

Spring 2010

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Living in Pain, Throwing Out Agony:
A Health Study of the Rural Residents of Three *Hani Zu* Ethnic Minority Villages in
Hong He Prefecture, Yunnan Province.

Haley Newman

May 31, 2010

To the people of *San Cun*, *Ba Ce*, and *Za Mo*,

Thank you for welcoming me into your homes.

Thank you for offering me peanuts and *baijiu*, and a window to what life is like in the
countryside.

Thank you for sharing your stories--
your stories of pain, struggle, loss, change, and, in the face of it all, your stories of hope.
Thank you for teaching me how to build a road and how to quickly crack a peanut shell.
Thank you for showing me that it's possible to laugh when you're in pain, to smile when
you're suffering, and to move on when you've lost loved ones without reason.

This is for you.

From you I learned strength and resilience, and discovered my true passion to help people
who have so little and still give so much.

Thank you for leading me to your village.

Someday I will come back to the hills of *Honghe*.

I hope that you will still be there.

Nestled in the rice-terraced mountains of Southern Yunnan, there are dozens of small towns of about 300 people. The villagers are physically and emotionally drained and perpetually exhausted. The men smoke over a pack of cigarettes every day and drink five or six small glasses of *baijiu*, their home-made rice wine. Some have been coughing up blood, others can't breathe deeply enough to walk, let alone work in the fields anymore, leaving their wives to do all of the farm work.

By bus these villages are just a few hours away from Mojiang, yet life here feels decades away from the city.

Over the past thirty years, millions of people in both the city and countryside have benefited from *gaigekaiifang*, China's Reform and Open Door Policy. An elderly farmer will tell you without hesitation that his life today bears no comparison to the *tongku*, the suffering and agony of his childhood.

The 2010 Shanghai Expo presented China's newest advancements in technology, business, architecture, and wealth for all the world to admire; but behind the slogan of "better city, better life" are countryside villages where clean water, sanitation and the most basic health care is still out of reach.

The advancement in health care and access to health services has not coincided with the improvement in China's economy. In terms of health, gains from the era of economic expansion have benefited urbanites far more than countryside farmers.

The difference between urban and rural health is now a stark contrast; in 2006 China was ranked by WHO as the lowest in the world in terms of health equity: urban residents

who make up only about 20% of China's total population enjoy roughly 80% of the national health resources.¹

Rural Health Research

In this paper, I will explore the crisis of rural health in China based on the three weeks that I spent living and conducting research in *San Cun*, *Za Mo*, and *Ba Ce* countryside villages in Yunnan's Honghe Prefecture. The villages are located in a field terraced-mountain range of roughly 40 villages total, 90% of which are of the *Hanizu* ethnic minority. *San Cun*, *Ba Ce* and *Za Mo* have roughly 300 residents,² the majority of whom are subsistence farmers.³

Research Methodology

The primary gauge of health status and health care quality and access for my study was based on the *San Cun Rural Health and Nutrition Survey* (Appendix A), which I constructed based on questions compiled from several sources, including China's *Economic, Population, Nutrition and Health Survey 2006 Household Questionnaire*, and several of the United States Center for Disease Control (CDC) health screens, including the dietary screen, health problems screen, immunization questionnaire, smoking and tobacco screen, blood pressure screen, and cardiovascular health screen. For CDC screens that were tailored for an American respondent, I rewrote questions to be more appropriate for Chinese culture.

Initially, the *San Cun Rural Health and Nutrition Survey* included 12 sections: background information, including age, gender, marital status, educational background, and

¹ Hu et al., 2008.

² This includes those teenagers and adults who have left to find work in the city, so the actual number of permanent residents is less than 300.

³ Socioeconomically, *San Cun* was slightly more prosperous than the other two villages. It has what is considered one of the best school lower and middle schools, which draws children from other poorer villages without their own school systems. Every five days *San Cun* is also host to market day, so a larger portion of *San Cun* farmers also work as vendors. Very few farmers of *Ba Ce* and *Za Mo* have no secondary income unless they leave to find work in the city.

occupation; smoking history; water consumption; alcohol consumption; medical insurance; use of health care and medical services; current health status; disease history; symptoms experienced in the last month; symptoms of cardiovascular disease; diet; vaccination history; depression and mental health test; and family member health status and premature morbidity.

After conducting the first few interviews, I quickly realized that individual stories provided much greater insight than yes or no answers. Thus, for the current health status and disease history, instead of prompting with specific questions, I instead asked general, open-ended questions about their state of health. Often, these stories also led to an explanation of access problems and the respondent's opinion of quality of care.

To gain a general understanding of the most common symptoms villagers experience on a daily basis, I also asked whether the interviewee had any of 13 specific symptoms within the last month (Appendix B), although I purposely asked these question after the respondent had already painted a general picture of personal health so as not to influence individual's health stories.

As I spent more time in the villages, I gained a greater understanding of the villagers' pertinent concerns and conditions. I removed the study section on depression and mental health because these questions did not seem culturally appropriate, and villagers often alluded to their emotional state through personal accounts without my prompting.

I also noted general trends in diseases and symptoms, particularly relating to women's gynecological issues, maternal and infant health, tuberculosis and gastrointestinal problems, which allowed me to expand my discussions with villagers as I became more familiar with Chinese terms for these diseases and their symptoms.

Qualitative research data was collected from 66 formal interviews, including 60 villagers⁴ who I interviewed using *San Cun Rural Health Survey*, two local doctors, a local community health worker, and a doctor and Executive Director of The Women and Children's hospital in the city of Mojiang.

Data collection methods included structured and unstructured interviews that I conducted with villagers and health service providers. I regularly observed service delivery and sanitation at local health clinics, and nutrition and sanitation conditions at the lower and middle schools in *San Cun* and *Za Mo*.

I also partook in the daily life of community members, including cooking, eating, farming, manual labor, market vending, education, and a local government meeting about a public health intervention.

Field notes and occasional tape recording were the primary method of data recording. All 66 interviews were conducted in Mandarin; however, as many of the female villagers only spoke their ethnic minority language, *Hanihua*, other villagers who could speak fluent Mandarin translated most of the interviews that I conducted with female villagers.

Daily Life

Perhaps even more insightful than the results of my study, was the time I spent living with the villagers and taking part in their day-to-day lives. After spending a day helping build a road in *Ba Ce*, I had a greater understanding for why 90% of the women I interviewed had back pain. While trying my hand at the Chinese card game *Qi, gui, wu, er san*, and inhaling second hand smoke for several hours from the men who incessantly lit up their tobacco pipes and drank endless bowls of *baijiu*, I began to understand more about the cultural influences and practices that contribute to health outcomes like lung and liver cancer.

⁴ For the purposes of statistical analysis, four surveys of villagers had to be discounted from calculation because they were under the age of 40.

Eating every meal with the villagers, watching how their food was prepared, and doing my best to help out (mostly just washing vegetables and shelling peanuts), provided great insight about their dietary habits and sanitation issues. On some days the water from the local tap was brown, “too dirty” to use to even wash vegetables with. In this case we used some of the water from the previous day that appeared to be cleaner.

In most households there was always enough to eat; however, the nutritional content of food follows a socioeconomic gradient: in poorer households, meat and soy protein sources are scarce, whereas wealthier families always had chicken, egg, pork, duck, and/or tofu. The most concerning dietary situation I observed was in the three schools that I visited where the two meals a day that children ate from the cafeteria had no protein source and minimal vitamin and mineral content.

The health problems highlighted in this paper stem from the results of the results of the *San Cun Rural Health and Nutrition Survey*, personal accounts from adults and children in village communities, and experiential observation that exposed serious health issues and illuminated some of the underlying root causes.

Abstract

The major health issues that I encountered in the countryside stem from a confluence of social determinants. Over the past 30 years, as accessibility and quality of health care has deteriorated, there has been a resurgence of health problems including a rise in infectious diseases like Tuberculosis and Hepatitis B.

But the failure of the rural health care system is only one part of the problem-- many of these health issues are socially and culturally rooted and cannot be solved even with China’s best medical care. The social determinants of health-- environmental sanitation,

nutrition, poverty and gender disparity--place just as much of a burden on these societies as does the lack of adequate health care.

To address all of the health problems I witnessed and their underlying causes is beyond the scope of this paper. Thus, I have chosen to focus on two key health issues, one relating the connection between inadequate rural health care and resulting health problems, and the second demonstrating the link between social determinants of health and individual outcomes.

In the first section, I will argue that the decline in rural health care over the past 30 years has led to the resurgence of Tuberculosis and Hepatitis B, and I will explain how this problem is manifest in the villages where I conducted my research.

In the second section, I will present the connection between gender inequality and the disparity in women's health in the countryside, demonstrating how social and cultural ideas and practices are as influential to health outcomes as access and quality of care.

For all the health problems I describe in this study, it is impossible draw simple conclusions about cause-and-effect; every illness is intricately linked to a web of determinants. By expanding about the background issues behind the resurgence of infectious disease and its connection to inadequate health care, and the disparity in women's health and its connection to gender inequity and inequality, I hope to show that these illnesses are caused by a confluence of factors-- both medical and non-medical.

This crisis can only be resolved by considering not only how to improve the broken rural medical system, but also how to address the underlying cultural and social determinants of health that go well beyond medicine.

Rise of Infectious Disease,

Decline of the Rural Health Care System

History of Health care in the Chinese Countryside

Following the founding of the People's Republic of China in 1949, remarkable improvements in health and health care were achieved by reducing poverty, improving education and environmental health, and introducing policies that made tackling health problems the forefront of reform. Central planning and community-based initiatives offered affordable and effective medical care, and encouraged health promotion with an emphasis on prevention first strategies.⁵

Health care policy focused on equitable access to quality health care for everyone, both urban and rural residents. Medical facilities were owned, financed and run by the central government, and provision of care in rural and urban areas following a 'three-tiered' systematic structure.⁶

In the countryside, the first tier of care was the local clinic or health station that existed in almost every village, offering basic health services and organizing public health campaigns, such as immunization programs. The second tier of care was a township health center with full time doctors to provide primary care and supervising public health and medical services provided by the local village medical clinics. The third tier of care was the county hospital, a larger medical center with more specialized services.⁷ The local level of public health efforts were integrated with the higher two tiers to unify curative and preventative services.⁸

From the 1950s to late 1970s, the rural health insurance system--the Cooperative Medical System (CMS)--funded individual health care and covered all agricultural workers.

⁵ Dummer, Cook, 2007, 10

⁶ Dong, Phillips, 2008

⁷ Dummer, Cook, 2007, 10

⁸ Dummer, Cook, 2007, 10

It was financed through the collective by retaining collective money from its commune sales to fund local health services and most hospital costs.⁹

By the mid 1960s, affordable and accessible health care was available to most of the population, both rural and urban.¹⁰

Entrance of Capitalism: Decline of Rural Health Care

The health care system created by the PRC enabled Chinese farmers to readily access high quality medical care. During the 1970s, roughly 90% of the rural population was covered by CMS, and most rural workers were between 1 and 1.5 km away from a township health center.¹¹

In the 1980s, however, with the rapid shift to a market-based economy, the health systems established by the PRC gave way to the drive for rapid economic reform. As China's health care policy followed its economic priorities, state planning and funding for health care were replaced with private incentives.

Ironically, as *gaigekaiifang* catapulted the Chinese economy, it acted as a detriment to health care in China by reducing public funding of care, granting financial independence for hospitals and health centers, and privatizing many health care systems.

Between 1978 and 1990 the government reduced its share of national spending from 32 to 15%. The cooperative medical-care system in rural areas deteriorated into a payment based system. Ownership of health services remained public, but financing was gradually privatized.¹² Ultimately, the percentage of villages with a cooperative medical system

⁹ Kaufman, Jing, 2002

¹⁰ Dummer, Cook, 2007, 10

¹¹ Dummer, Cook, 2007, 10

¹² Dummer, Cook, 2007, 10

fell from 90% in the 1960s to 5% by 1985, and all of the doctors who worked in village hospitals lost institutional and financial support.¹³

The new financial system placed the responsibility on local governments to mobilize resources for social, economic and health development, including planning and financing public health programs. As a result, governments in economically poorer areas had less ability to mobilize sufficient resources for public health programs.¹⁴

Today, health facilities provide services financed by fee paying. If patients are not able to pay, this significantly limits their access to health care, which is the case for a huge percentage of the rural poor.

The insurance system also shifted in the late 1970s with the end of collectivization and introduction of the household responsibility system, allowing individuals to develop their own agriculture and sell their own goods. Although the shift to household responsibility helped improve individual incomes, it also led to the collapse of the CMS insurance system. By the mid 1990s only roughly 10% of rural residents were covered by insurance.¹⁵

Today, most rural residents are covered by a new Rural Cooperative Medical Scheme (RCMS); however, the benefits from this insurance are often limited to catastrophic illness and in-patient medical services. Farmers are also required to pay an increasingly larger portion of medical costs from their own finances, which significantly limits access to quality care.¹⁶

¹³ Zhang, Uschuld, 2008

¹⁴ Dummer, Cook, 2007, 10

¹⁵ Dummer, Cook, 2007, 10

¹⁶ WHO Government plan 2008

The ripple effects of these changes have had a pronounced impact on the lives of villagers in *San Cun*, *Ba Ce*, and *Za Mo*. The three tier health care system that was in place during the 1960s and 1970s was effectively dismantled.

Ba Ce does not have its own village clinic; the closest medical facility is a three hour walk to the clinic in *San Cun*, which has two local doctors and a small, one-room health center with one bookshelf filled with pill bottles (some half-empty), and another shelf littered with empty glass bottles of IV fluids, such as sodium chloride and glucose injections. The main doctor is a local woman who had one month of medical training in the city of *Mengzi*.

San Cun has the best medical facility of the three villages. The local clinic has six patient rooms and a staff of six full time doctors, all of whom graduated from the *Honghe Mengzi Weisheng Xue Yuan*, a three-year medical college in the Honghe Prefecture.

Li Yisheng, a doctor who has worked at the *San Cun* clinic for the past four years, reported that the most common illnesses can treat are common colds, diarrhea, high blood pressure and headaches. Women can give birth at the clinic, but the doctors cannot perform other surgeries or provide emergency care.

Prior to the 1980s there was close coordination between township health centers and local clinics. But with the rise in privatization and the new financial system that places responsibility on local governments to mobilize resources, there is now no connection between the *San Cun* village clinic and higher level health facilities. Lack of oversight has contributed to the disappearance of local clinics and deterioration of quality of care at those that still exist.¹⁷

¹⁷ Dummer, Cook, 2007, 10

Of the 56 villagers I interviewed, only 19 (34%) had ever been to the *San Cun* rural health clinic, although 70% of respondents had consulted a local doctor at least once and been given *da zhen*, intravenously injected medication.

Inaccessibility to quality care has greatly contributed to today's rural health crisis, including the reemergence of infectious diseases like tuberculosis, sexually transmitted infections (STI's), and Hepatitis B.

Consequences of the Rural Health Crisis

Resurgence of Infectious Disease

Residents of the Chinese countryside have historically suffered greatly from a wide range of infectious diseases. After the founding of the PRC, however, the Chinese government led a successful attack on the most common diseases including typhoid fever, bacillary dysentery and cholera epidemics by improving health care and, indirectly, by improving socioeconomic conditions throughout the countryside.¹⁸

Improvements in sanitation, water conservancy and control, use of barefoot doctors and other initiatives were successfully used to combat poor environmental and hygiene conditions in rural areas.¹⁹

During the 1980s, however, general financial decentralization drove new health care reforms that shifted health funding and management responsibilities from central and provincial governments to county and township governments.²⁰ The current financial system places responsibility on local governments to mobilize resources for social, economic and health development. As result, governments in economically poorer areas have had less capability to mobilize sufficient resources for public health programs.

¹⁸ Dummer, Cook, 2007, 10

¹⁹ Dummer, Cook, 2007, 10

²⁰ Kaufman, Jing, 2002

Tuberculosis

One facet of this crisis is a marked resurgence of infectious diseases including tuberculosis. Today, China is among the highest TB endemic countries in the world and the second largest country in terms of number of TB patients.²¹ The incidence of TB is steadily increasing: in 1999 the rate was 39.03 per 100,000, rising to 44.06 per 100,000 in 2001 and 71.95 in 2004. Official estimates indicate that 80% of TB patients live in rural areas.²²

TB is caused by the bacteria *Mycobacterium tuberculosis* and is contracted by inhaling infected air droplets that can be spread by active TB carriers. Tuberculosis usually attacks the lungs, causing a persistent worsening cough. If left untreated, unexplained weight loss, fever, chills, night sweats and shortness of breath may take hold as the lungs are slowly destroyed.

Antibiotics to cure standard cases of TB have existed for more than half a century, but their effectiveness depends on strict patient adherence. The drugs must be taken for at least six months, but many patients discontinue use once their coughing subsides because they suffer from side effects such as vomiting, jaundice, and confusion, or can no longer afford treatment.²³

Patients who are “half-cured” transmit a form of TB called multidrug-resistant TB (MDR-TB), which is immune to first-line drugs.²⁴ Transmission of MDR-TB poses a serious public health threat that has become a major problem in recent years. China now accounts for between 25% and 33% of estimated drug-resistant cases of TB globally.²⁵

The burden of pulmonary tuberculosis is much greater in rural areas than in urban districts. In 2004, researchers in Shandong China found that poor counties had an absolutely

²¹ Dye et al., 1999

²² WHO

²³ Mayo Clinic

²⁴ WHO, 2006

²⁵ WHO and government plan

relatively higher TB burden when compared with richer counties, and they had less ability to finance TB control. TB patients in poorer villages also suffer exceptional financial burdens, which inhibits them from obtaining treatment and health care services.²⁶

The results of the Shandong tuberculosis study were attributed to the current financial system in China, which passes the responsibility to local government to mobilize resources for social, economic, and health development. Governments in economically poorer areas are less capable of mobilization, and their residents suffer for it.

Tuberculosis in San Cun, Ba Ce and Za Mo

In the three rural villages where I conducted my research, there was no local access to DOTS (Directly Observed Treatment, Short-course), the world standard tuberculosis treatment regiment. In *San Cun*, the nurses at the local clinic could perform a PPD skin test, which is used to determine if someone has developed an immune response to the bacterium that causes TB, a response that will occur if someone currently has TB or if they were exposed to it in the past. If the result is positive, the patient must then travel to an urban hospital to receive the DOTS treatment.

If an infected patient can travel to the *Honghe Renmin Yiyuan*, he or she will be given an eight month course of the DOTS medication free-of-charge; however, there are often barriers such as transportation fees and other medical expenditures that hinder patients from getting the free treatment.

Of the 23 men who I interviewed, three men reported that they had been diagnosed with pulmonary tuberculosis at an urban hospital, and one woman also reported that her son had been diagnosed at an urban hospital.

²⁶ Meng et. al, 2004

The accounts of *Li Jian Sha*, *Som Bai Wen*, and *Yang Fa Hua* illustrate several of the key issues with prevention and implementation of tuberculosis treatment in the Chinese countryside, including personal financial burden, lack of access to health care and treatment, substandard quality of TB health services, and inadequate health education of villagers, which may be contributing to the proliferation of multi-drug-resistant TB (MDR-TB).

Personal Accounts of Tuberculosis

One year ago, *Li Jian Sha*, a 44 year-old male from the village of *Za Mo*, developed a chronic cough, lack of energy, and dizziness, which forced him to stop working on his rice farm. Last October he paid 45 RMB to travel by bus to *Mojiang Renmin Yiyuan*, a public hospital in the city of *Mojiang*, roughly four hours away from his home to seek treatment.

He was diagnosed with pulmonary tuberculosis and prescribed medication which he was directed to take three times a day for the next eight months. Over the past two months his cough and fatigue has subsided, although he is still unable to perform physical labor.

Jian Sha stated that he would like to return to the city hospital for a checkup, but with the cost of his medication--400 RMB for a three month supply--he does not have enough money to cover the transportation fee of 30 RMB round trip and the hospital fee of 100-200 RMB at *Mojiang Renmin Yiyuan*.

Som Bai Wen is a 65 year-old male from *San Cun* who developed a bloody cough in the fall of 2006. During the past three years he sought treatment at the *Mojiang Renmin Yiyuan* once, and once at a hospital in Kunming. During both visits he was prescribed medication, which he has purchased but takes only when he isn't feeling well. If his cough is not too bad, to save money he prefers not taking the medicine. He was unaware that not adhering to the instructed treatment schedule could impair effectiveness of treatment. His medical expenses over the past three years have cost a total of over 3,000 RMB.

Yang Fa Hua is a 73 year-old male from *San Cun* who developed a severe cough and chronic dizziness five years ago. He has been to the *Mojiang Renmin Yiyuan* three times and taken his medication as directed for the past six months. His symptoms have not improved, but he does not have enough money to return to the hospital. He manages to work on his farm every day, although before his illness he could work six or seven hours of manual labor per day, whereas now his body can only withstand one to two hours per day.

The major barrier that these men experienced to accessing proper care was the financial burden. *Jian Sha* and *Yang Fa Hua* would like to return to the hospital but they cannot afford transportation and medical fees. *Som Bai Wen* takes his medication, but only intermittently when he can afford it.

Distance from the hospital, poverty, and lack of education regarding proper treatment practices is not only dangerous for the health of these patients, but also poses a threat to public health. If the men are not treated properly, they are hosts of a contagious vector that will spread the disease to other villagers. Additionally, not taking the medication regularly leads to the spread of MDR-TB, which requires a much more costly and hard to access treatment regimen.

Hepatitis B and Liver Cancer

The burden of Hepatitis B in China is also reflective of the weakness of the health care system in the countryside. Today, the prevalence of hepatitis B is more pronounced in rural areas than in Chinese cities because there is lower access to the vaccine and greater knowledge deficiency among local health workers and the general population.

The People's Republic of China now carries the greatest burden of chronic hepatitis B virus (HBV) infection in the world. Individuals chronically infected with HBV have a one in

four chance of dying from primary liver cancer cirrhosis if not medically managed. An estimated 60-80 percent of liver cancer cases in the Chinese population are caused by chronic HBV infection.²⁷

HBV is now the most prevalent life-threatening infection in China-- an estimated 100 million Chinese are chronically infected, and the disease kills roughly 260,000 to 280,000 people every year, more than tuberculosis, HIV and malaria combined.²⁸

Hepatitis B is a viral infection that attacks the liver and can cause both acute and chronic disease. The virus is transmitted through contact with the blood or other body fluids of an infected person. It is primarily transmitted via perinatal/mother-to child exposure, sexual intercourse, close household contact, needle-sharing, and occupational exposure.²⁹

In China, vertical transmission at childbirth is the most common route of transmission, which can be prevented through administration of the hepatitis B vaccine and hepatitis B immune globulin at birth. For those who are infected, routine screening can lead to early detection and reduce the risk of death from liver cancer and cirrhosis.³⁰

The most critical strategy for HBV prevention in China today is through administration of the hepatitis B vaccination. In 1992, The Chinese Ministry of Health recommended that hepatitis B be routinely used for newborns as part of China's Planned Vaccination Program; however, the nationwide used of hepatitis B has been hampered by several factors, including cost of vaccine to infants' parents, lack of public awareness about vaccine, and insufficient vaccine supplies.³¹

²⁷ Chao, et al. 2010

²⁸ Chao et. al, 2010

²⁹ Chao et. al, 2010

³⁰ Chao et. al, 2010

³¹ Zhou, Wu, Zhuang, 2009

In 2005, Chinese authority initiated a new vaccine regulation rendering all vaccines, including hepatitis B vaccine, free of charge to all newborns and infants. Thereafter, coverage in most rural areas increased to 83.5%-96.5%.³²

Even today, however, residents who live in remote or isolated areas with poor health services have much lower hepatitis B vaccine coverage. A 2004 survey in the Huangnan County, located in the Qinghai Province, showed that the timely birth-dose coverage was only 42.6%, and coverage with three doses of the vaccine was only 46.5%.³³

Although China recommends timely administration of the Hep B vaccine, with the first dose given at birth, followed by the second and third doses at age 1 and 6 months, punctual administration remains low throughout the countryside: among children born at home-- 17% of the birth cohort, or 2.3 million children annually-- only 17% are given timely administration of the first dose of the vaccine.³⁴

Hepatitis B in Ba Ce, Za Mo and San Cun

In the villages where I conducted my research, there were several challenges to hepatitis B and liver cancer prevention and diagnosis and treatment that highlighted crucial weaknesses in China's rural health care system.

Of the 33 female subjects in my study, none of the women had been vaccinated for HBV; thus, if any of these women were infected, they could potentially pass the disease on to their children if they were not inoculated at birth.

In *Za Mo* and *Ba Ce* where there are no village clinics, 90% of women reported out-of-hospital births, whereas in *San Cun*, which has its own local clinic with eight full-time

³² Zhou, Wu, Zhuang, 2009

³³ Zhou, Wu, Zhuang, 2009

³⁴ Wang et. al, 2007

doctors, 40% of women went to the local clinic to give birth where newborns are administered the cold-chain HepB vaccine within 24 hours.

If the first dose of the vaccine is given within 24 hours after birth, the vaccination against HBV is approximately 90% effective in preventing perinatal transmission; however, administering the hepatitis B vaccine within 24 hours after birth to infants born in remote areas can be very difficult, especially for those born in-home.

In my study it was challenging to collect exact data on the number of children of study participants who were given timely administration of the HepB vaccine with the first dose given at birth. Most women believed their children had been inoculated, but were unclear of what vaccines they had received and when they were administered. None of the women interviewed who reported at-home births (85%) had their newborn inoculated within the first 24 hours.

Liver cancer and Hepatitis B Screening

In rural China, cirrhosis of the liver³⁵ or liver cancer, often caused by chronic HBV, is generally discovered at a very advanced stage due to lack of access to health care and cancer screening.³⁶

The most common symptoms are abdominal pain, feeling abdominal fullness for no apparent reason, weakness, fatigue, and unexplained fever. Frequently, the diagnosis of cancer is not considered until symptoms persist, or until a person develops an enlarging abdominal mass or fluid in the abdomen or jaundice, the skin turning yellow.

The initial screen for Hepatitis B and liver cancer both require blood tests. Of the 56 people I interviewed with the *San Cun Rural Health Study*, only 20% of men and 12% of

³⁵ Cirrhosis is characterized by replacement of liver tissue by scar tissue and regenerative nodules (lumps that occur as a result of damaged tissue that is generated), which may ultimately lead to loss of liver function.

³⁶ Mayo Clinic Foundation, 2009

women reported ever having a blood test. Of those who had received a blood test, none of these respondents knew if they had been given the hepatitis B vaccine or a liver cancer screen.

In addition to the lack of access to Hepatitis B and liver cancer screening, another problem in rural regions of China is the knowledge deficit about Hepatitis B transmission, symptoms and treatment. In a 2010 cross-sectional study on Hepatitis B and liver cancer knowledge and practices among healthcare and public health professionals, researchers found that HBV- and liver-cancer-related knowledge practices and education was especially deficient among health workers from rural provinces:³⁷ one-third of health workers surveyed were not sufficiently informed about all the modes of transmission and best ways to prevent transmission, including vaccination and safe needle practices.³⁸

Hepatitis B in San Cun, Ba Ce and Za Mo

During my research in the Chinese countryside, anecdotal evidence suggested that in the villages in *Honghe* there was a similar knowledge deficiency about Hepatitis B and liver cancer.

Za Mo Nan, 41-year-old woman from *San Cun* reported that her father had died at age 60 after falling ill for two months, during which time his skin turned yellow and he experienced chronic abdominal pain. He went to the village clinic in *San Cun*, but did not have enough money to visit an urban hospital. When I asked *Za Mo Nan* if she had any idea of what may have caused her father's death, she said:

“I do not know. His whole body turned yellow. It was very strange. He could not eat and his stomach hurt. After two months he died.”

³⁷ Chao, et al. 2010

³⁸ Chao, et al. 2010

Za Mo Nan had never heard of the symptoms of Hepatitis B or liver cancer, so she was unsure if they could be related to her father's illness.

The Roots of Tuberculosis and Hepatitis B: Weakness in the Rural Health Care System

The marked resurgence in the incidence of tuberculosis and the high prevalence of Hepatitis B throughout the countryside is reflective of the weaknesses in China's current medical system.

Thirty years ago, the focus of health care policy was on equitable access and quality care for everyone. In the countryside, the three-tiered medical care system ensured that farmers had access to knowledgeable doctors and modern medicines. Public policy had a prevention-first approach, with local efforts integrated within higher level services.

Today, this system is in shambles. Patients with tuberculosis have to travel too far to get their medication. The decline of community health workers and public health campaigns has led to lack of education regarding general health and treatment practices, which is endangering individuals and the public at large.

The high prevalence of Hepatitis B can also be traced to the decline in rural health care. Today, there is less emphasis on a prevention first approach and little focus on the eradication of infectious disease. Thus, there is less funding for essential preventative services like access to infant and child immunizations.

There is a desperate need for targeted education and training of health professionals in regions with low disease knowledge; yet with the present structure of health care, there is little funding for this type of educational training that could potentially increase preventative practices and decrease rates of disease transmission and premature morbidity.

I will now turn to the present disparity in women's health throughout the countryside and its relation to gender inequity and inequality. Just as the spread of TB and hepatitis B

stem from a confluence of health care issues and social determinants like environmental sanitation, smoking, and alcohol consumption, women's health is also rooted in both medical and social and cultural issues.

In this section, I will focus more on the social determinants that have influenced the disparity in women's health, specifically gender inequity and inequality, before I consider how all of these factors, including inadequate health care, have converged over the past thirty years of China's rural health crisis.

Gender Inequality and Inequity, Disparity in Women's Health

Rural Chinese women's access to health services has several determinants. Beyond locality, accessibility, and quality of health care facilities, women's health is also greatly influenced by familial dynamics and the larger societal and cultural environment of women's rights.

In the past two decades, rapid socioeconomic and political changes have generally increased status and protection of women in society, and yet, particularly in the countryside, patriarchal attitudes still prevail-- the proverb *Xian qi liang mu* meaning good wife and loving mother, is still the societal ideal for most rural women.³⁹

Women's Health in San Cun, Za Mo and Ba Ce

The cultural context of my health study was the family system in three *Hanizu* ethnic minority villages where gender inequity and inequality are strongly perpetuated. While living with a family in *San Cun*, I closely observed the relationship between my host parents and their children. I also spent time in dozens of village households, noting typical gender roles in daily life and conducting formal and informal interviews about issues directly and

³⁹ Tang, Lai, 2008

indirectly related to women's rights. To illuminate the present state of women's rights in connection to use of health care services, I also compared survey data on women's and men's use of health services.

In general, there was a greater domestic burden placed on women with housework, childcare, and physical labor. Women were in charge of cooking, cleaning and childcare with little or no assistance from their husbands.

During the first meal of the day, usually late morning, small groups of villagers often ate together in one household. The women cooked while the men gathered on stools around a wooden table. In *Za Mo* and *Ba Ce* it was customary for the men to sit and eat first, while the women stood and refilled food dishes.⁴⁰ After ten or twenty minutes, the women would then take their own bowls of rice; however, they did not sit at the table. If they sat, it was on stools behind the men, and they would frequently stand to see if any dishes needed replenishment.

During the afternoon or evening meal, two or three families typically ate together. Women sometimes sat at the table with men, although they were still in charge of refilling dishes and rice bowls. In *Ba Ce*, the poorest of the three villages, if there were any meat dishes the women ate very little, leaving most for the men.

Housework and childcare were also entirely up to the women. Even men who did not work on the farm and were home all day spent most of their time smoking, drinking *bai jiu*, and playing card games. In *San Cun*, *Ba Ce* and *Za Mo*, I never observed a man helping his wife cook or clean in the home, which is an important indication of a married woman's position in the family.

⁴⁰ This was also typical in some households in *San Cun*, however, in other households women and men ate together more frequently and there was not the same sense of female subservience as there was in the other villages.

According to *Hanizu* custom, a woman should never rest before her husband. *Li li Yan*, a 58 year-old woman from *Ba Ce* said, “If my husband is not sitting, I can’t sit. I’m used to it. This is our way.”

Gender Inequality and Its Effect on Women’s Health

The lifestyle for women in these villages places a heavy burden on their physical and emotional health. The *San Cun Rural Health Survey* revealed that most women are chronically sick and in pain: in the last month, 60% of women surveyed had experienced frequent dizziness, 48% have had frequent stomach aches, 33% reported arthritis pain, and 24% reported chronic gynecological disease, typically causing leucorrhea and pain while urinating (Appendix B).

Gender discrimination limits women's access to care because of unequal distribution of household assets. Of the 24 respondents who had never gone to a city hospital, 71% were female, 88% of whom said did not have enough money to travel to the city themselves, but had a husband or son who had sought treatment at an urban hospital in the past year.

Ten male respondents who had previously sought treatment in the city also reported that their wives were ill or in pain, but that the family did not have enough money to send her to the hospital.

In most families, resources were first allocated to address the health of male family members, while females were expected to wait longer or go without seeing a doctor. Based on observational evidence of daily practices and gender relationships, it also appeared that women had very little freedom of movement and decision-making power, which has been shown to contribute to a woman’s ability to seek out necessary health services.⁴¹

⁴¹ Tang, Lai, 2008

The overall setting of these villages and the general status of women's health suggests that the low social position women hold, both at home and within the village community, has a negative impact on their overall health status.

Female literacy

Of the villagers I interviewed, 85% of women reported no schooling. Improving this statistic is critical to improving women's and children's health. When girls go to school, they are more likely to marry later and have healthier children, and three times less likely to contract HIV/AIDS.⁴² Maternal literacy is also strongly and positively associated with receiving prenatal examinations and with healthy delivery patterns.⁴³

A major barrier to education in the countryside is the fee that is charged to parents for each child to go to school. Beginning in 1986, schooling itself became free when China instituted the nine-year compulsory education law for primary school education and junior middle-school by putting the State Council and the local people's governments responsible for raising funds for operating expenses and investment.⁴⁴ In many rural villagers, however, there is still a weekly "living-fee" (*shenghuofei*) for students who stay at school during the week because their homes are too far to commute. In *San Cun* and *Za Mo* the *shenghuofei* was 10 RMB per week and 1 RMB per day for two meals at the school cafeteria. For poorer families in *Ba Ce* and *Za Mo* who could not afford the weekly *shenghuofei* for two children, parents with a boy and a girl were more likely to only send their son.

Domestic Violence

⁴² Alter, 2008

⁴³ Li, 2004

⁴⁴ Compulsory Education Law, 2005

Violence against women perpetrated by a husband or male intimate partner (IPV) is especially prevalent in the countryside, where rural areas residents tend to be less educated, with stronger beliefs in traditional gender roles and more limited access to public services.⁴⁵

In a review of empirical literature on male-on-female intimate partner violence in China from 1987-2006, researchers found that Chinese women who reported incidents of violence perpetrated by their male intimate partners were more likely to grow up in rural villages, have low educational attainment and belong to low socioeconomic status.⁴⁶

Domestic violence was not included in the questions asked of female respondents in the *San Cun Rural Health and Nutrition Survey* because when I was constructing the survey I was not aware that domestic abuse was a prevalent problem in these villages. Once I discovered that domestic abuse is quite common through personal accounts and informal interviews, I was not sure if it would be appropriate to ask questions about this topic without making respondents feel nervous or uncomfortable, particularly for female respondents who were interviewed in the presence of their male partner.⁴⁷ All of the information I collected about domestic violence was based on casual discussions with women and children, and an informal interview with my host father, who suggested that the majority of men in *San Cun*, *Ba Ce* and *Za Mo* regularly hit or beat their wives.

Personal account

The first report I heard of domestic violence was from a discussion with *Li Zhe Nong*, a 15 years-old girl from *Ba Ce*. *Zhe Nong* and her brother live at school in *San Cun* from Monday through Friday and walk home on the weekends to help their mother cook and take care of the farm.

⁴⁵ Zhang, 2009

⁴⁶ Tang, Lai, 2008

⁴⁷ When I go back to the villages this summer to conduct further research, I hope to incorporate more research on domestic abuse and its relation to gender inequality.

I met *Zhe Nong* when she helped me translate from Putonghua to the local dialect. In the afternoon I went back with *Zhe Nong* to make lunch before she and her brother left to trek three hours back to school. As she was packing up her backpack with a few books and clothes to get ready, her eyes had filled up with tears.

Zhe Nong was crying because she didn't have enough money for this week's *shenghuofei* of 10 RMB. Her mother usually gave her money each Sunday, but this week she had told *Zhe Nong* she would have to ask her father for that week's *shenghuofei*.

But *Zhe Nong* was too afraid to ask him. "Baba drinks to much *bai jiu* and then he beats my mother and grandmother," she said. "*Wo pa ta*, I'm afraid of him."

Violence and Gender Inequality

Studies have shown that the use of preventative and curative care is positively associated with a woman's personal autonomy, her power to make decisions in the home, the extent to which her husband shares housework and childcare, and her exposure to the world outside her village.⁴⁸ With greater autonomy and authority, a mother is more likely to respond to her own illness or her child's illness by leaving home to seek out necessary health services; thus, a child's health is also critically linked to the rights of his or her mother.

In *San Cun*, *Ba Ce* and *Za Mo*, an underlying cause of domestic violence is the gender inequality that still prevails in these rural communities. These women have little decision-making power, no exposure to the outside world, and they most often single-handedly bear responsibility for housework and childcare.

To shift the present state of women's health in these villages it is essential to improve the legal consciousness and education of rural women, expose them to the world outside their

⁴⁸ Li, 2004.

villages, provide psychological remedies for victims and perpetrators,⁴⁹ and improve quality and access to local health care networks.

Conclusion: Making Change

Until women are appreciated and valued, their husbands will continue to abuse them. They will suffer from painful diseases and still remain second in line for health care, behind their male family members.

As is important as it is to improve access and quality of care in the countryside, if women are undervalued within their own family and in society they will be less likely to visit a health care center, even if it's more accessible and provides the highest quality care.

Thus, as we work to improve the rural health care system, to truly evoke long-term change, it is just as important to address the underlying social determinants of health, including environmental sanitation problems, inadequate nutrition, contaminated water sources, and deep-rooted gender inequality.

The Story of Li Hai Long: Living in Pain, Throwing Out Agony

Li Hai Long is a 16-year-old boy who suffers from congenital heart disease. Seven years ago, when he was 9, *Hai Long* first started having trouble breathing. Slowly, it became harder for him to move. His parents had already divorced and gone to find work in the city, leaving *Hai Long* to live with his grandparents. When no one in the village clinic knew why he couldn't breathe, *Hai Long's* *yeye* and *nainai* pooled all their savings to take him to a hospital in the city.

There he was diagnosed with *xinzangbing*, heart disease caused by a clinical birth defect. For a long time *Hai Long* could not go to school. One month ago, he was able to join

⁴⁹ Li, 2009

the fifth grade class in *San cun*. Because the school is too far for him to still live with his grandparents, he sleeps in *San cun* and eats all his meals with a local couple.

One day, *Hai Long* let me read an essay that he wrote for school entitled, “The Story of My Childhood.” This is an excerpt that I have translated:

My childhood had good parts and bad parts. Because I have worries I'm happy and unhappy.

The good things are so many I can't say all of them, for instance I came to San Cun school to study. On April 12 my grandfather brought me here, at first I didn't like it at all, now I have gradually come to like it more and more.

Here I have older brothers and sisters who take care of me, wash my clothes, and pick me up and drop me off every day. At school the students are all happy to have fun with me. Although I just arrived, they don't treat me at all like a new student, they treat me just like an old student, they are all willing to help me not to have any problems, especially the class leader who treats me very well. After being there a week, they had already given me a great impression. One day I arrived late and my teacher didn't blame me at all, she just said, “I know our body isn't well.”

When I heard this I felt so moved.

Another day, all of the students in my class were doing cleaning up, the teacher didn't allow me to participate because she said my body isn't well so I should sit under a tree and rest. Suddenly the students all shouted out that I shouldn't have to participate, and one of the students named Yang Guo Wei said, “I will do two people's jobs.”

When I heard this I started to cry.

The good parts of my childhood are too numerous to count. Nowadays, having fun with the students and teachers here makes me feel extremely happy.

I really like my childhood. Now I am going to take all of my agonies and throw them all out. As much as possible, I will enjoy my life.

This essay epitomizes the resilience and strength of the villagers who I met in *San Cun, Ba Ce, and Za Mo*.

Changing the state of rural health in China is a daunting endeavor that will require not only restructuring the present health care and health insurance systems, but also reviving successful strategies that were used to address the social determinants of health during the 1950s and 1960s, before the shift to market-based economy led to the decline in attention to the health and well-being of rural citizens.

Even in the face of pain, struggle, loss, and overwhelming challenges, I believe there is hope. So many villagers I met are in pain and have suffered so much loss, and yet they are still so resilient.

They laugh. They welcome you into your home and offer you dinner. They make you tea and pull out a bowl of peanuts. They have nothing, and yet they give so much.

Through a resurgence of the basic principles of health care policy and strategies that were promoted after the founding of the People's Republic of China, it's not too late to help. But the rural health crisis in China demands our attention now, before it's too late.

Acknowledgment

路元：谢谢您总是帮助我，总是关心我的身体健康，也总是和妈妈一样照顾我。我永远感谢您。

迪医生：谢谢您告诉我怎么去三村。我希望有一天当医生的时候就可以回到村子里跟你一起工作。这是我最大的梦想！

白血：谢谢您天天都帮助我在村子里。你不只是我的同事，也是我很好的朋友。我希望有一天我们能再在一起工作。

小周：谢谢您帮助我翻译。谢谢您平跟我聊天，和我一起谈论我对男人的烦劳和担心，也给我很好的提议。我真的觉得你是我的中国姐姐！我很高兴这个夏天我们还在一起，不要离开你！

To my wonderful parents: Thank you for calling me every day when I worked in the village so that I could vent all my thoughts, feelings, frustrations, and crazy stories (like getting pig water thrown on me and finding a mouse in my bedroom). I missed you so much, but I felt that you were there with me. I love you.

村民人：谢谢你们帮助我了解你们的力量，也发现我自己的梦想帮助人什么都没有但是还给别人那么多。我承诺回到村子里，一已经很想你们！

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Subjective Account and Future Study

Living and working in the villages was one of the best experiences of my life. Most importantly, I made friends and felt like I had the opportunity to peek through the window to what life is like in the countryside.

This summer I am planning to go back to continue my research, and ultimately I hope that after I graduate medical school I can come back to work here long-term. For now, my goal is to continue to make friends and try to think of ways we can help.

For my future research goals, I would like to pick a more narrow topic to focus on. I felt that for this paper I gathered too much information on many disparate health issues, as opposed to focusing on a single relevant issue more in depth. This summer I plan to focus specifically on maternal and child health and access to care.

There is very little I would change about my ISP experience. I could not have been more lucky with the people I met along the way who helped guide me through this territory. Thank you to everyone who helped make my research dream a reality.

Appendix A: *San Cun Rural Health and Nutrition Survey*
San Cun Rural Health and Nutrition Survey
三村健康与营养调查
2010年5月4号
Haley Newman

省 *sheng*: 云南

县 *xian*: _____

村 *cun*: _____

调查户编号 *diaocha hu bianhao*: _____

名字: _____

今天的日期: _____ 年 _____ 月 _____ 号

BACKGROUND INFORMATION

I. Background Demographics

1. 出生日期? _____ 年 _____ 月 _____ 日

2. 年龄 _____

3. 性别 _____ 男 _____ 女

4. 父母跟你在一起住吗?

5. 结婚了没有? 你的老公 / 老婆的名字是什么?

6. 你的文化程度(*wenhuachengdu*)是什么?

是小学还是初中还是高中?

II. 工作, 工资

1. 你现在有工作吗?

2. 你的工作是什么? OR 你为什么没有工作?

3. 你每月平均挣多少钱?

4. 除了农业以外, 你有没有别的工作? 比如说卖东西, 修(*xiu*)摩托车?

5. 你每个星期工作几天? 每天几个小时?

6. 去年你的工资一共是多少? 够不够用? _____
7. 你上个星期工作了几个小时? _____
8. 你有政府的补助(bu3zhu4) 吗? 如果有, 每月有多少钱? _____
9. 每年你在田地劳动吗?
10. 一个星期大概有几天在地里劳动? _____
11. 每天劳动几个小时? _____
12. 除了你以外, 谁帮你在地里干活? 你付他钱吗? _____

HEALTH INFORMATION

I. 抽烟

1. 你抽过烟吗? _____
2. 你开始抽烟的时候有几岁? _____
3. 你为什么要抽烟?
4. 你每天抽几支(zhi)烟? _____

II. Water and alcohol consumption

1. 你喝的水从哪里来的?
2. 你每天喝几杯水吗? _____
3. 你每天喝白酒吗? 你每个星期喝几次? _____
4. 你每天喝几杯白酒? _____
5. 你喝的是自己做的白酒吗? 白酒是怎么做的?
6. 你平常喝啤酒吗? _____
7. 你每饿星期喝几瓶啤酒? _____

III. Medical Insurance

1. 你有医疗保险吗? _____
2. 你有什么样的医疗保险?
3. 你的医疗保险平常生病可以用吗?
4. 如果你不住在医院的话, 你看病可以用保险吗?
5. 如果你住在医院的话, 你的医疗保险补贴(butie)多少? 你自己要付多少?

V. Use of Health Care and Medical Services

1. 在上个月里，你有没有生病或者受伤？如果有，请告诉我你生的是什么病，包括呀痛。

2. 你现在没有哪里疼？现在有没有生病？

3. 在上个月里，有没有：

发烧，喉咙痛，咳嗽	
拉肚子，肚子痛	
头痛，头晕	
骨节(gujie)痛，肌肉(jiyou)痛	
皮疹(pizhen)	
眼睛 / 耳朵问题	
胸闷(xiongmen)	

4. 你生病的时候做什么？

自己保护自己，
去看本地的医生，
去看城市里的医生，
不管了

5. 你去看病的时候去到哪里？每年去看病几次？

6. 你去过墨江县或者别的城市看病吗？

a. 是你的病很重吗？有什么病？用多少钱？

b. 医生说是什么问题？

7. 从你家到最近得诊所用多少时间？去那里方便吗？

8. 你觉得这个诊所怎么样？为什么？

9. 生什么病得时候你去看医生？生什么病得时候你不去看医生？为什么？

10. 去看一次病差不多用多少钱？

11. 你知道你平常血压(xueya)高吗? 头晕吗?
12. 你去看病的时候, 医生跟你量(liang)血压吗?
他给你吃降血压(jiangxueya)的药吗?

VI. Current Health Status

1. 如果给你的身体健康打分, 从 1 到 10 分, (1表示很糟糕, 10表示很好), 你给的身体健打几分? (好, 量好, 很好?)
 - a. 为什么?
2. 你生病就必须停工作吗? 如果有, 是什么病?

VII. Disease History

1. 你以前骨头受过伤吗?
2. 你有风湿(fengshi)吗?

VIII. Symptoms of Cardiovascular Disease

1. 你有没有过胸闷(xiongmen)吗? 清告诉我觉怎么样?
2. 你爬山的时候胸闷吗?
3. 你走路的时候平常胸闷吗?
4. 如果走路的时候你胸闷的话, 你怎么办? 你是不是慢慢走, 还是 休息一会儿在走?
5. 如果你休息胸还闷吗?
6. 请告诉我在身体上那里觉得不舒服。
7. 你有时候觉得是很难呼吸(fuxi)吗? 什么时候觉得会呼吸困难?

IX. Diet

1. 你每天平常吃几餐饭?
2. 你早餐 / 中餐 / 晚饭平常吃的是什么?
3. 你平常什么时候吃饭?
4. 清告诉我, 你们平常都吃什么? OR 这些菜你吃的是: 少吃, 有时候吃, 常常吃

IX. Vaccinations

1. 你的孩子种过疫苗(yimiao)吗?
2. 你知道他什么时候种疫苗吗? 有什么疫苗?
 - a. hepatitis A vaccine?
甲肝(jiagan)疫苗
 - b. hepatitis B vaccine?
乙肝(yigan)疫苗
- c. chicken pox
水痘(shuidou) 疫苗

X. Depression/Mental Health test

1. 如果给你的生活打分, 从一到十分, (一表示很糟糕, 10表示很好), 你给的生活打几分? _____
2. 你现在比小的时候更幸福吗? 为什么?
3. 你的生活比小的时候想像的更好吗? 为什么?
4. 你对你的生活满意吗?
5. 如果你有能力改变你的生活, 你会改变什么?

XI. Others illnesses

1. 在过去的六个月里, 你的家人有没有生过病?
2. 如果有, 他生病时的症状(zhengzhuang)是什么?
3. 他去看医生了吗?
4. 在过去的六个月里, 这里有没有人还没到60岁就去世了?
5. 如果有, 他们是得什么病去世的, 生病时的症状是什么? 有没有去看医生?

Appendix B:

Male

Symptom	Male	Percentage
Kesou	11	48%
Touyun	11	48%
Tou tong	10	43%
Yanjing Wenti	10	43%
Fengshi	9	39%
Xiongmen	8	35%
Erduo Wenti	8	35%
Houlongtong	8	35%
Fashao	8	35%
Gujie tong	7	30%
Jirou tong	5	22%
Duzi tong	5	22%
Symptom	Female	Percentage
Touyun	20	60%
Duzi Tong	16	48%
Fengshi	14	33%
Yanjing Wenti	14	33%
Gujie tong	12	36%
Jirou tong	12	36%
Xiongmen	11	33%
Toutong	11	33%
Fashao	8	24%
Erduo Wenti	7	21%
Houlongtong	7	21%
Kesou	4	12%

