

Healthcare in China: Challenges and Gaps

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Aim

Drawing from informal surveys¹, sentiments on social media (Sohu, Zhi Hu and Weibo), as well as open source data, this paper aims to highlight persisting healthcare challenges in China, as well as those that the country would potentially face in time to come.

Background

The problem of health care inequalities in China became noticeable after the turn of the new millennium. Public discontent with limited access to care and soaring expenditures (termed as “Kan-bing-nan” [difficult to receive medical care] and “Kan-bing-gui” [medical treatment is expensive] by the Chinese press) grew and finally prompted a major health care reform in 2009. The reform placed great emphasis on promoting primary health care, expanding the coverage of social health insurance, working off price markups of drug sales, innovating public hospitals and promoting diversified channels of health care provision. The ultimate goal was to align domestic health care with broader trends of universal health coverage (UHC) worldwide.²

Fast forward to 2015, healthcare system reform remains a pressing concern in China. In fact, during the National People’s Congress (NPC) and Chinese People’s Political Consultative Conference (CPPCC) sessions in 2015, healthcare system reform was the third-highest issue of concern among citizens. The “Thirteenth Five-Year Plan for Health and Wellness” of the State Council in 2016 pointed out that the total amount of healthcare resources in China is insufficient, and academics from the country’s medical field had noted that following the outbreak of COVID-19, it became clearer that uneven allocation of resources in the country was a core issue.

Today, in China’s 14th FYP,³ the country aims to achieve the following by the end of five years: (i) construction of national regional medical centers; (ii) construction of a number of high-level clinical diagnosis and treatment centers, (iii) building of high-level talent training bases, and high-level scientific research innovation and transformation platforms; (iv) create “@Internet + medical health” collaboration platforms; and (v) form a group of specialist alliances with national and regional medical centers as the core.

¹ A total of 30 participants from various regions and provinces in China have been surveyed. They include: Jiangsu, Beijing, Shanghai, Sichuan, Guangdong, Shanxi, Chengdu, and Qinghai.

² Zheng, L., Zhang, L., Chen, K., & He, Q. (2022). Unmasking unexpected health care inequalities in China using urban big data: Service-rich and service-poor communities. Plos one, 17(2), e0263577.

³ http://www.ce.cn/xwzx/gnsz/gdxw/202204/27/t20220427_37535670.shtml

While these plans have been put in place, several healthcare issues continue to persist in the immediate term, as well as in the near future.

Persisting Healthcare Challenges

1. Disparity in resource allocation

Resource allocation has been uneven across the country. And by resources, we are referring to both 'hardware' (hospital buildings) and 'software' (i.e. medical professionals). As early as in 1989,⁴ China began to implement the hospital classification management system. In pursuit of various benefits brought by these ratings, hospitals excessively pursue scale expansion, exerting a "siphon effect" on primary healthcare resources.

The contradiction between people's demand for high-quality healthcare resources and misallocation and insufficient supply of healthcare resources constitutes the main contradiction in the field of healthcare care.⁵ Misallocation of healthcare resources has led to inefficient operation of China's medical system, and therefore promoting even healthcare resources allocation is a livelihood issue that the Chinese government should address as a major problem.⁶

a. Hospital Distribution

According to official reports that account for hospital numbers in provinces across China, it was reported that - the number of hospitals in China shows a distribution characteristic of "decreasing from southeast to northwest" . The more economically developed regions of East China and Central South China have the most number of hospitals (13 provinces in these two regions account for 50% of the country's total number of hospitals), followed by the Northern, Southwest and Northeast region, and provinces located in Northwest China have the least number of hospital

⁴ Chen, Z., Barros, C. P., & Hou, X. (2016). Has the medical reform improved the cost efficiency of Chinese hospitals?. *The Social science journal*, 53(4), 510-520

⁵ Yang, L., & Li, S. (2016). Factors and Improvements in the Misallocation of Urban and Rural Medical Resources. *Economic Perspectives (Jingjixue Dongtai)*, 9, 57-68.

⁶ Zou, W. (2014). Poverty Reduction Effects and Threshold Characteristics of Equalization of Health Services: Analysis Based on Spatial Heterogeneity. *Economist (Jingjixuejia)*, 8, 59-65.

- accounting for only 8.6% of the national total, with Ningxia and Qinghai provinces having the least.⁷

However, if we look at the hospital capacities from the angle of per capita (no. of hospitals per million people), it was observed that capacities were stretched even in regions with the most number of hospitals (East and Central South China - with provinces such as Shanghai, Guangdong, Zhejiang, Jiangsu, Fujian, Henan and even within the same city, also exists. (Ling et al., 2011) Differences in healthcare resources and unfair accessibility across different districts can be observed (Chen et al., 2019). This is especially prominent in provinces and cities in the Northeast and Western regions to overall inequality nationwide. Trends of huge disparities within underdeveloped regions and provinces indicate eminent pro-developed inequality and a serious problem of unequal allocation of quality health care resources.⁸

With these disparities and lack of adequate community-level healthcare, citizens are flocking to large hospitals, resulting in a shortage of medical capacity to address everyone's needs. Sentiments from surveys and social media postings have also shown that people were concerned about access to healthcare within their communities. Due to the lack of community-level hospitals, many had to travel long distances to larger public hospitals. Of note, they have also highlighted that even for existing community hospitals, many are not well-equipped in terms of equipment and medical expertise to handle more complicated health issues. Shanxi is one province that has been highlighted to lack these capacities and expertise, and of note, diagnosis guidelines and standards were also inadequate. In all, there is not just inadequate hospitals, but also disparity in terms of quality and expertise of healthcare. We will now take a closer look in terms of disparity in medical personnel allocation.

⁷ Zheng, L., Zhang, L., Chen, K., & He, Q. (2022). Unmasking unexpected health care inequalities in China using urban big data: Service-rich and service-poor communities. Plos one, 17(2), e0263577. https://finance.sina.com.cn/jjxw/2022-04-15/doc-imcwiwst1995175.shtml?cre=tianyi&mod=pcpager_fintoutiao&loc=18&r=0&rfunc=47&tj=cxvertical_pc_pager_spt&tr=174

⁸ Ibid

Figure: Hospital Numbers Across China

图表5: 总量上, 我国医院数量呈“东南到西北递减”的分布特征

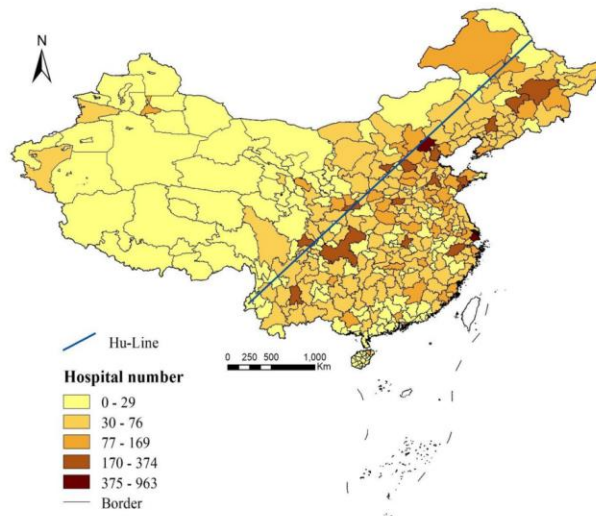
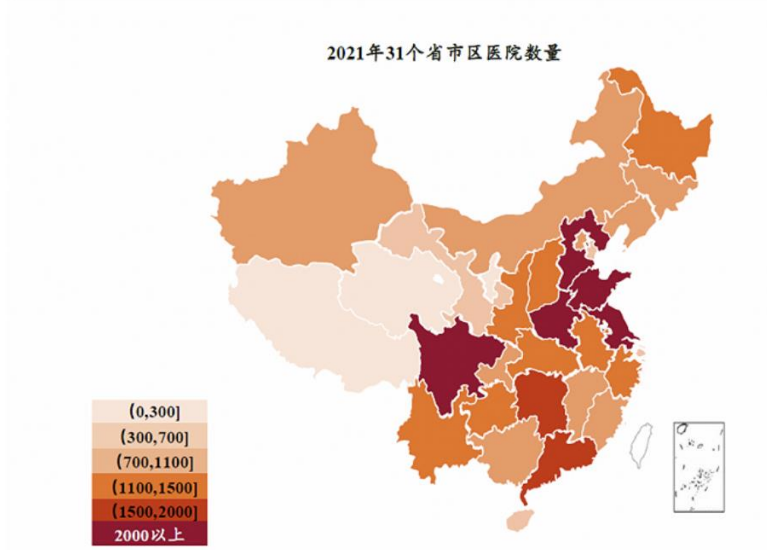


Fig 3. Distribution of quality hospitals (DoQ).
<https://doi.org/10.1371/journal.pone.0263577.g003>

b. Medical Personnel

China's healthcare system adopts an administrative hierarchical model, in which administrative forces determine resource allocation.⁹ The higher level a hospital is at, the more government financial investment, the larger the land occupation, the more advanced the equipment, and the higher doctors' salary level.¹⁰ This has resulted in disparity in terms of medical personnel allocation across the country.

In terms of the number of doctors per capita, the Northern region of China was reported to have significant advantage, followed by provinces in the Eastern Region. Provinces in the Central South and Southwest regions were reported to have relatively scarce resources. The number of practicing doctors/thousand people stands at 3.0 in 2021, with Beijing, Yiqi, and Juechen provinces having significantly high numbers of 5.7 doctors/thousand people. Of note, provinces like Guangdong, while rapidly developing, only see 2.5 doctors/thousand people, lower than the national average. Internally, Guangdong also see disparities in different regions within the province - with the east, west and north of Guangdong having the weakest medical institution. Yunnan, Guizhou, Tibet, and Xinjiang were the other provinces pointed out to be ranked much lower in doctors per capita.¹¹

In terms of the number of nurses per capita, Beijing, Shanghai, Zhejiang, Jiangsu and other provinces still have the upper hand. Shortage of nurses were observed in provinces such as Hebei, Tianjin and other provinces in Northern China despite them having more doctors per capita. However, in all, the number of nurses per capita in China is still considered adequate, and not as scarce as doctors. Of note, Beijing has recorded the highest number of registered nurses per 1,000 people at 6.5. Shanghai, Zhejiang, and Jiangsu provinces came close after Beijing. Provinces comprising Guangdong, Anhui, Fujian, among others, were reported to still have insufficient nurses per capita.¹²

⁹ Du, C., & Zhu, H. (2016). The Evolution Logic of China's Urban Healthcare System. *Social Sciences in China (Zhongguo Shehui Kexue)*, 8, 66–89.

¹⁰ Zhu, H. (2017). The Root Cause for the Difficulty of Development a Hierarchical Medical System Is in Medical Care, Not in Medical Insurance. *China Health Insurance (Zhongguo Yiliao Baoxian)*, 5, 20–22.

¹¹ Zheng, L., Zhang, L., Chen, K., & He, Q. (2022). Unmasking unexpected health care inequalities in China using urban big data: Service-rich and service-poor communities. *Plos one*, 17(2), e0263577. https://finance.sina.com.cn/jjxw/2022-04-15/doc-imcwiwst1995175.shtml?cre=tianyi&mod=pcpager_fintoutiao&loc=18&r=0&rfunc=47&tj=cxvertical_pc_pager_spt&tr=174

¹² Ibid. 11

Figure: Number of Doctors per Capita Across China
 图表2: 2021年各省市区人均医生资源的分布情况

2021年31个省市区每千人执业医生（助理）数量



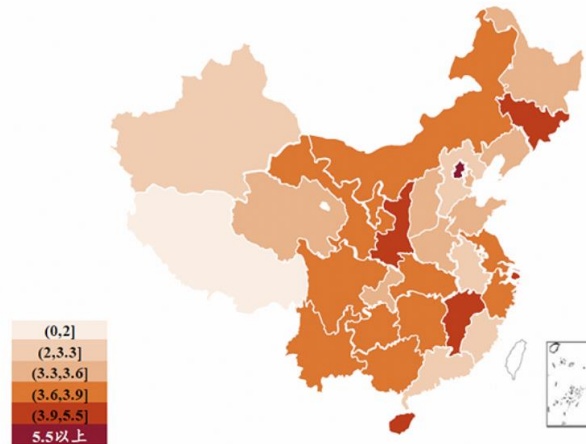
资料来源: 各省市区 2021 年统计公报、粤开证券研究院罗志恒、原野等整理

注: 由于吉林、西藏、青海、宁夏未披露 2021 年统计公报; 相应省市区的数据采用 2020 年数据替代。

Figure: Number of Nurses per Capita Across China

图表3: 2021年各省市区人均护士资源分布

2021年31个省市区每千人注册护士数量



2. Infrastructure and Systems-Specific Gaps

Besides disparity in resource allocation, we will now also explore specific infrastructural and system gaps. In 2020, the Chinese central government set aside 45.66 billion yuan (for investment in the public health system).¹³ However, as the pandemic enters its third year with the omicron variant causing a global surge of infections, China still faces enormous challenges of uneven distribution of medical resources across its vast territory. Of note, three areas were specifically highlighted: (1) Lack of Intensive Care Units (ICUs), (2) Lack of Efficient Public Emergency Health System and Accident Emergency System (3) Lack of efficient registration system in hospitals; and (4) Infrastructure surrounding hospitals reduce accessibility.

In terms of ICU capacity, a medical research study observed that ICU capacities were uneven in different regions - with the Northeastern, Northwestern, and Central Regions having higher ICU bed capacities as compared to the Southern region.¹⁴ Of note, it was also highlighted that a comprehensive, integrated ICU system was lacking. This would include ensuring ICU standards - environment settings (i.e. ventilation system, temperature, lighting, noise control, among others), as well as ensuring adequate personnel who are trained in intensive medicine to run operations. Equipment and resources such as ventilators and ECMO were also highlighted to be insufficient, one that was extremely starking during the pandemic. President of Tianfu Hospital in Sichuan Province, Kang Yan (四川大学华西天府医院院长、华西医院重症医学科教授康焰),¹⁵ who had handled the aftermath of the Sichuan earthquake as well as had his hands on when the pandemic first broke out in Wuhan, had also added that: Intensive medicine is a relatively 'young' discipline in China, and the country needs to build on this area to handle major disasters and public health emergencies that would see large number of critically ill patients in a short span of time”.

As for China’s Public Health Emergency System (PHES), it was also pointed out by citizens that the country lacks a robust emergency system. Of note, Chen Xiaohong (中国工程院院士、湖南工商大学校长陈晓红), a academic from the Chinese Academy of Engineering and President of Hunan Technology and Business University had also pointed out several issues with China’s PHES - (1) strategic positioning and planning of the country’s public safety emergency management layout is still unclear, affecting the design of emergency management systems; (2) efficient data sharing through appropriate channels are not in place (especially databases that support disaster assistance); and (3) government crisis management technology is fragmented - there is a lack of integration from data, to decision making, and emergency response. This has

¹³ <http://html.rhhz.net/ZGWSZY/html/2021-4-453.htm>

¹⁴ <http://html.rhhz.net/ZGWSZY/html/2021-4-453.htm>

¹⁵ <http://www.xinhuanet.com/health/20220301/da561d7e936143f69611f316b5537d47/c.html>

resulted in duplication of efforts at time, and resource misallocation. It was also highlighted that coordination needs to be clear both at the state level, as well as at the provincial level.¹⁶

Still on emergency systems, it was also highlighted by netizens that the country's hospital accident and emergency (A&E) capacity is lacking. In a People's Political Consultative Conference (Mar 2022), it was emphasised by Huo Yong (全国政协委员、北京大学第一医院心脏中心主任、心内科主任霍勇), a member of the committee and director of Peking's Heart Center and Cardiology Department - that the country's construction of emergency system requires top-level national design and policy support.¹⁷ It was pointed out that nearly 80% of patients with cardiovascular disease in China died outside the hospital, and some of them died at home or on the way to the hospital because of the long pre-hospital emergency treatment time and unstandardized procedures. It was recommended that county-level emergency system and pre-hospital first aid system must be improved, with the support of policies that allow better coordination and optimisation of resources, as well as the standardising of treatment processes. **Specific to county-level emergency systems, it was mentioned that at the country level, dispatching capacity is stretched, and emergency stations are inadequate. This resulted in slow emergency response time, affecting the prognosis of patients.** Several survey participants from Shanghai and Guangdong provinces have pointed to the aforementioned as an important healthcare challenge to be addressed.

Another pain-point that has been highlighted in hospitals - is the lack of efficient registration systems. Survey participants especially from Beijing and Jiangsu have brought this point out repeatedly - emphasizing that despite adequate hospitals in the city, registration and administrative processes were taking far too long. Registration processes have been mentioned to be a "choke point" when accessing medical services. Of note, it was mentioned by netizens that registration and administrative processes were lacking in technology advancement.

Lastly, it was also pointed out by netizens that Infrastructure surrounding hospitals were inefficient, affecting accessibility into hospitals. For instance, the lacking of parking spaces, inefficient road infrastructure and traffic management were highlighted. This is however, not an issue specific to healthcare facilities, but also to other public amenities in the country (i.e schools).

3. Training, Retainment of Personnel, and Expertise Development

Another healthcare issue highlighted was that of training, and retaining medical expertise. In a research conducted¹⁸, human capital deficiency is one of the key factors that have negatively impacted the ability of the healthcare sector towards offering quality health care. The author also

¹⁶ https://www.cae.cn/cae/html/main/col35/2020-03/04/20200304130017180515681_1.html

¹⁷ <http://www.anke.net.cn/industry/262.html>

¹⁸ Balding, C. (2020) China's poor public health care has hindered coronavirus fight. NIKKEI Asia.

indicates that unlike in the United States where there are about 1,500 people per general practitioner, China has only one¹⁹ practitioner per 23,000 people.

In Guizhou province, it was reported that medical staff at the grassroots level were not familiar with medical treatment procedures and processes, especially in the area of disease prevention and control. In order to improve the province's medical system, it was recommended that improvements be made to retain talents, improve their training, and improve medical technology capabilities.

Also in Guangxi Zhang Autonomous region²⁰, a plan (aligned to the 14th FYP) has been put forth to improve the area's medical system. Of note is its emphasis on strengthening the grassroots-level's medical talent team by: (1) gradually improving the attractiveness of grass-roots medical and health institutions to attract and retain talent; and (2) increase the training of grass-roots medical and health personnel, and further consolidate the foundation of grass-roots talent team.

Rural doctors are not only paid a meager amount, but are also prejudiced due to their²¹ perceived lack of professionalism. According to the National Health Commission, the nation only had 792,000 grassroots doctors in 2019, down by 231,000 from 2012. There were also 120,000 fewer clinics in the villages as compared to 2012. Meager salaries, insufficient supporting policies, and bleak promotion prospects have left China with a growing shortage of grassroots medical personnel. As the central government moves to improve their remuneration and social status, there is still much to do to elevate this aspect.

Training and expertise development and retainment remains an important healthcare gap in China - commonly identified short falls include lack of training opportunities for practitioners and poor integration between clinical care and the public health service and other health sectors. According to Sun et al. (2021)²², the large-scale transmission of the coronavirus has not only raised alarm but also exposed the weak capacity of community hospitals in China. This weakness results from factors such as incompetent doctors and limited ability for virus testing.

All in all, the uneven allocation of "talents" across the medical industry - with better and more experienced doctors serving larger public hospitals vis-a-vis community and grassroots level hospitals, has also contributed to this phenomena.

¹⁹ <http://health.people.com.cn/n1/2022/0316/c14739-32376599.html>

²⁰ http://wsjkw.gxzf.gov.cn/xxgk_49493/fdzdgg/gkwj/zcjd/t11603816.shtml

²¹ http://english.www.gov.cn/news/topnews/202109/08/content_WS61380be4c6d0df57f98dfd7d.html

²² Sun, S., Xie, Z., Yu, K., Jiang, B., Zheng, S., & Pan, X. (2021) 'COVID-19 and healthcare system in China: challenges and progression for a sustainable future', *Globalization and Health*, 17(1), pp. 1-8.

4. Medical Insurance and Cost

According to Li et al. (2020)²³, one of the main obstacles towards accessing quality health care is financial barriers. Although the Chinese government has made large-scale infrastructural investments when it comes to accessing healthcare, evidence shows that a significant number of residents minimize the use of medical services due to financial reasons. On this note, many also choose to wait at overcrowded hospitals to receive treatment instead of choosing a private hospital, in view of high medical costs.

Medical insurance has been emphasized once again, as an important aspect to be beefed up in China. The State Council's executive meeting chaired by Premier Li Keqiang in Sep 2021, adopted the 14th FYP for National Medical Security and made arrangements on improving the medical insurance system to better meet people's needs for medical services and drugs. According to Premier Li, China has been working towards establishing a basic medical insurance system with universal coverage to make medical services more accessible and affordable. During the 13th FYP period²⁴ (2016-2020), basic medical insurance schemes covered 1.36 billion people, with the coverage rate staying above 95 percent. However, netizens have still surfaced medical insurance coverage as an issue.

According to a study²⁵ by Lee et al. (2022), while majority of Chinese adults have health insurance - with only 3.15% of the population uninsured, most only had low coverage insurance (approx. 65% of the population). This has affected the extent of insurance coverage and access to quality care.

Long-Term Healthcare Concerns

1. Healthcare services for the aging population has been highlighted as a key concern in the long run, among netizens.

In just 20 years' time, the population of people over 60 years old in China is projected to reach 28% of the population due to longer life expectancy and declining fertility rates, making it one of the most rapidly-aging populations in the world. This huge demographic shift presents new challenges and opportunities for public health and socioeconomic development – in particular, the development of an integrated system that caters to the health and social needs of older

²³ Li, X., Krumholz, H. M., Yip, W., Cheng, K. K., De Maeseneer, J., Meng, Q., & Hu, S. (2020) 'Quality of primary health care in China: challenges and recommendations', *The Lancet*, 395(10239), pp. 1802-1812.

²⁴ http://english.www.gov.cn/premier/news/202109/15/content_WS6141f29ac6d0df57f98e038f.html

²⁵ <https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-022-07498-1>

people, 75% of whom suffer from noncommunicable diseases, with equal access to health care regardless of geographical area²⁶.

China has been innovating for improved access of older people to integrated care, by means of a community-based social and health care system that covers also chronic disease control and prevention, strengthened health services and is staffed with a large health workforce. A national-level center for Gerontology was established in 2015 to look into elderly-related scientific research, clinical care, rehabilitation services, public health policies and health management²⁷.

However, many still feel that more needs to be done to ensure that the country's healthcare system is able to support an aging population.

2. Mental Health related healthcare services were also highlighted as a long term issue to be addressed in China.

Health experts²⁸ have called for increasing investment in mental health services in China, as a study has revealed that only 0.5 percent of people suffering depressive disorders received adequate treatment. It is estimated that 9.5 percent of individuals diagnosed with different degrees of depressive symptoms used mental health services, and an even lower 3.6 percent of patients sought treatment from psychiatric specialists. About 7 percent visited healthcare institutions or took psychotropic drugs, 0.3 percent enlisted help from social services, and 2.7 percent turned to traditional Chinese medicine or other alternative therapies, the study said.

While China has in recent years²⁹, implemented requirements to “strengthen the construction of the social psychological service system”, and look into the construction of a National Social Psychological Service System, netizens have pointed out that stigmatization and lack of education in mental health remains an issue, hindering the population from seeking help. More needs to be done to address this issue.

Conclusion

China's healthcare has undergone significant reform over the years however, more needs to be done to address the aforementioned issues. This report indicates that there are areas where a small financial investment can reap large returns. While policy changes and system integration

²⁶ <https://www.who.int/china/health-topics/ageing#:~:text=China%20has%20one%20of%20the,expectancy%20and%20declining%20fertility%20rates>.

²⁷ Han, Y., He, Y., Lyu, J., Yu, C., Bian, M., & Lee, L. (2020). Aging in China: perspectives on public health. *Global Health Journal*, 4(1), 11-17.

²⁸ <https://www.chinadaily.com.cn/a/202110/07/WS615e3421a310cdd39bc6d480.html>

²⁹ http://www.xinhuanet.com/finance/2021-10/12/c_1127945973.htm



can be long and drawn out processes, healthcare training can be carried out swiftly and effectively. Enrichment medical training of existing healthcare professionals can quickly raise quality and performance. Installing updated, cutting edge software and training the staff for dispatch of emergency services as well as for the hospital registration process do not require long lead times or high costs. These can cost-effectively help save lives.