzy, 2009).

However, in the mid-1980s, China rapidly reformed its seemingly successful healthcare system as part of overall economic liberalisation. The reform was characterised mainly by the decentralisation of public sector health services. In addition, there was an increase in reliance on out-of-pocket payments by users of health services, along with an increase in autonomy of health facilities as well as more freedom of movement of health workers and flexibility in pay. This move was in line with the privatisation of China’s economy in the general effort to reduce the role of the central government in regional and local affairs. Social expenditure, including health spending, was largely decentralised to county and township governments within provinces. The result was a weakening of the vertical lines of communication and control of the health system (Bloom & Gu, 1997).

China's hierarchical public health system is made up of six different levels: state (national), province, city, county, town and village (see Figure 1) (Anand et al., 2008; Liu & Wang, 1991). While some of the health stations were run by local governments, a wide range of institutions owned and operated the clinics and hospitals. These included state-owned enterprises, military establishments, private investors, and local cooperatives. However, there were insufficient public health regulations and mechanisms for governance. Gao Qiang, the Executive Vice-Minister of Health, explained that the under-reporting of SARS cases in Beijing was due to the plethora of medical institutions under differing management (the city, district and county governments, the Ministry of Health (MoH) and Ministry of Education, the military, and enterprises) (Liu, 2004; Liu & Wang, 1991). A major persistent flaw was that important gaps in the monitoring mechanism existed below the district level. Thousands might be affected by the outbreak of pandemics before they would come to the attention of district authorities. Some contended that China had yet to invest in public education to
prevent future epidemics, with regards to personal hygiene and public health practices (Blumenthal & Hsiao, 2005).

Specifically in the case of the Xi'an healthcare system, different government departments (finance, administrative, healthcare) had different classification standards, levels and methods of licensing doctors. Administrative authorities established a system separated into five levels: (village, town, county, city and provincial), distinct from the healthcare departments' classification which classified according to three classes, denoting quality and standards. Alternatively, finance departments would record only two types of medical institutions: profit-seeking (i.e. private) and non-profit hospitals (i.e. public). In view of this, Xi'an Public Health Bureau (2008) emphasised the pressing need for "unified planning, rational distribution, appropriate development and standardised management" across counties and villages in the area, because lack of collaboration among healthcare departments would cause information flow to slow down.

A major problem within the healthcare system was the widening gap between rural and urban areas. Concomitant with the decentralised strategy and marketised healthcare system, the central government reduced its ability and commitment to redistribute healthcare resources from wealthier to poorer, yet highly populated, areas, resulting in a wide disparity between urban and rural China in terms of spending and service delivery (Griffiths, 2008). Although rural residents accounted for 70% of China’s population, they received only a third of health expenditure (Hsu et al., 2006), resulting in a serious shortage in healthcare resources and facilities (measured in terms of hospital beds and medical professionals) in rural areas compared to the urban areas. A glaring problem lay in the fact that most of the improved health services tended to privilege those already able to afford it (Coyne, Hou, Short, Zhe, & Wu, 2002).
The aforementioned disparity in healthcare services led us to look further into the pertinent health issues in rural China and what had been done to tackle the problems.
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Issues in Rural Healthcare

Rural residents of China faced unique healthcare issues such as maternal and infant mortality, infectious disease, epidemics and environmental threats. In recent years, the government had stepped up its efforts and diverted more attention and resources to rural healthcare, one of which was the Healthy China 2020 reform.

Maternal and infant mortality was a pressing issue in the rural area. Between urban and rural areas, there was a wide gap in maternal and infant mortality rates (China Statistical Yearbook, 2000; WHO, 2008). Specifically, the maternal mortality rate in rural areas in 2004 was more than double that in urban areas—63 versus 26.1 per 100,000 live births, respectively (WHO, 2008). Similarly, infant mortality rate in the rural areas in 2004 was 24.5 compared to 10.1 per 1000 live births in the urban areas (WHO, 2008).

In addition, infectious diseases such as tuberculosis (TB) and schistosomiasis had returned to rural areas due to high population densities and water pollution (Ross et al., 2001; Dummer & Cook, 2007). For instance, identified cases of TB were steadily increasing in China: in 1999 the rate was 39.03 per 100,000, rising to 44.06 per 100,000 in 2001 and 71.95 in 2004 (China Statistical Yearbook, 2005; Cook & Dummer, 2004). Although these statistics applied for general Chinese population, official estimates revealed that 80% of TB patients lived in rural areas (Li, 2003; Xinhua News Agency, 2006).

HIV/AIDs and avian flu were potential threats in rural areas as well (Cook & Dummer, 2007). In the case of HIV/AIDS, the social disgrace linked with the disease may prevent people from seeking diagnosis and treatment. Another possibility was that farmers suffering from HIV/AIDS might encounter difficulties in selling their goods and products, which led to economic hardship for their families (UNAIDS, 2002). Furthermore, Avian Flu could become widespread in rural areas due to the fact that rural population and animals lived close together, often in conditions favourable to virus spreading (WHO, 2007).
Last but not least, environmental threats jeopardised the health of rural residents too. For instance, toxins, which were released mainly from coal burning activities on a large scale, posed such a severe health danger in China (WHO, 2007). Indeed, respiratory diseases became the main cause of death in rural areas until 2004 (China Statistical Yearbook, 2005). Another major issue was water quality. Between 300 and 360 million people in rural areas did not have access to clean water (Drummer & Cook, 2007; Zhang, Wu, & Sanders, 2007). Therefore based on the above four points, rural residents of China had unique healthcare issues.

To deal with these rural healthcare issues, the Chinese government had recently put in tremendous efforts to improve public healthcare coverage. The medical care system had developed rapidly since the implementation of the old health reform in the 1980s. However, because the main orientation of the old healthcare reform was to give autonomy to hospitals without the contribution of public finance, hospitals relied on advanced procedures and drug sales to make money. Health expenditure rose and rural residents especially found the cost hard to bear. The disparity between urban and rural sectors and between different regions of China thus enlarged (Ramzy, 2009; Chen, 2009).

In order to address these problems, China developed a new healthcare reform in 2009, termed "Healthy China 2020" which consisted of multiple goals. The Minister of Health, Beijing attested to the fact that the way to pave cost effective development for healthcare was "to apply the policy of prevention first, focusing on rural and grassroots level service, and paying equal attention to both Western medicine and traditional Chinese medicine". Major emphasis was placed on promoting basic health service. In the rural areas, infrastructure and human resource development of the three-tier network at county, town, and village levels was planned (Chen, 2009).
TAPPING INFORMAL NETWORKS “GUANXI” WITH ICTS

This paper sought to address the issue of improving rural healthcare at the grassroots level. Rural doctors played an important role in improving healthcare due to their direct contact with patients with their unique health problems. However, limited efforts had been undertaken to empower these rural doctors. The next section of the literature review would reveal more about the role and function of rural doctors.

China’s long struggle with healthcare coverage for rural areas went back for decades, when the "barefoot doctors" programme became a national policy. The focus was on training paramedics quickly in order to meet pressing rural health needs (Anon, 1968). Selected and paid for by their recipient villages, barefoot doctors would usually begin practicing after basic medical training, supplemented by occasional refresher courses at county or community hospitals. Emphasis was placed on epidemic disease prevention and treatment of common diseases (McConnell, 1993). Despite under-developed techniques and limited medical instruments, these rural doctors were able to provide timely treatments for sanitation, immunisation, and delivery for pregnant women (Lampton, 1977).

During the healthcare reform in 1980's, the Ministry of Health cancelled the title of barefoot doctors, barring them from institutional and financial support. Consequently, some switched profession completely, became "village doctors" or "health aides" after passing a formal medical examination (Zhang & Unschuld, 2008). In order to maintain standards, the central government introduced a medical licensing system in which village medical practitioners could be certified as "rural doctors" (Liu, 2004). Under economic pressure from the shift from collectivism to individual labour, village health services became privatised. Relative economic attractiveness was the main factor for the shift from prevention of mainly acute diseases to treatment of chronic conditions (McConnell, 1993).

Despite the introduction of the medical licensing system, rural health practitioners received minimal professional training and supervision, with more than 60% of the medical
practitioners (excluding assistant medical practitioners), engaging in three or fewer years of professional training. In addition, Ministry of Health (2007) estimated that around 30% of the entire medical force had only a senior high-school level of education, with the average level of education even lower in rural areas, leading to the low quality of healthcare service in rural areas (Wang, Kushner, Frey, Ping & Qian, 2007). Two-thirds of the rural doctors started their career as barefoot doctors, lacking both experience and adequate training. Misdiagnosis, inappropriate prescriptions, over-prescribing and inadequate record-keeping were believed to be common (Liu, 2004; McConnell, 1993).

Meanwhile, the incentives for rural doctors to undertake disease control activities were inadequate. Substantial time would be needed to equip the rural workforce with knowledge and skills capable of controlling existing and new infectious diseases (Wang et al., 2008). However, like the "barefoot" doctors who preceded them, the village doctors were first-line health care providers in rural areas. Hence, they were identified as key change agents to improve overall rural healthcare in China (Clayton, Yang, Guan, Lin & Wang, 1993).

The current literature revealed that there were certain pertinent rural health issues which required urgent attention. However, problems such as lack of training, knowledge and skills hampered their effectiveness in delivering health services effectively. Hence, the first research question sought to investigate about the information needs of rural doctors.

**RQ1:** What are the information needs of rural doctors in Xi’an?

Due to the prevalence of *guanxi* culture and the function played in sharing information in China, we anticipated the potential of *guanxi* to facilitate effective information exchange between rural doctors and their stakeholders, particularly as an alternative to the existing formal information exchange system.
Guanxi Network

Guanxi, a mechanism to increase and facilitate information exchange between various stakeholders, is a prevalent social phenomenon in China, and is integrated into daily lives and systems, both private and public. Guanxi literally meant “relationships”. However, the term meant something more in Chinese, and has implications beyond customary English usage. Guanxi is more than connections; it is a “mechanism by which individuals are able to achieve personal, family or business objectives (Bell, 2000). In addition, guanxi in China is a broad social and cultural construct that provides security, stability and trust, reflecting the broader Confucian tradition (Zhu & Zhang, 2007). The Chinese recognise that these ties are the "grease" the society needs to turn smoothly; hence they establish and maintain connections to turn to for assistance (Ellis, 2009).

Guanxi teaches a person to identify a competitor (outsider) from a collaborator (insider), and prescribes different rules for dealing with each type of person. Insiders are highly trusted because they are expected to give accurate information (Hammond & Glenn, 2004). Family, colleagues and classmates are regarded as insiders and are offered some degree of automatic trust (Gu, 1990). The major function of guanxi relationships is the sharing of information. One is expected to share important information, even confidential, with those who are considered insiders (Gao & Ting-Toomey, 1998). Conversely, outsiders are not entitled to such a privilege (Chu & Ju, 1993).

Guanxi is cultivated through a continual exchange of favours. Tokens, either tangible or intangible, are given and received personally to keep the relationship thriving. Guanxi is not merely for personal benefit or for an event, but once guanxi is built, it is constantly kept healthy (Ellis, 2009). In China, guanxi goes deeper than just on a personal level. It is integrated in the governance system and used as an alternative when formal mechanisms fail. In addition, guanxi enables networks to overcome barriers and instability in times of changes.
in the formal system or framework (Gu, Hung & Tse, 2008). Hence, guanxi reduces transactional costs and time by going around formalities, thus improving efficiency (Piao, 2006).

The negative effects of guanxi, caused by political and economic power invested in individual, can be seen when relationships become entirely based on material exchange, degenerating the network into one that undermines Confucius values (Verhezen, 2004). Furthermore, the limitation of guanxi to ‘insiders’ influences thinking patterns such as promotion of groupthink, leading to a disparity in social dimension, even in the healthcare sector (Piao, 2006).

In order to assess the possibility of guanxi in facilitating effective information exchange between rural doctors and their stakeholders, we looked into the existing information exchange networks to understand how those networks influenced the rural doctors' information seeking behaviours.

**RQ2:** How do the networks between rural doctors and stakeholders influence the former’s information seeking behaviours?

  a) What are the existing networks the rural doctors have?
  b) What are the mechanisms of these networks?
  c) How do these mechanisms influence rural doctors' information seeking behaviours?

**ICTs for Health Development in China**

The appropriate use of information communication technologies (ICTs) had been recognised as a way to increase the quality and reach of reliable information and effective communication, as well as crucial elements in public health practices. ICTs had helped to improve dissemination of public health information; enabled remote consultation, diagnosis and treatment and facilitated collaboration and cooperation among health workers, including
sharing of learning and training approaches (Chetley, 2006). This subsequently improved the effectiveness of health-service delivery and the overall healthcare system.

For the purpose of this research study, we focused on ICTs that facilitated two-way communication and allowed interactivity between the source and the end users, such as internet or mobile telephony (Greenberg, 2005; Michiels & Crowder, 2001; Skuse, 2001; UN ICT Task Force, 2003; Weigel & Waldburger, 2004; World Bank, 2003).

In recent years, doctors in China had increasingly acquired information through formal systems available such as Healthcare Information Systems (HIS). HIS or e-Healthcare is the employment of information technology, especially the internet, to improve healthcare services (Eng, 2001). A systematic review by Pagliari et al. (2005) suggested that this term referred to “the organisation and delivery of health services and information using the internet and related technologies”. The term encompassed both technical development and new working styles associated with networked communities.

The aim of HIS was to improve the efficiency and quality of healthcare, eradicating repetition and waste of resources in hospitals (Guo et al., 2005; Tao & Miao, 2003; Wang, Hu, & Wang, 2004). Furthermore, the importance of HIS was not only evident in hospitals, but was also seen as vital for the general public. After the SARS epidemic in 2003, the Chinese government had put in great efforts in constructing a public health information network that would strengthen the system's capability to respond to emergencies in a more effective and efficient manner (Liang & Xue, 2004; Qin, Jeng, Rakue, & Mizota, 2005). One such effort would be to extend the information network to all rural areas and to improve the public health information system to facilitate disease surveillance, detection, reporting and response. It was estimated that over 80% of medical organisations above the county/district level, 27% of town level hospitals and all Centers for Disease Control and Prevention (CDC) above the county/district level were able to receive real-time information during an epidemic
through such health systems (Zhanga, Xua, Shanga & Rao, 2007). However, given the fact that HIS in China remained a research gap in the contemporary literature (Braa, Monteiro & Sahay, 2004; Wang, 2009), we considered the possibility that village clinics might not be part of this information system due to the lack of resources and facilities in rural areas. Therefore, in the course of the research, we sought evidence of whether the rural doctors had the same opportunity as their urban counterparts to benefit from such health information systems.

Turning to rural China, there had been increased adoption of digital ICTs in recent years. The size of rural netizens in China reached 84.6 million by the end of 2008, increasing by 31.9 million from 2007, with the growth rate surpassing 60%. Furthermore, with the development of 3G applications in China, accessing internet through mobile phones was expected (China Internet Network Information Center, 2009). With subscriptions in urban areas declining due to saturation, mobile operators increasingly looked to rural areas, where tele-density was only 12 percent, as a source of new growth (Nystedt, 2008). Still, China’s countryside is vast, with large disparities between the more well-off areas where mobile operators were likely to set their sights on first and impoverished regions where many people did not even have landlines (Wallis, 2009). We expected a high penetration rate of mobile phones and internet in rural China in the future, which would unleash the potential of harnessing these ICTs in healthcare service delivery.

**RQ3:** How can ICTs improve the information exchange within rural healthcare system?

a) What are the ICTs adopted by rural doctors in Xi’an for healthcare purposes?

b) What are the benefits of, and barriers to, the usage of ICTs to rural doctors?

**Conceptual Framework**

The conceptual framework chosen to provide a foundation for the examination of the overall effectiveness of ICTs in developing countries was the ICTs for Healthcare
Development model (Chib, Lwin, Santoso, Hsu & Ang, 2008). The model was used to analyse the benefits of healthcare ICTs as well as the existing barriers to its development.

![Figure 2. ICTs for Healthcare Development Model.](image)

As an opportunity producer, ICTs had been shown to increase the economic benefits for users, as in Kenya, where medical organisations expanded their reach and service capacity to newer audiences (Batchelor et al., 2003). ICTs acted as a capability enhancer, increasing work and time efficiency for the trained health workers in Peru who were able to receive immediate notifications of diseases (Voxiva, 2001). As a social enabler, ICTs allowed health workers in Ghana to stay connected, and engage with one another using personal digital assistants (PDAs) (Chetley, 2006). With the prevalence of guanxi culture in China, ICTs would be potentially beneficial for maintaining and reinforcing existing guanxi networks.

Finally, as a knowledge generator, ICTs improved access to health information, as in Russia, medical staff in a child cancer care centre connected with co-workers in the United States to exchange critical information (Vishnevskaya-Rostropovich Foundation, 1999).

Poor infrastructure in developing nations inhibited ICT accessibility and connectivity which in turn affected effective usage of ICTs. State support was especially critical during the initial set-up phase (Badshah, Khan, & Garrido, 2003). Economic capabilities of individuals
and communities were also restraining factors most obviously in rural areas. High costs of ICT adoption could result in slow or little ICT proliferation and low technological literacy within the community. Technological limitations such as functions of the devices and technological literacy could hinder the effective usage of ICTs. Socio-cultural barriers manifested in three forms: the existing social structure, social values held by the community, and social factors such as age and gender, all of which might inhibit the adoption of ICTs. For example, tight *guanxi* relationships might hinder the use of ICTs since access was only granted to people within these closed networks. This would mean that people excluded from these networks were not given access to the resources at all.

Being inter-related, these different categories of barriers could not be regarded as separate entities and should not be examined in isolation or stand-alone categories.

**Method**

**Research Design**

A qualitative approach was chosen to gain in-depth understanding of the rural healthcare system in Xi’an, information needs of rural doctors and their information seeking behaviours, as well as the benefits of, and barriers to, the use of ICTs. Therefore, in-depth interviews were employed in order to obtain descriptive and comprehensive data pertaining to theoretically determined issues, as well as to explore unpredicted issues raised by the participants.

In-depth interviews allowed researchers to probe deeper into the various areas of focus and newly raised issues. Although open-ended interview questions, some of which were based on the theoretical framework of ICT4H model, were pre-determined to create an interview questionnaire (see attached Appendix A), we utilised the semi-structured interview method as it offered the flexibility to probe deeper into issues which emerged during the
interview sessions. In addition, as several groups of respondents were involved in this study, the interview questionnaire was adapted to the specific respondent groups.

Participant observations of participants were also utilised and included direct observation, informal interviews, and house visits. That aided the research in divulging the facts that interviews could not discover, and in removing discrepancies between what respondents said or believed, and in providing actual facts.

Area of Focus

The first objective of this study was to understand the information needs of doctors at grassroots level, i.e. village doctors in Xi’an rural areas. In order to assess this issue critically in a comprehensive manner, we attempted to uncover the status and responsibilities of these village doctors in the healthcare system, as well as the support they received from top management.

The second objective was to find out information seeking behaviours of village doctors. Based on the current literature review, we anticipated village doctors’ engagement in both formal communication channels and self-initiated or informal “guanxi” networks.

The third objective was to gauge village doctors’ ICTs usage to satisfy their information needs. Access to ICTs and usage behaviours were uncovered through a series of questions on cost of facilities and access, frequency and ease of use, experience and purpose of use, as well as general perceptions towards ICTs. Questions addressed both new and old ICTs, such as the internet, mobile phones, HIS, television and video to compare and contrast different mediums of information exchange. In addition, the impacts and disadvantages of ICTs were evaluated based on questions corresponding to the key benefits and barriers identified in the ICT4H model. This allowed us to propose recommendations to overcome potential barriers for relevant stakeholders so as to ensure successful implementation of future ICT-related projects and policies in the Xi’an rural healthcare system.
Participants

For this study, 74 in-depth interviews were conducted with key stakeholders in Xi’an healthcare system. The table below displays the breakdown of participants. The term “rural doctors” was used to occasionally refer to both “county doctors” and “village doctors” whereas the term "village doctors" pertained only to grassroots doctors, the lowest level in Xi’an healthcare system.

Table 1

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<tr>
<td>Male</td>
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<td>------</td>
</tr>
<tr>
<td>Village Doctors</td>
</tr>
<tr>
<td>County Doctors</td>
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<tr>
<td>Urban Doctors</td>
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<tr>
<td>Rural Patients</td>
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<tr>
<td>Pharmacists</td>
</tr>
<tr>
<td>Health Officials</td>
</tr>
<tr>
<td>Village Chiefs</td>
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<tr>
<td>Health Information System Officials</td>
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<tr>
<td>Telecommunication Suppliers</td>
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<td><strong>Total</strong></td>
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Sampling Procedures

Research participants were selected through snowball sampling, relying on a Chinese collaborator working in Tang Du urban hospital in order to establish connections with important contacts such as government health officials and urban doctors. The majority of the
interviewees gathered were obtained through referrals, largely enabled by guanxi of collaborators, including researchers from Xi’an Jiao Tong University.

Without guanxi, it would have been difficult for us to access key interviewees. The fact that the rural population was generally fearful of the authorities added to the difficulty in gaining honest replies when questioned. This was especially so towards inquisitive outsiders, such as the Singapore-based research team.

Data Collection and Transcription

Fieldwork in Xi'an was conducted over the month of December 2009. Interviews with the doctors, health officials, telecommunication suppliers and pharmacists were conducted at their work stations, including hospitals and village clinics, government offices and medical halls. Interviews with rural patients were conducted at village clinics and hospitals. Interview sessions ranged from half an hour to two hours long, depending on the participants’ understanding of rural health. All the interviews were conducted in Mandarin Chinese by us. However, due to the particular Chinese dialect spoken in the rural areas, on-the-spot translation was conducted.

All the data were either audio or video recorded for purpose of translation and transcription. The original Mandarin transcripts were translated into English by the research team. Photographs and video clips were also collected during the course of fieldwork in rural Xi’an.

Data Analysis

The main analysis method employed was thematic coding, which involved “interpreting the information” and categorising textual extracts in reference to “themes in the context of a theory or conceptual framework” (Boyatzia, 1988). This form of coding allowed us to analyse the data collected in an elaborate manner and effectively identify emergent themes.
At first, a list of broad topics was developed based on the proposed research questions, theoretical framework, and prior literature review. After the transcription and translation of interview data were finished, coding was used to categorise the data into the developed themes. Code sheets created in Microsoft Excel were employed extensively during the coding process because the software’s filtering and sorting functions proved to be exceptionally useful in data management. We particularly sought trends, patterns, and topics that the participants emphasised, dramatised, were confused by; as well as through elicited statements about how participants saw themselves, their situation, or their surroundings. Quotations from respondents are marked as separate paragraphs or when included in the text, were distinguished with quotation marks.

Results

There was a pressing need for village doctors to acquire essential information to effectively practice their profession. These village doctors served as the key agents in improving rural healthcare despite limitations in skills and knowledge. We found that the information needs of village doctors were unfulfilled. Only a number of authorised village doctors were able to receive information, trainings and meetings from the government authorities. On the other hand, the majority of village doctors interviewed were not privileged to be a part of this formal system. Instead, they had to acquire information through self-initiated networks facilitated by phone communication, traditional face-to-face sharing, internet and social media networks. The latter networks were termed as the “informal networks” by us. The prevalence and effectiveness of the informal networks in facilitating information exchange among village doctors led to an investigation of the benefits and barriers of each ICT tools as suggested by the ICT4H model.
Information Needs of Village Doctors

Village doctors possessed a low level of medical knowledge and the facilities in the village clinics were often inadequate. There were mainly three types of knowledge essential to the practice of village doctors. They were: knowledge about diseases in rural areas, knowledge about medicine, and knowledge and skills to operate facilities.

Village doctors could only treat minor or basic illnesses such as infection of the upper respiratory tract, gastric pains and appendicitis, as they were “not well trained” and mostly resorted to using “outdated treatments based on past experiences”. Even if they theoretically knew how to treat major diseases, they would not be able to do so as they didn’t have “proper medical facilities or medicine” for diagnosis and treatment. To village doctors, the best solution for difficult cases would be to “transfer the patients to the county hospitals”.

Currently, the biggest problem is about diagnosing the illness. No matter how experienced I may be, or the vast number of patients I have treated before, or how good I am in reading veins, the diagnosis may not be as accurate after all. A secondary diagnosis would be better. (Village doctor No.3)

In addition, village doctors’ clinics were ill-equipped and under-staffed, as compared to county hospitals and area hospitals:

It is not easy because we’re at the lowest level. This village clinic is in the stage of development. With the amount of workers right now, extensive facilities are useless because you need trained people to operate them. (Village doctor No.4)

Therefore, there was an urgent perceived need of village doctors to acquire sufficient medical knowledge, as well as get appropriate service facilities for effective diagnosis and treatments.

There are two improvement needed in the rural area. Firstly, improve service capabilities such as hardware investments to build more hospitals and purchase medical equipment. Secondly, service standards have to be improved by giving appropriate training to the personnel in medical institutions. (Health official No.1)
The first remark often mentioned was that village doctors needed to learn about “common diseases” in rural areas which included pneumonia, bronchitis and cough, gastrointestinal diseases and high blood pressure. In addition, they also learned how to treat “seasonal diseases such as heatstroke in summer and gas poisoning in winter”. Secondly, village doctors had to acquire knowledge about "maternal and infant health", such as fertility control for birth planning and child vaccination. Thirdly, village doctors needed to learn about the “prevention of communicable diseases”, such as the recent H1N1, and thereafter disseminate this prevention knowledge to villagers. Fourthly, village doctors had to be equipped with skills to deal with “emergency cases” before transferring the patients to upper-level hospitals, as well as to conduct follow-up treatments after patients came back from diagnosis at urban hospitals.

We treat some types of critical illness only when there is a basis for treatment. Usually, we will direct them to the upper level hospital to take X-ray, CT. After the upper level has reached a conclusion on the illness, we may treat the patient here. (Village doctor No.28)

Finally, village doctors needed to learn practical skills in order to treat the patients effectively after they had acquired "theoretical knowledge”. Normally, village doctors "acquired and practised practical skills after attending training”.

Pharmacists played an important role in providing up-to-date information to village doctors with regards to medical supplies. However, increasingly, village doctors with internet access and wider exposure were able to obtain medical information themselves. Subsequently, they approached the pharmacists to ask them for supplies of new medicine.

Normally, village doctors can obtain information through the internet. When they discover a new medicine, they can even recommend it to us. We’ll bring the medicine back for them and allow them to try it for a period of time. (Pharmacist No.1)

Price of medicine was very important because village doctors had to prescribe effective medicine that suited village patients' budget. Specifically, village doctors would
TAPPING INFORMAL NETWORKS “GUANXI” WITH ICTS

prescribe “cheap and effective medication” for patients who were “financially unstable”; and “higher grade and better quality medicine” for patients who were better-off. Village doctors were able to retain their patients by suggesting suitable and affordable medicine.

In rural areas, you have to control the pricing of treatment well. If you charge slightly higher than others, patients will no longer visit your place for treatment... The number of patients has fallen by half over the past few years; hence there is a need for new knowledge and drugs. (Village doctor No.3)

As certain patients subscribed to traditional Chinese medicine (TCM) instead of western medicine, village doctors needed to know how to prescribe appropriate medicine for different types of diseases and explain their effects to the patients.

In the last decade, we treated illnesses using TCM. But now, we can use a combination of both TCM and western medication. This means that there are a lot of new medication and treatment methods unknown to us. Hence, I would really love to acquire this new knowledge because if the development of co-treatment proceeds further, patients too will increase. (Village doctor No.3)

Village doctors expressed the need to learn how to utilize medical facilities and equipment crucial to the diagnosis and treatment of patients.

Additionally, you have to learn how to use and operate the facilities and you need to have the relevant knowledge. (Village doctor No.4)

In our village, it is useless to have elaborate type B-ultrasonic equipment, because we did not learn how to operate such equipment even though we have studied it. (Village doctor No.21)

Information Seeking by Village Doctors

The second section of the findings answered the questions pertaining to the networks between rural doctors and stakeholders and how these networks influenced the rural doctors' information seeking behaviours. The networks found were classified under two broad categories: formal and informal networks. A privileged group of village doctors recognised by the authorities were able to receive formal trainings, meetings and possibly information from HIS. Specifically, the opportunity to attend such formal events was limited to a selected few village doctors who had a "medical license" or had "records with Qian County Health
Department”. Village doctors were conferred differential status by the authorities and licensed in two different ways. On one hand, those "above 40 years old, or had practiced for at least 30 years", would be recognised by the government. On the other hand, younger doctors who did not meet these requirements had to "undergo and pass an official examination" in order to get the license, which was only "usable within Shaanxi province", and these successful candidates could only practice “in the particular village they were serving in”.

Village doctors who were not conferred preferential status had to resort to setting up their own networks in order to acquire and exchange information. These networks, termed as the informal system, consisted of traditional face-to-face sharing, informal social media networks and phone communication via land line and mobile phones. We chose to focus on studying the benefits and barriers of ICTs employed in the informal system due to the effectiveness and prevalence of informal networks in enhancing information exchange among village doctors. The prevalence of informal networks was confirmed both in the findings and literature review gathered.

Formal information exchange in Xi’an healthcare system. As mentioned above, under the formal networks regulated and imposed by the authorities, village doctors received and sought information primarily through trainings by government health authorities and meetings conducted by government health authorities. The Health Information System (HIS) was another potential source though this was available solely to the urban sector of the healthcare infrastructure.

Village doctors received training sessions from “county hospitals”, the “health bureau medical center”, the “Center for Disease Control and Prevention” and even the “Health Ministry”. In these training sessions, village doctors were educated and trained on how to
identify and treat illnesses prevalent in a particular season, or constituted an epidemic threat, such as H1N1 flu.

However, financial constraints limited regular trainings sessions despite the presence of well-laid plans. Richer village clinics tended to hold trainings more frequently than the rest. In addition, most village doctors supplemented incomes through farming, and thus “had to tend to their fields during peak seasons”, hence they were sometimes unable to attend the training sessions organised by the authorities.

Regardless of what is planned, if finances are unavailable, they are not able to do anything. Richer places might hold frequent seminars for the village doctors, including training that specially teaches medical knowledge. But this normally cannot happen for most places because of money issues. (Health official No.1)

Recognised clinics were given the opportunity to send health workers for trainings, since "almost every year, we [the government] would take out a sum of money for the county health bureau to conduct trainings for the rural doctors". Once again, this privilege was only given to the recognised rural (county and village) doctors. Due to the aforementioned fragmentation in the financial support, licensing and administration, "only a limited portion of rural doctors gained access to training seminars” to upgrade their medical skills and knowledge.

We would only recognise one village clinic. As for the other clinics, if they are already built, they would only be recognised as sub-branches of this main clinic… The money that the government invests for training is training for the village doctors that are recognised. There is no such thing as free trainings. (Health official No.2)

Meetings were another forum hosted by health authorities or county doctors in county hospitals for village doctors. According to one of the village doctors, such meetings “were held since the 70s and 80s” but “these meetings did not have a fixed schedule”.

Even for healthcare meetings that were held either in the village, town or county, a health official revealed that, "others who are not notified are those who are not recognised by
the health department”. During such meetings, village doctors were often informed and updated on health information and prevention especially with regards to communicable diseases and epidemic.

There has been a recent increase in the information for H1N1. In my own clinic, we already attended three to five meetings and we came back to inform the villagers about related health information and prevention. (Village doctor No.4)

HIS was another potential way for rural doctors to receive information and enhance work efficiency. According to a HIS manager in an urban hospital, HIS played an important role in "facilitating workflow, enabling medical sequence, improving medical quality and management efficiency, and reducing the possibility of medical error in urban hospitals". These provided for greater time efficiency, enhanced the knowledge of doctors, and directly contributed in improving the capabilities of doctors. Such factors pointed to the potential benefits of introducing HIS to the rural sector. However, this system was unavailable in the rural areas due to several factors pertaining to infrastructural barriers, lack of finances, and socio-cultural resistance to technology adoption.

**Informal “guanxi” information exchange networks.** Besides acquiring information from formal networks, village doctors, especially those excluded from formal networks, had created for themselves informal networks to access relevant information. We found a number of village doctors who made use of guanxi in order to facilitate their information exchange and improve their practice. They revealed that they sought help or advice from more experienced and knowledgeable doctors in county or city hospitals whom they had contact with. A village doctor stated that “if [he had] any doubts or difficulties, [he] would consult the doctors from county or city”. In addition, when probed on whether it was easier for village doctors to obtain information through guanxi, an urban doctor attested that, "in our medical circle, it is indeed easier, faster and more direct. This is a social phenomenon."

Guanxi was not only a prevalent urban social phenomenon in China, but was also used by
village doctors to establish connections and acquire useful information. However, we noted that *guanxi* facilitated information exchange between existing relationships, but rarely led to the establishment of new connections, thus limiting communication within an enclosed circle.

A village doctor cannot call people he does not know. It must be someone who is relatively familiar. We can also say that the village doctors have their own way of maintaining connections with the village medical center, county health organisation. They have some doctors there whom they are familiar with. They have such connections. (Health official No.1)

The *guanxi* network manifested in different forms: informal meetings amongst village doctors, internet social networks and telecommunications (land-line and mobile phones). In doing so, the village doctors who were kept out of the formal information loop were able to fill the information gap through these self-initiated informal networks.

Within the villages, some doctors sought internal help by asking colleagues face-to-face. A village doctor shared that, “if there are certain things that we don’t know about, we will enquire within our circle of village doctors." Another village doctor added, "If the patient’s situation is not an emergency, we would gather a few doctors to discuss the diagnosis and the treatment."

We also found a few, younger and more tech-savvy village doctors using online social media tools. One such example was the utilisation of QQ networks, a popular and free instant-messaging computer program, with over 300 million subscribers in mainland China. Members could log in and communicate with other subscribers in their QQ networks. According to the interviewees, the particular online social networks under investigation were usually formed by batches of doctors, graduated from Chinese medical colleges, wanting to maintain contact. Therefore, QQ networks were used as a tool to facilitate interpersonal communication between village doctors and their stakeholders.

Besides enquiring within their social clique of village doctors, some village doctors also sought to obtain updated health information or acquire additional information to form a
more accurate diagnosis using land-line or mobile phones. Several village doctors stated that they would call up friends, colleagues, ex-schoolmates, or trainers whom they had connections with at county or city hospitals. These parties called often had higher medical qualifications and greater access to updated information.

Village doctors were found to use the internet and computers to seek health information from government-initiated medical websites, or utilise online social networks (QQ) and mobile phones to improve the information exchange between them and their stakeholders. The following section of the findings revealed information pertaining to the existing ICTs being used to empower information seeking of village doctors based on the ICTs for Healthcare Development model.

Benefits of ICTs

Following the summary in Table 2, the benefits of effective use of ICTs will be discussed below accordingly.
### Table 2

**Benefits of ICTs Adoption by Village Doctors**

<table>
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<tr>
<th></th>
<th>Internet – Medical Websites</th>
<th>Internet – QQ Networks</th>
<th>Mobile Phones</th>
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<tbody>
<tr>
<td><strong>Opportunity Producer</strong></td>
<td>“The internet allows us to check on the latest developments in the medical field as well as the medical trends.”</td>
<td>“We will discuss about how to treat using what type of medicine...It’s a two-way learning process.”</td>
<td>“Most of the patients actually call when they need me to go over.”</td>
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<tr>
<td><strong>Capabilities Enhancer</strong></td>
<td>&quot;Surfing the internet is more convenient and faster” as compared to reading from books.</td>
<td>“Whenever we discover an illness that we find hard to diagnose or treat, we will send a message to this network group to ask for help.”</td>
<td>“Fast, timely and convenient.”</td>
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<td></td>
<td>“I can also review and reference others’ recommendations and comments.”</td>
<td>“We log onto QQ at least thrice a day.”</td>
<td>“Health ministry called us all for training.”</td>
</tr>
<tr>
<td><strong>Social Enabler</strong></td>
<td>“When I have questions, I could also ask the experts online.”</td>
<td>“On QQ, we can exchange health information and knowledge.”</td>
<td>“Even if there isn't anything in particular I will also call to maintain contacts.”</td>
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<td></td>
<td>“To truly understand the epidemic, one had to research through the internet.”</td>
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<tr>
<td><strong>Knowledge Generator</strong></td>
<td>&quot;When I don’t know which medicine to prescribe or the functions of the medicine, I will call to ask.”</td>
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</table>
**Opportunity producer.** The use of mobile phones increased income for village doctors, as it allowed them to be available to practice at any time of the day. The patients gained greater access to doctors' consultations as they were able to contact the village doctors as and when needed. A village doctor stated that “most of them [patients] actually call when they need me to go over”. Another further explained that mobile phones were useful to the patients when they needed immediate help at a time when the clinic is closed.

Those patients with emergency conditions can call here even in the wee hours of the night. If they are unable to come here for treatment, I will go to them. (Village doctor No.7)

Therefore, it was expected that greater access to patients via mobile phones would create more opportunities for village doctors to practice. In addition, equipped with more updated medical knowledge from the internet, village doctors could give better quality treatments as well. Since they were paid per treatment session, with the increased reach of patients, incomes were multiplied as well.

**Capabilities enhancer.** The use of ICTs increased work and time efficiency for village doctors, especially in emergency cases. They allowed village doctors to better treat patients by obtaining information and communicating efficiently.

Mobile phones enabled village doctors to seek help from city or county doctors when they met with illnesses that they were unclear about. This was made possible because village doctors were able to "describe their [patients'] symptoms clearly through the phone”. In times of critical emergencies, rural patients stated that the mobile phone was a convenient tool to contact doctors. At the same time, rural doctors could seek to acquire essential information to treat the patients by consulting fellow doctors. Many village doctors mentioned that the mobile phone “is fast, timely and convenient.” Urban doctors who communicated with village doctors confirmed that “the mobiles are definitely convenient and can be used immediately. We [urban and village doctors] can discuss in real time.” Another village doctor
revealed that “for those situations which I can easily understand, they [city doctors] can instruct me straight away through the mobile.”

Furthermore, health authorities were able to disseminate critical information to village doctors quickly, allowing village doctors to respond to situations promptly. A village doctor indicated that when H1N1 broke out, the “health ministry called us all for training”. Another claimed that “the country hospital will inform the village hospital, and the village hospital will inform the village doctors. Information goes down this way, one level by one level, by the telephone.”

As for the internet, a village doctor mentioned that "it is very easy to search for information" when asked why he used the internet to acquire medical knowledge. To another village doctor, “surfing the internet is more convenient and faster” as compared to reading printed material.

The internet is beneficial towards the evaluation and treatment of conditions. I can review and reference others’ recommendations and comments. For example, if a patient with lung problems, after diagnosis and treatment still shows no evident progress after a couple of days, I can go online to research other treatment methods. (Village doctor No.4)

In addition, village doctors tapped into their QQ networks when they encountered illnesses they could not diagnose, as one village doctor confessed, “whenever we discover an illness that we find hard to diagnose or treat, we will send a message to this network group to ask for help.”

**Social enabler.** With the use of mobile phones, village doctors were able to keep in touch with colleagues, as one affirmed that “even if there isn't anything in particular I will also call [the urban doctors and patients] to maintain contacts”.

As for well established relationships, as in the case of doctors who graduated from the same Chinese medical college, meeting on QQ seemed to have become an integrated daily
activity, “we log onto QQ at least thrice a day, once in the morning to check whether there is any update for the day. Once in the afternoon and once in the evening at 7pm.”

**Knowledge generator.** ICTs enabled village doctors to access information critical to their practices during diagnosis and treatment, as well as learn more about communicable diseases and necessary medicines. When asked how health information was normally obtained, many village doctors stated that they would call when unable to diagnose an illness or when needing updated information on new diseases, with one saying, "I would call when I can’t diagnose an illness I’ve never encountered before." Text messages sent through short message service (SMS) provided in mobile phones were also a source of information. A village doctor stated that he received “news SMSes” on his mobile phone containing the latest health information.

Furthermore, one interviewee revealed that “the internet allows us to check on the latest developments in the medical field as well as the medical trends. When I have questions, I could also ask the experts online.” QQ networks served as an effective platform for information exchange as well:

On QQ, we can exchange health information and knowledge. For us [village] doctors at the lower level, we do not have a pool of information that we can tap into. (Village doctor No.4)

Sometimes we have meetings [on QQ networks] on the types of illnesses that our patients encounter....we will discuss about how to treat using what type of medicine...what could be improved, how to prescribe the right medicine and their effects. It’s a two-way learning process. (Village doctor No.21)

Secondly, in-depth information about current diseases, like the recent H1N1 virus, was available on the internet or could be obtained via mobile phones. One village doctor stated that the health authorities informed him about the disease itself, “but to truly understand the epidemic, one had to research through the internet. There are many websites with columns dedicated to Influenza A.” Furthermore, most of the village doctors would call doctors in the city or in the hospitals for help, “I would usually ask for solutions for patient’s
symptoms if I cannot solve it on my own. It is also possible to request for my teacher [a city
doctor] to come over”.

Thirdly, village doctors could acquire information on medication by making phone
calls or searching the internet. A village doctor mentioned that “when I don’t know which
medicine to prescribe or its functions, I will call to ask”. Another attested that “I usually find
out about new medicine on my own, through the internet.”

**Barriers to the Effective Use of ICTs**

The barriers as summarised in Table 3, will be discussed below in detail.
### Table 3

**Barriers to ICTs Adoption by Village Doctors**

<table>
<thead>
<tr>
<th></th>
<th>Internet – Medical Websites / QQ Networks</th>
<th>Mobile Phones</th>
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<tr>
<td><strong>Economic</strong></td>
<td>• “In addition, the health officials came here to ask us to buy a computer, so we have to buy it. But we do not have enough money.”</td>
<td>• “Usually we do consultation through the phone, but the villagers will find it expensive and consider about the cost of calling.”</td>
</tr>
<tr>
<td><strong>Technological</strong></td>
<td>• “Computers cannot be moved.”</td>
<td>• “Phones only allow for verbal expression.”</td>
</tr>
<tr>
<td></td>
<td>• Information on the internet was “not quite complete and hard to navigate.”</td>
<td>• Mobile phones are “just not audio-visual enough for me. Not seeing is not believing.”</td>
</tr>
<tr>
<td></td>
<td>• “Simple functions I can handle, but for more complex and advanced ones it’s not so easy.”</td>
<td></td>
</tr>
<tr>
<td><strong>Social-Cultural</strong></td>
<td>• “I am so old already...I won’t be able to learn how to use a computer now.”</td>
<td>• “He’s afraid that once he shares his knowledge with me, I will snatch his business away.”</td>
</tr>
<tr>
<td></td>
<td>• “He can’t learn <em>Hanyu Pingyin</em> anymore.”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• “If we don’t know all these physicians, it is almost impossible to have any correspondence at all.”</td>
<td></td>
</tr>
<tr>
<td><strong>Infrastructural</strong></td>
<td>• “In the villages, the connection is very slow.”</td>
<td>• “China’s telecom network isn’t very well developed. There are many places where reception is bad.”</td>
</tr>
</tbody>
</table>
Economic. The cost of investing in a computer and the cost of calling through phones posed as significant economic barriers to the effective use of ICTs. Investing in a computer was a financial challenge for some village doctors, especially those who did not receive financial aid from the government. Specifically in the case of technological facilities, recognised doctors were able to have greater and faster access to information because "computers and printers were given to about 23,000 recognised village clinics". However, this scheme was limited to a sample trial group of village doctors and did not extend to all Chinese provinces.

Some recognised doctors even confessed that they faced difficulties in fund allocation as priority had to be given to the reconstruction of their run-down clinics rather than the purchase of computers, particularly in the face of some corrupt and inefficient bureaucratic practices.

In all aspects we need money, the government does help us, but the money never reaches us. My clinic does not fulfill the conditions of a village clinic, so I have to rebuild it next year. We need a few thousand yuan for this. In addition, the health officials came here to ask us to buy a computer, so we have to buy it. But we do not have enough money. (Village doctor No.21)

In the case of mobile phones, the Chinese rural population was deemed not as well-off as the city dwellers so mobile phones were sometimes used infrequently. Villagers seldom spent time consulting for medical help over the phone due to high costs of air time.

Usually we do consultation through the phone, but the villagers will find it expensive and consider the cost of calling. The villagers have time to walk-in for consultation, but not money to call. (Village doctor No.8)

Technological. Three main types of technological barrier concerned the limitations of the technological device, difficulty in locating information on the internet as well as the low credibility of information found on the internet.

A village doctor considered the computer a bulky device because "computers cannot be moved". He preferred using other sources of information such as medical journals and
books because he felt inconvenienced by digital technology. Similarly, for health information in books, “you can find it ...and you can flip it anytime”.

Furthermore, information on the internet was “not quite complete and hard to navigate. It’s not easy to find information immediately. It is dispersed.” Some of village doctors stated that information online had low credibility, since “the information online is virtual or fictitious in nature. The credibility level is only 20-30 percent.” Reliability was another important consideration.

It is important that people search for information online that is reliable. We cannot go to our teacher in the hospital to tell him about an article that we’ve read. What if in the next two days the article is removed from the web? In comparison, books come from production houses. You can definitely rely on it because you know who the author is. (County doctor No.3)

In addition, using a computer required one to be equipped with technological skills. A village doctor stated that “what I am learning now is just basic knowledge, simple functions I can handle, but for more complex and advanced ones it’s not so easy”.

During the interviews, the village doctors also brought up certain limitations of the mobile phones in interviews, stating that mobile phones only allowed for verbal communication, despite visuals and personal physical examination being important factors in the medical profession.

Phones only allow for verbal expression. From a medical perspective, observations are made, and smelling and asking done. It would not work by simply listening. If there is video call function, I can observe and know the conditions of the patient. (Village doctor No.24)

Urban doctors mentioned that when village doctors contacted them for help, difficulties faced were that “images cannot be shown and patients cannot be seen”. This was more so for situations where images were critical, such as burn victims or patients with skin diseases.

We would only be able to know the degree of the burns, the surface area of the burns and the patient’s vital signs through the information that the village doctor provides. But for things like ulcers due to the burns or the level of
consciousness of the patient, the doctors could only explain through description. (Urban doctor No.8)

A village doctor interviewed mentioned that the mobile was “just not audio-visual enough for me. Not seeing is not believing. So I do not think the information I am receiving is impactful”. Therefore, in certain situations, mobile phones could not be used because of the limitations of certain critical functions.

Socio-cultural. There were several socio-cultural factors inhibiting the use of ICTs, including age, limitations of guanxi networks and competitive mentality.

When discussing about computers and the internet, many village doctors of advanced age did not think it was possible to learn new skills. Some of them considered retiring in the near future; hence they did not see the need to pick up new skills. Age was a factor that stopped some village doctors from signing in to use QQ as well.

I am so old already, I would not be able to adapt to it. Recently, the hospital arranged for a collaborative medical program and I voluntarily opted out of it because I would not be able to learn how to use a computer now. (Village doctor No.5)

They [the older village doctors] can’t catch up... He cannot learn Hanyu Pingyin [Chinese phonetic romanization alphabets] anymore. (Village doctor No.14)

Having access to guanxi networks helped to facilitate information flow to village doctors. However, the reverse was also true for village doctors who did not have connections to key individuals. When probed on whether village doctors called up urban doctors for help, an urban doctor explained the situation as such, "this is dependent on whether there is contact established in the first place. Otherwise, why would they look for [me]?". Another village doctor also explained that "[village doctors] and [urban doctors] had very little communication with one another. If we [the village doctors] do not know all these physicians [from county or urban hospitals], it is almost impossible to have any correspondence at all".
These statements illustrated the fact that village doctors had a pressing need to gain access to personal networks as well.

Furthering the isolation was the fact that QQ networks were limited only to a certain group of doctors. Most of the time, these people in the networks knew each other beforehand. Therefore, anyone without connections would most likely be excluded from the network. We observed that most of the village doctors engaged in QQ networks were young and better educated individuals who graduated from urban medical colleges. There seemed to be a distinct difference in the knowledge and skills between this group of younger village doctors as compared to the older group of village doctors who might not have received proper medical training. The interview transcripts revealed that the younger, better educated village doctors might practice selectivity in their choice of respondents when exchanging information. A village doctor that graduated from a medical institution outside his village of residence mentioned that he “seldom interacts with the village doctors here because their standard is limited”. This reiterated the literature review, which revealed that clear distinctions were made between "insiders" and "outsiders" (Gao & Ting-Toomey, 1998). In the aforementioned situation, the group of younger, better educated village doctors could be termed as the "insiders" whereas the "outsiders" were those who were left out of their social networks. The distinction between "outsiders" and "insiders" not only placed people in different relational circles, but also prescribed specific rules of interaction or communication.

Last but not least, competition posed as a socio-cultural form of barrier to the effective use of ICTs because it hindered the sharing of information.

Another guy who has a medical station would not share any good practices with me. He is afraid that once he shares his knowledge, I will snatch his business away. Even the neighbouring village which has a specialised department for dental problems would not reveal which type of medicine they prescribe for toothache when I ask....They tell me to solve my own problems. (Village doctor No.3)
Infrastructural. Given the slow development in rural areas of China, the weak infrastructure in the villages posed as a barrier to the adoption, and effective utilisation of mobile phones. A pharmacist stated that “China’s telecom network is not very well developed. There are many places where reception is bad”. There were certain areas in the villages with “blind regions” as stated by an urban doctor, where there was no reception. Consequently, in such places, mobile phones could not be used.

Furthermore, the lack of proper or advanced infrastructure hindered the ability of village doctors to connect to the internet, especially broadband, which was not used at all. A village doctor said that he was “using a dial-up line for internet connection. In the villages, the connection is very slow”.

Discussion

There were two distinct categories of networks used by village doctors to seek and exchange health information. Under the formal networks which were regulated and imposed by the authorities, HIS networks helped facilitate information exchange. However, such a network was only available in the urban health sector. The HIS network had yet to be extended to the rural health sector due to various socio-cultural, technological, economic and infrastructural issues mentioned earlier.

We foresee the benefits of extending the HIS to the rural healthcare sector. However, it is also important to recognise the fact that village doctors might not have the competency, literacy and skill sets to operate such a system. Factors such as infrastructural and economic barriers might also pose limitations. Additionally, their current practice only required them to treat minor illnesses. Hence, there might be limited effectiveness for village doctors to use HIS.

Under the informal networks, rural doctors established self-initiated networks through guanxi and these networks manifested in three forms: phone communications, informal
meetings and social media tools such as QQ. We had identified several issues to discuss about.

Firstly, mobile phones proved to be an ICT widely used by village doctors in Xi’an, thanks to affordability and ease of usage. In addition, one did not have to put in enormous time and intellectual effort to learn how to use mobile phones. This reality pointed to the potential utilisation of mobile phones to facilitate real-time communication amongst rural healthcare providers in Xi’an.

The findings revealed that QQ networks among village doctors were found to be beneficial in facilitating timely and updated information exchange. However, there was a pressing need for village doctors to extend their QQ networks to one that is wider, such as one that includes county or urban doctors. The integration of these networks would allow for better quality of information and knowledge transference which would in turn help village doctors improve their practice.

Despite the advantages that QQ networks provided, we also recognised that only certain village doctors were able to gain access to these online networks. These networks arose out of personal relationships that were pre-existing, as in the case of networks of schoolmates. There was also a need for other village doctors to gain connections to these networks to avoid being left out of the information loop. We identified that there might be an existing group of rural doctors who did not have access to formal networks as well as informal connections through mobile phones and QQ networks. These rural doctors were likely to be practitioners who were well advanced in age, and lacked the technical competency to use ICT devices to facilitate their information exchange. Financial constraints might also be an additional barrier. Hence, despite the advantages that ICTs could provide, this particular group of rural doctors were unable to benefit from them, hence drawing the
knowledge gap even further between them and the rest of the rural doctors who had access to ICTs.

In the findings, we also found several instances where village doctors recognised the advantages of ICTs in facilitating information exchange. However, they also stated that in the medical practice, personal interaction with patients and physical examination were regarded as highly important. Hence, this was an inherent limitation of ICT as it was unable to facilitate physical interaction.

Many of the village doctors lamented the poor state of the rural medical conditions. They commented that despite the fact that ICTs can help increase their knowledge and help facilitate the improvement of their medical skills, the advantages it could bring was limiting. This was because the knowledge and skills cannot be put into practice due to the lack of facilitates and equipment such as oxygen tanks or X-ray device in the rural areas.

Implications

This study showed how the existence of personal networks could be beneficial to a specific group of people in rural Xi'an, China. It also investigated how ICTs could be used to facilitate and support such networks for information exchange. From mobile phones to internet usage, each had its own benefits, limitations as well as the potential in creating information and supporting information dissemination. It was important to consider how these findings could potentially affect stakeholders within the rural healthcare sector.

Firstly, from the interviews, several rural doctors highlighted a pressing need to fill in their knowledge gap with credible and timely information. As such, we saw the potential of developing an open-source database and medical websites for their benefit. Indeed, considering the fact that basic health information beneficial for rural doctors could be obtained and organised easily, one could expect that it would not take much time and efforts to set up such database or websites. Access to the open source database organised centrally
by credible government sources could be obtained through the use of the internet, since several village doctors had the means to purchase a computer and health development policy makers also mentioned that computers were given out to recognised village doctors. Another possible access was to connect these database and medical websites to telecommunication networks that allowed village doctors and patients to receive health-related SMSes. In addition, not only were users able to receive faster and more credible information from the database and medical websites, they were also able to contribute resources to benefit the community. This highlighted a collaborative effort between the government and rural doctors. We also recommend that chat-room functions and online forum can be made available on the database portal and websites to allow for greater interaction among the rural doctor community. However, we saw the need for a moderator to ensure that the contents posted and communicated are pertaining to relevant topics and not of frivolous substance.

Secondly, localised and relevant content created for the rural doctors would cater to their needs and the particular conditions of the village. With an enhancement in medical knowledge, rural doctors would be able to improve their service delivery and could make better treatment and diagnosis decisions. However, this database would be more useful for village doctors already adept in using digital technology. Doctors unwilling to learn, or those who felt that they were too old, to carry on their practice, might not benefit from this open source database. More training should also be implemented for village doctors especially in their technological skills, as the adoption of internet was becoming more prevalent in recent years.

Thirdly, we also recommend that policy makers or voluntary organisations provide technological training on usage of computers and internet for rural doctors. This would help equip rural doctors with the necessary skills to improve their technical competency and operate the computer as well as internet functions. When this occurs, rural doctors would be
able to access internet resources and facilitate information exchange on medical and health knowledge further.

Fourthly, in the course of interview, we found out that many rural doctors acquired contacts of urban doctors or fellow village doctors from the training sessions attended. We recommend that policy makers should provide for more medical training sessions for rural doctors, *or even open up the sessions to whoever desires to learn and acquire new skills*. These training sessions could act as a platform to initiate *guanxi* networks to facilitate information exchange between the trainer (a county or city doctor) and the rural doctors. With an increased frequency in training, the interaction among the urban and rural doctors would also increase and information exchange could be maximised.

Lastly, policy makers should consider the health needs of village doctors and rural residents at large. We recommend that policy makers should encourage, partner with, or provide incentives for telecommunication suppliers to build rural infrastructure to enable information exchange through the internet, land lines or mobile phones. Besides catering to the needs of healthcare services, education and agricultural sectors could also make use of the infrastructure. Encouraging the sharing of resource would enable shared responsibility amongst the rural community and this in turn would promote sustainability of the project in the long run.

**Limitations**

Our study had some limitations, especially in the execution of field work. Firstly, there were times when we faced language problems due to the different dialects of Mandarin Chinese spoken in rural Xi'an. This prevented them from probing the participants further for more meaningful accounts. Secondly, the snowball sample was acquired through the personal connections of their Chinese collaborators. This might have suppressed the value of certain findings due to the unrepresentative sample of healthcare providers in Xi'an. We were also
unable to avoid geographical and age biases due to the fact that the participants whom we interviewed were largely obtained through referrals. Thirdly, because most rural doctors interviewed were either busy at work or afraid of talking about issues related to the government or the authorities, we could not inquire much about opinions regarding rural doctors' position in Xi'an healthcare system.

Nonetheless, this research focused on the existing *guanxi* networks within the rural healthcare in Xi'an, China, especially among the village doctors at the grassroots level, and how such *guanxi* networks were facilitated with the use of ICTs. The findings and implications of this study would be useful to the development of the rural healthcare if they are thoroughly considered and put into action.
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TAPPING INFORMAL NETWORKS “GUANXI” WITH ICTS


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Appendix A

Interview Guide

Section 1: English Questionnaire

Rural doctors

1. Describe your daily job scope as a doctor.

2. Can we categorise your job into 4 different categories: examination, diagnosis, prescription, feedback, follow-up, administration and documentation?

2a- Examination & Diagnosis
- What are the problems faced when you examine your patients?
- What do you do to overcome these problems?
- Given a scenario where you encounter patients with symptoms of illness you do not recognise, what do you do?
  *Prompts: Is it from books, friends, or training?

2b- Prescription
- What do you consider before you prescribe a medicine?
  *Prompts: Will you consider the availability of medicine, wholesale cost of medicine, availability of suppliers or pharmacists? Do you consider patients' financial status?
- Where do you get this information from?
- How do you keep yourselves updated on the new medicines in the market?
  *Prompt: Which channels do you use?

2c- Feedback & Follow Up
- Are there feedback channels available between you and the patients, as well as with other stakeholders (urban officials, urban doctors)?
- How do you respond to the feedback you receive?
  *Prompt: E.g. If patients complain about an allergy from the medicine that you prescribed, what do you do?

2d- Administration and documentation
- Do you keep records of patients' medical history?
- How do you do this?
- Do you share these records with the urban health systems? How do you do this?
  *Prompt: E.g. Do you upload the information onto a database or download information from a database?)

Questions to be asked in all 2a, 2b, 2c, 2d above.

A) Formal AND Informal Networks:

1. Who do you get the health information from?
   2. How do you get this information?
   3. Why do you choose these methods to get information from?
4. How did you gain access to your sources?

5. What are some of the problems you face in acquiring information?
   *Side note: Give scenarios so that it is easier to understand the core of the problem beyond the surface.

6. In a circumstance where you are unable to acquire information through the formal channel, what other ways will you turn to?
   *Prompt: Do you turn to friends or other sources using your connections?

7. How do you get in touch with health officials?
   *Side note: Base on circumstances, we will probe further.

**Additional Questions for Informal...**

i) Why do you choose these people to keep in contact with?
   *Prompt: Is it because they are credible, influential, approachable, accessible or they have authority?

ii) How do you maintain the relationship?
   *Prompt: What do you do to make sure your contact is available for you to call upon?

iii) Is there any difficulty in maintaining the contact?

B) What are some of the problems you encounter when receiving information?
   *Prompts: Example:
   - Content (Not sufficient or detailed enough to meet the information needs of rural doctors etc)
   - Packaging (The Language, style, format, sentence structure is not user friendly)
   - Technical (No internet access, only able to transit text information without image)
   - Competency (Inadequate skills or academic and professional training to understand information)

C) What are the existing ICTs adopted in Xi’an for health?

*Traditional ICTs: TV, radio, newspapers, books, leaflets, brochures.
*Newer ICTs: mobile phones, PDAs, Internet

- What are the benefits and limitations of using such ICTs?
- How do you think your needs can be met?
   *Prompt: Give scenarios and examples.
   - What are the potential ICTs that can help you overcome your current challenges?

**Rural Patients**

1. What are the ways you usually acquire health information?
   *Prompt: (traditional and new ICTs)
2. What are the benefits and limitations of using such channels as mentioned above? *Side note: Frame questions in terms of example: I.e. The last time you were ill, how did you seek for treatment?

3. How do you think your needs can be met?

4. What kind of health information do you expect to receive from rural doctors? What do you expect the rural doctors to know and provide?

5. How do you usually contact or acquire information from rural doctors in times of need?

*Side note: The aim is to find out how rural doctors can improve the connection between themselves and their stakeholders. Possibly through the means of ICT.

6. How do rural doctors get in touch or establish connections with you? How do they keep in contact with you? Any difficulty for rural doctors to maintain contacts with you?

**Management**

1. Given the current development and future goals of China healthcare system, what kind of knowledge should the rural doctors acquire in order to advance themselves to function in the modern health system and give better quality service to patients?

*Prompt: E.g. Knowledge of new practices, new medicines, new equipments and how to operate them.

**Formal:**

2. What are your strategies in order to disseminate information to rural doctors? *Prompt: Example…

- Giving training of new practices, new skills, new equipments, new diseases
- Creating a database of medical information
- Using TV, radio, leaflets or booklets to disseminate information
b. What is the rationale behind these strategies? Why do you choose to disseminate information through these channels?
c. Are these strategies strictly followed and implemented frequently? What are the problems in implementing these strategies?
d. What can be done to solve the above mentioned problems? What are the future plans to improve information exchange process?

3. Describe the HIS system adopted in your hospital.

*Side note: What is the content? What is the mechanism of this system? 
a. What function does it serve?

b. What are the benefits and challenges of using HIS?
Informal:

4. How do you keep in touch with rural doctors?

*Side note: follow up questions needed

5. How do rural doctors get in touch or establish connections with you? How do they keep in contact with you? Is there any difficulty for them to maintain contact with you?

6. What are the current types of ICTs that you use to communicate with rural doctors?
   a. What are the benefits and challenges of using such ICTs?
   b. Do you foresee future development to improve information exchange process? What is the next trend?

**Health Information System (HIS) Managers**

1. Describe the HIS system adopted in your hospital.

*Side note: What is the content? What is the mechanism of this system?
   a. What function does it serve?
   b. What are the benefits and challenges of using HIS?

*Side note: Example: System faces technical challenges such as inability to transmit images. Only text is allowed.

**For Web portals founder and managers**

1. Describe the web portals or websites you are maintaining.

*Side note: What is the content? What is the mechanism of this system?
   a. What function does it serve?
   b. What are the benefits and challenges of using web portals?

*Side note: Example: System faces technical challenges such as inability to transmit images. Only text is allowed.

**For telecom devices retailer**

1. Based on what consumer consumption patterns, what type of communication devices do rural doctors usually buy? How about rural residents?

2. In your opinion, what are the functions rural doctors and rural residents look out for when purchasing communication devices?
Drug suppliers, urban doctors, pharmacy owners

1. How do rural doctors get in touch or establish connections with you? How do they keep in contact with you? Is there any difficulty for them to maintain contacts with you?

2. What are the current types of ICTs that you use to communicate with rural doctors?
   a. What are the benefits and challenges of using such ICTs?
   b. Do you foresee future development to improve information exchange process? What is the next trend?
Section 2: Chinese Questionnaire

农村医生

1. 概述你作为医生的日常工作。

2. 我们可以将你的日常工作可以分为检查，诊断，开处方，回馈，跟踪，治疗和记录等几个部分么？

2a- 检查和诊断
- 你在检查病人的时候都遇到了什么样的问题？
- 你是怎么克服这些问题的？（在发现和接收信息的方面来说）
- 在你偶然遇到一些疾病的征兆却又没有立即诊断出来的时候，你会采取什么样的措施？请举例说明。
  - 提示：是通过书籍，朋友，报纸，集训，电视，手机，固定电话，收音机，还是因特网呢？

2b- 开处方
- 第一部分
  - 在你开出处方之前你会关心什么？
  1. 小提示：你会考虑药的效果，药的批发成本，还是药剂师和供应商？你关心病人的财务状况么？
  - 你从谁那里了解到这些情况？
  - 你如何获得这些信息？
  - 你是如何使你自己了解市场上的新药品的？
  1. 小提示：你会选择什么样的渠道呢？是通过书籍，朋友，报纸，集训，电视，手机，固定电话，收音机，还是因特网呢？

2c- 回馈和跟踪
- 你和你的病人之间的反馈渠道和你在行医中遇到的其他人的反馈渠道是可信的么？
- 你是通过谁获取这些信息的？（城市官员，城市医生，乡村病人）
- 你是如何获得这些信息的？
  1. 小提示：你会选择什么样的渠道呢？是通过书籍，朋友，报纸，受训，电视，手机，固定电话，收音机，还是因特网呢？
  1. 对于这些反馈的结果你是如何处理的？
小提示：例如，如果病人抱怨你的处方中有过敏性物质，你会如何处理？

2d-治疗和存档
- 你将病人的病例存档么？
- 你是如何存档的？
  - 小提示：是通过计算机还是纸？
- 你会将这些存档和政府官员分享么？你是如何做到这些的？
  - 小提示：例如你上传信息到数据库或者从数据库中下载信息么？

以下都得问的问题：
A) 正式和非正式的关系：
- 你从谁那里了解到这些情况？
- 你如何获得这些信息？
- 你多久获得一次这样的信息？
- 你为什么选择这样的人或者方法获得这些信息？
  - 小提示：是因为他们是可信的，有影响力的，可接近的，以获取的，还是他们代表权威？
  - 你是如何维护这些关系的？
  - 你如何保证你以上的这些交往是可行的？
  - 在维护这些交往上有什么困难么？
  - 在4个脆弱点上调查：
- 通常你过多久就得获取一次这样的信息？
- 你是怎么接近你的信息源的？
- 你获取信息的时候都遇到了哪些困难？
  - 边注：给出一个步骤以便触及问题的核心而不是问题的表面。
- 如果在特殊的环境下你不能通过常规的渠道获得信息，你将选择什么其他的渠道？
  - 小提示：你会求助于朋友还是通过你的关系网联系其他的信息源？
  - 在脆弱点上调查。
TAPPING INFORMAL NETWORKS “GUANXI” WITH ICTS

B) 参考:
你在接收信息时遇到的不曾想到的问题是什么？
*小提示：实例
- 内容（没有足够的充分和细节来满足乡村医生的信息需求）
- 包装（语言，风格，版式以及句子结构是否方便乡村医生）
- 技术（没有互联网的接入，仅仅是通过书本获取信息）
- 能力（不充足的技能，一个学术的和专业的培训来获取信息）

C) 西安现存的ICTs有哪些？
*传统的ICTs：电视，报纸，收音机，书籍，传单，小册子。
*新新的ICTs：移动电话，掌上电脑，因特网。
  - 用这些ICTs有哪些好处？
  - 这些ICTs有什么局限性？
  - 你认为这些ICTs如何满足你的需要？
    • 小提示：请给出实例。
  - 还有哪些潜在的ICTs可以帮助你们现在所面临的问题？

乡村患者

1. 你们通常通过哪些途径来获取医疗保健信息的？
a. 传统的还是新生的ICTs
  *传统的ICTs：电视，收音机，报纸，书籍，传单，小册子
  *新生的ICTs：手机，掌上电脑，互联网
2. 你用这些渠道的好处是什么？
  • 边注：用实例说明（可以通过最近关注最多的H1N1来说明）或者最近一次你不舒服，你是如何寻求帮助的？
  • 用这些渠道有哪些不便之处么？
    a. 边注：用实例说明（可以通过最近关注最多的H1N1来说明）或者最近一次你不舒服，你是如何寻求帮助的？
3. 你希望从乡村医生那里接收到哪些医疗信息？你期望乡村医生知道和提供哪些内容？
4. 通常你是如何从乡村医生那里获取信息的？
   - 你为什么选择这样的人或者方法获得这些信息？
   - 你为什么选择这些医生？
     - 小提示：是因为他们是可信的，有影响力的，可接近的，以获取的，还是他们代表权威？
     - 你是如何维护这些关系的？
     - 你如何保证你以上的这些交往是可行的？
     - 在维护这些交往上有什么困难么？
     - 边注：目的是找出乡村医生是如何加强他们和他们客户之间的联系。最好通过ICT的定义。

5. 乡村医生是怎么和你接触的和建立联系的，他们是如何与你保持联系的，他们与你们保持联系时出现什么困难了么？

6. 如果在特殊的环境下你不能通过常规的渠道获得信息，你将选择什么其他的渠道？
   - 小提示：你会求助于朋友还是通过你的关系网联系其他的信息源？

管理

1. 给出中国医疗保健系统现行的以及将来的目标，为了乡村医生能搞在更好的在现代医疗系统中提高自己的技能并且提供给病人更高质量的医疗，乡村医生应该具备哪些知识？

正式：

2. 你向乡村医生散布消息的策略是什么？
   a) 小提示：实例
      - 提供新的实践机会，新的技能，新设备，新疾病的培训
      - 提供一个医疗信息的数据库
      - 使用电视，收音机，传单，小册子来散布消息
   b) 这些策略的背后有什么联系么？你为什么选择这些策略来传递信息？
   c) 这些策略是很频繁的被执行么？执行这些策略都遇到了那些问题？
   d) 提到的这些问题如何能解决？在信息交流方面的远期计划是什么？
3. 简单介绍一下你们医院的医院信息系统
   • 边注：你们的硬件和软件各包含哪些？内容是什么？你们系统的结构是什么样的？
   c. 它有哪些功能？
   d. 使用HIS有哪些好处？
   e. HIS有哪些挑战？

非正式
4. 你如何与乡村医生保持联系？
   • 边注：依着实际情况继续提问

5. 乡村医生是怎么和你接触的和建立联系的，他们是如何与你们保持联系的，他们与你们保持联系时出现什么困难了么？

6. 当代的用来与乡村医生交流的ICTs是什么类型的？
   a. 这样的ICTs有哪些好处？使用这些ICTs会遇到哪些挑战？
   b. 你能预期一下将来信息交流工程的发展状况么？下一个趋势是什么？

HIS管理者

1. 介绍HIS在医院的使用情况
   • 边注：当中的硬件是什么？它的部件有哪些？系统的结构是什么样的？
   a. 它提供哪些功能？
   b. 使用HIS有哪些好处？使用HIS有哪些挑战？
   • 边注：系统面临的技术挑战例如不能传递图片文件，仅仅容许文本文件

网络接口设计者和管理者

1. 介绍你所维护的网络接口和网站
   • 边注：内容是什么？系统的结构是什么？系统的硬件和软件包括哪些？
   a. 它们都提供哪些功能？
   b. 利用这些网络接口有哪些好处？使用这些网络接口遇到的挑战有哪些？
   • 边注：系统面临的技术挑战例如不能传递图片文件，仅仅容许文本文件
1. 基于哪种消费者消费模式？乡村医生经常买什么类型的设备？他们是如何居住的？

2. 你认为，哪些功能（硬件和软件）是乡村医生和乡村居民希望的交流设备？

电信设备零售商

药品供应商，城市医生，药店主人

1. 乡村医生是如何和你们联系的？他们是如何与你们保持联系的，你们联系时遇到了什么困难？

2. 当代的用来与乡村医生交流的ICTs是什么类型的？
   a. 这样的ICTs有哪些好处？使用这些ICTs会遇到哪些挑战？
   b. 你能预期一下将来信息交流工程的发展状况么？下一个趋势是什么？
Appendix B

Map of Xi’an

Qian County is about 60km away from Xi’an, Shaanxi Province, China. There are altogether 12 towns in the county, each town consisting of many villages. The areas where fieldwork was conducted were on the outskirts of the county, away from its urban centre. The villages that were nearer to the urban center were normally more developed in infrastructure and technologically more advanced than those that were further away from the urban center.
Appendix C

Pictorial Gallery

Conditions of villages vary according to their distance away from the county. Villages which are further away from the county such as the one featured above lack in proper infrastructure and receive less attention from the government. Muddy roads and humble brick houses line the streets. The young and old populate the villages whereas majority of the middle age group have left to work in the city.

A village doctor attends to his patients in the overcrowded clinic. Often, village doctors share a close relationship with their patients. They are bounded by village ties. On some occasions, poorer villagers can receive treatment first and repay his/her medical fees at a later date.
An old village doctor shares about his medical experience and his eagerness to buy a computer. He desires to learn how to use the computer in order to acquire more information to enhance his medical knowledge and skills.

Clinics which are built according to the requirements of the government will receive more funding and recognition. The picture above illustrates an example of a well-developed village clinic with good facilities; a sight that is uncommon in other villages.
A young female doctor shares about using the computer and internet to search for medical information online in order to improve her knowledge and treat her patients better. Often, it is the younger generation of village doctors who have computers installed in their clinics.

Patients wait in line for treatment. Often, villagers rely on self medication. Due to financial constraints, they will only come for medical treatment at the village clinics or hospitals when they are in grave medical condition.
The young and middle-aged have more access to mobile phones. However, reception in the village is often weak and this hampers communication.
INFORMED CONSENT TO PARTICIPATE IN RESEARCH

Dear Participant,

We are final year students in Wee Kim Wee School of Communication and Information under the supervision of Assistant Professor Arul Chib at Nanyang Technological University. We are conducting a research to acquire knowledge of health care in rural China.

You are invited to take part in this study. Please read this form carefully and ask any questions you may have before agreeing to take part in the study.

We are requesting your participation in an interview which takes about 30 to 60 minutes. You will be asked a list of questions about your health care experiences. With your permission, the interview will be tape-recorded, transcribed and analyzed for research purpose. We will give you a small monetary token as an appreciation for your participation.

Your participation in this study is completely voluntary. You may skip any questions that you do not want to answer. If you choose not to participate or to withdraw from the study at anytime, there will be no penalty.

The researchers do not anticipate any risks to you participating in this study. There are no direct benefits to you, but we hope the results of our study will be able to contribute to the academic literature regarding the field of health care.

The records of this study will be kept confidential and only accessible to the researchers. In any sort of report we make public, we will not disclose any information that makes it possible to identify you.

Thank you for your participation. If you have any questions concerning the research, please contact us at fyp.china.09@gmail.com. If you have any questions or concerns regarding your rights as a subject in this study, you may contact our supervisor, Professor Arul Chib at ArulChib@ntu.edu.sg.

Statement of Consent: I have read the above information, and have received answers to any questions I asked. I consent to take part in the study.

Your Signature ______________________          Date ______________________
Appendix E

Transcript Samples

Interviewee 1: Elderly disabled village doctor

English Transcript for Interviewee 1

Q: Can you tell us about your consultation with the patients tomorrow?
A: There are no standard workings hours over here, we’ll diagnose the patients whenever they consult us. Basically, the illnesses diagnosed are the common and frequently-occurring ones. Primarily, I practice Traditional Chinese Medicine-based treatments and I am a disabled person myself as well. The combination of Chinese and Western medicine-based treatments was learnt through self-study and training in other places from as early as 1975 in the School of Traditional Chinese Medicine of Xianyang in LiangCun for more than a year.

Q: So did you attend that particular lesson?
A: 30 years ago, the ideology of open-door schooling was about Chairman Mao focusing the medical and health work on the rural villages, and the training of junior officers. Also, the other reason for that is to bring the university students to the rural villages to do practical work. I am 65-years old this year and I have been engaging in this work since I was in my 20s. This was due to the fact that I could not do manual labor, so I stayed on this job since. Other than a medical school, I have not been to other universities or colleges. After attending the medical school, I started to attend to patients everyday, handling some minor illnesses initially. Health conditions in rural villages are such that there are no laboratory equipments or assisting diagnosis. We can only rely on looking at the veins and physical examinations to diagnose patients which can range from 10-20 to over 78 people in one day.

Q: What happens if you have an illness that you could not diagnose? Would you call for assistance?
A: If there is a need for auxiliary examination, an application will be sent to a higher-level hospital for examination to help in the diagnosis, such as a CT scan application for a request of a CT scan and likewise for all other tests.

Q: Would you call the hospital then?
A: If they require a CT scan, they will issue a CT receipt from my place. Once, I recommended a patient to prepare 10yuan, in the end the bill came up to around 50yuan.

Q: Would you call the hospital to inform them you are sending a patient up to them?
A: That depends on the situation.

Q: Who would you call?
A: I would call those with a relatively good relationship with me and if it’s an emergency, I would call another number where an ambulance would be sent over to pick up the patient.

Q: Is the phone the only way of communication with the hospital?
A: Yes, the phone is the only way.

Q: No other ways?
A: Nope, no other ways.

Q: So the advantages of using the phone are its convenience and being fast, right?
A: Yes.

Q: What are the limitations?
A: Yes, for example, in the night the emergency department might not have people picking up the phone.

Q: What happens if there is a patient who called and needs to see you but is too ill to travel to your place? What would you do?
A: I would rush to the patient’s place immediately.

Q: What if there is equipment which allows you to have a visual on the situation at my place and that you do not need to travel all the way here?
A: There is no such equipment.

Q: What if there is such equipment available?
A: That would be good.

Q: Will it be better than the existing conditions?
A: It would be beneficial to those with difficulties with travelling like me, and I look forward to such an improvement.

Q: Would you wish to have such equipments?
A: Of course I would want to have those, not just these equipments, but also someone who could impart knowledge. I’m currently ordering some magazines but they always arrive late, hence I hope to get a computer so that I can learn from it. Times have changed for people like us and the knowledge are renewing very quickly. Some of the practices in diagnosis, knowledge learnt and medication may not be applicable anymore. Hence, I urgently need something which can allow me to understand the situation better and learn about new knowledge at my house.

Q: Let me ask you, though you feel that a computer may be useful, will you be able to learn to use it well?
A: This proves to be a tough task for me now.

Q: What if there is someone who can help to train you in it, will it help?
A: That is possible. Soon, there will be an implementation of co-therapy and with the success of co-treatment of the young people which I’m not in currently. In 2010, they will assign me a computer, which is something more of a headache to me. If I’m unable to master it, there will be someone assigned to assist me and I’ll continue to learn it myself.

Q: Just now you mentioned that you have access to medical information through magazines, if you require more updated medical information, where would you go to look for such information?
A: Then I would look for something even more advanced, faster and more comprehensive than magazines.

Q: Which kind of magazines then?
A: That will be the Chinese Journal of Rural Medicine.

Q: Do you use things like newspapers or television programs?
A: Newspapers are not as systematic and the one I’m currently subscribing to is the Xianyang Journal of Traditional Chinese Medicine.

Q: Do they have this on the television?
A: I have never learnt such things on television before.

Q: Would you call the county doctors to ask about the situation?
A: Who can I call over there?

Q: So you do not know anyone over there? Would you call the county doctors and enquire about some knowledge?
A: They are very busy over there, at times they will not explain to you clearly.

Q: So they will not explain to you clearly?
A: Nowadays the people in rural areas are very conservative. For example, another guy who is at the same level as me has a medical station at his place, will not share any good technologies with me. He’s afraid that once he shares his knowledge with me, I will snatch his business away. Even something such as a toothache, the neighboring village which has a better medical office for dental problems and belongs to a specialist department, would not even tell you which kind of medication they use if you ask them. For things like high blood pressure and elderly diseases, there is a specialist located ten miles away from here who has a better treatment. If I called over and ask about which kind of medications to use, they will only tell you to see as it deems fit that’s all. For pediatrics, if there’s someone do treat it better than me, they will also not answer my enquiries on their specialization. What I am trying to illustrate is that we need a teacher to guide us, do you understand my meaning?

Q: I understand fully, previously the magazines that you mentioned, did you order them yourself?
A: Yes, I ordered and paid for it myself.

Q: Is it issued monthly?
A: Yes.

Q: Does that magazine provide you with the latest information?
A: Yes, it updates me on the latest medication and cases. I have a copy over here; you can have a look if you want.

Q: Things like the latest strain of flu influenza, does the magazine advise you on the treatments?
A: It only tells you about the latest symptoms but not the treatments. As a Traditional Chinese Medicine practitioner, I will use TCM to treat the patient. If I think it is viral in nature, I would prescribe viral medication, and for those that is bacterial in nature, I would prescribe antibiotics for them.

Q: How long have you been practicing medicine?
A: 45 years. I’m 65 this year.
Q: So that means you started practicing since you were in your 20s?
A: Yes, I started when I was 20, learning as I treat the patients.

Q: Never stop learning at any age right?
A: Yes, you are never too old to learn, because we have never been systematically given proper education. As such, we can only rely on our own exploration. For example, in the last decade, you treated appendicitis in TCM using western medication. But now, you can use a combination of both Traditional Chinese Medicine and western medication to treat it. On the basis of this experience, it means that there are a lot of new medication and treatment methods unknown to us. Hence, I would really love to acquire this new knowledge because I felt that if the development of co-treatment proceeds further, there will be an increase in patients. In recent years, the reason for the decline in the number of our patients is because regional and county hospitals provide combined treatments, attracting patients to go there instead. In previous years, the rural hospitals have fewer patients than us because we are more conveniently located and do not charge exorbitant fees. In rural areas, you have to control the pricing of your treatments very well. If you charge slightly higher than the others, patients will no longer visit your place for treatments, meaning that you have to provide good treatments with competitive pricing at the same time. Illnesses such as pneumonia, if you charge 50yuan and other places charge 30yuan, people will go to other places next time and this is one way of competition. In recent years, patients with combined treatment have gone to the hospitals in the district towns because fees can be reimbursed over there, causing poor revenues for us this few years. The number of patients has fallen by half over the past few years; hence there is a call for new knowledge and drugs.

Q: I would like to ask, basically what are the patients’ illnesses? What are they here for?
A: Nowadays, it is all the seasonal diseases. During winter, it will be pneumonia, bronchitis and cough. During summer, it will be the digestive tract of diarrhoea and stomach pain. On a hot day, it will be heatstroke and gas poisoning in the winter. These are the common illnesses that I attend to.

Q: So they come here for the minor illnesses, but do they go directly to the county hospitals to see the doctors over there for major illnesses?
A: If there is not enough time, I would be called in even for the major illnesses. Once I’m there, I will make the diagnosis, if the illness is too complex for me to handle, I will refer the patient to a hospital according to the needs of the patient. If they refuse my recommendation, they will head to the county to have it treated. For those who have been treated by me for a long time, the villagers will let me check their veins to look at the extent of their illness to see the kind of illnesses and its severity. If it is serious enough, I would refer them to the respective hospital.

Q: What if you have better equipments and more updated information over at your place here, do you think you can treat more patients? That means they will be able to enjoy better facilities over here; will you be able to maintain that kind of standard?
A: I can. For things like conventional testing, if we know there is a high blood count, meaning the patient is more complex, we will be able to provide a better diagnosis. Now the problem is that we do not have proper diagnosis, and that the biggest difficulty we face is being unable to determine the illness. Just like the patient just now, we cannot determine whether he is suffering from gas poisoning or the Jimenez syndrome. If there are laboratory conditions available, we will know the problem once the blood tests are done. Now I treat it according to the gas-poisoning viral treatment, the situation will be better after 2 days of
infusion. However, if I treat it according to the symptoms rather than the diagnosis, we can only tell that it is gas poisoning when his condition improves after he remains outdoors. If there are nausea and vomiting, we will treat it as gas poisoning during winter and vertigo during summer, judging by the seasons. If laboratory conditions are available, it will be much better as the results will be out the moment blood tests are conducted.

Q: Have you thought of going to the county or city hospital for training and education?
A: Now I have passed the age of further education, I would prefer having an assistant but he has to have good skills as well. The competition in rural areas has intensified and you can no longer rely on checking the vein, observing and asking alone to determine the illness like me. A secondary diagnosis will be better as the slightest unsure of the patient’s condition will prevent us from prescribing drugs indiscriminately. We should send the patient for tests, if the patient complains of chest pains, the determination of either using trauma or organ infection treatment methods will be known instantly if there are X-rays available. Treatments in rural areas are mainly by experience. However, if there are laboratory tests, I would not have to consider so much about the diagnosis because currently, the biggest problem is about diagnosing the illness. No matter how experienced I may be, or having treated a vast number of patients before, or having a better diagnosis of reading the vein, the diagnosis may not be as accurate after all.

Q: Do you know of terms such as the vein and pulse in TCM?
A: I know them.

Q: How do you think about using the pulse, observing, asking to diagnose the patient?
A: The doctor mainly uses the pulse to treat the patient. However, the pulse may not be that accurate because laboratory tests are the most accurate. It will definitely be much clearer if we can use X-rays as the pulse reading may be affected by the doctors themselves. If the doctors themselves are sick, the reading may not be that accurate, and also different environments will have different effects on the reading. For example, if you feel cold, then the pulse reading will be different from the others.

Q: So if you want to know more about the patient, you will send them to the hospital?
A: Yes, sometimes if I do not know what is wrong with the patient, I will send them to the hospital to do tests, X-rays and electrocardiograms, especially for coronary heart diseases. The danger of coronary heart diseases is relatively large, if the diagnosis of it is unclear, it may lead to death. Hence, we must do ECG as the diagnosis is relatively poor in rural areas. The things which we have learnt in the past are no longer the same now. Furthermore, with the development of science, drugs and advanced diagnostic techniques, we are still lagging behind using outdated treatments based on our past experiences. We start improving by ordering a magazine, and then reading up on it, followed by reading up on the characteristics of new drugs which are the equivalence of the drugs we have been using in the past.

Q: So all your knowledge all came from the magazine?
A: Yes, it’s all through self-study and reading up from books.

Q: Will there be any developments for things such as computers and videos in the rural villages in the future?
A: It may be possible, especially with the realization of combined treatment. After the implementation of combined treatment, every medical station will require a computer to report the daily funding to the higher authorities and also to gain more medical knowledge.
my opinion, the most urgent thing for us will be to look for more videos on medical knowledge.

Q: So you feel that computers will be beneficial to the doctors in rural villages?
A: This will indeed be beneficial to the doctors. It can raise the level of medical knowledge, and now with these science-based approaches, it will be even better as people often have no time to go to the hospital for training. With the computers, they can now learn with it during their free time.

Q: What if they do not know how to use it?
A: They will have to adapt to it and learn it.

Q: Will it take a long time to master it?
A: I do not understand computers very well now but I heard that the computers now are easier to learn and apprehend.

Q: Do you have a computer over at your place here?
A: No, we do not have one right now. I would request for one right after the New Year, and it is a must to buy it. I would start learning it after I bought it and if the day comes when I’m no longer able to learn it myself, I would train up someone who can write. If there are any difficulties with using Hanyu Pinyin, I would write it out using words.
Chinese Transcript for Interviewee 1

Q: 明天你看病单位情形你说一遍
A: 这个也没有固定的上下班时间，啥时间病人来了就看，基本上都是一些常见病、多发病，我本人也就是以中医为主，中西医结合，实际上我是一个残疾人，都是自修的，主要当时参加地方的一些培训，最早是75年，咸阳中医学院在梁村办学，在那里进修了一年多时间

Q: 那你是参加了那个班是吧
A: 开门办学，就是以前毛主席让把医疗卫生工作的重点放到农村去，对基层人员的培训，再一个就是把大学生带到农村实际工作，这就是30年前的事情，我现在就从事这工作了，因为本人做不了体力劳动，所以就一直干这个工作，就上了一个卫校，没有上过其他大专学校，回来以后就是每天接待病人，刚开始的时候就是一些小病，农村的卫生条件就是这样，也没有化验设备，没有辅助诊断，就是靠号脉、物理检查来诊断，有时候一天就是十几个到二十个人，有一天就是七八个人

Q: 那如果病人看病，你不会诊断怎么办，你会打电话求助吗
A: 那如果需要做辅助检查的话，就开单子到上级医院去检查，协助诊断，比如需要做CT就开CT单，需要做化验就开化验单

Q: 那你会给那个医院打电话吗
A: 像做CT的话，就会给我这里发CT单，我介绍一个病人给我提上十几块钱，最初是十块，后来是二十、五十块

Q: 你不会给医院打电话给他们说你要送一个病人上去
A: 有那种情况

Q: 那你打电话是打给谁
A: 打给下面的业务比较好，和自己关系比较好的，急诊的话就给打一个电话，他就派一个救护车，把病人接走了

Q: 那你只用电话联络医院里面的人吗
A: 对，就用电话

Q: 就不用别的方式
A: 不用别的

Q: 那电话好处是方便又快对吧
A: 对

Q: 那有什么局限性吗
A: 有么，有时候像晚上人家那边的急诊室的电话就没有人接

Q: 那如果你诊断一个病人，就好像我生病了，病情太重不能你来这里看你，那我给你打电话你会怎么做
A: 及时赶到病人家里
Q: 那如果有那种设备，能够让你看到我在家里的情况，你就不用来到我家里
A: 没有这种设备

Q: 那如果就好像有这样的设备给你用
A: 那更好么

Q: 那会比现在好么
A: 那特别对我这种行走不便的人，十分盼望这种事情

Q: 那你会想要这种
A: 想要，不但想要，还想要一些传授知识的人，我现在订的是杂志，但是杂志不能及时送来，但是我就想要弄一个电脑，从电脑上也可以学习，因为我们这些人时代变了，知识越来越新颖了，现在看病有些地方可能有些不适应，过去学的知识、药物不适应现在的，所以现在急需一个能让我在家里可以了解情况、学习知识

Q: 想问问哦，你觉得像电脑有用对吧，那你觉得你自己能学会吗
A: 这现在也就是一个难题

Q: 那有人来帮你培训的话，你觉得你能学吗
A: 那可以呀。因为马上就要实行合作，现在年轻人都已经搞成合作了，我现在还没有，2010年就要让我配电脑，这也是我比较头痛的一个事情，所以我如果学不成了，就准备找一个人给我帮忙，然后自己在学习

Q: 刚才你说通过杂志能够得到医疗消息，如果你想得到更新的医疗消息，你会到那里去找这种消息呢
A: 那就要找这种比杂志更先进、更迅速、比较全面的这种东西

Q: 哪一类的杂志呢
A: 就是中国乡医杂志

Q: 有用报纸呀，电视呀这一类的
A: 报纸呀这些都不系统，想我现在订的是咸阳中医学报

Q: 电视有吗
A: 电视上到没有学习过

Q: 那会打电话吗，打电话给县里的医生问问情况
A: 你说给谁问

Q: 哦，不认识那里的人吧，就是给县里的医生打电话给他们问一下知识，你会打电话吗
A: 人家比较忙，有时候不会给你好好说的

Q: 哦，不会给你好好说
A: 现在农村的一些人保守的很，像和我同级的他那里有一个医疗站，他有一些好技术就不会给我说，比较保守，一说就怕我吧他的饭碗夺了，就简单的说一个牙痛，邻村的有一个卫生室的人牙痛看的比较好，属于一个专科，你问的话他用什么药的话他是不会给我说的，像这高血压、老年病，距离我们这里十里路的有一个专科看的比较好，如果我这里有个类似的病人，打电话过去问用什么药，他不会给我说的，自己看吧，就是那样，像有一个儿科，人家看的比较好，我想问一些儿科的问题他也是不会给我说的；我给你说的意思就是说我们这些人就需要一个老师来指导，我的意思听懂了吗

Q: 听懂了，听懂了，那你刚才说的那个杂志是你自己定的吗
A: 自己订的，自己出钱订的

Q: 每个月会送一本
A: 对

Q: 那个杂志是给你最新的信息吗
A: 对最新的，最新的药物、病例，我那里有一本，你可以看看

Q: 哪像最新的甲流，杂志会告诉你怎么治吗
A: 那就是最新的症状什么的，怎么治没有说，但是咱作为中医，就用中医来给他治，认为是病毒性的就开一些病毒性的药，细菌性的就开一些抗菌素这一类的

Q: 你当医生几年了
A: 45年了，今年65了

Q: 那应当是20几岁就开始了
A: 20岁就开始学了，那就是边学习，边看病

Q: 活到老，学到老
A: 活到老，学到老，因为我们没有系统的学习过知识，就只能靠着自己的摸索，比如说前十年给你治了一个阑尾炎用的是中药喝西药，现在就可以再给另外一个人用中药和西药，就是凭这个经验。但是现在新的药物和新的方法就不知道了，现在很想到这方面的知识，因为我感觉合疗如果发展了，病人会越来越多，这几年我们病人少的原因是，地区医院和县医院都有合疗，好多病人就跑到那里去，前几年乡卫生院没有我们这里病人多，我们这里比较方便，也不乱收费，这个农村你要把收费把握住，稍微费用高点就不会再来你这里看病了，不但要看的好，而且价钱要便宜，就好比来了一个肺炎，你今天给人家花了50，人家在其他地方花了30，人家就到30块的地方去看了，这就是竞争的一个方式，这几年合疗的病人都到县镇医院去看了，因为那里可以报销，所以这几年效益不好，这几年的病人比过去能减少一半，减少一半的情况下，就需要新知识、新药物

Q: 我想问一下，来这里病人基本都是什么病呀，就因为什么事情才会来这里呢
A: 现在都是季节病，像冬季就是肺炎、气管炎、咳嗽，夏季就是消化道的腹泻、肚子痛，像热天就是中暑，冬天的煤气中毒，我这里看的就是这些病
Q: 那小病会来这里，大病他们就会直接到县里的医院去看医生吗？
A: 是时间不，大病的话也叫过去看一下，我去了就要定一下，如果病太复杂的话我就不能看，我就给病人介绍一个医院，按照病人的需要，不需要我介绍的话就到县城里去看。像我这就是时间比较长了，农村人来就是让我号脉看一下病的程度，到底是什么病、严重不严重。如果严重的话就给说到那个医院去。

Q: 那假如说你这里有比较齐全的设备和更多的消息的话，你觉得能更多的医治病人吗？就说他们在你这里就能够在这里能够得到更多的设备呀，你觉得能达到这个水平吗？
A: 可以，想一些常规化验，知道血象高的话，像这个病人比较复杂的话，有这样的辅助诊断的。现在基层没有辅助诊断，最困难的就是现在病情不能确定，就刚才那个病人到底是煤气中毒还是门尼斯综合症确定不了，如果有化验条件的话，把血化验完的话就知道什么问题，现在我按照煤气病毒治疗，输液两天现在情况比较好了，那就是只能凭症状来判断，他房子里面有煤气，从室内出来以后症状有减轻了，再一个恶心呕吐，犯困，这个是冬天就按照煤气中毒来治，如果是夏季的话就按照眩晕症来治，如果有化验条件的话就比较好了，把血液化验了，就可以确定了。

Q: 那你会想到县里医院或者城里的医院去培训和进修吗？
A: 现在我这进修的年龄过去了，那就将来需要给我找一个助手，这是我的要求，但是助手的技术不好也不行，农村的竞争比较激烈。像我现在看病就是号脉和望、闻、问、切，但是有一个辅助诊断就更好了，现在的病人稍微不能确定的病情就不要给人家乱开药，就要赶快让病人去做化验去，如果来一个病人胸痛，到底按照什么来治，按照外伤治疗还是器官感染治，如果有拍片子的话就可以马上诊断了。农村现在看病主要凭的是经验，我这看病年代比较多了，如果有化验，等的辅助诊断就不用考虑那么多了，现在最难得就是把病情确定下来是什么病，现在我就是比年轻人经验丰富一些，有些人就说我诊断病情比较多，说我号脉比较准，实际上号脉也不是多么准确的。

Q(Z): 中医有一种叫号脉，脉象，知道吗？
Q: 知道。
A: 脉象，望、问、闻、切。
Q(Z): 这医生主要是靠脉象来治病，但是脉象也不是很准确，最准确的应当是化验呀，拍一个片子呀，这样就比较清楚的，脉象有可能受医生自己的干扰，医生如果自己得病了，号脉就不是很准了。不同环境下也有可能影响脉象，就像你们一样，你们觉得冷，就和其他人的脉象不一样。

Q: 哦，如果你想知道更多情况的话，你就会让病人去医院吧。
A: 对，有时间搞不清楚的情况下就让去医院去，做化验，透视，心电图。特别是最近有一个冠心病，冠心病的危险性比较大，诊断不清会死人的，就必须去做心电图，农村就是辅助诊断比较贫乏，像我们过去学的和现在就不一样。现在随着科学发展，药物呀，诊断技术比较先进，我们就还站在过去的经验上来诊断，现在就只是订了一个杂志，再找个杂志上看，再一个就是现在的新药，通过新药的说明书来看，相当于过去的哪一种药。

Q: 那你的知识都是从杂志上看的吗？
A: 对，都是自修的，看一些书

Q: 最后一个问题，农村以后未来就像电脑呀、视频呀会有发展吗
A: 有可能，特别是合疗的实现，实施合疗以后每一个医疗站就需要一台电脑，用电脑每天要给上面汇报经费，再一个电脑上可以学一些医学知识，这是我的看法，想好多视频都将找个医学知识，这对我们来说是最迫切的

Q: 所以你觉得电脑会对农村的医生比较好，对吧
A: 这就是对医生来说比较好，可以提高医疗知识水平，现在就用这种科学办法好，过去始终是到医院去培训，有些人是时间没时间呀，有电脑的话闲了就可以再电脑上学习

Q: 那如果不会用会怎么办
A: 适应，学么

Q: 会用很长的时间学吗
A: 我现在对电脑不了解，我听说现在电脑比较好学

Q: 那你这里没有电脑吗
A: 没有，马上过年就要求我配电脑了，非要求买不行，买了以后再开始学，两手打算，如果自己学不动了，给自己培训一个人，有手写的，拼音不懂得话，汉字我是会写的
Interviewee 2: Health Official

English Transcript for Interviewee 2

A: To fulfill his/her necessities of life. Can you not record? The three of you are not from mainland.

Q: we can understand, but are not quick enough to pen it down, that is why we need to record.

A: Okay, because I have no materials, is it okay? And this is your own research. Is it okay we smoke?

Q: Sure, sure.

A: We are going to quit smoking. By ten years, the entire health ministry has to quit smoking, we’ll begin from the health ministry, and slowly radiate to the rest, because village doctors are not so learned and they are basically half doctors and half farmers. One identity is being a farmer, another identity is being a doctor. In the past, the people here have some knowledge or specialty. They use their spare time to see patients. But as the society progresses, they raise their standards, a portion of them became full-time. Full-time here means that these people have land but they do not work on their land. Someone in the house does it or they rent it out and they concentrate on handling their patients’ cases, to be in charge of public health. For the village doctors, public health is a big responsibility. This is the country’s request. For example, it is the custom to have a banquet for events like child inoculation, wedding or funeral, the doctors also have a role of being a supervisor, a hygiene supervisor. He has to be there to supervise and if there is a mass diarrhea, there has to be an inspection to find the source of the cause. To prevent accidents like this, hygiene on food and drinks, environments and family, have to be taken into consideration. Others would be health education, advertisements and seasonal diseases. For example, during the hit of Influenza A (H1N1), the doctor will tell you how you should prevent it and what Chinese medicine to cook for everyone to consume. That is why for a village doctor, these portions of full-timers are doing better.

They receive better rewards because of their service. In the past, the rewards are limited to buying medicine. They purchase the medicine and raise the price up to 10-15% to sell, and their income is limited to this only; because they do consultation, registration, which he doesn’t want to do, and home visitation. In addition, village doctors are on their toes 24hours to consult his patients. He does not knock off and the day and night is no difference. As long as a villager calls, he will rush to the scene. These portions of village doctors have steady income. Apart from seeing patients, the doctor doesn’t earn much. What he earns isn’t enough. It has to do with the doctor’s skills, the surrounding environment, transportation and the population in the area. The smallest administrative village consists of only 300 people. According to the frequency of falling ill, it’s only 5% or 1%. A smaller population will have a lesser number of people falling ill. And these people will not be able to feed him just by purchasing medication. Currently, both at national and provincial level, we are implementing a gradual approach in purchasing service to deal with this matter. It does not matter if you are unable to earn money through consultation. As long as you take care of the hygiene in the environment and have the ability to do well in the inspection checks, the government will compensate you a certain amount of money. I think the most important are the basic necessities of life. Only a few of them are successful who earn above the ten thousands. For those who are not so successful, they would only have 100-200 dollars a month.
We, our province, plan to remove the price difference, which is to remove the price increase of 10-15% and give all the benefit to the villagers and allow them to buy medicine at stabilized prices. All three provinces will standardize. Standardize in inviting tenders, marketing consisting of a combination of goods and services and the price of medication. In this way, the commoners get to enjoy the benefits. However, the village doctors will lose their only source of income. Therefore, the country and the provinces prepared a sum of money to pay the doctors the 10%, depending on the amount of medicine bought. Though it is implementing now, it is still a stage of confirming things, it is uncertain if it will continue to be implemented. For those who earn a lot by selling medicine will be at a disadvantage. What they really want is a mean value, they will calculate as according to the mean. Therefore the most important is living. Other than that, if every village doctor would have some sense of ethics because the patients around him are all his relatives or somehow related. Since they are related or are familiar with the village folks, they often owe the consultation fee and this would result in a lot of foreign debts. His family could be very poor but saving lives are more important. Some of these debts were long ago, and couldn’t be repaid. every village doctor has to be ethical. What does he need in order to provide better consultation? That is my home has to be properly built, with a good washroom. It is impossible to be without germs but the back of our house contains a lot of rubbish. This is not acceptable.

Our province will be working construction of the village clinics, standardizing 3 cubicles, they have already checked and accepted 20,000 villages and above, some achieving 4-5 cubicles with good conditions. The other thing would be the need to collaborate with the logistics department. The welfare and health departments have to be separated. The other thing is to be standardized across. Such as licenses must be placed on the wall, because it might be checked at any time. Another thing would be diagrams and posters that state the importance of public health. Some of them are of 28 different divisions. Child health division, women division, disease prevention division, etc. there are also other diagrams and posters that belong to 30 over different divisions. But they are moving towards standardization now, within the towns and villages, and then moving on to the county level of standardisation. And of course, it is unpredictable now if we would be able to reach the level of provincial standardisation, because the standards of every city are very different. Some places have special diseases and some others don’t, so if we manage to hit standardization at county level, it would be good already. The other thing that needs standardisation is pharmaceutical. In the past, many pharmaceuticals were not standardized, and the accounts are not standardised too. Because after we’d improved our healthcare system, and the change started, there was standardization for treatment. This is the most important thing to ensure standardisation, because only when this is standardized, the doctors are able to report the spending. The accounts are done up strictly, and this is the working environment that must be followed. Once the doctor sees that his accounts are done up strictly, neatly, he feels better, because everyone wishes their working environment to be good, neat, clean and tidy, equipped with proper medical facilities.

If they need to fork out the money themselves, he knows that he is doing it for the general good, and for the public. Most people are unwilling to use their own money to pay for their clinic facilities. That is why the government would invest a sum of money to sponsor them the cost of the medical equipment. If it is still not enough, we recently increased the amount by another 3000yuan, and we are also giving them a computer. The conditions in the future would be better. We’ve fulfilled the living conditions and the hardware. What happens next would be increasing their technological skills. Since 2004, we’ve been doing such things. The city would use whatever governmental money they have for these trainings. They
wouldn’t wait for the country to assign the money, and they wouldn’t wait for the province to tell them how to allocate as well. Now the government is aware of such a scenario, so they would invest a sum of money for the village doctors to train. Such trainings would be short term trainings that deal particularly with types of diseases. SARs was so powerful at a point of time. That is why, the first year’s focus was on diseases. The second year’s training would be for maternal and infant health. The third year’s would be specialising in internal organs and child health, and the last year’s would be on public health. This year’s focus was on emergencies, which is on how the city deals with the pressing emergency cases in the villages. If the village doctors were to be taught at a higher level, they wouldn’t be able to understand and they can’t put that knowledge and information to good use. Regulations passed stated that village doctors aren’t allowed to operate on their patients. What we have done is to give each village doctor an emergency package, where they can learn how to treat common illnesses and illnesses that are not difficult to treat. We have settled this issue of increasing the skills of the doctors. As for the future needs, I think what is more pressing for rural doctors would be retirement. As a rural doctor in china, you’re half a doctor and half a farmer. The country knows that you have land, so when you retire as a doctor, you can depend on the earnings from your land. But some rural doctors give their entire lives to the practice, so they think their retirement should be taken care of by the government. The government has also taken this issue into consideration. But the rural population of China is just too huge. The province now gives 5 extra dollars for the rural doctors every month, on top of the 50yuan that is already given to them. But the idea of retirement does not exist in the minds of the rural doctors. The cities had all fixed 60 years as the age that doctors would be retiring, but the rural doctors themselves are not retiring. They are relatives to the people they are serving in the village. If you are a well known doctor, even when you are 80 years old, there will still be people who will look for you. So for such doctors, there is still income for them.

However, comparing them to the village paid school teachers, they are definitely having it tougher than them. But the government has recently come up with many new regulations that will be beneficial to the rural doctors. They keep thinking that the country wouldn’t bother about them. The country will solve their issues eventually, but what we are doing is first to stabilize the feelings of the rural people. Our country’s rural population is quite poor thing.

Imports are too expensive for us. The rural populations of other countries are wealthier than ours. That is why the people in China find it harder to pay for their medication than people in other countries. In the recent years, the Chinese government has taken note of this situation, and has invested a large sum of money. Just in Shaanxi province, the government has invested 40million Yuan for the rural people here. Because in recent years, rural health has been the focus, hence a lot of that money has been invested into rural health.

Q: You mentioned that you are planning to standardize it, which areas have been diversified? How were the medical procedure conducted by the village doctors? Is their level of competence of an average standard? As those further away from the city have no internet access and good facilities, how would the government want to standardize it? What is the plan? How did they disperse the information to them?
A: You are referring to the standardization of medicine or booklet?

Q: What is the booklet about?
A: The booklet is what I told you about, all sorts of diagrams and charts. For example, the management table for women and children and Pediatric immunization table
Q: Both aspects are possible.  
A: This card is our village's clinic way of management. Even though it includes the farming village clinic as well, actually it is easily accessible to every clinic assistant. Might as well talk about how he wants to include the women department and the maternity and childcare department to be included under the village clinic. The department involved with disease control is also under the village clinic. That is why every individual department has its own expectations regarding its professional responsibilities. For example the maternity and childcare department will inspect the pregnant ladies prior to and after the birth of their child. In the midst of their pregnancy, several checkups will be made. If a request is made, alright, the department prints a form, the form is passed down and this form is the whole county's form, regardless of which city they will have no authority to change it.

It is the same with the disease control department, there are all sorts of diseases, aids and dirty diseases etc. The department will have all sorts of form made to pass down, it is standardized in the county. However there is one part, regarding the local's situation, it is different, the birthplace is different, every child's age is different hence the department will make a form depending on its actual situation. That is why it was messy initially, because initially if a village had little people, it would have a little record book. But when village is bigger, it would have a bigger record book so it is very messy. It is faster to gain information, if every village undergoes standardization together when a computer has been allocated to each village clinic. This year, computers and printers are given to about 23 thousand village clinics. The computer can assess the internet and also the creation of news platform has increased. One news platform has 18 sub-projects, sub-project such as the diseases direct reporting system, a communicable diseases direct reporting system, emergency system and another combined treatment system. In total that includes 18 sub-projects, once this is complete, we will have lesser hard-copy paperwork.

However there is no choice now because the spread of information is still slow, certain hard-copy paper information must still be kept, once this is made common, everything will take off online. If things are online, the counties, provinces and cities can also access them, paper documents may not be necessary anymore, conditions will be better. The card explains these, so you understand now right, counties will have to be standardized, same with the provinces. As for the standardization of medicine, this is a strong emphasize of one of our province's assistant chairman. This is because research findings have shown that currently most hospitals in China have a problem with additional costs incurred in the medicine. Additional costs refer to, for example, the additional dollar that is being added on top of the original cost of the medicine before it is sold to the patients. Of course there is costs incurred within the hospital, for one the loss of medicine when it is being transported, some are expired, others crushed. There are also costs incurred for transportation and management. Medicine needs to be shelved, shelves are required and they need to be organized orderly. Workers are also needed, which adds to the incurred costs.

The country's current wishes to, because the rural people are a weak group of people so they are being considered first while the people in the cities do not need to be controlled as yet. Firstly, it is to standardize the money from the rural areas. To standardize three in one, hence more money is given to basic levels. The money given does not exceed the big hospital's funds. For example the same medicine requires a cost of 10 dollars, the village sells 11 dollars, the town sells 11.50 dollars, the county hospital will sell at 12 dollars and the provincial hospital possibly will sell at 15, 16 dollars.
To standardize three in one refers to, once the town and village's clinic prices are lowered, how is it possible for it to be the whole county's lowest price, the county mayor is currently always calling for a standardization of prices, but he cannot reach it. This is because currently in this county's hospital, medicine school fees are still very high. To standardize three in one, it is possible to make the bid, currently to reveal the basic medicine list, once the basic medicine list is set, according to the most taken medicine, I answer a call. Now the country has set a basic medicine, every county can revise it according to its needs. Why not say that the city's doctor will bring in a few medicines in addition to the basic medicine list because a part of this medicine belongs to the category that can be reimbursed because the other medicine cannot be reimbursed. He also takes over the good new rural cooperated medical treatment also finds a part for that, and adds it into the reimbursement.

We have also given the town clinic a part of the list, but in theory this part is not much different from the new rural cooperatives, no change, if they do not claim, the medicine is also not effective elsewhere and is possibly placed till it is expired. Once the medicine list is set, we currently have a whole county's medicine brand company, medicine brand company office, just based on medicine alone, there are three units to manage. This is the result of history, one is the county's medical control department, this was split from the county's medicine main hall in the past. Now because the situation calls for it, it is called back in. The medical control department has one, the main hall has created a pharmacy because it is an administrative unit, once brought in, after becoming a second level department, first level department needs an office to liaise this matter to create a pharmacy. Pharmacy belongs to the government and cannot be involved with purchasing. A medicine brand is created, to do this matter, it is possible to standardize the brands. After standardizing brands, is to standardize distribution, once medicine brands are standardized, so will prices be. Standardizing distribution uses the county's funds, to find such distribution company.

If someone is willing to take on this business, the distribution company will send the medicine over and it is free for the town and village clinics. But these funds are from the government, how do the town and village clinics claim? According to their yearly plan, there is a certain amount of medicine that is used in a month, they report theirs to the town's hospital, or report fortnightly, or weekly, depending on their decision. This distribution center contacts the town clinics directly, they deliver perhaps fortnightly or weekly. That is how the standardization of three in one for medicine is completed. However the plan for standardizing brands are still ongoing, standardizing distribution is still not completed, there are many companies keen to take this responsibility. However it is still a fee and fees needs to be tendered, because the government is paying, involved in this.

Q(Z): So is it that he would report the amount of medicine he needs, and if there are new medicine, he might buy it himself secretly. There is no control over such situations?
A: It is not that it is completely not allowed. If I see that the patient has a lot of money, and I want to hike the price up, I can do that. It’s just that I don’t record it down in my accounts. If you are able to sell it out, good for you. But there are patients who don’t see why they need to pay more for a medicine in the menu. So it means that if you don’t follow the menu, you will have many expensive medicines. Another thing that this leads to is that doctors would end up using only the better medicines which are more expensive.

Q: You mentioned earlier that standardization is in place. Is there a strict control over this situation, to ensure that implementation really takes place? Like for example, if the rural
doctors really gotten the information or resources that they should have? This is because when we were interviewing them, some of them told us that they never been to a single session of training or that they have never received such information before. But for the doctors who are nearer to the city have been to trainings before. We’re seeing two different types of treatment of rural doctors here. So how is the standardization you’re mentioning about properly supervised and implemented?

A: I am not sure about the doctors who said they’ve never been to training sessions before. They have not feedback to us on such an issue. It is not easy for us to check. We require that every rural health worker goes through training. Your understanding of rural health clinics might be different from how we understand the situation. Your understanding is that as long as it is in the village, it is a village clinic. But it is not that case. The government has implemented the rule that every village should only have one clinic. If the village is bigger and has more people, there might be chances of more than one official clinic, but that would depend largely on the situation as well.

We would only recognize one village clinic. As for the other clinics, if they are already built, they would only be recognized as sub-branches of this main clinic. Do you understand what I mean? The money that the government invests for training is training for the village doctors that are recognized. There is no such thing as a free training. For those who pay for trainings themselves, that is an issue of theirs, not ours. When you asked why some doctors are not trained, I can’t really tell you why because all along, we have a rule that every rural health worker must be trained, and for every one of them, it is free, that is why most people would not give up this chance because they don’t need to pay for training themselves. And after the training, I think there is still a $10 gift for the doctors.

You might ask how we pass such information down to the lower level authorities. If it is documentation, we have no other way but to go down level by level, because we can’t skip levels. There is a team that manages this at every level. Like for example, it is impossible that the ministry of health would pass a document immediately to the county level authorities without the provincial authorities knowing about it. Then you can’t carry out the actions required. We also function in this manner. We would give information to the city level authorities and they would pass it to the county level, so that at every level, the people are informed and every level would carry out what is required of them. As for the rural level, it would be impossible for the county level to pass down documentation because rural areas might not have fax machines. Now the rural areas are dependent on phones. That is why sometimes, information might be delayed. If it isn’t urgent, they might only pass the information down ten days later. Or since they have a few health meetings with the rural doctors every month, we could use that time to discuss administrative work, make reports and discuss future plans. Such administrative matters would be standardized. If there is no official documentation of certain information, or information of plans that are still being constructed, we would just prepare for what there is to come. For such matters, they would normally appear on the web or on the newspaper. Of course, the broadcast effectiveness might be low, because people in the villages would not go online everyday and they don’t order newspapers. So what should we do in such situations? Yes it is true that the technology in our villages is poor, but most of the younger people in rural villages are more widely read then the adults. Because they work and they are always going around, or going to school, so they would bring the news home via word-of-mouth. Now there are many cases where the children would go to school and ask questions on behalf of their parents. These are the two ways information is passed. As for what you mentioned, about how some rural areas don’t receive the information, it is also true. There are some villages out there that are only one-
family-village. The documents and information do not reach them, isn’t it very weird? Is it clear?

Q(Z): Yes, it’s very clear.
Q: It’s very clear.
A: Do you want to drink water?

Q: It is okay, it’s really okay. We already feel bad for taking up your time. You mentioned earlier that fax machines and newspapers were used. Were mobile phones used too?
A: I mentioned earlier that at the county level onwards, there are no more fax machines that are used, so it is very inconvenient to pass a document down. So at this moment, there can be two solutions. The first would be to hold a meeting for everybody so the information can be announced, but this would mean that the information is not an urgent matter. However, if it is urgent, they would call. Now at the province level, we have every village doctor’s phone number. In the whole province we have about 50,000 of them. We would inform every single one without fail. Of course there are some cities in a province that only report a few numbers. But as long as the village clinic’s numbers don’t change, we are able to contact them. That is why, once the form of digital information service provider is set up, we would stop using paper documents, but electronic ones. From this information station, we are able to find out which doctor went for trainings or what the doctors have done. Even their prescription, we are able to see and know. The provincial authorities would be able gather all the information on this platform.

Q: What are some of the limitations using the mobile phone? Are there some doctors that are un-contactable sometimes?
A: No. Because every rural household now owns at least a phone, but there are some villages where technology isn’t that developed, they don’t have phones. But we normally contact them through the phone. In the village, we would choose the village clinic that is the most advanced. He was sent to Beijing for a meeting. That would be such an honor. The country would give him 5000yuan as a token, but the prize is only a small part of the entire privilege. The prize from the ministry of health has been given out the last 4 years. And every year, they choose 200 village doctors. These doctors that they choose are treated very well. They are sent to meet the Prime Minister himself and the Minister of Health. Even our own department head has never shaken the hands of our Prime Minister. Can you imagine how great an honor it is for them to have such a privilege. I once had been to a village clinic where the doctor put up his photo with the Prime Minister on the wall. He was so proud of himself, and so happy.

Q: Just now you mentioned that in every village only one is permitted right? We saw other clinics with the medical license. How did that medical license come about?
A: It goes like this, in the past the country’s management of these people was very messy, the country didn’t bother. In the past they were called amateur doctors, certain things you learn from the older physician, you don’t go to school, that period, there were no schools to go to, so you learn to pick medicinal herbs from the older physicians, gradually you fall in love with this trade. As human beings, when you cure them, they will be grateful to you, and you will feel that your position is elevated, and you become more interested in it and you fall in love with this trade. At that time, the management was very messed up, as long as you want to do this you can do it, because the country didn’t pass down any official documents to restrict/restrain. There wasn’t anything in place for standardization. When the treatment goes wrong and something happens, nobody handles it. At that time the people would think that it
was you who went to look for them for treatment, so even if it’s not cured, it doesn’t matter because they are not decent doctors but since you insisted on looking for them for treatment. But at that time the conditions were bad. Now, since 2004, as announced in 2003 but executed in 2004, the administrative regulations for the doctors in the village. These regulations are standardized nation-wide, this is legislation. Means the village doctors are to disqualify all the licenses in the past and void them all. A new batch of certificate of employment for the doctors will be given out, on it is the national emblem, and it is recognized by the state. Then at this time we started to acknowledge the village doctors. Those who needed to be disqualified were, and those who were to be acknowledged were acknowledged. Some who cannot make the mark will be disqualified right away like what she said, he has a few signs that were mentioned, as an individual, you still have to evaluate. If I am on my own and I have my own license, I can still take my occupational license as a doctor to apply to be a private doctor. Another type is the extension done in the past, for example when the law was yet to be legislated, a village can have quite a number of them and they are all recognized by the health department. Because at that time if you don’t give the village doctors any reward, and they can sustain themselves it’s even better! If they can open their clinics, the more there are, the work can be better distributed. For example, you can do the statistics of the women and children, you can do the statistics of contagious diseases, and you can give commands/directions. At that time the management was very disordered. After standardization, a group of people were disqualified; they are no longer in the list of village doctors anymore. So they are automatically in the list of private (individual) doctors. There is another area, that is one clinic in a village. Some places did it very well, they have a huge clinic. For example a few of us work here, we divide the workload equally; I will cover pediatrics well, you will take care of the medicine department, it’s good to work in this way. But one problem would be the financial controller; there needs to be someone who will manage the financial part of purchasing the drugs, and whether he has any vested interests in this area. Some people cannot do it. For example when 2 people are competing against each other, no matter how many years had passed there will still be conflict between them. If you insist on using him, but he is not suitable for it, there will bound to be a conflict. A high level of integrity is important here as well. Personally, some might place more emphasis on medicine, some on gynecology, at this point of time, what should be done? They call this two branches in a village, or many branches in a village. Means, I only recognize one clinic in this village, as for other clinics I will regard them as the branches of this main clinic. As for the subsidies, I will only give it to the main clinic. For those in the county they will compromise, for example, I will give 120 bucks to people working on public hygiene, if he sees that they covered the public hygiene too, he will give them 60 each and the 2 of them agree on it. This kind of thinking exists, and there are a many villages which have different branches of clinic within the village, especially in places where the economy (and income) is doing better, if the pay is meager no one will want to do it. If it pays well then everybody will fight to do it. So in situation like this, the county’s health department will tacitly approve to it. But the certificate is still official, just that I am only certifying this one clinic. As for the various branches, they are like the other departments of this main clinic.

Q: One last question
A: It’s ok, please ask

Q: When you are planning, in the process of planning, does your department work with the other departments, for example the education department
A: Very much.
Q: like what you talked about just now, medical ethics, so perhaps working together with educational institutes or other non-governmental organizations etc
A: On medical ethics, this cannot be taught from the schools. Medical ethics needs discipline, no matter how well your school teaches you, if you do not have ethics, what good is he? So to have ethics you have to have discipline. Of course when we talk about practicing medicine in the village, you have to ask the village doctors. You have to ask those who are at the bottom level, to the village doctors, bad ethics are not usually found among them. Most of them, maybe a small number of them have bad ethics, but normally this will not be the case. Why is that so? Firstly, it’s because of matchmaking. Most of them are related in marriage, there is no need for the doctors to cheat the patients. Why are some village doctors still willing to work despite not earning any money, it’s because he enjoy a very high status in the village. The reputation of a village doctor in a village is higher than that of the village chief. Village chiefs practice bribery so that they can be elected.

I heard that some people may feel indignant, but no one dares to offend the village doctor. If anything was to happen at the doctor’s place, he will feel contented to just have this status. There was one year when we elected a village doctor. He is an outstanding man and he is handicapped. He was very well spoken of. He said that half a month before New Year until half a month after New Year, every household took turn to treat him to dinner; he didn’t have to go home to eat. It seemed that during these 2 months every household wanted to thank him, because he was kind towards them. As this person cherished his job very much as well, and he being a handicapped, he can’t work in the fields. By simply relying on the trust of the villagers he is contented. How is it possible that he will have problems with ethics? Cheating you of your money, deceiving you, as relatives, if your medical skills are not great and you want to go around cheating people. You are not an illegal travelling doctor but you go around and you have been living in this place for generations. If you cheated these neighbours, your ancestors will be cursed and your descendents will not be able to survive here. Hence, if your medical skills are not great you won’t be working here risking other people’s lives. Another thing is the problem with the quality of drugs. It’s just these 2; one is the level of medical expertise and the other one the quality of drugs used. When it comes to purchasing drugs, they wouldn’t dare to purchase drugs recklessly, or pass off the fake drugs as the real ones. Once there is a problem with administering of drugs, you will make everyone even sicker than they were.

His business will meet an end, he won’t have any more patients, and in future if people want to visit your clinic and heard that you had caused people to die, who will still dare to come? So, these people are very concerned about their reputation in the area. Hence, for village hospitals and clinics, they wouldn’t accept briberies and there shouldn’t be any problems with their medical ethics. As for working with other departments, redevelopment committee needs to set up the projects; the finance department needs to see if there is money. If there is, then we can all come together to discuss and prepare to work on something, if it is worth working on it or not and what will be the results of doing it. All these will be investigated and researched on beforehand, and this will be done not only by us, because some counties may have a greater population and when they have a big population, what does it represent? Association, political associations, and there are also community groups. All these will be looked into and based on these findings they will write a research report to advise the feasibility of project. Once the report is being handed up, every department will look through it from their position and see if it is worth and suitable to be set up.
For example, there is no money in the finance department this year, but you need a few billions. He will reject you right away. And when the redevelopment committee sees that there is no need to set up such a project, they will reject it too. From our position as service providers, we will give them suggestions when the result of the project is not good; which to do away with etc. There are many of such opportunities to work together, including planning work for the county. We work together with the manpower department of the county as well; the education department. For the education department, we are working together for a short-term education for the village hospital and now there is a special training. We found out that many graduates are unwilling to come back to work in the village. There are not many talents in the village. So now, there is a surge of policies to motivate their return, i.e. you come over here to study and after that I will pay for your school fees, for example 30 000 dollars, we will pay for you. Then you will have to sign a contract with the unit, upon graduation, you will have to work in the village for 6 years. This is the kind of binding contract they sign and they will train you specially, and help the village to look for people to work there.

Village hospital is now a full-time unit. Some other village hospitals pay well too. I heard that the trainers will do recruitment for them too, solving the employment problem. Because it is especially difficult to get employed in China, and it is very competitive. So for this kind of full-time unit, it is even tougher for them to recruit. Therefore, by the use of contracts, you can go over there to work upon graduation and I will help you with the job. And when you go over there, we won’t change your address to the village but will put it under the county. To the Chinese, there is still a reluctance to go back to stay in the village, which may be reflected in the residence permit. By this, a lot of their worries and concerns can be addressed. Also, there is this policy now that nicer houses are being built for the village hospital. Over here, we are going to have 10 billion dollars worth of facilities, and all the counties are going to have the same facilities. Now we are trying to solve the problems of accommodation for those employees, and the conditions of the wards for the patients.

There are still the hostels for the employees, their canteen, the patients’ canteen, and the hygiene condition for both the patients and the employees. In some clinics/hospitals, there isn’t even a bathroom; they have to go back to their home to bathe. Of course, all these can only be done gradually. Because China is so huge, our county has more than 50 000 village doctors. When I went to Germany, they only have 400 000 people in one county. Over here, we have at least 37 000 000 people, and our county is considered the lesser few. Think about it, there are about 1 million over there, in Shandong about 9/7/80 000 000 or 8/9 000 000. The population size is too big, including the village hospitals. How is it possible to deal with more than 1700 village clinics all at one shot? It is very difficult to get such a big amount of money at one go and the pressure on the country will be great. Hence, this has to be developed over time. Hence, when we discuss with the other departments it is mainly on the planning part. The administrative department helps to fight for their interests. For example, I wish to increase the personnel quota in the village clinic, there are too little workers and too much work and the workload is heavy. So I gave it to the planning committee, who emphasized that this person doesn’t have enough manpower. Then the planning committee will have more authority to increase the manpower quota. Then it will be passed on to the manpower department and over there they have a judge, and he will help us village clinics and four military hospitals. Do you know about four military hospitals?

Q: Yes we know
A: Ok. The Fourth Military Medical University is a very famous university in the country. They have many professors over there. If you ask the village doctors, who can’t even qualify
for an undergraduate course, to be named at the same level as the doctors in such universities, that is clearly unfair. And in terms of contribution, I feel that the village doctors gave out a lot more. Because of the harsh conditions, wherever he can survive would be a form of risk he has to take. Over there they can’t earn much money and they still have to serve the people. Who doesn’t want to live a comfortable life right?

Hence this group of people really deserves our respect. If he can be there he must have sacrificed and contributed a lot. So we apply to ask for the entry requirements to be lowered for this group of people, just for this group of people. They do not need to write thesis, English standard can be requested to be lowered. We don’t expect them to go for examinations but use a different way, for example, the people’s word-of-mouth for them. I can give out a survey now and look for 1000 locals and interview them door-to-door to find out. Then, the people can evaluate your performance, whether you are good or not, based on your medical ethics, medical skills, the way you perform. For example, I’ve been in this line for how many years and nothing bad has happened before, from things like this we can give him an appraisal and give him a positive evaluation. In this way, the village clinics will be more enthusiastic, and the village clinics will work with the insurance department and union welfare organisation, for people who have worked previously or for those who will be retiring, to fight for their interests. But of course, fighting for their interests has limited success, because the situation is not doing well, it can be increased slowly. When the country’s economy is improving, there will definitely be an increase of the benefits. Now we’re just trying to fight for them little by little, that is what me and other departments are trying to do now.

Q: What about non-government organizations?
A: Oh, non-government organizations have a lot of foundations and they participate in it too. But I realized that these foundations have very benefits-driven. I don’t mean to comment on the foundations but they include Li Kah Ching Foundation, Jia Dao Li, and a Chinese medical foundation, and the Chinese primary health care foundation. Each of these foundations has a particular interest which they are driving for. What is this drive? It’s not that we don’t welcome you to come forward. Of course, we want to help them, do well, but they are to follow the pace of the country closely. In the past when the country did not think highly of this area, they had an even tougher time.

They don’t offer help in times of need, instead they are like the icing on the cake, and they have many wants. Now we are not that passionate about supporting the foundations. The other time there is this foundation in the US called “light the candle foundation” and the foundation had only helped us to save our investment by 10 dollars, requesting that we save on our allocation to the counties, cities and towns, build 2 village clinics. Even if you do not need 10 000 dollars, at least 5000 dollars is needed to build one clinic. Then 10 over children came and a woman asked me over to have a meeting with them. I said I will definitely not accept, what kind of rubbish is this. 10 over children coming over, then wanting the provinces to accommodate you. You took away all our money needed for petrol/oil. Why do I say disadvantage, Li Ka Ching gave 8 000 000 dollars, requesting for the 8 000 000 package for the province. Firstly, they are building on the investment which the country has already put in.

If the country did not invest, if you want to do such good deed go ahead. We are very supportive. But he didn’t want to do it. But when the country started on it, now I understand, and the country has already invested a lot but he only invested a little, but the name still has
to be hung on him. For example, in Taiwan, if this matter is not approved by the province chief, we will definitely not approve of it. So what if you have given the money, we are unwilling. That country can use a prominent person, contributing a little but able to request to have his name being put up, why do I say disadvantage, he doesn’t earn money but ride on his name, this kind of advantage. Doing charity takes into account your motives you’re your attitudes. For such a small sum of money that you’re donating you’re expecting so many things. You want manpower, you want welfare and administrative help. He wanted decorations to be up and then, the children will have their holidays and they can come out to welcome them. In the end the province chief was very angry. He wrote a letter to his boss, a well-written one with logic and evidence. The person was very touched in the end and he cancelled all these. Your desire to do charitable works is great. It’s just this amount of money, but you move people here and there, have countless checks, checks on progress, checks on this and that. If you want to check,

You ordered this school to go on vacation, everybody carries their water buckets so that you can dry your streets. But in actual fact your charitable work has already lost its meaning towards the end. So, we don’t deny the help and benefits that the foundations can bring to other places. We are still grateful, and we’re grateful towards the kind-heartedness. But we feel that their motive behind this kind-heartedness is still problematic. But we think that the Red Cross Society, their works are still passable. But not practical. After the earthquake we were given a sum of money. A part of it was from the village clinic and the other was from the trainers, and they sent some of the village doctors for training. Isn’t this rubbish? You sent all the doctors to the university and asked the professors to train them. Yesterday I was just talking about Li about this matter...it’s too far-fetched

Q(Z): Is it Xi Jing hospital or Tang Dou Hospital over at Si Medical School?
A: School, how should I say, many departments which do this kind of things, they do not understand, so what they do are not practical, like helping the poor. They have been doing a lot of work, but what they are doing is not practical. Now in the country, every house has restrictions on one another. There is a vested interest in this. Everybody wants to get this favour. From what I understand, as long as you can get the money invested in the health department, consolidate them, then we can use it to meet a particular need, whatever the need may be. We know, like helping the poor, the Red Cross is not reckless. We just matched a batch this afternoon, and he approved it without even asking. For the people “below”, they will just take whatever is approved/written.

Q(Z): Very low adoption rate
A: All are idle, and repeated. Not considering those they allocated, it is according to their imagination, how did they allocate the facilities in the beginning? That is, ECG, blood instrument, X-ray machine to the first bag. If you calculate these 3 apparatus, for example, 200 000 dollars, I put them in one bag. Then I see the cavity treatment instrument, gastroscopy etc and this is also 200 000 dollars. This can be the 2nd bag. I ask you to come and pick. If every clinic picks by 200 000 dollars, don’t you think that is rubbish too. Maybe I need ECG, gastroscopy but you only allow me to pick one bag. Isn’t this utter rubbish? There I feel that matters of the health department only they will know how to deal with it, other departments will simply mess it up.

Q: Just these?
A: the foundation, I think of it when you say organizations. Of course we have our own funds for the poor
Q(Z): The fund for the poor is done by the Health Department right?
A: It’s not by the government. We have a “fund for the poor” and a Red Cross Society, of course there is Song Ching Ling Foundation, and that will be related to women and children. Song Ching Ling set up the foundation for women and children. So that will be relevant to the “women and social department” and it will be followed through from there. In the past there is still England’s HU Programme, but I heard that that programme is still doing quite ok. Because when that programme was being authorized by china, it allows the health system to operate on its own. In this way it is still quite good. I don’t know about Li Kah Ching Foundation, I don’t know why they are always so concerned about results or what, keep wanting you to report your progress to them, and they still needed official documents.

One thing is progress, planning, progress, and at the end, conclusion. After that we grew afraid of this foundation and we don’t want them to work for us. One thing is that their specification/standard is high, if you want to do good works etc we are very grateful. But if you make it so difficult to do good works, people dislike it. HU is much better, if I give it to you to do, and I just need to check on it once after that. You just need to tell me when you will be done with it and when it’s done I will go down to check, once and for all. I wont bother you about your progress but I can sign the documents/contract with you. Under normal circumstances our efficiency is really so much higher. Now every office needs people, each office can’t do without manpower. Any one of those office, it is so simplified and the workload is exceptionally heavy.

Q(Z): Yes, I see that you all are very busy
A: That’s why the workload is very heavy now. We don’t wish to handle too much work actually, because we can’t cope with it. When they come, all the leaders will be with you. If you don’t go, it will feel like you don’t respect them. If you go, you have to put your work here on hold. So this is one area about the association which we are not very pleased with, others not so. Now the association is in touch with us. They said to give free medicine and free delivery of it etc. there was once an assignment taken up by the province, so we have no choice. We went with them, and didn’t bother with it after that.

Q: That’s the end. Thank you.
Chinese Transcript for Interviewee 2

Q: 第一个问题，你本身认为乡村医生有那些需要
A: 一个满足他自身的生活需要，不用录可以不，你们三个都不是大陆的

Q: 我们是可以听得懂，但是要记下没有那么快，所以要录下来
A: 那行，但是我这样讲很散，因为我没有材料，没关系吧，而且你们这个也只是自己的一个研究，那行，咱们这抽烟合适不，

Q: 可以，可以
A: 我们马上也要戒烟了，10年卫生系统全部要戒烟，先从卫生系统开刀，慢慢往外辐射，因为乡村医生本身也不是多么博学，乡村医生的定位本身就是半医半农，一种身份是农民，一种身份是医生，以前这部分人有点知识，或者有点特长，他利用自己的业余时间，看点小病呀，但是呢随着社会的进步，他们自身水平的提高，有一部分已经成为专职的，所谓专职就是家里有地，但是他自己不去干，家里有人干或者他们租出去了，自己就专心给大家来看病，做公共卫生这块，对乡村医生来说，公共卫生是很大的任务，这个是国家的要求，比如说儿童疫苗呀，谁家里结婚呀，哪家家里死人呀，风俗的话家里会摆上宴席，他还有一个监督的职能，卫生监督，他就要去，一个就是监督你要留样，如果发生群体腹泻呀，就用送去检验，查是个源头出的事情，以免出事，注意饮食卫生呀，注意周围的环境卫生呀，家庭卫生呀，再一个就是健康教育，再一个就是要宣传平时要注意的，还有就是季节性病，比如说现在的甲流，他要告诉你怎么办，制一些中药汤呀，大家喝呀，要做这些事情，所以对乡村来说，这一部分人能专职来看医的发展比较好，所谓发展比较好就是通过他的服务能得到一定的报酬，以前的报酬主要限制在买药，就是他把药品采购回来，他卖的时候他会加上一部分价格，加价限制在10%-15%，他的收入只限于这一部分，因为他这个门诊，挂号，这个他是不要的，包括出诊，而且乡村医生是24小时都会接诊，他不分上下班，不分白天和晚上，任何时候，只要有村子里人打电话，因为都是乡里乡亲么，他就会马上赶到现场，这部分的乡村医生收入是稳定的，但是大部分医生除了看病，那部分收入是不够的，一个是与技术有关系，一个是与周围的环境，交通不便利呀，这些有关系，还有他的他辖区的人口数有关系，因为现在最少的行政村才300人，按照人的发病基数来算，比如说按照5%。或者1%发病，你基数小，你发病人数少，这一部分人就养不住他，这一部分人来说买个药，该个啥就根本养不住他，现在国家和省上逐步的采取购买服务的方式来做这件事情，就是说虽然你看病挣不到钱，但是只要你把周边的公共卫生这块做的很好，过去去考核你，你做的很好了，政府拿一部分钱补给你，你问的最需要的，我觉得最需要的基本生活问题，因为发展好的毕竟是少数，发展好的乡村医生，一个月还有上万的，但是发展不好的，一个月一两百块钱还是有的，而且咱们省上准备把差价全部拿掉，就是不允许你进完药还要加这10%-15%，就是把这个福利全部让给老百姓，就让老百姓买的药是平价药，全省全部统一，一个统一，统一招标，统一配送，统一药价，全省的，一种药全省统一，这样的话就是老百姓得实惠了，但是对乡村医生来说，这一部分收入又没了，他本来就靠这块收入，这块收入没有了，所以国家和省上就准备再拿回来一部分钱，你平均加10%，国家把这一部分钱了给你自己，你卖多少药，好国家加10%，把钱给你，现在正在
试行，但是这块最终能不能实施下去，现在只是一个摸索阶段，因为对药品收入多的这部分人，他就吃亏了，因为他讲究的是平均值，是按照平均值给你算的，所以说最需要的就是生活，下面的如果每一个乡村医生都有医德，只要是医生他就会有这份，因为乡村医生和周围的病人都是亲戚关系，有些都是亲戚，多少代网上传就是一家父母，一个自然村么，一般都是亲戚套亲戚，乡里乡亲，他看病都是先欠着，所以每一个乡村医生他都会挂好多外债，他自己家也可能很穷，但是救人要紧，但是救完以后这些人就会欠他的钱，有些就是长年前，换不清，还有这种情况，生活保障以后，咱就说医德这块，每一个乡村医生他都要有医德，就是说他想看好病，想看好病，他需要什么，就是我的房子要给我建好，我的存卫生所要有一个很好的，不能说在家头里，要求这个东西是无菌操作的，咱这后面放的都是乌七八糟的东西，这是不行的，我们省今明两年就是要做村卫生室规范化的建设，规范建设就是要求三室分开，今年已经验收2万多个村，有些达到四室，五室分开，条件好了，另外一个就是说一定好喝你杂货铺这些彻底分离，生活区和医疗区一定要分开的，另外一个就是全部统一，就是标志，墙上的这些制度，有些规章制度要上墙，随时要看。另外还有好多个图表卡册，图表卡册这些都属于公共卫生的序列，有的分到28种规定，儿童管理呀，妇女管理呀，什么地方病管理呀，各种传染病的管理，这些图表卡册28种，有些都上30种了，这些现在也就是逐步统一，乡镇统一，乡镇统一以后达到一个县统一，当然以后能不能达到每个省统一，这个还可能不好说，因为每个市的条件都不一样，有些地方有地方病，有些地方就没有，能达到一个县统一我们就很满意了，还有一个就是处罚要统一，以前很多就没有处罚，也没有台账，因为我们新型农村合作医疗开展以后呀，有一个门诊统筹，这一块要求必须统一，他不统一你搞不清楚了，是一个先天条了，因为统一以后，才能报账，报账有严格的报账制度，这是一个工作环境的问题，一个乡村医生他看了以后，感觉干干净净的，他心情也很好，谁都希望自己的工作环境是很好的，工作环境好了，还有医疗设备，医疗仪器，如果这一部分要他自己拿钱，他是为大家服务的，让他自己拿钱投入这部分，一般人是想不通的，因为他做的是为人服务的事情么，所以这块国家省上也拿了钱有些设备已经配下去了，还不够我们最近有下了3千块钱下去，另外在加上配上电脑，以后的条件可能会好一点，这是他的硬件要求，生活要求完了，硬件要求也完了，另外一个就是技术要提高，咱们是从04年，其实以前每年也都在做这个，这地市也根据自己的财政状况去做，根据财政状况就是说市上有钱了，我自己拿出钱来提前培训，我不靠国家，不等省上，现在国家也意识到了，国家每年也投一部分钱，用到乡村医生的培训上面，省上配套一部分，用于提高，他们这种培训就属于一种短期的培训，针对性，目的性非常强，比如说一开始传染病，非典那年传染病那么厉害，所有的传染病，今年就培训这个，第二年我把妇幼这部分培训了，第三年比如说内科，儿科，接着公共卫生，接着急诊急救，就是全市针对他们这种很急需的东西，像有些高深的东西你讲给他们，他们也不懂，还有他也用不成，不如说外科的好多东西，给你他讲再多，从国家这个要求上讲，就不允许乡村医生开展手术的，所我我们只是配了一个急夹缝合包，一般都是常见病，稍微疑难的，当然有些水平高一些，常见病能提老百姓处理了，我们就已经达到目的了，就是说技术的提高这是一方面，至于再往后有什么要求的，我想乡医最核心的就是以后的养老问题，我们乡村医生现在的身份是半医半农，作为一个农民来说，国家就是说因为你又土地么，以后养老你靠土地就行，但是对于有些医生来说，他为老百姓奉献了一辈子，认为养老问题国家应当给管，国家现在也在逐步在做这件事情，
中国农村这个基数太大，现在也在逐步考虑，我看省上现在最近对乡村医生这块一年一个月才补5块钱，加上以前的基数55块钱，但是国家这样想了，也有他的想法，乡村医生不存在退休，个别市上说你到60了让你退了，但乡村医生都是相亲么，你水平高他认你，你到80岁他还会找你看病，所以相对这块还是有一部分收入的，不过这块已经成了大问题了，因为他们和民办教师来比的话，他们确实很困难，民办教师有待遇，他们就享受不到，所以这一块意见也比较大，国家现在出了这么多好政策，乡医现在逐步有一个盼头了，总觉得国家一定会不管他们的，国家迟早会把他们的事情解决，现在对稳定人心这块起到了一定的作用，中国的农民可怜，到外围转完以后，国外的农民的农产品很贵的，国外的农民都很富的，所以说中国的老百姓比国外付出的药多的多，但是得到的回报却是少的，但是这些年开始政府意识到这些事了，政府现在那大笔的钱往下投，光陕西省给新农合这块投入40个亿，加上我们这块，我们这块每年是3个多亿，另外疾控，地方病，这些钱全部都投入到农村，因为这些年一直在抓农村卫生，这个问题我觉得就说到这里了

Q: 刚刚你说要统一对吧，哪些地方了，乡村医生是怎么样行医的，就要一个比较平均的水平对吧，因为现在有些距离城市比较远的，他们没有网络，没有那么好的设备，哪政府是怎么样想要统一的，有什么样的办法呢，还是怎么发信息给他们的
A: 你指的的是药品统一，还是卡册统一

Q: 卡册是？
A: 卡册是我刚才给你讲的，各种图表卡册，比如说妇幼管理卡册呀，儿科计划免疫表呀

Q: 两方面都可以的
A: 这个图表卡册咱们村卫生室这个管理，虽说划到农村卫生处了，其实是每个处手都能伸到他们这的，不如说妇社处，妇幼这块他也下文件也要求到村卫生室这块，牵扯疾病控制这块他的任务最后也落到村卫生室这块，所以说每个处室，对每个处室来说都有在自己业务范畴内的一个要求，比如说妇幼处，他就会有一个对育龄妇女产前访视几次，产后访视几次，中间要做几次体检，他有一个要求吧，好，他印一张表，这个表发下去，这个表就是全乡统一，各市你是无权去改的，疾控处也一样，各种病结核呀，艾滋病，梅毒，这些病他就会有各种表发下去，省上统一的，但是有一部分，针对他当地的情况，他不一样，出生地不一样，每个孩子的年龄段都不一样，他就会根据他自己的实际情况做一个表，所以说为啥当初乱，当初因为我这个村人少，我做一个小本子，我这个村人多，我做一个大本子，所以说相当散乱，现在因为各个县都，因为规范了么，都给他统一起来了，而且现在信息化非常快，咱们现在给村卫生室一部分已经配了电脑，今年大概给2.3万村卫生室把电脑都配上，电脑，打印机这些都配上，配上以后他们都能联网，而且现在这个信息平台建的也比较多，一个信息平台十八个子项目，所谓子项目就是所谓疾病直报系统，还有一个传染病直报系统，还有一个应急系统，另外一个合疗系统，就是总共包含十八个子项目，这个完了以后咱们纸质的东西会越来越少，现在没办法因为信息化普及的慢，有些纸质的东西还是要留着，等这个以后以后，全部就从网上走，他从这边以上网从省市县都能看到，纸质文件可能就不会再需要了，条件会越来越好，这个图表卡册这块就这些，明白了吧，省上能统一省上统一，县上也统一，至于药品统一，这个是我们一个副省长
强力推行的，因为调研以后都发现，现在中国的各级医院都存在药品加成的问题，所谓加成就是药商给我供货是10块钱，我就加成11块钱我卖给病人，当然不否认医院里面有成本，一个是一个药物有损耗，我运过来的有高有低，有损耗的，另外我还有运费，我还有管理费，我要把这个药摆起来，我要有架子，而且我要把他管理的很规范，我要请人吧，就是所有他有成本，在国家意思呢，因为农民属于弱势群体，首先考虑农民，城市这一部分人先不管，先从农村开始统一价，三统一，所以基层他不加钱，他超不过大医院的钱，比如说一种药，成本10块钱，村里卖11块钱，乡镇可能卖11.5，县医院就卖到12块钱，省里的医院可能就卖到15，16块钱了，所谓的三统一，一旦把乡镇和村卫生室价格降下来，哪可能就是全省的最低价，省长在老陕，全省统一价，他达不到，因为现在这个省医院，教学医院既便宜还是很高的，三统一呢，统一招标这个能做到，现在把这个基本用药目录都出来了，基本用药目录直接定完以后，根据常用药，我接一个电话。现在国家出了一个基本用药目录，各个省可以根自己的情况来改正，比如说城区医保他会在基本用药目录以后再扩展一部分药进来，因为这一部分药属于报销范围的，因为其他药他是属于不报销范围的，好新型农村合作医疗也把这个拿过来，也给自己找了一部分，在加进去新农合报销的，我们给乡镇村卫生室也列了一部分目录，但是我们这块原则和新农合差不多，不更改，他不报的话，我们把药放到哪里也不是太好用，有可能放过期，药品目录定下来以后，咱们现在有一个全省的药招办，药品招标办公室，光药品这块有三个单位管，是因为历史原因造成的，一个是省药监局，这个是当时从省药促会分出去的，现在因为形势的需要，又把它给和进来，药监局有一个，厅里成立了一个药正处，因为他是一个事业单位，和进来成二级局，成二级局以后，一级局必须有一个处室来协调这个事情成立一个药正处，药正处属于政府部门有不能参加采购，有设立了一个药招办，共同来做这个事情，统一招标能做到。统一招标完成以后下面就是统一配送，统一招标就统了药价，统一配送这快也是省上拿钱，准备找这种配送公司，有愿意愿意承担这个事情，他这个配送公司就把药送到对乡镇卫生院和村卫生室是免费的，但是这个钱有政府来出钱，乡镇卫生院和村卫生室怎么报呢，他按照自己的计划，每年报计划，他每个月使用的药他大概有一个数，他把自己的数报给乡镇卫生院，或者半月以报，或者每周以报，这个他们自己来协商，这个配送中心直接对乡镇卫生院直接，他或者半月或者一周把药给人家送过去，这是咱药品的三统一就是这么来完成，但是呢现在统一招标正在进行，统一配送还没有弄好，想承担这项的物流公司非常多，但是呢，他还是一个费用吗，这个费用还是要招标的，因为是政府掏钱，牵扯这个事情

Q(Z): 您毛主任我问一下，他需要多少药就报多少药吗，那他还有一点药，比如说新特药他也想用，挪他自个偷偷购买，这个也没法控制
A: 这个是这样的，不是完全不允许，你如果说老百姓有钱，我自己来卖最贵的药用，允许，只不过不再基本用药目录里面的不报销，那你自己能卖的也行，但是如果老百姓说用用药目录里面的药我为啥要花那个钱买贵药，所以你也不得不权衡，也会有很多非常贵重的药出现，在一个会导致医生的这种利益驱动，他就会用好药

Q: 刚刚你说的那个统一的策略吧，是很严格的被实行的吗，还是有人经常来管理的吗，就是上级的策略很彻底倒下基层去吗，哪些乡村医生有得到哪些信息吗，因为在我在采访他们时，有些就说我们从来都没有去培过，我们从来都没有得到消息过，就是
距离城里比较近的就说给我去培训，这一类的，就说有不一样的水平对吧，就是怎么样，才能把这些策略就是让哪些乡村医生都得到这些信息的
A：你说你问那一块，他说他没有参加过培训，这个咱不太清楚了，他没有具体的反应上来，我们不好去查，咱们要求其实是全员培训，至于有些卫生院说他没有去参加过培训，因为你理解的村卫生室可能和我们不一样，为什么，因为现在好多人都以为在村子里的都是村卫生室，你们当时是不是这么认为的，只要是村子里的，都是村卫生室，是这样理解的，这不对。国家要求每个行政村允许建一个卫生室，原则上只能建一个，至于村组特别大，比如距离特别长，人口特别多，根据实际情况再多建，所以咱们的要求就是让每个村组建一个卫生室，这样的话，我只认你一个，至于其他的呢，他也没了点呀，他就个体，明白我意思吧，国家掏钱培训的，只是培训我们认可的乡村医生，至于你是个体的我们不在免费培训之列，至于他自己掏钱去进修什么，这个是他的事情，所以你问到有些没有培训，所以这个我不好说，因为这些年都是要求全员培训，每个人全免费培训，所以我说一般人不会舍弃这个机会，因为不掏任何钱，去了好像还给10块钱补助，有这个情况，当然你问咱们的政策怎么传递到下边，如果是文件的话，我们只能通过一级一级去走，因为不能越级，因为他又一个辖区管理么，就怎么说呢，就像卫生部不可能直接把一个文件发到咱们县上吧，省上都不知道，你这工作就没有办法开展，我们也是，我们给市上，市上给县上，就是每级都知道，每级都一条心去干这个事情，至于县上再往村上通知呀，他就不可能有这种正式文件去走了，因为他也没有传真，现在村子里就靠电话，有时候他会拖上一阵子，比如说这个事情不急，不如此10天以后才开始，好，那看到星期五就开例会了，乡镇卫生院对乡村医生这块是每个月开几次例会，就是每月你来我这里几次，大家一个工作谈一谈，汇报汇报，再把下一步的工作安排一下，这个会在上面统一给大家交代，这是正式文件，如果想信息呀，没有出台政策的文件，或者你这是计划当中的时候，我们只会说，报纸上呀，比如说省长讲了，我们准备怎么怎么，准备怎么做，还没有做，的时候就会在报纸上，在网络上出现，在这个上面出现，当然他的普及率有点低了，在村里他不可能天天上网看到这些，他不定报纸，这怎么办呢，这个也不是什么难事，因为咱们中国的农村相对差一点，但是这部分的孩子大部分都见过很大世面，都往外跑，或者打工，或者到外面上学，孩子就会吧这个信息传递到家里，因为现在都是好多在上学的孩子，看到了替父母来问呀，这种情况非常多，我们也就这两种情况吧，这两种传递方式，至于你说其他山区里面没有传到的，确实有，比如有些地方，其中有一个村子，那个村子还在，只有三个人，只住一家人，但是个行政村的编制还在，你说奇怪不奇怪，这个问题说清楚了，

Q（Z）：说清楚了，非常清楚
Q：说的好清楚
A：你们喝水不

Q：没关系，真的没关系，耽误你时间已经很不好意思了，就想问问你刚才说用哪一个传真呀，报纸呀这些，有用电话吗，就用电话打电话给那些乡村医生吗
A：这种我不明白，就说这种叫乡镇上和县上，因为到乡镇级和县级下面没有传真了，他不办呢这个文件传过去，这个时候就是两种方式，以会代培，比如说着时间不紧的话，咱就人叫过来一块说，如果时间紧呢，比如说这个文件今天下午要东西，他只有打电话，而且县上现在把每个乡村医生的电话都要过来了，全省将近5万个，
Q: 就现在用手机或者电话遇到什么困难吗，就有时会联络不上哪些乡村医生吗
A: 这个没有，因为乡村医生那块，因为现在农村几乎每家都有电话了吗，当然个别村子条件不好的没有，我现在先去看基本上各个村都有，因为老百姓有什么的，我们都是给他打电话，就是选了一个发展比较好的，送到北京开会去了，那是莫大的荣誉，国家给奖励五千块钱，钱是小事，但是卫生部奖，卫生部对卫生没有这个奖励，对乡村医生已经奖励了四年了，每年选200个，而且这些人，对这些人的待遇非常高，进中南海，就是选做代表的时候，进中南海，见总理，见卫生部部长，我说那厅长都没有和总理握过手，你们都去握过手了，这是对他们来说莫大的荣幸，我曾经到一个乡卫生室，他把村卫生那个墙呀，他就那个放到最大，墙有多大，他放多大，他非常自豪，非常高兴的，我这里也有一个没有挂，他非要给我送一个，我说那行吧，你放到这里吧

Q: 哪你刚刚说每一个村子只有一个允许的对吗，哪我见过其他的卫生室都是那个行医的证，那个证是怎么回来的
A: 他是这样子的，以前国家对这部分人管理的非常混乱，国家是不管的，以前叫赤脚医生吗，有些事跟着老中医教学一学，也不上学，那阵也没学上，跟着老中医采采草药呀，逐步逐步他就爱上这行了，人呀，你给人把病看好，人都感激你，觉得地位也挺高，在一个对这也慢慢感兴趣，他就爱上这行，那个时候管理特别乱，就是谁想干谁都能干，因为国家没有一个约束性的文件下来，有一个规范性的东西，就是看不好出医疗事故了，也没有一个处理，那个时候老百姓认为，咱自己找人家看的，看不好就完了，他也不是一个正经医生么，你非要找他看，但是那个时候条件差，现在呢，就是说从04年，03年颁布的，04年执行的，就是乡村医生管理条例。这个条例是通过全国人大统一的，这个就是立法了，就是乡村医生把以前的所有证淘汰，全部作废，从新发了一批乡村医生从业证书，那个上面有国徽的，属于国家认可的，这个时候我们就把乡医从新认定，该淘汰的淘汰，该认定的认定，有些不行的就直接给淘汰了，向她说的这几个他啥都有，他有几种现象，作为个体的话，你还是要批得么，我是个体我有我的证书的话，我拿我的职业医师证申请办个体医生，这还是允许的，还有一种是以前延长的，比如说以前这个法没有立下来的时候，哪一个个村子就好几家，卫生局来说全认，因为那个时候你不给村医一点报酬，他能开好呀，能开的话，人多活好干么，你比如说统计妇幼这块你去弄，统计传染病你去，他好指挥，那个时候管理特别混乱，咱们规范以后呢，一部分人是被淘汰了，他就不再你乡医的序列里头，他就自动列入个体的序列了，还有一个方面是这样子，要求是一村一室，一些地方做的很好，一个卫生室很大，比如说咱们几个一起在这里工作，分工明细，我的儿科看的好，你的内科看的好，这样的好做，但是财务管理师一个问题，这个药品财务都有一个管理呀，他一个利益在这个里面么，但是有些人他和不到一块，比如说两个人本身就是竞争关系，多少年都有矛盾，你硬让他和，他和不成，和进去就是一个人矛盾，但是这连个人的水平都很高，而且一个侧重于内科，一个侧重于妇科，这个时候怎么办，他们叫一村两点，或者一村多点，就是说你只认可你叫一个村卫生室，
至另外一个人认为你是这个村卫生室的一个分站，分点，这么去认为，至于现在补助下来了，我只给你这个村卫生室，至于县上的他会折中，比如说现在我给搞公共卫生的这块没人120块钱，他一看这连个人都搞了，他就会一人给60块钱，这两人也愿意，这种想象也存在，就是现在这种一村多点的现象还是蛮多的，尤其是在经济收入比较好的地方，收入差的谁都不干，收入好的大家强着干，所以这种情况，县卫生局就默许，但是证书还是全的，我只给你写一个点，那个属于分点么，就类似咱们这医院在另外的地方这一个门诊部，一回事

Q：问最后一个问题
A：没关系你说

Q：就你们在办这些策略当中，在策略的过程中，你们这个部门和其他部门有合作吗，比如说教育部门呀
A：非常多

Q：就你刚刚说到那个医德对吧，就可能和学院呀，或者有可能和非政府的机构一起合作，就是看哪一
A：医德这块呀，不是靠学院来教育出来的，医德要靠自律，你学校再怎么教育，他医德不好，他能那什么吗，所以医德上一定要靠自律，当然你说乡村医生这块哦，我看你们主要问乡村医生对吧，你们是抓了最底层，对乡村医生这块呀，他们就不存在医德不好，咱这么说来，就大部分，可能极少数医德不好，但是一般情况下不会，为啥，一个首先是相亲，大部分都沾亲带故的，他没有必要去骗他们，为啥有些乡村医生不赚钱他还愿意干，是因他在村子里的地位非常高，一个乡村医生的地位在村子里面比村长的地位要高，村长因为这选举也有贿选，我听说哦，有些人可能还不服气呢，但是谁都不敢得罪医生，医生家只要有啥事情，他就觉得他有这个地位，他已经很满意了，我们其中那年选了一个乡村医生，也是一个优秀的，这个乡村医生是一个残疾人在当地的口碑非常好，他说他从过年前的半个月到过年后的半个月，是家家论者请他吃饭，不用回家，这个两个月家家都要感谢他的样子，他对每一家都有恩，这个人因为他自己也很珍惜这个工作，他是一个残疾人人么，你叫他到地理他也干不成活，他靠着到村子里这种威信他已经很满足了，你说他咋可能医德上有什么问题，去坑你点钱呀，骗你点什么，作为相亲的话，如果你的医术不高，你去坑蒙拐骗，你几天，你不是医生，到乡医院，世世代代定居的，如果你骗了你周围这些邻居，包括你的祖辈会挨骂，你的后代就没脸再这块生存，所以医术不高起码不会在这块坑蒙拐骗，另外一个是就是药品的质量问题，他就这样，一个是医术水平，一个是用药的质量，买药这块他也不敢胡乱采购假药，假冒伪劣，一旦因为用药的问题，你把周围的人看出毛病了，首先他自己的生意到头了，第二个工作没有了，以后随便有人到你这里来，一问那人生死过人，把人治疗死了，谁还来你这呀，所以这些人非常注重当地的信誉，所以对乡卫生院，村卫生室这部分人所以不存在受贿赂，却不存在，医德上应该没问题的。至于和其他部门合作呢，首先发改委要立项，财政要看有没有钱，有了钱大家再坐到一起协商我们准备做一件啥事情，这个是事情值不值得去做，做了以后有什么效果，这个都会提前调研，这个调研你，不光是我们去调研，因为有省人大，人大代表会么，政协，另外还有一些民间团体，这些他们都会去调研，会形成一个调研报告，可行性报告，报告上报以后，就每个部门审，你站在自己的立场来他值
不值得立项，适不适合，比如说财政今年就没钱，你这个需要几个亿，他直接就给你打掉了，发改委一看这不需要立项么，他也打掉了，咱们作为业务口感觉立项了收不到好的效果，我们也会给他们建议，把这个打掉，这个合作是很多的，包括我们给省编办，省人事厅都有合作，教育厅，教育厅是我们对乡镇卫生院这块有个短期的教育，而且现在有一个定向培养，现在发现好多人毕业以后都不愿意回农村去，农村人才不多，现在就出了好多激励政策，就是你来到我这里上学，到我这里上学以后呢，我把学费你给免了，比如说3块钱，给你免了，免了以后单位让你签合同，你毕业以后必须到农村服务上6年时间，就是签这种约束性合同，定向培养，另外给乡镇卫生院招人，乡镇卫生院现在是一个全额事业单位吧，有些卫生院好的也拿不少呢，我听说，这一部分人呢也是定向给他们招，优先解决工作，因为中国这就业特别难，竞争压力非常大，像这种全额单位想进更是难上加难，所以他也采取这种签合同的方式，你毕业你自愿到那块去工作，好，你毕业我首先把你工作给你解决，另外到哪以后我不把你的户口放到村上，放到县上，中国的户口对人们来说还是有个，总是不想回到农村那种，这样就把他们的好多顾虑尽量解决，而且现在还有一个政策，我们也给乡镇卫生院也盖了很漂亮的房子，这边也下了，咱们这里最近将近下了10亿的设备，全省都配一套，现在又要给他们解决职工的住宿条件，病人的病房条件，还有职工的宿舍，还有职工的食堂，和患者的食堂，还有就是职工和患者的卫生条件，有些卫生院一个洗澡的地方都没有，都要自己跑回自己家里去，当然这个只能逐步去做，因为咱中国这个太大了，我们省5万多个乡村医生，我到德国他一个省才40万人，我们省是至少的3700多万，咱省应该是倒数第几个，你想那边都有一个亿的，山东九七八千万，八九千万这样，所以所人口的基数太大，包括乡镇卫生院，怎么1700多个县级卫生院，国家想一次解决特别难，一次要拿那么多钱往上补国家也压力大，逐步发展吧，所以和其他部门协商主要是政策方面的协商，政策协商也是给他争取利益，比如我给乡镇卫生院希望增加编制，人少活多，工作量太大，就给编办写，反复写这个人编制不够，他编办才有权增加编制，给人事厅写，人事厅不是有一个职称评审吗，让我们乡镇卫生院的人和四医大的人，你不可能知道四医大吗

Q: 四医大知道
A: 知道哦，第四军医大学，就是在全国非常出名的一个大学，他的里面博士一大堆，你叫乡镇卫生院这些连本科都上不了的人，在同一个起跑线上去评副高级职称，显然不公平，而作为付出的人，我觉得乡镇卫生院里面人更大，因为那种艰苦的条件，他能在村里站住脚，哪能在村里生存着就是一种风险了，那条件争不了多少钱，还得为人民服务，哪谁不想去好日子是吧，所以这一部分人很值得尊敬的，他能在那块他的付出就很大，我们就申请给这部分人降低门槛，就是他们，论文和可以要求不写，英语我可以要求你降低，咱不要求去考什么，咱以另外一种形式，比如说口碑，我现在下发一千张调查卷，找一千个老百姓走门串户来问么，大家评价你坏，从这个医德，从你的医技，从你出事的程度上，比如说我工作多少年我没有出过什么事情，从这个角度来鉴定他，也评他的副高，这样乡镇卫生院他的积极性就上来了，给村卫生室呢就给人保厅，就是人事劳动保障厅跟他们沟通，就是给这些曾经工作过的，或者以后即将退休这些人，争取他们的利益，当然争取的很少，那也是争取恶劣，逐步增加么，国家财力好的话还会增加，现在逐步给他们争取，我和其他部门协商就是主要为他们争取利益，说白了就是这样子的
Q: 哪非政府的机构呢
A: 哦，非政府机构他有好多的基金会，但他们也参与进去，但是我发现这些基金委趋利性非常强，他说的这些趋利性，不是说基金会，包括李嘉诚基金会，嘉道理，还有一个中国医药基金会，还有中国初级保健基金会，所有的这些基金会都有一个趋利性，所谓的趋利性是什么呢，我们不反对你来，当然是想帮助他们，好事情，但是他们是跟国家的步伐走，当以前国家不重视这块的时候，他们的生活更艰难，他们不会做雪中送碳的事情，只会做锦上添花的事，而且要有又特别多，我们现在对基金会这个事情不是特别热衷，上次还有一个美国的叫燃灯基金会，基金会只给我们省投资了10块钱，要求我们省市县配合，盖两个村卫生室，不1万块钱，5000块一个村卫生室，来了十几个小孩，那个省妇联把我叫过去开会，我说坚决不接受，这是胡正么，十几个小孩过来，让省市配合你踩点，你把我们的油钱都折腾没了，为啥说趋利性呢，李嘉诚投了800万，要求省政府配套800万，首先他是建立在国家投入的基础上，国家不投，如果你要做这种慈善的话你可以去做，我们按个时候很支持呀，是他他不去，国家一开始做，现在我明白了，这种事情是国家投了一大部分钱，他投了以少量部分钱，但是名字还要挂到他的名字上，比如说台湾的**，这事情如果不是省长同意做，我们根本不同意做，别看你给钱了，我们都不同意，他们这个国家拿大头，他出以小部分钱要求名字挂成他的名字，为啥说趋利呢，他不赚钱，他图的名，这种利，下去以后剪裁要求底下掌灯结彩，完了小学生全部放假，出来迎接呀，最后省长很生气，最后给他老总写了一封信，写的非常好，写的就理有据哦，组后那个人最后感动，把这些都取消了，你想做善事的心是好的，区区就过点钱，你把人接来应往的，还不停的检查，一会查进度，一会查这个，你要查，你要省市县都要下车，下去陪着，哪多少个车呀，浪费多少人力物力呀，见还不说那个吃喝，你叫这学校全部放假，大家都提着水桶给你洒街，实质上你这种善事做到最后就变味了，所以基金会咱们不否认他对个别地方来说得到好处了，觉得还是感激的，咱们感激的是善心，总觉得他的这个善心的出发点还是有问的，但是咱觉得这个红十字会，这个做的事情还可以，但是不务实，地震以后给咱给了一笔钱，一个是村卫生室给了一笔钱，在一个人才培训给了一笔钱，把乡村医生培养到四医大去培训，你说不是扯淡么，你把乡村医生里的人集中到一个大学里头，请这些教授们去做培训，昨天我还和李处说这个事情了，这有点胡正

Q(Z): 四医大那边是西京医院还是唐都医院
A: 校部，所以怎么说呢，有好多做这件事情的部门呀，他不懂，所以他做的事情就不务实，像扶贫办，扶贫办也做了好多事情，但是扶贫办做的事情也不务实，国家现在每个口有互相的牵制，他有一个利益关系在里面，都想落这个人情，其实按照我理解的话，只要能住卫生口投的钱，你全部整合起来，比如我们就能掌握那块需要，需要什么，咱们了解，你像扶贫，红十字会不是胡正么，扶贫办，我们刚配下午一批东西，他问都不问又配一批下去，底下的想，自给的照单全收

Q(Z): 利用率很低
A: 全闲置了么，重复了么，还有他们配的不考虑底下，他就是根据自己的想象，他们最开始配备设备的时候怎么配的呢，就是我把心电图，血球仪，X光机我打到第一包，他这个三个一算，比如说20万，我放一个包，我在看那边口腔治疗台，胃镜什么，我一看这也20万了，好打成第二包，来叫你挑，每个卫生院20万你来挑，你说那也
不是胡正么，我可能这里面需要心电图，这里面需要胃镜，但是你只让我挑一个包，这不是很瞎整呀，我觉得卫生口的事情只有卫生口人能知道，其他部门纯粹胡正

Q：就只有这些吗
A：就基金会，我想着你说的民间团体，当然我们自己有一个扶贫办

Q(Z)：扶贫办事卫生厅的吧
A：不是事政府的，我们有一个扶贫办还有一个红十字会，当然宋庆龄基金会呀，那他们就和妇女儿童有关系，宋庆龄她设的是妇女儿童基金会，他和妇社处就有关系了，通过他们那里就下去，所以以前还有英国的HU项目，不过听说那个项目做的还可以，因为那个项目他授权中国以后，他让你卫生系统自己来做，他这个还比较不错，我不知道李嘉诚基金会呀，不知道是为了给老总看这个成绩呀还是什么，反复的不停的让你抱进度，还有以正式的文件，一个是进度，规划，进度，最后的总结，后来我们见这基金会都害怕，不想给他们弄，一来规模还高，要说的话这个善心呀，善举呀我们到挺感激的，但是如果他们搞成那个样子我们就不太喜欢，HU那块就比较好，交给你们去做，我到时候我只查一次，你什么时候告诉我你做好了，好我下去查，我一次给你查到位，我也不追究你的进度，但是我签合同和可以和你签，一般情况下咱们这个办事效率真的高多了，现在每个处室都进人，不进人不行了，现在随便那个处室，就是精简的太厉害了，工作量又特别大

Q(Z)：是的，看你们都特别忙
A：所以现在活量太大，我们都不想接太多的活，因为忙不过来，你说他一来，你都叫领导都陪着你，不去你觉得不重视你，去吧，人家这边一摊活全撂下了，所以我们对基金会这块不太喜欢，其他没有啥，现在出宝基金和我们联系，说免费给下面送药什么的，有是一个省长接的活，我们没有办法，我们跟着去了趟，走了一个形式，就再没管

Q：问完了，感谢
### Thematic Coding Sheets

#### RQ 1: What are the information needs of rural doctors in rural China?

<table>
<thead>
<tr>
<th>No.</th>
<th>Speaker code</th>
<th>Profession</th>
<th>Verbal utterance</th>
<th>Thematic</th>
<th>Knowledge</th>
<th>Skills</th>
<th>Facilities</th>
<th>Training</th>
<th>Rural focus</th>
<th>Formal</th>
<th>Contacts</th>
<th>General</th>
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</thead>
<tbody>
<tr>
<td>22</td>
<td>RP_Dec22_3</td>
<td>Rural patent</td>
<td>People from the city don’t come here for consultation.</td>
<td>k</td>
<td>x</td>
<td>f</td>
<td></td>
<td></td>
<td></td>
<td>g</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q: People from the city don’t come here for consultation.
A: People from the city do come, but not people from other provinces.

#### RQ 2: How does the network between rural doctors and stakeholders influence their information seeking behavior?

<table>
<thead>
<tr>
<th>No.</th>
<th>Speaker code</th>
<th>Profession</th>
<th>Verbal utterance</th>
<th>Guanxi</th>
<th>Formal</th>
<th>Training/ Meeting</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>RP_Dec22_8</td>
<td>Rural patent</td>
<td>Q: Why do you think the medical level in the village is low? How about the doctor’s medical knowledge and skill?</td>
<td>k</td>
<td>s</td>
<td>f</td>
<td></td>
</tr>
</tbody>
</table>

Q: Why do you think the medical level in the village is low? How about the doctor’s medical knowledge and skill?
A: I think it’s due to the lack of medical expertise and knowledge. Also, the doctors in the village don’t have access to advanced medical equipment.

### Snapshots of Coding Sheets in Microsoft Excel Documents.

TAPPING INFORMAL NETWORKS “GUANXI” WITH ICTS

Appendix F
Appendix G

Budget

**ICTs in China - Budget Estimation**

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount (SGD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Travel Expenses</strong></td>
<td></td>
</tr>
<tr>
<td>Airfares incl. tax (to Xi'an)</td>
<td>2025.00</td>
</tr>
<tr>
<td>Taxi (Singapore)</td>
<td>155.30</td>
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<tr>
<td>Insurance</td>
<td>204.00</td>
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<tr>
<td>Daily expenses (Food/Transport)</td>
<td>1367.00</td>
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<tr>
<td>Lodging</td>
<td>994.00</td>
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<tr>
<td>Travel Visa</td>
<td>100.00</td>
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<tr>
<td>Vaccinations</td>
<td>246.90</td>
</tr>
<tr>
<td><strong>Logistics</strong></td>
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</tr>
<tr>
<td>Gifts for participants</td>
<td>74.00</td>
</tr>
<tr>
<td>Manpower</td>
<td>321.00</td>
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<tr>
<td>Equipment</td>
<td>35.10</td>
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<tr>
<td>Translation &amp; Transcription</td>
<td>318.00</td>
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<tr>
<td><strong>Miscellaneous (Printing)</strong></td>
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<tr>
<td><strong>Contingency plan</strong></td>
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<tr>
<td><strong>Total (Pre-tax)</strong></td>
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<td>Singapore Tax</td>
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<td><strong>Final Total</strong></td>
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1 SGD = 4.89 Renminbi
### Appendix H

#### Research Timeline Overview

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<thead>
<tr>
<th>Description/Date</th>
<th>Sep-09</th>
<th>Oct-09</th>
<th>Nov-09</th>
<th>Dec-09</th>
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<tr>
<td><strong>Description/Date</strong></td>
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<td></td>
<td></td>
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<tr>
<td>Contextual Lit Review (Referencing)</td>
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</tr>
<tr>
<td>Decide on focus, RQ, location</td>
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<tr>
<td>Theory, criticise, choose, refine RQ</td>
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</tr>
<tr>
<td>Check Grading Criteria</td>
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<tr>
<td>Book SQ airline tickets</td>
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<tr>
<td>Draft Lit Rev/Questions for Arul trip ready</td>
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<td>Arul departs</td>
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<td>Apply for Visa</td>
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<td>Media Diversity Abstract Submission</td>
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<td>Contingency period</td>
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<td>Exams</td>
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<td>Field Research in Xi'an</td>
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<tr>
<td>Contingency period</td>
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## TAPPING INFORMAL NETWORKS “GUANXI” WITH ICTS

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<td>Data analysis and reporting</td>
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<td>Abstract Submission (IAM CR)</td>
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<table>
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<tr>
<td>Submit endorsed A&amp;C form to L2 G.O</td>
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<td>Submit softcopy of revised final report</td>
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