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State of Urban Community Health Centers in China: Nursing and Patient Perspectives

Observations on Challenges and Implications of Reform

Linda Kang and Wendy Zhang

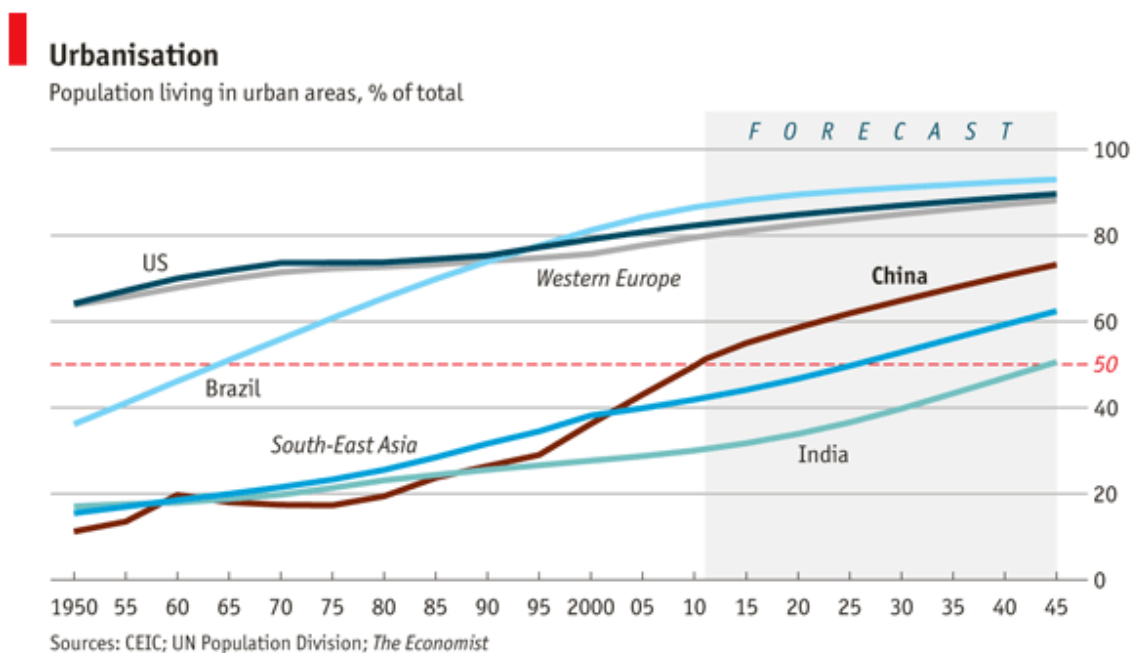
A special thanks to our mentors Dr. Linda Aiken and Dr. Matthew McHugh from the Center of Health Outcomes and Policy, University of Pennsylvania School of Nursing and Dr. Marshall Meyer from the Wharton School. Thanks to Dr. Thomas Mackey from the University of Texas, Houston for lending his expertise while in China. Thanks to Dr. Yu Liu, Dr. Qian Lu, and Peking University School of Nursing for facilitating our stay and visits to the CHCs. A big thank you to all the participants and CHCs who hosted us for this study. Lastly, thank you to Dr. Asher and all other SIRE staff for making this experience possible.

I. *Introduction: China's Changing Demographics*

China's health care system is facing major challenges. The country is struggling to deal with a population that is "aging, urbanizing, and is afflicted with chronic diseases" says Wang Linhong, the executive deputy director of the chronic-disease department of the Chinese Center for Disease Control and Prevention.

According to the Ministry of Health of China's health statistics yearbook in 2010, there were approximately 114 million adults aged 65 or older at the end of 2009, which is 8.5% of the population. This aging proportion is projected to grow to 22.7% by 2050.

For the first time, there are now more people living in China's urban areas than in rural areas. At the end of 2011, China had 690.79 million people living in urban areas, compared with 656.56 million in the countryside, as reported by the National Bureau of Statistics. That puts the number of people residing in China's towns and cities at double the total U.S. population (Figure



1).

Another major challenge is the prevalence of chronic disease, such as diabetes, hypertension and cardiovascular disease. Out of every 100 deaths in China, 85 are now caused by chronic diseases, according to China's Ministry of Health (2010).

Similar to developed nations such as the United States, China struggles to provide access to affordable, high quality care despite rising health care costs (Li, 2001). Leadership in China acknowledged that reforms were required in the health sector as part of a push towards 'balanced development' and a more 'harmonious society' (Wagstaff, Yip, Lindelow & Hsiao, 2009).

Community Health: Frontline of Health care reform

In 2006, China set a goal of creating a universal and affordable health care system. China pledged \$125 billion in support of health care reform in 2009. An emphasis of this reform included making health insurance coverage available to all and improving access to care, placing increased importance on primary care services in Community Health Clinics (CHCs) (Bao & Alcorn, 2011). To achieve these goals, the government sought to expand the CHCs by 700,000. By 2010, a total of 6,903 community health services centers and 258,362 community health services stations have been set up in China (Yan, 2010). However, the increase in utilization of CHCs has been debated.

Specifically in Beijing, changes in patient visits to CHCs ranged from a decrease of 45% to increase of 37% (Zhang et al., 2011). Therefore, the number of outpatient visits was flat throughout the last three years at the CHC in selected Beijing districts.

Previous studies have indicated that a majority of public CHCs in China have low credibility in the community because of perceived problems of inadequate staffing and resources, resulting in patients' over use of hospital services (Zhang et al., 2011). In many countries such as the United States, nurses play an important role in community health, filling in the gaps in the

shortage of primary care providers. Unlike other countries, China actually has more doctors than nurses (Anand, et al., 2008). However, there are still not enough health care workers to provide for China's immense population.

China needs to assess their health care personnel problems to implement effective retention, recruitment and training for their health workforce (Dussault & Franceschini, 2006). Access to skilled health care personnel is essential to achieving the health related Millennium Development Goals (MDGs). By 2008, China had 1.65 million nurses but with a population of 1.3 billion, the country needs 5 million more nurses to achieve the global standard (Yun et al., 2010).

For community health organizations the shortage in nurses is dire. The ratios of community nurses to residents in China were as follows: eastern areas 1:12,022, central areas 1:19,252 and western areas 1:26,384. The nationwide average for nurse to community residents was 1:16,745 which does not measure up to the WHO standard of 1:2,600 (Yuan, et al., 2012).

One major barrier to China's health reform efforts in increasing utilization of CHCs is the inability to recruit and retain the workforce necessary to ensure high quality care that the community trusts. Shortages in nurses have been linked to higher rates of patient mortality, staff burnout and turnover (Yun, Jie & Anli, 2010). Previous research literature suggests that nurse burnout may also be associated with poor patient outcomes and quality of care, therefore amplifying concerns about nurse burnout (Liu 2012; Vahey et al., 2004; Aiken et al., 2002). Little work has been done to examine these important workforce outcomes in CHCs in China. Understanding the nurses' work environment, job satisfaction, and burnout levels in CHCs would be integral in improving CHCs overall.

II. Objectives

Finding a successful and replicable CHC model that can attract and retain qualified health professionals, while satisfying the needs of patients is of great policy interest. Therefore, this project aimed to examine the current state of CHCs through analyzing both factors of satisfaction and dissatisfaction of nurses and patients.

Through a case study of CHCs in Beijing, China, we aimed to answer the following:

Patients:

- 1 What draws patients to use the community health center services currently?
- 2 What improvements can be made to CHCs to improve the patient experience?

Nurses:

- 3 What are the current roles and backgrounds of nurses in CHCs and what drew them to work in CHCs?
- 4 What dissatisfactions do they have with their current role that would influence their decision to leave the position?

These four questions culminate into the main objective of what changes need to be made in order to improve the experience for both nurses and patients in the CHCs. We believe it is important to look at the perspectives of both the consumer and provider.

Results of the study can lead to strategies for improvements of recruitment and retention of nurses in community health centers which in turn could lead to increased patient satisfaction. The findings can inform China's primary care system reform efforts and practices of health managers by improving understanding of how nurses' work environments in different settings affect intention to leave, burnout, and job satisfaction. It would also allow for future comparisons

with primary care service models in both the US and China, with the goal of improving systems in both countries.

III. Research Methodology

Methodology: The approach is a qualitative method involving semi-structured interviews with Chinese nurses and patients in urban CHCs in Beijing, China. The interview guide instrument was developed from a literature review of previous studies involving nurse and patient satisfaction. Confidential interviews were conducted at 4 community health centers in Beijing; two additional CHCs were visited in Xi'an but interviews were not conducted. The community health centers studied were a convenience sample, although one was selected because it was known as an example of an exemplary community health center and was unique in its affiliation with a university teaching hospital which is atypical in China. All participants were informed about the purpose of the study and the voluntary nature of their participation. Written informed consent and an agreement for the use of anonymous quotes from the interviews were obtained from all participants.

Sample. Clinic sites were chosen in collaboration with the host university (Peking University – College of Health Science, School of Nursing) and constitute a convenience sample. Patient and nurse participants were recruited with the cooperation of managers at the participating community health centers. No monetary incentives were given to minimize the possibility of coercion or undue influence. See appendix for consent forms in English that were then translated to Chinese by the bilingual investigator of the research team. The consent form complied with requirements of the University of Pennsylvania's Office of Human Research. Explanation of

the consent form was given in Chinese by a bilingual investigator of the research team and questions from the participant's were answered before the start of the interview.

Data Collection/Analysis. Interviews were conducted with nurses who are eligible according to the eligibility criteria-those with more than a year of community health nursing experience and older than age 18. Written consent was obtained from nurses who were interviewed. The interview took place at the convenience of the participant. Data were collected by interviewer in written records in Chinese transcription and translated to English. Bilingual investigators of the research team checked the accuracy of the translation. The unit of analysis is individual themes relevant to the research question (Zhang & Wilbermuth, 2009). Descriptive and topical categories in the data were identified in accordance with a directed content analysis method (Hsieh & Shannon, 2005). Categories and coding schemes were derived from the data and previous related studies (Zhang & Wilbermuth, 2009). Coding categories were identified from the transcription of interviews by the investigators independently with notes on substantive areas of content. Investigators analyzed and quantified the presence of key words within the context of the social, political and cultural factors surrounding the conversation. Categories developed by investigators were then compared and analyzed for ambiguities, incompleteness, lack of clarity and overlaps in categories. After consistency was rechecked, the investigators made inferences and explored and identified relationships between categories, uncovering patterns in the full range of data (Bradley, 1993).

Limitations/Bias. Recognizing that there might be organizational or cultural constraints that would not allow for audio interviews to be conducted, there will need to be two researchers conducting interview for reliability. Nuances in cultural and political backgrounds of researchers and participants might also contribute to misinterpretations of words and explanations in

common understandable terms needs to be clarified by researchers. As Beijing is the capital city, more resources could be potentially funneled to the community health centers there (Yuan, et al., 2012). As a result this could influence the opinions of the nurses and generalizations may be difficult to draw from a single study and more research would be needed to follow up in other more geographically diverse locations. Also, patients interviewed for the study already utilized CHC services. Asking community members that do not use the CHC services would allow a more complete view of thoughts of potential consumers.

Case Study of Beijing Urban Community Health Clinic

We studied four different CHCs in different districts of Beijing in order to gather a more comprehensive view of the current state of CHCs in Beijing. In every district, there is a main CHC and smaller stations surrounding the center that are situated in the community. The government's policy is that residents should be within fifteen minutes walking distance to a center or station. Free basic public health services delivered in CHCs included community health information management, communicable disease management, response to emergent public health hazards, chronic disease management, mental health, oral health, pest management, endemic management, immunizations, maternal care, well baby care, family planning, elderly care, service of disability and rehabilitation, and health education (Zhao et al., 2011). Centers generally were larger and had more services available than stations. Availability of services from the list above depended on the clinic. Residents were not bound to go to the station closest to their homes.

There were five days of observation at each district site, which included field observations and interviews. We visited both the main center and a station at each site. A mix of patients and nurses of all backgrounds were interviewed, with a total of 12 patients and 12 nurses

across the four CHCs clinics. Themes derived from interviews from the four clinics have been aggregated because of the small sample size. Details of the four CHCs are highlighted in the appendix.

IV. Patients' Perspectives

The demographic of patients regularly visiting CHCs were mostly elderly, above age 60. Middle aged patients came to the clinic mostly for minor ailments such as colds. Newborn vaccinations and well baby check-ups are also popular services offered by selected centers and stations. One CHC did not accept visits from children due to a lack of staff expertise in pediatrics. Patients had heard about CHC services through insurance, hospitals, and community members by word of mouth. When a new CHC station first opens, teams of nurses and public health professionals are sent out into the community to promote the services.

Indicators of Patient Satisfaction

The consensus among patients was that they came to the CHCs for convenience reasons. Most patients are community members that live less than fifteen minutes away. One patient stated that “this clinic is just a block away from my house”. We found that community health stations are located very deep into the community and typically serve local residents. Many taxi drivers along the main roads did not know where the station is located.

One patient claimed “There are usually no long lines. Even if there are, it is much shorter than in the hospital. We pay, see the doctor, and get our medications all in one place. We would have to go three different lines and floors in the hospitals”. Patients appear to save time when they come to the CHCs in lieu of the hospital. Also CHCs can make referrals for patients to the hospital, allowing them to skip the typically long lines of getting a number to see a specialist

when necessary. For patients that are home bound, nurses also offer home care services for a flat starting fee of 20 yuan, which is about \$3. Nurses often call back in the afternoon to check if the patient is doing alright after their morning visit. Patients found home care services, which are not offered by tertiary hospitals, to be very convenient.

Besides convenience, patients were also satisfied with the lower prices charged and friendly working staff. They were satisfied that common drugs available in the CHCs are cheaper in price than if obtained at the hospital, because of the higher amount they are able to reimburse from insurance when they buy drugs at the CHCs. The price to simply see a doctor is on average 3 Yuan for those with insurance, whereas it can be upwards of 50 Yuan in the hospital. Patients also mentioned that nurses were generally friendlier in the CHCs than in the hospitals because they had more time to spend with the patients. Long term patients also knew the nurses that worked at the specific CHC that they frequented.

Patients' satisfaction differed depending on their perception of the nurse's technical skill adequacy and attentiveness to their needs. One patient's comment of "the nurse is very patient in explaining the procedure to me and she can get the needle in painlessly," contrasted with "I had to wait twenty minutes after my IV finished for the nurse to come and pull it out". Indicators of patient satisfaction are summarized in Table 1.

Table 1. Satisfaction indicators of patients in CHCs (n=12), % of patients mentioned	
Convenience	100%
Lower costs	58%
Friendly staff	50%

Clinically competent staff	25%
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Suggestions for improvement

Patients mentioned a wider selection of medications, more nursing staff, expansion of services, and expansion of physical space as areas for possible clinic improvement. Some patients also mentioned that they could not think of any areas for improvement for the CHCs. We observed that medication availability in CHCs was often limited, especially in the stations. Some patients had to go to the main clinic or hospital in order to pick up the appropriate medication that the doctor described. For long term chronic disease patients who use the medication regularly, a special request can be put in so that the clinic can carry the medication specifically for the patient. In such cases, a nurse would go to the hospital and retrieve the medication for the patient. However, we only heard mention of this service in one clinic. Some patients would also have to go to the hospital to get certain lab tests done that could not be completed at the clinic. They noted this as an inconvenience and wished that the clinic could offer that service.

Patients also commented how one or two nurses at a clinic was often not enough to efficiently respond to the morning rush of patients all needing their respective IV, injection, or oxygen treatments.

There were certain services such as traditional Chinese medicine that are very popular, so patients would often be crowded into one room. Expanding the physical space of the clinic would allow for more privacy and separation of beds in areas such as Traditional Chinese Medicine and rehabilitation.

However, it should also be noted that more health care professionals may be needed in order to support the expanded capacity.

Table 2. Suggestions for improving satisfaction of (n=12), % of patients mentioned	
Wider selection of medications	66%
More nursing staff	42%
Expansion of services offered (ie. lab tests)	33%
Expanding physical space	17%
Nothing needs to be improved	33%

V. Nursing Perspectives

Current role of nurses at CHCs

Nurses primarily had responsibility for IV transfusion, injections, home visits, and patient education in the clinics. Additionally, nurses would participate in interdisciplinary teams to sign up community members or workers at nearby companies. CHCs have the responsibility of proactively finding people to sign up for services and there were quotas to be met for each team in the number of people that they had to sign up. Each team was usually made up of a nurse, doctor, and public health specialist. The government requires that a health record be made for everyone in the city of Beijing. Each individual was asked to sign a contract for the acceptance of provided services.

Nurses are responsible for monthly health education sessions. They work in partnership with neighborhood councils to coordinate community health outreach. There was a neighborhood

council in each district responsible for providing health education programming for the community, especially for children and elderly. Topics range from self-care for diabetes to how to take your blood pressure. One established CHC, had placed participants, most of whom were elderly, into different small groups, which went through the education sessions together. Established members who attend regularly would be in charge of their small groups and making sure that the new members understood, kind of a peer support idea.

Nurses do not have any diagnostic responsibilities. Depending on the circumstance, nurses are responsible for blood pressures; in community outreach the nurse takes the blood pressure, but in the CHC the doctor takes the blood pressure as a part of the visit if needed. In certain CHC stations, where there may only be three people manning the space, the nurse can also be in a pharmacist role dispensing medications or cashier.

Training and Experience of Nurses in CHCs

In our interviews, we found that all nurses completed similar work tasks in CHC, regardless of their education level. However, nurses with bachelor's degrees were more likely to be considered for management positions when available. Despite no foreseeable major changes in salary or work responsibilities, nurses were willing to continue to further their education. For instance, most nurses were educated at an associate degree level and then continue on to study for their bachelor's, especially younger nurses. This may be due to the overall culture context that highly values education (Chen, 2002).

Although there is value in receiving education, it appears that the education nurses received has traditionally been more focused on technical skills and rote memorization rather than critical thinking. One manager commented: "Nursing students today are focused solely on tasks. They do not ask the critical thinking questions that are necessary to be a great nurse."

Nurse managers in the CHCs revealed in their interviews that nurses are highly competent at starting IVs and giving injections, but they rarely have the opportunities to use the other skills that they are trained for such as responding to emergencies.

A majority of the nurses working in CHCs have work experience in hospitals. At one CHC, there was a work requirement of five years spent in the hospital before nurses could work in the CHC. However, as a training program for community health nurses has developed, new graduates are also being recruited directly into community health centers.

Indicators of nurse's satisfaction in CHCs

When asked what drew them to work in the community health center, the overwhelming majority answered better work hours because of no night shifts typical in hospitals. Hospital nursing always required nurses to complete night shifts no matter their tenure. A typical comment was “I wanted to spend more time with my family and felt a responsibility for my kids. Working the hospital schedule just became too hard.”

Nurses were most satisfied with their level of autonomy and long-term relationships with patients. One nurse comment said, “we don't just follow the doctor's orders in the community. We see our direct impact through patient education and developing good relationships with patients. A lot of the elderly have empty nests at home with no children living with them, so it is good that we are here to care for them.” Many elderly patients with chronic diseases come frequently enough to the center to develop relationships with the nurses, some of whom have worked at the station since its inception.

Some nurses mentioned patient education as the most satisfying part of their work. One nurse, who led a community blood pressure screening once a week, explained how a patient in his 40s had found out he had high blood pressure. With the nurse's guidance, he proceeded to

control it through diet and exercise, without medications. The nurse stated that “If I had not been there for the screening, the younger patient may never have known that he had high blood pressure”. The nurse got to see the progression of the patient’s success, and that brought her great satisfaction.

During the interviews, nursing management personnel stated that “treating employees like family” created a stronger work environment. Respect and humbleness were described as important qualities to exhibit in leadership. One manager stated how she promotes flexible scheduling when possible. “If you let someone out early on a day he or she needs it, they are more likely to stay overtime when you need them”. Nurses also mentioned how they treated “each other like sisters and always had each other’s back.” At some sites, all the workers ate lunch together, including the doctor, nurses, and cashier. During the meal, we observed how people were treated equally and they all seemed very involved and open to sharing their personal lives with each other. One clinic also sponsored office vacations, encouraging bonding between co-workers outside the work setting.

Better working hours	92%
Long term relationships with patients	58%
Autonomy	50%
Family culture at work	33%
Sense of achievement in seeing patients improve	25%

Indicators for Nursing Dissatisfactions

Low social status and remuneration were amongst the top two responses for nurses' dissatisfaction with their current position in CHCs. In general, nurses felt that they gave more than they received. One nurse said "My monthly salary can only pay for one English class for my son". Some nurses have also expressed frustration with the reimbursement rates for services they provide, which have not changed since the 1980s. One injection by a nurse is charged at the equivalent of 50 cents.

Nurses shared the sentiment that those nurses who left the profession had ample reasons to do so and did not blame them. They felt that their co-workers who had the opportunities to leave the profession have better lives ahead of them.

Other dissatisfactions also came from negative interactions with patients, such as being blamed for things that were beyond their control. "Patients would get upset with us when we told them that IV transfusion for some medications have to be done first in the hospital for safety reasons. Patients would not believe us, and got verbally abusive that we would not complete the procedure, even though it was the doctor's mistake for telling them the wrong information."

Along with putting money into CHCs, the government also delegated many new policies and tasks that must be completed by CHCs. Nursing management is responsible for overseeing government regulations and assuring that standards set by the government were being met in the CHCs. Nurse managers commented that government targets and regulations were often impossible to reach due to limited resources in the workforce. Nurse managers also felt pressured as yearly inspections are conducted by the public health department inspectors in order to grade each CHC. Based on these results, bonuses would be distributed to the CHCs in district from a set amount from the government. Some nurses mentioned frustrations with having to complete various tasks that they felt were out of their realm of responsibility such as pest control or

insurance paperwork. Having to complete miscellaneous tasks cut into their time to complete nursing tasks such as providing health screenings.

Low social status	100%
Low Remuneration	83%
Mistreatment by patients	42%
Heavy workload mandated by government	25%
Completing Miscellaneous work outside traditional nursing tasks	17%

VI. Discussion: Challenges and Questions Raised

Empowerment for Change

From analysis of the interviews and field observations, some of the biggest challenges faced by CHCs include attracting and retaining qualified nursing professionals and meeting high governmental standards. Because CHCs are highly regulated and monitored by the government, there is not much room for individual decisions such as to raise nursing salaries. Only when there is a surplus in one area, can the nurses receive bonuses. One nurse manager saves money on nursing uniforms and is then able to redistribute that to the nurses. But in general the clinics lack the flexibility and resources to provide nurses a reasonable level of remuneration. In addition, nurses are not optimistic that change will occur and are generally not proud of the nursing profession. When asked if they would want their children to become nurses, all of them answered no. Although nurses were described as “angels in white” by the media in some circumstances, there was general dissatisfaction with the general societal perception of nurses as merely “doctor’s lackeys.”

Retention in the field of nursing begins as early as basic nursing education. At some of the top universities in the country, nursing schools find it difficult to retain students in bachelor's programs. A majority of students would much rather switch to other schools such as public health or even non-medical professions. Each year, students across China take an examination to determine their eligibility for which college and major they can attend. Scores needed to attend top engineering and medical schools are high, while nursing scores needed are lower. Students can only apply to five combinations of universities and majors. Therefore, if a student succeeds into getting a top university with their score, but it is not high enough for a particular major they wanted, they may be redistributed to major in nursing. Also, women are more likely to be put into the nursing profession than men, even amongst those with the same testing scores. Therefore, starting at the university level there is a group of students that did not want to be nurses in the first place. This makes it extremely difficult for nursing to move forward as a profession, if leaders passionate about nursing are not able to recruit talented future generations of nurses.

Maximizing Utilization of Human Resources and Services

There are also major challenges with balancing timing and staffing of service utilization in CHCs. In general, more patients come into the CHCs in the morning, flooding the waiting rooms and overwhelming the staff. Significantly fewer patients come in the afternoon, leaving staff with an unbalanced workload. There are advanced screening technologies that are present in CHCs but not utilized due to scheduling difficulties. This seems to be the culture at medical institutions amongst the places we visited. We posed the question of whether it would be possible to spread out the patients throughout the day with an appointment system or encouraging some patients to come in the afternoon but this would require cultural change which

most thought would be difficult. There is team coordinated care between nurses, doctors, and public health specialists. However, it is still unclear that team members understand what roles each discipline has on the team and often the roles are not discipline specific. Some nurses may have more years or higher level of education than doctors or public health specialists due to the education system. Although the associate degree for doctors is phasing out, there are still some physicians in CHCs with that background. Nursing roles tend to be the most unclear, as they are often viewed as a supporting role to the doctor and public health specialist. In our visits, we have seen numerous nurses perform non-medical roles such as acting as the pharmacist dispensing drugs and cashier at CHCs. With all nurses generally completing similar tasks regardless of education, there is a mismatch of talents and skills being utilized in the CHCs.

VII. Recommendations

In light of the challenges mentioned above, we lay out three recommendations that we believe will increase nursing and patient satisfaction in CHCs given our observations.

1. Inclusive management model
2. Training for interdisciplinary team-based care
3. Education reform
 - a. Recruiting nurses at the university level
 - b. Continuing Education

Nursing managers cannot change government policy, but research suggests that having a supportive work environment has the potential to increase the quality of care provided and the satisfaction of both nurses and patients alike. For example, incentive programs and mentorship

programs, and employee councils that promote employee feedback, will likely increase satisfaction (Yang et al., 2008). A servant leadership model may be effective. This is where hierarchy of command is flipped with customers being at the top, employees in the middle, and the managers at the bottom. Managers are to serve their employees, and nurses serve their patients. This can create a more harmonious environment between all parties, when respect and humbleness is promoted. Citation?

Although there is a lot of talk about working together as a team amongst nurses, public health officials, and doctors, actual team training must be provided, with roles clearly defined. Nurses should have their own defined role, beyond “helping” other health professions. It may be necessary to hire more ancillary workers, so that nurses can focus on nursing related tasks versus miscellaneous tasks.

Changing the recruitment methods for nursing at top nursing schools across the country may allow students who are more interested in nursing careers to benefit from a good education. Adding the possibility of interviews or essays and seeing students beyond academic test scores may increase the number of students that are willing to stay in the profession and be passionate about it, and not view it as a safety net career option. Changing the perception of students within the nursing profession may be necessary before societal views change.

Because of the phenomenon that most young nurses continue their education until they reached their associate or bachelor level, opportunities to advance the role of nursing can be encouraged through their education. Classes on leadership and carrying out evidence based improvement initiatives may empower nurses to make changes in their environments and develop more satisfying roles. Currently, there is low morale within the profession that change

can occur. Teaching students to go beyond learning technical skills and placing them under encouraging management where they are supported to make change may begin to change the role of nurses.

VIII. Conclusion:

As the demographics shift from the rural to the urban areas and the proportion of the aging population continue, the need for primary care will grow. CHCs are seen as potential solutions to meet this challenge. Nurses who are dissatisfied with their jobs tend to have higher rates of attrition. Without an adequate nursing workforce the CHCs cannot be effective in providing accessible and quality health care. An inadequate nursing workforce could also adversely affect patient satisfaction. As China moves forward in health care reform, it is important to address the satisfaction of both health care workers and patients, because of the suggested link between quality of care and burnout of workers.

This research explored nurses' and patients' experiences within community health centers (CHC) in China in the midst of the ongoing health care reform. This qualitative study utilized field observations and semi-structured interviews conducted with nurses working in four urban community health centers in Beijing, China and patients who utilized these services. Traditionally, well-qualified health professionals have not been attracted to CHCs because of inadequate remuneration and low social status (Yang et al., 2008). However, there are other areas of improvement in changing work environments, continuous training in clearly defined roles, and education reform that can help increase satisfaction rates. These results will contribute to further development of best practices in improving both nurse and patient satisfaction with community health centers in China, thereby increasing access and quality of care provided to its citizens.

Appendix A

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Appendix B

Clinic Descriptions

Ganjiakou

Ganjiakou used to be a first tier hospital until it was turned into a CHC by the 2006 healthcare reform (Zhang et al., 2011). There are six stations all built within 15minute walking distance from each other. The main center that governs the stations is a 3 story hospital building, with physical therapy and alternative Chinese medicine offered on the upper floor as well as an inpatient room on the top floor, which is mostly filled with physical therapy patients. The main CHC center had its own cooking service, which provided lunch to the residents in the CHC. They were piloting an Adult Day Care and Program of All-Inclusive Care for the Elderly (Rizhaoliao). This was developed after a community needs assessment, but currently only has one enrollee. They have the infrastructure built to provide beds for the residents for an afternoon nap, as is custom in Chinese culture. Nurses were separated into two groups. One group was stationed in the IV transfusion room and provided home care services. Another group of nurses was responsible for the in patient ward.

Yuetan

Most CHCs follow a public model sponsored by the government. Yuetan CHC is the first of its kind: a university-community partnership affiliated with Capital Medical University and

FuXing Hospital and modeled after successful primary care clinics in the United States. Yuetan has developed as a sustainable CHC that offers interdisciplinary primary care, prevention services, rehabilitation, health education, and chronic disease management. China Medical Board, in an initiative directed by Dr. Linda Aiken at Penn, recently granted funds for four nurse-managed university-community partnership health clinics. Dr. Tom Mackey, faculty from UT Houston and collaborator on my project, directs the expansion initiative and benefits from the results of this project as he develops the business plans for the new clinics. Understanding the management and staffing models that make Yuetan successful and sustainable can improve China's CHC reform efforts. It is one of the most developed CHCs in the area. Yuetan has a requirement for staff to serve at least five years before becoming a community nurse at their establishment. However, as a curriculum starts to develop for community health nursing, newly graduated nurses are also considered for posts at the CHC, after a residency training program.

In addition, Yuetan also has an international collaboration and a strong relationship with the University of Wisconsin. One of Yuetan's community health station was bigger than a main CHC center in other districts. It offered an immunization and well baby clinic as well as general medical practitioners along with alternative Chinese medicine. It also had advanced screening tools such as a fat composition and BMI calculating machine. However, these machines are under utilized because appointments have to be created only when a nurse is available, which is usually in the afternoon, but most patients prefer to come in the morning.

Zhongguancun

The CHC had one main center and three stations. The main CHC building was currently under reconstruction, so the CHC was temporarily placed on a floor within the Zhongguancun hospital, which is considered a medium sized second tier hospital. Besides the main functions required of

CHCs, it also had a smoking cessation clinic. One station that we visited had services of transfusion room, alternative Chinese medicine, and general medicine practitioners. The nurses also went on home visits. Although some residents in the area, would want nurses from the main CHC, thinking that they are more qualified than the station nurses. There are currently no policies limiting residents to receive home care from the station that is closest to them.

Aoyuncun

Aoyuncun is the newest community health clinic that we visited, first started in 2009. It is located in a newer, economically more well off community called Olympic Village. It has one main center and two stations. It also offers women's health services, mental health, rehabilitation, and preventive care for infants. Employees can choose to participate in a lunch program where food is bought from local restaurant, and money is automatically deducted from monthly paycheck. Like other CHCs, the clinic closes down around noon and opens up again at 2PM. Employees eat lunch together and take a nap during this time.

Appendix C

Connections with U.S.

The US could follow China's example of truly integrating primary care into the community. A model of having primary care and community clinics situated in the middle of residential areas or community centers could increase regular utilization by the surrounding residents. In addition, building partnerships with town councils or activity centers would be extremely beneficial. China has town councils responsible for each district and creating programming for residents, mainly children and elderly. Chinese elders have a strong sense of social connection with each other, from practicing tai chi together in the park early morning, to dancing in the square at night. Developing healthy lifestyle programs centered around community engagement can be very effective.

Although community health centers, which are aimed at serving underprivileged populations, generally take a holistic approach to care and engage the entire community, this seemingly has not seeped into mainstream level of primary care in the US. ().

Promoting a family culture at work can increase worker satisfaction. Offices in China will sponsor employees and their families to go on vacation trips together. In China, the idea of permanent work placemats still persists, where employees often are assigned to the office in which they work and are dedicated to being there for many years to come, although this culture is slowly changing with the younger generations. US companies like Zappos are famous for their company culture and actively promote “family” in their values.

Also the word itself, Community health centers (CHCs) is associated with safety net and low income clinics that serve the underprivileged in the US. Therefore, comparisons in the literature must be questioned. In the US, there is stigma that government run programs are often less efficient and more geared towards the underprivileged, than private institutions. Both China and US face health disparities between the rich and less privileged. The growing middle class in China, now calls for privately owned clinics and hospitals that are geared towards providing VIP service for the rich. The fact that care for the underprivileged and privileged should be separated, is a sign of disparity. Therefore, it is important that CHCs should be catered towards all members of the population.

Appendix D

Protection of Human Subjects

The study complies with the IRB’s regulation on protection of human subjects in research. The researchers will all have completed IRB’s human subject research training. The study conducted employs non-invasive procedures without risk of significant physical harm. To minimize and avoid emotional harm, the data collector will explain the purpose of study properly

to participants and inform participants that they can stop the interview at any time they feel uncomfortable or unnecessarily stressed. Potential stress is minimal with questions about job satisfaction and discussions of job dissatisfaction. Emphasize in the consent to conduct interview is on the fact that if at any point the participant feels an unnecessary amount of stress is being stimulated due to the questions, the participant will tell the interviewer to stop the interview. Interviews will be conducted in private settings (patient/consultation rooms) with nurses working in community clinics and hospitals in Beijing, China who have knowledge of community health services in the district. Thus, target population does not fall into the categories of vulnerable population (children, pregnant women, fetuses/neonates/prisoners etc.). To ensure protection of privacy primary data sources will be collected without any personal identifiers such as name, address medical numbers and any such identifiers will be stripped during the transcription process to insure the individual cannot be linked to the interviews they have given. While it is possible that the results might benefit the subjects in the future, there is no compensation for the subjects. The interviews are anticipated to last no more than an hour unless the subject wishes to continue their response beyond the allotted time.

Appendix E

Interview Guides in English and Chinese Translation

Questions for CHCs in China

For Managers:

1. Could nurses with appropriate education assume a larger role in clinical care in the clinic? If so, what would that role be?
2. What kind of additional education, if any, would nurses require to take on greater roles?
3. What are the sources of dissatisfaction of doctors, nurses, and others in working here at this clinic?
4. If you need to make changes in this clinic to improve work satisfaction of staff, what would the changes be?
5. If you need to make changes in this clinic to improve patient care and patient satisfaction, what would the changes be?

- 1 您觉得护士有适当的教育（本科）可以在诊所能够承担和发挥更大的作用吗？
如果可以，怎样去发展更大的作用？
- 2。您觉得什么样的教育附加，可以使护士能够发挥更大的作用？
- 3。您觉得什么是护士（医生，和其他在这里在这个诊所）工作不满的来源？
- 4。您觉得如果您需要在这个诊所做更改，以提高工作人员的满意度，会是什么需要改变呢？
- 5。您觉得如果您需要在这个诊所做更改，以改善病人护理和病人的满意度，会是什么需要改变呢？

Evaluation

- 1. How are community health centers evaluated? Do patients have opportunities to give feedback?
- 2. How do doctors or nurses receive feedback for their quality of work?
-Do you know of any complaints of burnout?
- 3. How do people pay for services?
- 4. What is the maximum capacity for patient services? At what capacity are services being utilized at the community health center?
- 5. What type of people do you think would benefit more from going to a community health center instead of a hospital?

1. 社区卫生服务中心的**质量**是如何评价的？患者有机会提供评价吗？

—社区卫生服务中心**设置的指导方针**是什么？

2. 医生或**护士**如何接收他们的工作**质量**的评价？

—有医生或**护士**倦怠任何**投诉**？

3. 病人如何支付**服务**？

4. 为病人**服务**的最大容量是多少？

5. 什么样的患者可以跟好利用在社区卫生服务中心的**服务**？

—什么样的患者可以去社区卫生服务中心，而不用是去医院呢？

Barriers

- 1 What are the barriers to improving quality of care?
- 2 What are the reasons why staff joins the community health center?
-What are the reasons that staff leave the community health center?
- 3 What do you think are reasons that keep people from utilizing the community health centers?
- 4 What do you think are the perceptions that people have about the community health center?
- 5 Are people referred back to the community clinic from the hospital? Why or why not?

1. 您**觉得**什么是提高**护理质量**的障碍是什么？

2. 您**觉得**什么会要**工作人员喜欢**工作在社区卫生服务中心呢？

-是什么原因会要**工作人员**离开社区卫生服务中心呢？

3. 您**觉得**是什么原因，会防止人使用社区卫生服务中心呢？

4. 您**觉得**人们对社区卫生服务中心的看法是什么？

5. 病人会称从医院**引进**到社区**诊所**吗？为什么不一呢？

Solutions

- 1 What changes have you experienced since the health care reform in 2009?
 - a Has there been an increase in funding?
 - b Has there been more opportunities to advance education?
- 2 Has there been any teamwork among staff within the community health centers?
Between the community health centers and hospital-based specialists?
- 3 Are there any initiatives to attract, retain, or develop workers?

1. 您经历了有什么样的变化来自 2009 的医疗改革？

—有增加资金？

—有更多的机会推进和提高教育？

2. 卫生服务中心工作人员有团队精神吗？社区卫生服务中心和医院有合作吗？

3. 有任何倡议，以吸引，保留，发展工人呢？

Nursing

- 1 What type of services or tasks do nurses provide at the community health center?
- 2 What is the average level of education for nurses at the community health center?
 - What opportunities are there for continued career advancement/education?
 - Are there opportunities available for mentorship/training?
 - How satisfied are you with your nursing career?
 - Do you believe your education prepared you for your tasks on the job? Do you feel that you are using your education to its fullest extent in your current scope of practice?
 - Would you like/accept going back to school to increase your level of education?
- 3 What are you dissatisfied with in your current position?
 - What is the most enjoyable part of your job?

护理

1. 护士在社区卫生服务中心提供的类型的服务吗？

2. 护士在社区卫生服务中心教育的平均水平是什么？

3. 护士有继续发展职业和教育的的机会吗？

—有培训的机会吗？

—您觉得你正在使用实践范围内最大限度？

—您会欢接受回到学校，增加你的教育水平吗？

4. 您对您的护理事业的满意程度如何？

—满意您当前的位置吗？

—工作最喜欢的部分是什么？

Questions for patients:

- 1 Have you been here before?
- 2 How did you hear about the community health centers?
- 3 How affordable are these services provided by the community health centers?
- 4 What do you think are the best services at community health centers?
- 5 What improvements do you think should be made to improve services in community health centers?
- 6 What is your opinion of the quality of nursing care provided at the community health center?
- 7 How do you decide whether to go to the hospital or CHC?

对病人的问题：

1. 您以前来过社区卫生服务中心吗？
2. 您是怎么知道这个社区卫生服务中心的？
3. 社区卫生服务中心所提供的这些服务收费你能负担得起吗？
4. 您认为社区卫生服务中心什么服务是最好的，？
5. 您觉得社区卫生服务中心哪些方面需要改善？
6. 您对社区卫生服务中心提供的护理服务的质量的看法/意见吗？
7. 您如何决定是去社区卫生服务中心或是去医院呢？

Note: Questions were used as a guide to start conversation and not all questions were asked in each interview.

Appendix F

Consent Forms in English and Chinese Translation

Informed Consent Form

Please consider this information carefully before deciding whether to participate in this research.

Purpose of the research: To understand the experiences of nurses and patients at community clinics in China.

What you will do in this research: If you decide to volunteer, you will be asked to participate in one interview. You will be asked several questions. Some of them will be about your experience with community clinics. Others will be about your opinions of improvement or changes that need to be made..

Time required: The interview will take approximately 10-15 minutes.

Risks: No risks are anticipated.

Benefits: This is a chance for you to tell your story about your experiences concerning health care in China.

Confidentiality: Your responses to interview questions will be kept confidential. At no time will your actual identity be revealed. You will be assigned a random numerical code. Anyone who helps me transcribe responses will only know you by this code. The recording will be erased as soon as it has been transcribed. The transcript, without your name, will be kept until the research is complete.

The key code linking your interview with your number will be kept in a password protected computer in a locked office, and no one else will have access to it. It will be destroyed upon completion of the project. The data you give us will be used for an article we are planning on writing and may be used as the basis for articles or presentations in the future. I won't use your name or information that would identify you in any publications or presentations.

Participation and withdrawal: Your participation is completely voluntary, and you may withdraw from the study at any time without penalty. You may withdraw by informing me that you no longer wish to participate (no questions will be asked). You may also skip any question during the interview, but continue to participate in the rest of the study.

To Contact the Researcher: If you have questions or concerns about this research, please contact: Xiao Kang at 4180 Curie Blvd, Philadelphia, PA 19104, USA. Email: kangxi@nursing.upenn.edu You may also contact the faculty member supervising this work.

Your participation in this research study is voluntary. If you decide not to participate, you are free to leave the study at anytime. Withdrawal will not interfere with your future care. If you have questions about your participation in this research study or about your rights as a research subject, make sure to discuss them with the study investigator or members of the study team. You may also call the Office of Regulatory Affairs at the University of Pennsylvania at (215) 898-2614 to talk about your rights as a research subject.

Agreement:

The nature and purpose of this research have been sufficiently explained and I agree to participate in this study. I understand that I am free to withdraw at any time without incurring any penalty.

Signature: _____ Date: _____

Name (print): _____

知情同意书

请仔细考虑，才决定是否参加这项研究。

研究目的：为了了解在中国的社区诊所的护士和患者的经验。

在这项研究中，您会做什么：如果您决定参加采访，我们会问您几个问题。其中一些将是您与社区诊所的经验和您的意见。如果您允许，我将磁带记录我们的采访。我们不会记录您的名字在我们的磁带上。

所需时间：大约需要 10-15 分钟。

风险：无风险的预期。

优点：这是一个机会给您告诉您的经历和您的关于社区诊所的故事，。

保密性：我们会保密您的采访的答复。在任何时候，您的身份都是保密的。您的采访的记录将被分配一个数字号码。帮我抄写的人，只知道这个号码。在研究完整的时候被转录的记录将被删除。您的个人信息都是保密的。

您的号码联系您采访的将保持在一个密码保护的计算机在锁定办事处，并没有其他人将有机会获得它。项目建成后，将被销毁。您给我们的采访的答复可能会在未来的文章或介绍的基础上使用。我们不会使用您的姓名或信息在任何刊物或简报。

参与和退出：你的参与是完全自愿的，你可以在任何时间不受处罚退出研究。您可回通知我说，你不再想参加。

要联系研究员：如果您有任何疑问或关注本研究，请联系：康霄 4180 居里，费城，PA 19104，美国。电子邮件：kangxi@nursing.upenn.edu 您也可以联系监督这项工作的教员

与谁联系有关您的权利，在这项研究中，问题，关注，建议，或投诉没有得到解决所研究员，或研究相关的危害：人类受试者使用内部评级行动在宾州委员会大学主任在研究中，3624 市场街，套房 301S，费城，PA 19104 电话：215.573.9438。

协议：

本研究的性质和宗旨得到充分的解释，我同意参与这项研究。我明白，我自由地在任何时间退出不受处罚。

签名： _____ 日期： _____

姓名： _____

Appendix G

Permission to Conduct Study in English and Chinese Translation

Date

RE: Permission to Conduct Research Study

To Whom It May Concern:

We are writing to request permission to conduct a research study at your institution. We are currently enrolled in the School of Nursing at the University of Pennsylvania, and am in the process of writing an article. The study is entitled Management and Satisfaction at Urban Community Clinics in China.

I hope that the school administration will allow me to recruit 50 participants to anonymously complete a semi-structured interview (copy enclosed). Interested participants, who volunteer to participate, will be given a consent form to be signed (copy enclosed) and returned to the primary researcher at the beginning of the interview process.

If approval is granted, participants will complete the interview in a quiet setting on site. The interview process should take no longer than 15 minutes. The interview results will be pooled for the project and individual results of this study will remain absolutely confidential and anonymous. Should this study be published, only pooled results will be documented. No costs will be incurred by either your institution or the individual participants.

Your approval to conduct this study will be greatly appreciated. We will follow up in person next week and would be happy to answer any questions or concerns that you may have at that time. You may contact either of us at the address: kangxi@nursing.upenn.edu or wzhang@nursing.upenn.edu

If you agree, kindly sign below and return the signed form to us. Alternatively, kindly submit a signed letter of permission on your institution's letterhead acknowledging your consent and permission for us to conduct this study at your institution.

Sincerely,

Xiao Kang and Wendy Zhang

Enclosures

cc: Dr. Matthew McHugh Advisor, University of Pennsylvania

Approved by:

Print your name and title here	Signature	Date

年月日,

权限进行研究性学习

它可能涉及的人：

我们写信，要求允许在你的机构进行的一项研究。目前，我们正在参加在宾夕法尼亚大学护理学院，我在写文章的过程中。这项研究是在中国城市社区诊所的题为“管理和满意”。

我希望学校的管理，将允许我以匿名方式完成的半结构化面试（附上副本）招收 50 名学员。自愿参加，有兴趣参加者，将给予同意书签署（附上副本），并在采访的开始返回到主研究员。

如果经批准后，参与者将在现场安静的环境中完成了采访。采访过程中应采取不再超过 15 分钟。面试结果将汇总的项目和个人的这项研究结果将保持绝对保密和匿名。如果这项研究公布，只有汇集的结果将被记录在案。您的机构或个人参加，将招致任何费用。

您的批准才能进行这项研究将不胜感激。我们会很乐意回答任何问题或疑虑，你可联系我们：
kangxi@nursing.upenn.edu 或 wzhang@nursing.upenn.edu

如果您同意，请在下面签字，并返回签名的形式给我们。另外，请提交贵机构的信笺上签署的许可信，承认你的同意，并为我们进行这项研究，在你的机构的允许。

真诚的，
Xiao Kang and Wendy Zhang

CC：博士，宾夕法尼亚大学的 Matthew McHugh

批准：

打印你的名字和标题在这里签署

日期