

PERKINS+WILL

# Research Journal



2016 / VOL 08.01



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### A CONTEXTUAL STUDY FOR HEALTHY COMMUNITIES IN CHINA:

*Towards Culturally-Sensitive Urban Design and Planning*

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#### ABSTRACT

Built upon theories of the built environment's effect on public health outcome and addressing the importance of cultural sensitivity in urban design and planning, this article gives an introductory account of the urban context of contemporary Chinese cities in relationship to its current public health issues. It also reviews the recent healthcare reform in China and its implication on the market and changing urban environment. The objective is to develop a contextual understanding to inform the planning and development of healthy communities in China. The result is proposed in the concept of Health Community. It is an integrated framework of healthcare facilities and its surrounding communities.

**KEYWORDS:** urban regeneration, China, healthcare reform, urbanization, contextual studies

#### 1.0 INTRODUCTION

There is unprecedented interest in the effects and impacts of the built environment on the health of urban inhabitants globally. From the impact on physical activity, obesity and diabetes, to respiratory health (via air pollution) to mental health, the relationship between built environment and public health has become one of the most important discussions in urbanism in recent years. However, this has been largely a dialogue based on Western public health philosophy, generally in reference to North American and European societies<sup>1</sup>.

It would also be important to understand that the effects of the built environment are very much related to its cultural, social and economic context. This article seeks to develop a contextual understanding of the relationship between the built environment and health in contemporary Chinese cities. In addition to the basic ideological differences between eastern and western culture, China has a strong heritage in alternative medical practice that address the body and health.

The article gives a brief account on the current urban context and development of China's healthcare system, leading to some key public health issues observed with-

in the context of the built environment. The healthcare reform initiated in 2009 was a turning point for healthcare development in China, and this will be the background for our investigation on the relationship between public health and the Chinese cities' built environment.

As a result of the rapid urbanization in the last few decades, a new class of urban residents emerged that gives specific character to the contemporary Chinese society. They are also the key users/consumers in the expanding healthcare market, which was endorsed by the government with encouraging reform policies. Through the reading of their lifestyles, market trends and their implications, the baseline analysis was used to construct our concept of a model that represents the relationship between the built-environment and public health system in China.

A case study was conducted on a city center public hospital in Shanghai and its vicinity to examine the activities and the use of public space, and to discover opportunities for urban design intervention to improve the current conditions. Furthermore, the consideration was extended beyond the hospital premise into its surrounding neighborhood, which leads to the formation of the

concept of a “Health Community”. The objective would be to enhance public health outcome through looking into the overlapping area of the healthcare activities and that of general urban life.

The potentials and opportunities of the “Health Community” is investigated in three aspects that contribute to the design of built-environment for a healthy community. In relationship to the current healthcare system issues, the article analyzes the components to build a community-based primary care system. Secondly, through reading into the Chinese philosophy on wellness and a survey of the area’s health-related business, the research seeks potentials of preventive care for urban chronic illness. Lastly, as a crucial aspect of a healthy community, we look into the use of public space and its design and planning implication towards an active lifestyle.

This article is intended to be a starting point to support further exploration in strategies and application for a culturally-sensitive urban design of healthy com-

munities. We believe that the built environment affects people’s behavior and lifestyle choices, which directly relates to the health and well-being of its residents. In the same time, by addressing the importance contextual understanding, it will enable us to plan and design our communities in a more human-centered, and culturally empathic approach.

## 2.0 THE URBAN CONTEXT AND KEY PUBLIC HEALTH ISSUES

China has similar land area as the United States, consisting of almost 10 million square kilometers, but with four times the population at 1.37 billion (Figure 1). While western cities have been developing for over a century since the Industrial Revolution, China’s urban development essentially began in the 1980’s, since the People’s Republic of China’s economic reform. During this period of a little over three decades, its urban population has grown from 20 percent in 1980 to 54 percent in 2014<sup>2</sup>, resulting in movement of over 260 million people from rural to the urban areas.

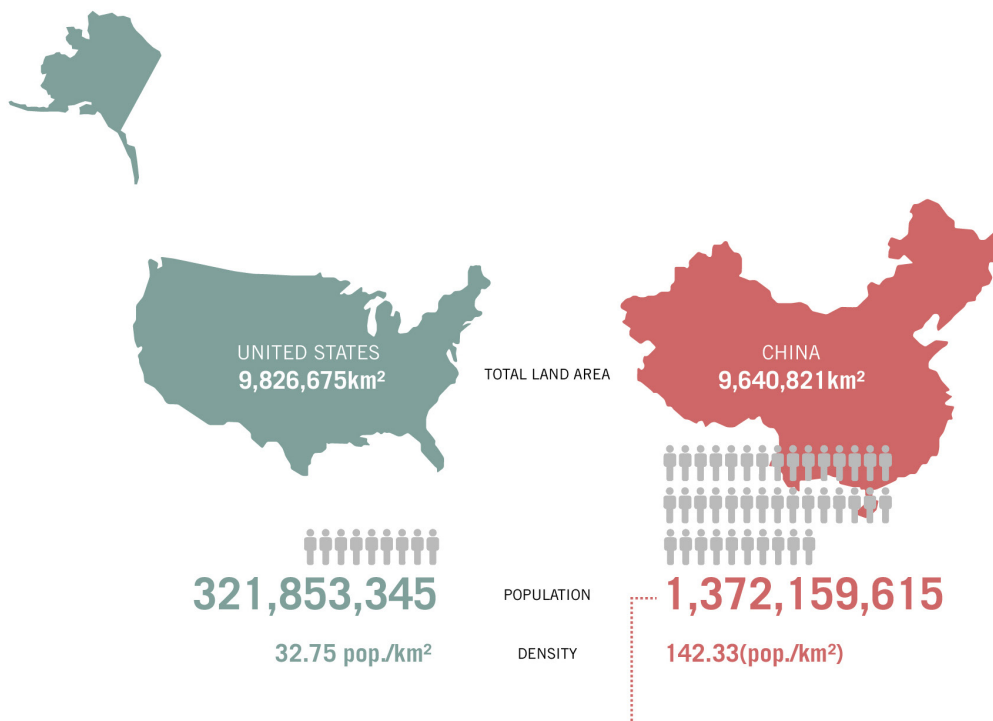


Figure 1: The comparison between land area and population of the United State and China.



The sheer volume of urban immigrants is creating a lot of stress on the nation's healthcare service. To accommodate the increasing urban population, new cities are rapidly growing in size and density. Large new cities of population over one million are being built overnight. Many of them are new developments that are planned in haste and without careful consideration for the well-being of their residents. Oversized street blocks, segregated uses, lack of public space - they are essentially becoming "un-healthy cities" that create negative health impact on the residents. Meanwhile, traditional city centers are also under the pressure to increase population density, with a growing need for public services in large scales - they are faced with the issue of limited land resources and existing over-crowded urban condition.

On a positive note, the high population in large cities can provide the critical mass for effective public service. In high-density urban setting, service can be concentrated in hubs, enabling shorter travel distance and the economy of operation can be optimized. The challenge lies in the upgrade and expansion of existing facilities, which are often situated in small land plots with densely built surrounding.

For example, the Huashan Hospital, in central Jingang District of Shanghai, was established in the early 20th century as a Red Cross China outpost with minimal capacity. Through a century of development, it has grown into a large public hospital with over 1,200 beds and 3.8 million outpatient visits annually. The original structure was demolished and the hospital rebuilt as a cluster of modern buildings with the main tower at 20 stories high. However, situated in the dense urban center, it has grown to reach its capacity without sufficient space to handle daily demand, both in terms of floor space as well as green area. The over-crowded hospital is also leading to the problems for surrounding area with congested vehicle and pedestrian traffic, causing a lot of stress for the neighboring communities.

The combined factors of large population and rapid development has set a particular urban context for Chinese cities when planning for their development and public health strategies. In addition, there is a deep-rooted wellness philosophy in the practice of traditional Chinese medicine, and a different cultural value of the family and social structure. These contextual background would have implication on public health policies and planning strategies. While learning from best practices in well-developed western cities, cultural sensitivity would be important in order to have an empathetic perspective for more effective solutions.

### 2.1 The Contemporary Chinese Urban Residents (Class Disparity)

The rapid economic growth in the last few decades has attracted many individuals and families from the countryside to the big cities seeking jobs and better livelihood. Some have been living in rural villages or small towns with an agricultural-based lifestyle for generations, yet in the last few decades, many have settled in cities and they have become the new urban residents. According to the publication "From the Soil" by sociologist Fei Xiaotong<sup>3</sup>, the foundation of Chinese society is based on a communal bond, which was formed to suit small village community organization. It emphasizes respect and hierarchical relationship among family members, relatives and acquaintances, and this value system still holds true at this age, in the metropolitan urban society with a very different social condition.

This idea is also apparent in Confucius philosophy as the concept of "filial piety" or the respect to parents and elderly (孝). The younger and capable members are expected to care for the welfare of others in the family, and they would feel the obligated to take care of the old and the sick. In the case of serious illness of a family member, many would spend extensive amount of time in the hospital to accompany the patient, or travel with them long distance to seek medical service.

Another character of the new urban residents in China is the reliance on state-provided service. When the People's Republic of China (PRC) was established as a communist state in pre-reform decades, citizens would work for state-owned enterprise and receive full welfare, including medical and other health-related services. Until today, the general medical cost to patient is still relatively low, where a basic visit to the outpatient clinics at public hospitals cost about 20 Yuan (\$3 USD). Therefore, many would still habitually go seek medical assistance at the public hospitals regardless of necessity.

The neighborhood residents with minor illnesses, the extensive visitors to inpatients, and the family group to accompany their relatives for medical services—all of these have caused extra volume of visitors to the public hospitals in addition to those with critical needs. The situation is worsened by the spatial design of hospitals, which often have little consideration of visitor flow and public space, resulting in the commonly-experienced over-crowded environment in many Chinese public hospitals. In the case of city center hospitals that have very limited land parcel, the issue of congestion is extended beyond the hospital premise and also affecting surrounding area and residential communities.

These traditional values are in fact slowly evolving, as the big cities are in transition into a more market-oriented society. It is also important to understand another type of urban residents – the rising middle and affluent class. They are the individuals and families with an annual household income above 75,000 RMB<sup>[i]</sup>, as defined by a report from the Boston Consulting Group<sup>4</sup>. The middle and affluent class of the Chinese cities account for 38 percent of urban household in 2013, with projection to grow into 59 percent in 2020.

This new rising urban class could share similar cultural value as described above, but they have adopted to and embracing the new capitalistic lifestyle with further demands. As one of the earliest group that benefit from economic development, the affluent and middle class have high concern of their health and wellness, and they begin to have the means at affording a premium for it. Partly due to the lack of confidence to public healthcare service, they often seek alternative service from the private healthcare operators, who became the main consumer force behind this new market opportunity.

## 2.2 The Healthcare System and Reform

In 2009, the State Council has initiated an ambitious healthcare reform that aims to transform the country's healthcare service system. The objective is to provide universal healthcare with policies in public health insurance,

drugs regulation and the hospital organization<sup>5</sup>. It also encourages a more open market with favorable policies to attract private service providers, with the aim to improve quality of service through market competition. Many policies at the regional and local level have been drawn up since then, in some aspect it is showing promising results, such as the achievement of 90 percent basic medical insurance coverage in 2015<sup>6</sup>. The reform appears to be positive in tackling some of the issues discussed, however, there is still a lot to be done in terms of policy, program and design to address the fast-changing urban development and its challenges.

China's healthcare system, namely "Medical and Health Service System", is accounted for in three major categories: (1) the hospitals that constitute majority of the country's healthcare service, including public and private hospitals for general, specialty, as well as traditional Chinese medicine facilities; (2) the "basic healthcare units", which were originally set up as birth control and public health station in villages and urban neighborhoods in pre-reform days, and they will then become an area of focus in the healthcare reform as the foundation to upgrade into a network of primary care facilities; and (3) the "specialty public health units" are the specific healthcare institutes such as Drug and Food Safety Bureau and Center for Disease Control at a central government level of administration (Figure 2).



Figure 2: The medical and health service system in China.

[i] RMB (renminbi) is the official unit of currency in China.

The public hospitals were positioned to cover full range of service from primary to tertiary care, and many of the urban hospitals are also large in scale (1000+ beds), with top resources in equipment and medical staff. Private hospitals are generally smaller in scale, often established as specialty or senior wellness / rehab facilities that cater to market demand. In 2013, private hospitals accounted for about 15 percent of total bed-count in the country, while a reform memo released in 2015 has explicitly encouraged private healthcare service, with an objective to increase their share of inpatient capacity into 30 percent in 2020<sup>7</sup>.

The intention is to improve overall healthcare service quality through constructive market competition. In fact, the direct subsidy from the government only accounts for approximately 8 percent of public hospital revenue<sup>8</sup>, the institutions have to rely on their medical service to generate necessary revenue to sustain financially. Currently, the public hospitals have the issue of over-prescription on drugs and procedure to generate revenue through pharmaceutical rebates, as a result they have less concern on patient experience and satisfaction. It is one of the objectives in the reform policy to reduce the hospital's reliance on medical drugs mark-up, with regulations for a new system on prescription and distribution. Along with the opening up of healthcare market, there will be a wider array of healthcare service options, the public hospitals would need to reconsider their operation in a more effective manner and to adopt a more patient / service-oriented approach.

Another critical issue with current healthcare system is the lack of effective primary care facilities as gate-keeping to the system. The “basic healthcare unit” in an urban neighborhood is set up according to a service catchment of 30,000-100,000 residents with one community health center. These centers are responsible for preventive and primary care, however, they have very low utilization in many cases, especially in larger cities where there are other available options. The main reason is the lack of service and limited medical resources in these community health centers. Since there is not a strict referral system between the community health centers and the public hospitals, many would bypass the clinic and go directly to larger hospital for consultation. In fact, it is easier to get referral to specialty doctors through primary care at the hospital internally instead from other clinics. More importantly, there is virtually no difference in cost and insurance coverage between a hospital or community health center, therefore, patients would naturally go to the hospitals for any and every medical need.

The government is responding to this issue by allocating reform budget to upgrade the community health centers as proper primary care facilities. Based on the existing health stations already set up in residential neighborhoods, minimal effort is required for hardware upgrade, but the problem lies in the shortage of qualified general practitioner and medical staff. This was the main cause of the short service hours and negative view from the residents towards its quality of medical treatment.

While increasing capacity with education and training of healthcare professionals will be needed in long term planning, it is necessary to establish stronger connection between the community health centers and public hospitals. This would improve current conditions and can be done in short-term. Doctors from the district's large hospitals can work at the community health centers on a part-time basis, and maintain patient record cross-platform. This will not only increase the service capacity, but also build up positive image for the center's accountability. The neighborhood patients can then grow into a habit of going to community health centers for primary care, where they know that they can get proper consultation and referral to secondary treatment at the hospitals when needed.

### 2.3 Market Trends and Implications

The healthcare expenditure in China accounts for 5.4 percent of its GDP in 2013, which is very low at an international standard, but the market studies give a very positive projection, with the expectation to grow to 11.8 percent in the next few years<sup>9</sup>. Besides the formal medical expenses, the projection for urban residents on spending related to wellness (such as dietary supplements and gym membership) is also increasing as the awareness increases, in response to escalating chronic illness and the worsening pollution issue in urban China.

The prevalence of chronic diseases applies to urban residents in virtually all sectors regardless of education or income level. This is currently a very attractive market for private operators to offer a variety of services. People who can afford it will opt for private provider service at a higher premium, while the lower-income population continues to struggle for medical attention at the congested public hospitals with limited resources. This is another critical urban issue, the inequality of accessibility to quality healthcare service.

As an example (Figure 3), we can see the contrasting conditions at public versus private hospitals. The Zhengzhou University First Affiliated Hospital in Henan province is known as “the largest general hospital of the world” with over 7000-bed capacity. However, it is not necessarily the best in terms of medical service and patient / visitor experience. Lacking proper design and planning strategies in its ambitious expansion plan, the super-large hospital has attracted extremely large volume of visitors, many of which are left in poor conditions, such as temporary patient bed and treatment stations exposed in open areas, accompanying families to stay overnight along the corridor or even camping out in the parking lot.

On the contrary, the private hospitals are serving only the very affluent few. An example of the Shanghai Red Leaf International Women’s Hospital, the well-known private maternity hospital advertised for its “5-star” service, is also known as one of the most expensive in the country. A grand hotel-like lobby is often empty and there are “customer service representatives” accompanying the patient in addition to the already high ratio of medical staff.

With the steadily growing urban income level, there will be a demand for mid-price range healthcare market – not just the affluent few but the core middle class who

would seek comfortable and reliable service beyond the public hospitals. While the universal public healthcare insurance is underway, there is the potential to allow public insurance holder payable to private operator service. Functionally, it could require the patient for larger portion of out-of-pocket payment comparing to regular public hospital service, as a result, this could serve a substantial group of urban middle class who are demanding for better service and willing to pay within a reasonable range for such service.

The mid-price range service could become an important share of the urban healthcare market in the future. It should also encourage the public hospitals to upgrade and improve their services, for the opportunity to increase revenue through quality medical service instead of the quantity in prescription and procedures. There are already established departments of “premium care service” at some large public hospitals as a test for increasing service charges, but with provision of better patient environment and services, and it has received positive feedback with growing demand. While to overhaul the entire public healthcare system will take some time to implement, the development of a mid-price range service range (with public insurance payable) could serve as a transitional strategy beneficial to both the patient and the institutions.



Figure 3: Comparison of public space condition between public and private hospitals.



### 3.0 THE BUILT-ENVIRONMENT AS A HEALTH-BASED COMMUNITY

Besides policy and program strategies, the built environment is the other crucial factor that affects public health. Studies have identified two paths contributing to health outcome – the exposure path of environmental factors and the behavioral path that relates to our lifestyle choices<sup>10</sup>. Health outcome is affected by exposure to environmental factors, such as air pollution and water quality, which are also critical urban issues that China faces today. For the purpose of this article, we focus on the health impact through behavioral path.

Our behavior is unconsciously influenced by the surrounding environment, where it gives clues to prompt us into certain lifestyle choices and action<sup>11</sup>. While some of the healthcare issues discussed would need to be resolved at a higher level of policy planning, proper design of the built environment can assist certain level of behavioral changes. The objective is to promote an overall healthy lifestyle, which would ultimately improve citizen health and be less reliant on public healthcare services. With the understanding of how contextual issues in contemporary China are reflected in the urban environment, we can then propose design intervention for healthy communities that is emphatic and sensitive to the social and cultural context.

We examine the health-related built environment in two levels of scale: (1) the public spaces in a hospital and its vicinity, where the medical staff, patients and visitors are interacting with patients directly, and (2) the extended community beyond the healthcare facilities, which affects a larger group of residents (some of them potential patients) and contributes to an overall healthy lifestyle. An area of 1 km radius surrounding the Huashan hospital in Shanghai city center is identified for the study of its spatial setting and patient/resident behavior. While there are already many studies in the best practice for healthcare (hospital) design, in this article we focus on the urban environments at a public space and community scale.

#### 3.1 Case Study: Huashan Hospital – An Urban Center Facility

The Huashan Hospital is an AAA-grade<sup>[ii]</sup> general hospital with 1200+ beds, regarded as one of the best public hospital in the region. It is situated in the dense city center along a busy commercial street, while the surrounding area consists of predominately residential communities of social housing from the 1970's, with a few new developments. Its city center location and urban development history have given the area a compact urban fabric and concentration of major facilities. The area also has good accessibility to multiple subway lines and public buses.

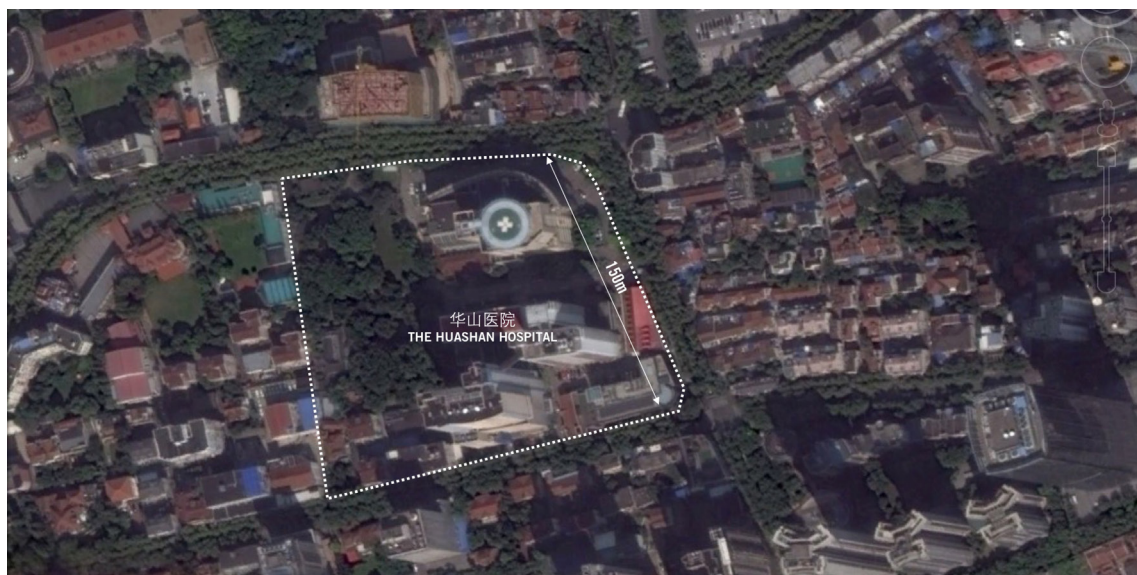


Figure 4: Huashan hospital and surrounding area, Jingan District, Shanghai.

[ii] The hospitals in China are categorized as A / AA / AAA grade, according to their scale and service standards. The AAA-grade is the highest classification of public hospitals.



### 3.1.1 Public Space at the Hospital

From discussion in the previous sections, we understand that the high urban population is the main reason for the congested hospital environment, with additional pressure from out-of-town patients and their family members, as well as nearby residents going to the hospital for minor illnesses. The field observation has confirmed this condition as seen in the public area of Huashan hospital (Figure 5), where the entry street and hospital lobby is usually a chaotic scene comparable to a busy subway interchange, especially during peak hours in early morning when patients go for appointment registration.



Figure 5: Out-of-town patients near Huashan Hospital seeking accommodation and directions.

Without sufficient signage and information, visitors would often be confused and ended up taking extra time to get around. In Chinese public hospitals, there is no pre-booking for any general consultation. Patients can only register in-person that morning for an available appointment on that day. Many people would spend a long time in the lobby waiting for their appointment or medication, where the pharmacy is also located at the

same public space. There is no defined waiting or resting area, but only rows of aluminum benches, nor are there any amenities such as restaurants or convenience stores on site.

### 3.1.2 Public Space at Hospital Vicinity

Another challenge shared by many city center hospitals is the small land parcel and narrow street situation where it does not allow for sufficient open space, in addition to parking and traffic issues that further affect the nearby neighborhoods. In the case of Huashan hospital, it sits on the intersection of two busy city roads, with buses and bicycles mixed with the already heavy motor vehicle traffic. The condition is worsened with unregulated street parking and random drop-off of hospital visitors by taxis and private cars. The original hospital entry plaza and walkways are filled with double-parked cars by staff and patients. With insufficient parking space at the premise, the hospital has to be gated to exclude all external traffic, including public drop-off (Figure 6).



Figure 6: Over-parked hospital plaza and congested surrounding streets.

In the case of a hospital situated within dense urban fabric, traffic should be controlled in order to create a pedestrian and patient-oriented environment. A complete street design concept would be appropriate in this case, where street-side parking should be prohibited and car lanes should be reduced to discourage through traffic. Then, with the street space released, bicycle lanes can be designated along the road, or to create a drop-off bay for patients by taxi or private cars. Regulating parking and traffic could return sidewalk space to the pedestrians, with the advantage of existing mature street trees, a wider sidewalk with street furniture could turn the congested street into urban places that allow patients and visitors to stroll, stop and engage into social activities.

Another opportunity is to creatively utilize space, by integrating the design of hospital grounds and public streetscapes. The green area of the urban hospitals is often designed as non-accessible landscape planter within the fence, a typical engineering solution per code requirement on green ratio. With small urban design intervention, spaces such as street corners with narrow side-walk and fenced planters could be turned into a landscaped plaza to be used by residents and patients alike. This type of intervention is an effective example of how the design of built environment can promote activities such as social interaction, which will bring a positive change to enhance recovery of the patients as well as improving quality of life for the residents.

Research has shown beneficial results in patient recovery when they are exposed to greenery, visually or physically<sup>12</sup>. It might be more difficult to have views to nature from the rooms in a city center patient tower, yet there can be many potentials for design to “invent” green space for assisting in the healing and recovery of patients. Less critical patients are allowed to check-out during the day in Chinese hospitals, they would benefit greatly from the improved streetscape and public open space.

Land is a very scarce resource in the densely built-up urban centers, and hospitals are going to have higher volume of visitors as the population increases. Under such conditions, as in the case of many dense urban district, it will become necessary to have a holistic view of healthcare facilities with the community together and seek creative solution with limited resources.

### 3.2 The Health Community: Potentials and Opportunities

There are multiple definitions and interpretations of a “healthy community”, from policy to program development and design. From our investigation, we realized that there is an opportunity for healthcare institutions and the community to share resources (public spaces, services and amenities), and to build a system of programs and places that would benefit the patient as well as the residents. To translate this into potential design and planning strategies, we proposed the concept of “Health Community” to discover the synergy between the healthcare facilities and the surrounding residential communities (Figure 7). The concept changes the traditional view of hospitals as isolated facilities, and focuses on areas where the activity of hospital user and surrounding resident overlaps.

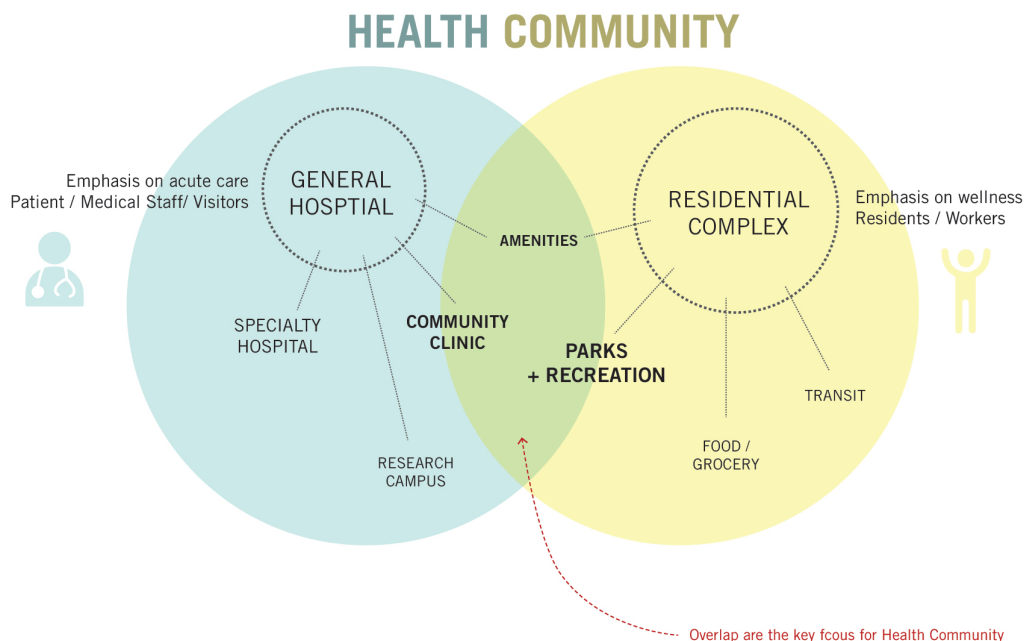


Figure 7: The integrated consideration of the hospitals and the community.

Particularly in city centers, resource sharing would be important and necessary to consider due to land constraints. For communities, it could work more efficiently to have healthcare service provided at multiple levels, with primary care facilities at closer proximity to the neighborhood, particularly for the elderly residents. Working together with programs and urban design projects that are pleasant for walking and recreational activities, it would introduce positive behavioral changes towards a healthy lifestyle. Ultimately, by enhancing overall public health, it could contribute to relieving the urban stress and other issues observed, indirectly, but effectively.

By developing integrated healthcare facilities and within the community, we can see how these two seemingly independent systems have in fact many opportunities to overlap and benefit each other. Elements such as

parks, plazas and amenities, shops and restaurants can be effectively shared by both groups of users, and community clinics can be also used by residents for other activities during off-hours. By sharing of resources, it would create a vibrant community, while at the same time it could help to vitalize local businesses.

### 3.2.1 Community-Based Primary Care Network

We observed that one of the major problems with the current system is a lack of effective primary care facilities to serve as the “gate-keeping” mechanism for public healthcare services. We concluded from mapping the facilities in the case study area, there are a number of smaller hospitals and community health centers existing within walking distance (400-800 m) of the community. However, many of them are poorly equipped, underutilized or inaccessible to the local residents (Figure 8).

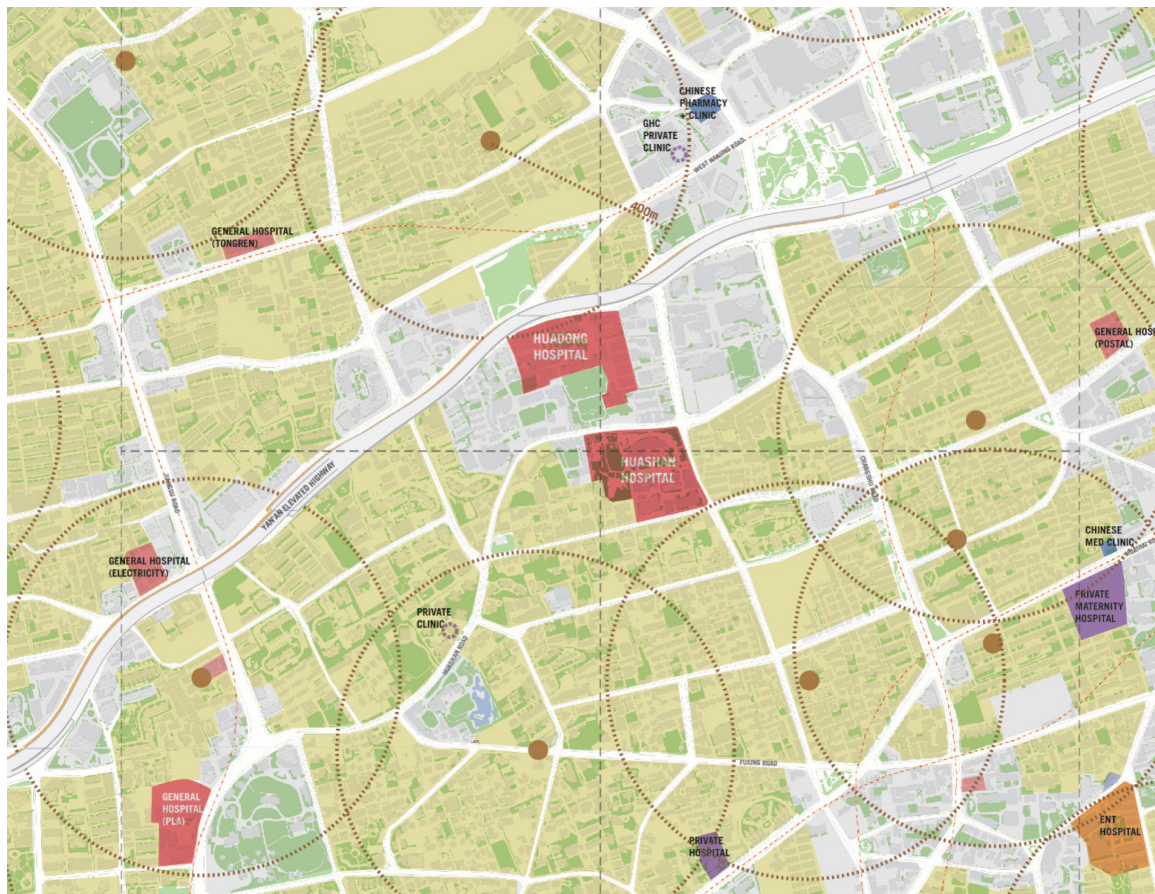


Figure 8: Healthcare facilities in the study area.



The smaller hospitals are usually affiliated with state institutions, such as the military and veterans' hospital or the hospital for the national electricity company. Only current or retired staff and family members, can access these facilities and other walk-in patients are not served in this facility. As mentioned in recent healthcare reform memo<sup>13</sup>, there is already a plan to phase out state enterprise healthcare service, from currently a 13 percent share to a 2 percent share in 2020. These facilities have the potential to transform into public hospitals for primary and secondary care, and as a shorter-term action plan, they can begin to receive public patients at spare capacity. These hospitals could become anchor facilities at the community-based primary care network. At the community network level, there are the "Health Stations" (now called Community Health Centers) established according to planning code for residential communities. They were established as neighborhood service units for a smaller population with very basic set-up, but the extensive coverage into the communities gives them an advantage of being highly accessible to all residents, including family with young children and the elderly. As the previous section has discussed issues and potentials in terms of operations, it is important to emphasize their role as the gathering hub for the community and to ensure their accessibility to all residents.

The community health centers also have the potential to become community centers that promote preventive care and healthy lifestyle. Often housed together with elderly activity centers and adjacent to neighborhood parks, their location is ideal for community outreach. There is a good opportunity for these health centers to increase their role in public health education, with programs and activities such as aerobic exercise classes or healthcare seminars. Under current public facility guidelines, they are hardly noticeable from the streets, design interventions with welcoming urban design as simple as connection to the public parks, or seating area at the plaza can help to increase their presence in the neighborhood.

There is also a third type of facilities that has potential to contribute to the community-based primary care network—the Chinese medical clinics. Besides the public Traditional Chinese Medicine (TCM) hospitals, there are still many alternative outlets in the neighborhood that we should consider as part of the Health Community programs. They exist in a variety of format from the formal Chinese pharmacy with its complimentary clinics, to reflexology and acupuncture clinics. It is a common practice, usually among the older generation, but be-

coming increasing popular in general, to treat chronic disease at the traditional Chinese clinics, where it usually involves multiple visits in a longer period of treatment for a combination of herbal medicine prescription with other treatment. These clinics have the capacity to treat minor illnesses with Chinese herbal remedies, and not necessarily in need of modern medication or procedures.

Together these facilities could form a strong network of primary care outlets to serve the community its basic healthcare needs. They will be essential in acting as the system's "gate-keepers" while helping to reduce the load of large hospitals for higher level acute care. There is a need to improve the primary care facilities' service accessibility and the facilities capacity to increase utilization. Policies such as insurance payable to alternative (traditional Chinese) medical service gives the motivation for increase usage. Finally, with thoughtful public space design intervention and publicity campaigns, these facilities will have the opportunity to become the anchors for their communities.

### *3.2.2 Non-Medical Wellness Facilities for Preventive Care*

The idea of preventive care is not new to Chinese culture, there is a strong heritage in traditional Chinese medicine regarding wellness beyond (or before) acute care. The medical practice focus is less about curing sickness, but more to maintain coherence, or balance, in life so that we would not get sick. In the contemporary Chinese cities where chronic diseases are prevailing as in any large cities in world, to embrace the cultural roots on this wellness philosophy would be a good entry point to consider preventive measures for chronic illness for a healthier urban lifestyle.

The healthcare reform policy is also creating favorable conditions for private service providers, with the growth of health-conscious urban middle class, it presents very attractive market opportunities on health-related products and services. As surveyed in our study area, a variety of health-related businesses can be found, such as the dietary supplement store, the therapeutic massage spa, and the herbal pharmacy with Chinese doctor on-duty. These commercial establishments are not formally "medical", but usually follow some healthcare theory and the aim is towards improving health. They can be characterized as "wellness establishments", that focus on improving health and wellness, which could also be seen as a kind of preventive care to chronic illness that contributes to positive public health outcomes.

Taking on a different perspective than the popular view on “wellness establishments” as purely market-driven and profit-seeking, we should consider them as an important contributor to the Health Community concept. This is where the formal healthcare and informal lifestyle commerce overlaps, places that are very visible in our urban environment. In thinking about preventive care for (urban) chronic disease as largely a behavioral change into a healthier lifestyle, the current market is having extensive influence to our lifestyle and consumption choices. As the health-related products are becoming widely available and more affordable, it should increase the accessibility to healthy choices and reduce urban chronic diseases.

As an example of how these wellness establishments are contributing to preventive care at a community level, we can see in this large medical mall within our study area (Figure 9). It has a storefront with colorful display of precious herbal medicine, the 5-floors include pharmacy for Chinese and Western medicine, sales counter of home-use medical equipment or beau-

ty and cosmetic products, as well as traditional Chinese clinics that service and prepare herbal medicine. It is a community landmark and holds as much importance of a supermarket or library, where residents would come to learn about the latest model of blood-pressure test equipment to be used at home, or to seek advice on the appropriate choice of seasonal herbal supplement.

It is indeed debatable regarding the effect of these commercialized establishments. In a negative sense, they could focus on driving sales instead of providing fair consultation to the patient's need. However, as the Chinese cities are in transformation to contemporary society with open market system, we should think about how to embrace these establishments instead of separating them from the discussion of public health. They could have a positive effect in bringing health awareness to a broader audience, and in providing more readily available services to the residents in comparison to traditional healthcare facilities.

### 3.2.3 Public Open Space for Active Lifestyle

Finally, beyond direct relationship with the healthcare practice, the effect of a Health Community concept should result in the design of places that lead to an active, healthy lifestyle. It is understood to be the most effective way to reduce chronic diseases in a community, which ultimately contributes to reducing pressure on public healthcare services.

Classic urbanism theories, such as those advocated by Jan Gehl, have described how the quality of public space is the key factor to what kind of activities, who, and how often it will be used<sup>14</sup>. This translates into the important role that the design of built-environment plays in the effect on its users' behavior, and in the case of our study, towards an active and healthy lifestyle. In developing the Health Community concept for urban Chinese context, current condition of public spaces and its activities were studied. Together with an understanding of the cultural backgrounds and residents' habits, it can become useful tools to inform design decision for urban environment improvements.

Based on the belief in traditional Chinese medicine's view on wellness, regular exercise and a daily stroll is considered as common practice among Chinese residents. There are community-organized exercise sessions or individual Tai-chi practices, as we would often see in parks and plazas. There are also fitness equipment, installed in many social housing projects. However, the majority of the users appears to be the older group and senior citizens.



Figure 9: Chinese Medical Mall that provides a wide range of services and products.

There are many recreational facilities for active sports, and in recent years a large number of fitness studios has been established, which are more popular among the younger generation. Usually having elaborate equipment and staff trainers on-site, with better service and longer opening hours that cater to the lifestyle of busy urban residents. This is a result of market development, and also showing a trend towards a preference of indoor activities instead of outdoor. The issue could be the quality of outdoor space according to Jan Gehl's theory on urban space. While little can be done to improve air pollution immediately, we can improve the quality of public space through design, to be more accommodating for all residents to engage and encourage outdoor activities.

For dense urban center communities, space is relatively limited for specific recreation venues. However, there are some interesting observations in the case of our study area in Jing'an District, offering different ways as to how the residents utilize public space for social and recreation activities. For example, residential streets with little traffic, along wider sidewalk with shaded enclaves, would be often occupied by children playing and their grandparents chatting with neighbors. Street furniture is used in unintended ways, such as a tree fence becoming the exercise pole for the senior residents. In city parks, the elevated planting area are used for fitness training or yoga practice. It is also a famous scenery in many Chinese cities that community groups take up the plazas at office buildings during evenings and weekends to engage in group dance or exercise.

In our observations, we learnt that in a community where multiple function and user groups overlap, people found opportunities for innovative use of public space to accommodate their activities. This is a positive result without the need of additional resources and should be encouraged through urban management policies, with considerations in master planning and design strategies for communities.

At an overall master plan level, it will be crucial to ensure the variety of functions and user groups in a community through mixed-use planning, to create the possibility of space sharing at different time for different use. While there should still be sports venues planned in a community, it is not necessary to plan all urban space for designated single use – in many cases flexible public spaces would be more effective. Together with an inclusive and tolerant urban management policy, people will be engaging into activities at a much higher rate in public open spaces. Availability and accessibility are some of the best motivators for our behavior towards an active lifestyle.

This is an important reminder for the urban planners and local officials, that instead of simply taking the total amount of green area as performance indicator, a dynamic network of open space with a variety in scale and quality that allows activity to happen is more effective. The future performance indicator of open space for a Health Community should not only be the green area sum, but the frequency that they are being used and the variety of activities.



Figure 10: Multiple uses of public space for sports and recreation.



#### 4.0 CONCLUSION

The population density and the speed of development has given China a very different context for the consideration of how to design our communities and plan strategies to promote public health. In general, the large Chinese city centers have sufficient density to provide the critical mass for effective public service, and many have a relatively good public transportation system. This has set a good foundation for sustainable development and basis to build healthy communities with low reliance on motor vehicle transportation.

City centers with longer development history have a good compact urban fabric as well, where we can focus on the optimization of dense urban neighborhoods, instead of over-build new cities to replace the old ones. However, in the last few decades the cities have been under pressure of rapid growth and development, where many new cities are being planned in haste. The fast rate of urban development is also leading to a transformation from traditional values to a new social order, which creates the class disparity and its associating issues.

This is being reflected in the character of the new urban residents as we described in this article. There is a very strong tie to family relationship and a reliance on state-provided healthcare, leading to the heavy pressure of public hospital service. Meanwhile, the rising urban middle class is also forming a lucrative consumer market for private service providers, where the issue can be seen in the case of very extreme healthcare services.

The contextual study of the article has focused on the current public health issues in the urban centers of China, where the main problem is congestion at public hospitals, which also affects their surrounding neighborhoods. Recent healthcare reform has started to approach the issue with directions to transform the nation's healthcare system. While the reform is still in early phases and being developed through various regional and local policies, the actual effects towards its goal of universal high-quality healthcare remains to be seen. It should be noted that the encouraging policies for private healthcare investment has created attractive market opportunities, but there should be a delicate balance between the market-driven approach and the vision of social equality in public health.

There is not a simple solution that would work for all. China is a country with very large population and there is a large variety of urban conditions from very different development backgrounds. For these complex conditions, it will be particularly important to conduct contextual

studies accordingly. As the ultimate goal of the Health Community concept is the well-being of its residents, and healthy lifestyle has to be archived through some level of behavioral change, the understanding of cultural background and social conventions would be key for any strategies to be effective.

Although this article has provided some generalized character of the contemporary urban residents in China, in order to create successful projects, it will be important to have a more in-depth study of local conditions for strategies that are emphatic to the users' needs. It should be noted that this article has mainly focused on the issues of existing urban centers, with Shanghai Jing'an District as an example. Certain intervention proposals are rather specific for urban regeneration of communities in similar condition. There would be some very different situations for new district developments or rural towns and villages, which should require other type of contextualized strategies.

With the understanding of urban context and the character of its residents, we see that the potential for urban centers lies in the synergy between the healthcare facilities and its surrounding communities. For this, we developed the concept of "Health Community", an integrated approach for healthcare and community planning that considers the facility and the community as a mutually benefiting system. With local sensitivity and integrated consideration, we would be able to plan and design our communities with empathy that can benefit the patients and the residents.

Through specific case study of the Shanghai Jingan District, it was established that there are in fact many available but under-utilized resources already existing in the neighborhood. Many of the current urban spaces can also be turned into effective activity-prompt places with simple design interventions.

While there are many studies currently relating to the Healthy Community theory and practice, not too many studies have been done in the context of Chinese urban development. Further research effort would be needed in order to build a conceptual framework with strategies and guideline for future development in research, theory and practice.

In the case of contemporary Chinese cities which are still under rapid urbanization and growth, the development of healthy communities is crucial to the well-being of its residents and the operation of the public healthcare system. It could be the engine for urban regenera-

tion of many inner-city districts, in bringing the focus back to the center instead of initiating more unnecessary expansion.

The promising reform objective appears to be at a good start in transforming the nation's public healthcare system, with the opportunity to build a strong community-based primary care network. There are also potentials in the private sector to further develop into the market of a mid-price range healthcare services, which could alleviate the unbalance situation of healthcare options that are currently available.

The Health Community concept is about identifying common resources and to facilitate between healthcare facility and the community through mutually beneficial programs and design interventions. Complementary work is required at multiple levels with an integrated design thinking, from a top-down development of reform policies, as well as from the community level on initiatives and specific spatial strategies. As urban design and planning professionals, the ultimate goal would be to take this conceptual framework as a tool, to achieve the vision for a Healthy Community – a socially inclusive and culturally sensitive urban environment.

## Acknowledgments

I would like to thank my partners from the original Innovation Incubator project, Luke Li and Florence Huang, for their support in research and assistance. Thanks should also go to our medical planners, Laura Zimmer in Chicago and Runchao Xu in Shanghai, for sharing their experience and insight regarding healthcare practice in different regions and cultural background.

## REFERENCES

- [1] Barton, H., and Tsourou, C., (2000). *Healthy Urban Planning*, London, UK: Spon Press.
- [2] The World Bank, (2015). "Population, Total", Data, Retrieved on 6/2015 from <http://data.worldbank.org/indicator/SP.POP.TOTL>.
- [3] Fei, X., (1992). *From the Soil (Xiangtu Zhongguo)*, Berkley, CA: University of California Press.
- [4] Wu, C., et al, (2014). "From Insight to Action: Capturing a Share of China's Consumer Health Market", Report, Retrieved on 03/2016 from [http://www.bcg.com.cn/en/files/publications/reports\\_pdf/BCG\\_From\\_Insight\\_to\\_Action\\_Feb\\_2014.pdf](http://www.bcg.com.cn/en/files/publications/reports_pdf/BCG_From_Insight_to_Action_Feb_2014.pdf).
- [5] The PRC State Council, (2009). "Healthcare and Medical Reform Working Memo", Retrieved on 8/2015 from [http://www.gov.cn/zhengce/content/2009-07/23/content\\_6221.htm](http://www.gov.cn/zhengce/content/2009-07/23/content_6221.htm).
- [6] Sussmuth-Dyckerhoff, C., and Wang, J., (2010). "China's Health Care Reform", *Health International*, No. 10, pp.55-67.
- [7] The PRC State Council, (2015). "Planning Brief of the National Medical and Health Service System", Retrieved on 4/2016 from [http://www.gov.cn/zhengce/content/2015-03/30/content\\_9560.htm](http://www.gov.cn/zhengce/content/2015-03/30/content_9560.htm).
- [8] Sussmuth-Dyckerhoff, C., and Wang, J., (2010). "China's Health Care Reform", *Health International*, No. 10, pp.55-67.
- [9] Deloitte, (2015). "2015 Healthcare Outlook China", Retrieved on 11/2015 from <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Life-Sciences-Health-Care/gx-lshc-2015-health-care-outlook-china.pdf>.
- [10] Alkan, B., (2014). "A Vision and Planning Framework for Health Districts of the Future", *Perkins+Will Research Journal*, Vol. 6, No. 2, pp.57-70.
- [11] Rapoport, A., (1982). *The Meaning of the Built Environment*, Tucson, AZ: The University of Arizona Press.
- [12] Ulrich, R., (1984). "View through a Window Many Influence Recovery from Surgery", *Science*, Vol. 224, pp. 420-422.
- [13] The PRC State Council, (2015). "Planning Brief of the National Medical and Health Service System" Retrieved on 4/2016 from [http://www.gov.cn/zhengce/content/2015-03/30/content\\_9560.htm](http://www.gov.cn/zhengce/content/2015-03/30/content_9560.htm).
- [14] Gehl, J., (2011). *Life Between Buildings*, Washington, DC: Island Press.