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# Strengthening primary health care in China: governance and policy challenges

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## Abstract

Primary care is often the weakest link in health systems despite its acknowledged central importance in promoting population's health at economical cost. A key reason for the lacunae is that both scholars and practitioners working on the subject typically underestimate the enormity of the task and the range of complementary measures required to build an effective primary care system. The objective of the paper is to highlight theoretical gaps and practical limitations to strengthening primary care. The challenges and difficulties are illustrated through a case study of China where primary care continues to struggle despite the government's strong political, financial and policy support in recent years. In this paper, we review the development of primary health care in China and how it is governed, provided, and financed, highlighting the gaps and misalignments that undermine its performance. We argue that governance deficiencies coupled with flawed financing and payments arrangements are major impediments to improving performance. China's experience offers valuable lessons for other governments seeking to strengthen primary health care.

**Keywords:** China; governance; health financing; health reform; primary care

## 1. Introduction

COVID-19 has once again highlighted what has been known for some decades: primary care is vital for protecting populations' health and promoting wellbeing. The reasons for the salience include, in the words of WHO (2020) '... better health outcomes, improved equity, increased health security and better cost-efficiency....' in a similar vein, OECD (2020) notes: 'Strengthening primary health care offers opportunities to make health systems more efficient, effective and equitable (OECD, 2020).' Yet, primary care is often the weakest component in countries' health system despite concerted efforts to strengthen it over decades. The objective of the paper is to understand and highlight the conditions that stymie primary care despite strong commitment to strengthening it. We focus on the case of China which in recent years has devoted unparalleled attention and resources to building primary care in the country.

A well-developed network of primary care providing necessary services at affordable costs to the population offers tremendous potential for strengthening the overall health system. First, primary care providers are typically located in proximity to patients which makes them suitable for providing preventive and public health services. They are especially effective at maintaining a long-term relationship with patients, and thus track their health status, and managing chronic diseases that require continuous care. Second, a well-established referral system linking primary care and other providers allows the former to serve as 'gatekeepers' of the health system. Referral

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arrangements allow better use of hospitals resources by ensuring that only those requiring specialist treatment use it. As patients usually have less knowledge of the range and quality of health services, primary care providers can make better decisions on secondary care on behalf of patients. Third, primary care facilities are an effective tool against communicable diseases which require only basic services that are best delivered locally by the primary care provider (WHO, 2018). Fourth, strong primary health care improves efficiency by reducing the unnecessary use of more expensive diagnostic services offered by hospitals. Finally, primary care makes health services more responsive by bringing services closer to where people live.

Discussions on primary care tend to be pitched either at macro level or concentrate on micro-level details. Bulk of the studies on primary care are, in fact, of the latter type, focussing on the composition and effects of specific interventions (Espinosa-González *et al.*, 2019). While often rigorous and insightful, they tend to miss the larger picture and do not shed much light on how the individual interventions relate to other interventions and the overall system (Kruk *et al.*, 2010).

At the macro-level, several studies dwell on assessment of the quality of care or attainment of goals of primary health care (e.g. Starfield, 1979; Donabedian, 1988). Studies by international organisations and think tanks, on the other hand, tend to focus on highlighting the need for strengthening primary care, followed by a variety of recommendations to make it a reality. OECD (2020), for example, recommends a move away from hospitals for delivery of primary health care services, reorganisation of primary health care based on teams and integrated networks, and adoption of bundle and population-based payments, and introduction of new modes of delivering care through digital consultations, mobile clinics, and workplaces. Similarly, WHO (2020), recommends four core 'strategic levers': political commitment and leadership; governance and policy frameworks; funding and allocation of resources; and the engagement of communities and other stakeholders. The strategic levers are to be supported by ten 'operational levers', including workforce, infrastructure, medicines, private providers, purchasing and payment systems, and digital technologies for health. In the United States, the National Academies of Sciences, Engineering, and Medicine (2021) has proposed an equally elaborate plan for rebuilding primary care spanning value-based payment, universal access, appropriate medical training, and use of relevant technology.

What is lacking in such proposals is clarity on the difficulties that implementing the reforms involve and how to overcome them. A comprehensive discussion of strengthening primary care would include exploration of the specific problematic conditions that stymie its strengthening and the tools required to address them. It would also include consideration of the different difficulties the suggested measures are likely to face and how and in which sequence to adopt and implement them. Without considering these concrete issues, the recommendations for strengthening primary care appear as expression of pious hopes.

There are five sets of policy problems that are central to health systems, including primary care: governance, provision, financing, payment, and regulations (Ramesh and Bali, 2021). How they are tackled crucially affects the system's performance and its outcomes. Of these, governance is the most crucial because it extends to and underpins the other functions, and it is on this particular function on which we will focus in this paper. The key challenge for governance is to bring together the different components of health system to work towards a common goal.

Governance refers to arrangements for developing policy goals and ensuring through appropriate use of policy tools that the key stakeholders work towards their achievement. In health care, this involves developing a shared goal and ensuring that arrangements and tools exist for achieving them. Our definition is more precise than many others in the literature, including one offered by WHO (2020) which defines governance as arrangements for 'ensuring strategic policy frameworks exist and are combined with effective oversight, coalition building, regulation, attention to system design and accountability'.

China's determined efforts in recent years to strengthen primary care make for an apt case study for understanding the challenges and drawing lessons. First, China descended from

being a top health care performer in the 1960s to a laggard by the 1990s. Infant mortality rate (below one year old) decreased from 135 per 1000 in the early 1960s to 45 in the early 1980s but the pace of improvement then stagnated amidst policy changes in the 1990s (World Population Prospects, 2019). Much of the stagnation has been attributed to the decay of primary care in the country due to policy neglect (Ge and Gong, 2007). Second, the scope and depth of China's efforts to re-build the health care system from grounds-up, founded on primary care, has few parallels in the world. In addition to massive increase in public expenditures, national and local governments have launched hundreds of programs to strengthen primary care, including numerous pilot programs experimenting with different provision and payment arrangements. Third, China's case shows that governments' efforts and strong political, financial and policy support are insufficient ingredients for success as many of the system's shortcomings continue to persist despite notable successes. The factors that explain both success and failure offer valuable lessons to other governments contemplating reform of their primary care services.

Our analyses of primary care reforms in China show notable progress but we also note serious shortcomings. We argue that the reforms' limited achievements are the result of gaps in governance structures and inappropriate use of policy tools that undermine reform efforts. Specifically, the fragmented governance of the sector continues to undermine its performance. The problems are compounded by the clinics' heavy reliance on sale of drugs and services for revenues and the perverse incentives fostered by fee for service payments and out of pocket financing.

## 2. Primary care in China

Primary health care is often defined in terms of philosophy or strategy centred on integrated services, multi-sectoral policies, and empowered communities (WHO, 2020). We adopt a narrower definition, focussed on the health care services available at the first point of contact. Although primary care is meant to be provided by nearby clinics, in reality, hospitals are often a major provider of primary care which makes it difficult to exclude them from study. As such, in this study we will cover all primary care, regardless of the setting in which it is provided.

Primary care clinics in China provide general outpatient care as well as public health services such as vaccination and health education (Li *et al.*, 2017). There are separate institutional structures for urban and rural areas. In urban areas, PC is available at community health centres and health service stations, while in rural areas it is available at township health centres, township health clinics and village clinics. The services they provide are fragmented and widely perceived as being of inadequate quality. In the mid-2000s, the Chinese governments expanded its efforts to strengthen primary care as part of its broader goal of compressively reforming the country's health care system. In the following discussion, we outline the evolution of the primary care system in China.

### 2.1 The emergence of primary care: 1950–1980

During Mao's rule, health care programs focused on urban work units and state enterprises (Qian and Blomqvist, 2014). State-owned enterprises had their own clinics for primary care, largely funded by government grants (Frazier, 2002; Duckett, 2012). Rural areas were organised into communes that provided primary care through 'Barefoot doctors' and funded through Cooperative Medical Schemes (CMS) (Hu 1976; Wang, 2011).

### 2.2 The retreat of the state from primary care: 1980–2000

With the onset of economic liberalisation in the 1980s, China's primary care system, built during Mao's era, began to deteriorate due to dissolution of state enterprises and rural communes. Limited funding adversely affected maintenance of facilities and patients' perceptions. Hospital

beds in township health centres rose from 46,000 in 1960 to 775,000 in 1980, then fell to 669,000 by 2004. However, general hospital beds increased from 941,000 to 1.78 million between 1980 and 2004, reflecting the relative decline of resources for primary care (China Health Statistical Yearbook, various years). Visits to township health centres decreased from 1.07 billion in 1990 to 824 million in 1999, and bed utilisation dropped from 56% in 1981 to 31% in 2001 (China Health Statistical Yearbook, various years). This trend began to reverse only after the mid-2000s following policy initiatives to revitalise primary care.

The decline of primary care was driven primarily by decrease in government funding for health, which fell from 38.6% of total health expenditure in 1985 to 15.8% in 1999 (China Health Statistical Yearbook 2021). Moreover, funds were increasingly allocated to public hospitals rather than primary care clinics. The problem was aggravated by widening disparities in government health spending. In response to funding cuts, primary care providers focused on generating income directly from patients via user charges. This shift, in the absence of robust insurance programs, led to an emphasis on curative rather than public health and preventive services. This declining state of primary care was reflected in the population's health status. For example, the prevalence rates of infectious diseases such as TB increased in China during the 1990s and early 2000s (Ge and Gong, 2007: 89).

### **2.3 Rebuilding primary care: 2000 to present**

The outbreak of severe acute respiratory syndrome (SARS) in 2002 woke the Chinese government to the perils of weak primary care and galvanised it into action. In 2004, a swathe of fiscal and organisational reforms promoting public health were introduced, backed by increased budget allocation for primary care. The efforts reached new heights in 2009, following the government's commitment to rebuilding the health system from grounds up encompassing all major components of the system. This followed the realisation that many flaws were systemic that required a comprehensive response rather than the piece meal responses that had been tried in earlier reforms.

A major government document released at the 6th plenum of the 16th party congress in 2006 spelled out a vision of an integrated health system throughout the country. To improve access to health care, it called for building a health service network in rural areas and community health centres in urban areas<sup>1</sup>. It also called for integrating urban and rural health resources, building a referral system between hospitals and primary care providers, and encouraging medical personnel at hospitals to provide services at primary care clinics<sup>2</sup>.

The post-SARS reforms started with reorganisation of the public health functions which had been the responsibility of epidemic control stations at provincial, city, and county levels. After SARS, responsibility for infectious diseases was consolidated under Chinese Centre for Disease Control and Prevention (CCDC) (Huang, 2015: 93). The national level CCDC is mainly responsible for research and guidance on public health service provision while the sub-national levels are responsible for investigation and surveillance of infectious diseases as well as community-level public health service delivery. Primary care clinics are expected to play a supportive role in public health service delivery.

A vital component of the renewed commitment to primary care was the substantial increase in funding for it. Since 2009, the Chinese government has continuously increased budget allocation for building health infrastructure, training healthcare workers, and paying healthcare workers. To align public primary care providers' incentives with the needs of the population, public financing has been decoupled from the revenues they generate. Earlier, a portion of the funding for providers was linked to the revenues they generated which offered incentives to concentrate on services that generated surplus revenues.

<sup>1</sup>[http://www.gov.cn/gongbao/content/2006/content\\_453176.htm](http://www.gov.cn/gongbao/content/2006/content_453176.htm), accessed on 7 April 2022.

<sup>2</sup>[http://www.gov.cn/gongbao/content/2006/content\\_453176.htm](http://www.gov.cn/gongbao/content/2006/content_453176.htm), accessed on 7 April 2022.

The health reforms initiated in 2009 have also sought to enhance coordination and economy of scale by integrating hospitals and primary care clinics into health care ‘conglomerates’. The conglomerates are expected to promote better planning and sharing of resources across facilities within a region. The integration is also designed to facilitate referral decisions by both primary care providers and hospitals<sup>3</sup>.

Building a working referral system between primary care and secondary service providers has been another key component of the reform efforts. To incentivise patients to visit primary care providers before visiting hospitals, reimbursement rates are lower for those without referral. Furthermore, to reduce areas of competition between primary and secondary care providers, some public health services have been designated specifically for the former.

Reducing costs of drugs has been a major priority of the government and efforts in this respect were ramped up in 2009. All government-owned primary care clinics in both rural and urban areas are required to sell essential medicines – defined as cost-effective drugs that serve basic medical needs – at procurement price with ‘zero mark-up’<sup>4</sup>. The list has been continuously expanded and in 2018 included 685 drugs<sup>5</sup>. To compensate for loss of revenues due to zero mark-up on drug prices, social insurance reimbursement for essential medicines is set at a substantially higher rate compared to other drugs (Qian and Blomqvist, 2014; Qian, 2022).

To strengthen system-wide stewardship and coordination in the health care sector, in 2018 the government established two peak agencies with distinct sets of oversight responsibilities. The National Health and Family Planning Commission was relaunched with sharper focus as the National Health Commission (NHC) with overall responsibility for provision of health care, including planning, regulation, and administration. At the same time, a parallel new agency called the National Healthcare Security Administration (NHSA) was established with responsibility for health care financing and payment as well as procurement of drugs. The two agencies together are intended to provide firm stewardship and clear direction to provision, financing and payment functions in health care in the country.

One notable trend in Chinese health care reforms is the absence of efforts to promote community engagement, a major theme in the literature on primary care. Existing work on the subject argue that community participation in design and delivery of services is critical for the success of primary care (Hou *et al.*, 2017; Liu *et al.*, 2019; Haque *et al.*, 2020) but these arguments are yet to be reflected in the health policy reforms in China (Xu and Mills, 2019; Xiong *et al.*, 2023).

### 3. Discussion: strengthening primary care in China

While it is still early for firm assessment, emerging evidence suggests that recent efforts to strengthen primary care in conjunction with broader health reforms in China are producing desired results. The number of urban community health centres increased from 5900 in 2010 to 9800 in 2020. At the same time, government subsidy for these clinics increased from RMB 10.9 billion to RMB 81.7 billion over the same period, an average annual growth rate of over 22% (Figure 1).

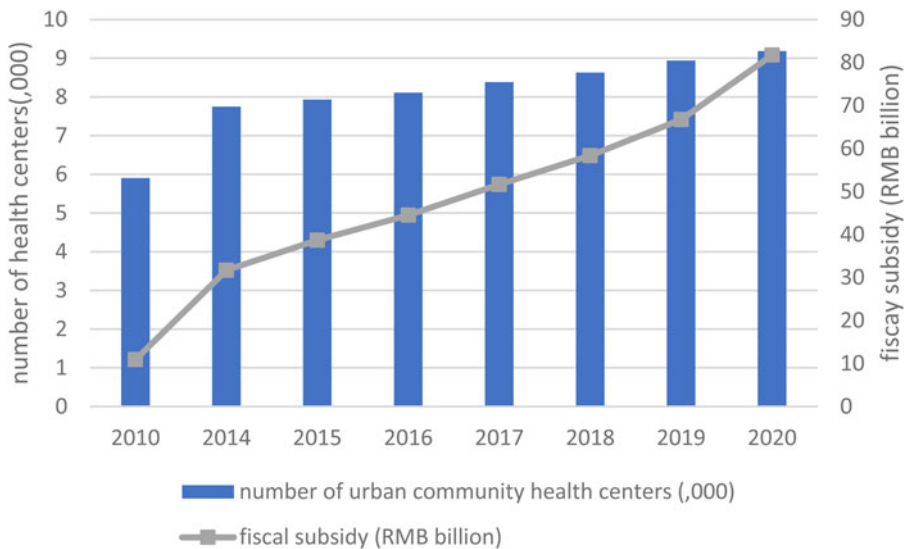
Yet, China has a long way to go before its goals of the Chinese government can be said to have been achieved. There are still huge regional variations in accessing primary health care. For example, in 2020, there were 3.1 general practitioners (GPs) per 10,000 population in Beijing compared to only 2.0 in Guizhou province<sup>6</sup>. Moreover, drug expenditure still accounts for a large share of the health care expenditure in primary care clinics despite concerted efforts to reduce it. In 2020, 40% of revenue in urban community health centres were from drug sales which was similar to the share a decade earlier (China Health Statistical Yearbook, various years).

<sup>3</sup><http://www.nhc.gov.cn/yzygj/s3594r/202007/0f58f93e3f5a4a26ab9079f78bf2dca5.shtml>, accessed on 7 April 2022.

<sup>4</sup><https://www.nmpa.gov.cn/directory/web/nmpa/xxgk/fgwj/bmgzh/20090818111001978.html>, accessed on 7 April 2022.

<sup>5</sup><http://www.nhc.gov.cn/wjw/jbywml/201810/600865149f4740eb8ebe729c426fb5d7.shtml>, accessed on 7 April 2022.

<sup>6</sup><http://tyj.beijing.gov.cn/bjsports/zcfg15/gjhj/11193611/index.html> & [http://wjw.guizhou.gov.cn/xwzx\\_500663/zwyw/202110/t20211012\\_70854181.html](http://wjw.guizhou.gov.cn/xwzx_500663/zwyw/202110/t20211012_70854181.html). Accessed on 23 March 2022.



**Figure 1.** Number of urban community centres and the amount of fiscal subsidy, various years  
 Source: China Health Statistical Yearbook, Various years.

The outbreak of COVID-19 tested the capacity of the health system to meet the population's needs and primary care providers were found wanting in several respects. In Wuhan in 2017, only 12,500 doctors worked in primary care clinics compared to the 76,000 doctors who worked in hospitals (Wuhan Statistical Yearbook 2018). The supply of medical equipment was also grossly insufficient, as there were not enough diagnostic equipment or isolation wards in many community-level hospitals/clinics.<sup>7</sup> Personnel were also insufficiently trained to deal with the rapidly spreading infectious disease.

The reasons for the limited success of the recent reforms in China lie in how primary care in China is governed, provided, financed and paid for.

### 3.1 Governance

The vision of creating a unified health care system built on primary care has been difficult to realise in China due to the vast administrative fragmentations that exist in the country. For start, different providers and functions are administered by different agencies. Government clinics are owned, financed and regulated by NHC,<sup>8</sup> which is also responsible for overall planning and allocation of healthcare resources (WHO 2015). However, the salary and benefits of public clinics' employees are set by the Ministry of Human Resources and Social Security while the National Development and Reform Commission (NDRC) is responsible for overseeing health infrastructure investment and regulating the entry of private clinics. NDRC also sets the prices of medical service, but it is the NHSA which determines the reimbursement rates for social health insurances, including primary care.<sup>9</sup> Furthermore, public health matters are regulated by CCDC while subsidies for public primary care facilities are set by the Ministry of Finance. Governance of private clinics is simpler as they are regulated by local health bureaus (Fang, 2008).

The horizontal fragmentation is paralleled by a vertical division of responsibilities across provincial, prefectural, county, and township governments that play an important role in primary care provision and financing. The fragmentations at the national level are mirrored in lower levels

<sup>7</sup>[https://m.thepaper.cn/rss\\_newsDetail\\_5685761?from=,](https://m.thepaper.cn/rss_newsDetail_5685761?from=,) accessed on 7 April 2022.

<sup>8</sup>Including the National Administration of Traditional Chinese Medicine.

<sup>9</sup>[http://www.nhsa.gov.cn/art/2021/10/15/art\\_26\\_6244.html,](http://www.nhsa.gov.cn/art/2021/10/15/art_26_6244.html) accessed on 7 April 2022.

of government as each ministry has local bureaux with responsibility for implementing policies. Local health bureau appoints the head of the government-owned clinics, evaluate their performance, and hold them accountable. The vertical fragmentation is compounded by the fact that local governments are the largest source of healthcare financing, accounting for over 70% of government health expenditure in 2020, even though they do not have control over many crucial aspects of primary care providers' operations. Fragmented governance extends to evaluation of primary care clinics' performance which are linked to allocation of fiscal subsidy as well as salary and career path of health workers.<sup>10</sup> The fragmentation of authority and responsibilities for primary care undermines both implementation and accountability.

The division of responsibilities across agencies and levels of government, while unavoidable to some extent due to the need for specialist management and vast size of the country, requires firm coordination which has been lacking in China. Many inter-departmental committees exist to coordinate efforts (WHO 2015) but are insufficient to overcome the departments' different interests and implementation plans (Qian, 2021).

The outbreak of COVID-19 tested the coordination between public health institutions and primary care providers and found it to be weak. In fact, there was no regular channel for effective communication between public health and primary care service providers. For example, when the disease broke out, there was no item in the National Notifiable Infectious Disease Surveillance System to classify it.<sup>11</sup> The only mechanism for reporting it was to consider COVID-19 cases as 'Pneumonia of Unknown Etiology' (PUE).<sup>12</sup> However, health workers in primary care clinics did not understand PUE and did not know how to identify it.

The establishment of NHC with responsibility for coordinating the provision and delivery of health services and NHSA with responsibility for coordinating health financing and payment functions has overcome many of the problems arising from various fragmentations. The importance of a central coordinating authority in health care delivery was recently highlighted by the NHC's role in leading China's efforts to fight COVID-19 pandemic. Similarly, NHSA has been leading efforts to integrate the fragmented health insurance schemes in rural and urban areas<sup>13</sup>. The integration of the insurance schemes is intended to not only enlarge insurance pools and improve management efficiencies but also bridge gaps in insurance coverage across the population. While representing major efforts to strengthen governance of health care, NHC and NHSA have a difficult road ahead given the vast size of the country and the deep fragmentations that exist.

Over the last decade, the government has also been trying to enhance the efficiency of government-owned health care facilities through management reforms. However, unlike public hospitals wherein managers have been given greater autonomy in operational matters in recent years, primary care clinics continue to operate under tight government control. The responsibility for staff recruitment, including the appointment of heads of government-owned clinics, continues to rest with local health bureaux remain (Tan, 2021). Moreover, the range of service provision, pricing and reimbursement rate are closely regulated by local authorities. The fragmented responsibilities and lines of accountability undermine coherent governance of primary care in the country.

### 3.2 Provision

The organisation of primary health care in China is divided between rural and urban areas, with the former consisting of village clinics and township health centres and the latter consisting of community health centres and stations. Urban areas also tend to have hospitals providing primary care. To promote professionalism in primary care, in 2011 the government declared the

<sup>10</sup><http://www.nhc.gov.cn/jws/s7882/202008/0ad3357cf1c747e0af8e5e145698d571.shtml>, accessed on 7 April 2022.

<sup>11</sup>[http://www.chinacdc.cn/zxdt/202001/t20200125\\_211441.html](http://www.chinacdc.cn/zxdt/202001/t20200125_211441.html) Accessed on Nov 7 2021.

<sup>12</sup><http://www.eeo.com.cn/2020/0203/375484.shtml> Accessed on Nov 7 2021.

<sup>13</sup>These insurance schemes include Urban Basic Health Insurance for urban employees, Urban Resident Basic Medical Insurance, and New Cooperative Medical Scheme.

**Table 1.** Human resources, number of visits and bed Utilisation rates in primary clinics in 2019

	Areas	Total numbers of clinics	Health workers per clinic	Doctors per clinic	Number of visits per doctor per day	Bed utilisation rate (%)
Community health centre	Urban	9,561	43.4	17.8	16.5	49.7%
Community health station	Urban	25,452	4.3	2.0	13.9	n/a
Township health centre	Rural	36,112	34.1	13.9	9.4	57.5%
Village clinics	Rural	616,000	2.3	0.7	n/a	n/a

Source: Statistic communiqué of Health in China 2019.

goal of establishing a GP system consisting of trained family physicians and nurses throughout the country. To make family medicine more attractive, it doubled the average annual salary of primary health care professionals in the following six years. The reforms have borne fruits, as the number of practising doctors and registered nurses in primary care have increased by more than a quarter in recent years.

In 2019, community health centres on average employed 18 doctors and approximately 43 health workers including pharmacists and nurses (Table 1). Community health stations and village clinics employed considerably fewer doctors and health workers. Community health centres are the most heavily utilised facilities, experiencing 16 visits per doctor per day, while the number of visits per doctor per day for community health stations and township health centres is 13.9 and 9.4 respectively.

Overall, majority of primary care in China is provided by private clinics, which accounted for approximately 56% of all primary care services in 2020 (China Health Statistical Yearbook 2021). In rural areas, 99% of township health centres are government-owned, compared to about 51% of urban community clinics (China Health Statistical Yearbook 2021). In contrast, most village clinics are privately owned which weakens government control over them.

The share of outpatient services accounted for by primary care clinics declined from 62% in 2010 to 53% in 2020 (Table 2). In comparison, the share of outpatient services provided by hospitals increased from 35% to 43% over the same period. The declining use of primary care clinics is notable given the policy priority and additional resources devoted to raising their use.

There are vast inter-regional variations in distribution of primary care resources across the country. For example, in 2020 the number of health workers per 1000 population in township health centres was 2.37 in Jiangsu province compared to 0.98 in Liaoning province (China Health Statistical Yearbook 2021). The large inter-regional differences are also reflected in fiscal spending. In 2019, government health spending per capita was over RMB 3265 in Beijing, compared to only RMB 870 in Liaoning province (China Health Statistical Yearbook 2021). The variations in government health spending are yet larger at lower levels of government.

In China, public clinics compete not only with private clinics but also with private and public hospitals to attract patients because a large proportion of their earning is derived from user charges. To promote collaboration and sharing of resources between public hospitals and clinics, the government has been promoting formation of conglomerates comprising of different levels and types of healthcare facilities in a defined region. For example, in Shanghai, all



**Table 2.** Clinics and hospitals' share of primary care services by number of visits, 2020 and 2010

	Outpatient services		Inpatients services	
	2010	2020	2010	2020
Hospitals	35%	43%	67%	80%
Primary care clinics	62%	53%	28%	16%
Others	3%	4%	5%	4%

Source: China health statistical yearbook, various years.

government-owned primary care clinics have been required to join a health conglomerate since 2020<sup>14</sup>. A typical health conglomerate consists of a general hospital, several smaller hospitals and many urban community health centres. Patients are encouraged to visit a community health centre and get a referral before visiting higher level hospitals.

The region-based conglomerates are intended to be reinforced by a referral system with primary care providers serving as gatekeeper of access to hospitals and specialist care. However, patients are merely incentivised and not required to secure a referral, as insurance reimbursement is somewhat lower for accessing hospitals without a referral<sup>15</sup>.

Although efforts to form conglomerates and promote referral system are still at an incipient stage, difficulties in implementing the policy are already apparent. The slow progress is understandable given that hospitals and primary clinics within a conglomerate are competitors for patients and revenues. Despite some weakening in recent years, the incomes of hospital managers and physicians are still significantly tied to the revenues they raise and it therefore not in their interest to refer patients to another facility regardless of appropriateness. Hospital managers are also reported to pressure GPs to refer patients to hospitals within the conglomerate for the higher service fees they can charge<sup>16</sup>. The problems are compounded by patients' innate preference for hospitals due to perceptions of higher quality of service they offer and are often willing to pay the higher costs involved (Shen and Zhang, 2016). As a result, referrals are not widely used in China, with most patients going directly to hospitals as and when they wish (Li and Yu 2011; Shen and Zhang, 2016).

Health care providers in China are lightly regulated with respect to clinical practices and this is reflected in their activities that serve their own organisational and financial interests rather than the public interest. One study found that over 60% of patients in the sample were prescribed antibiotics that were not compatible with their symptoms (Currie *et al.*, 2011). Even for informed patients who understood that antibiotics were not appropriate, 39% were still prescribed with antibiotics. There are regulations to control induced demand but enforcement is lax.

The quality of primary care remains low in China, notwithstanding significant improvements in recent years. In 2016, only 6.6% of all physicians were licensed GPs, though this was higher than 4.2% in 2012<sup>17</sup>. In primary health care facilities outside urban hospitals, 31% of doctors do not have appropriate educational qualifications and the share is even smaller in rural clinics (Li *et al.*, 2017). A 2017 study showed that for patients with incognito tuberculosis, township health centres provided the correct treatment only 38% of the time and village clinics only 28% of the time (Yip *et al.*, 2019).

<sup>14</sup>[https://www.shanghai.gov.cn/nw41435/20200823/0001-41435\\_54747.html](https://www.shanghai.gov.cn/nw41435/20200823/0001-41435_54747.html), accessed on 7 April 2022.

<sup>15</sup>See a government document released in 2015 about the implementation of a referral system in China [http://www.gov.cn/zhengce/content/2015-09/11/content\\_10158.htm](http://www.gov.cn/zhengce/content/2015-09/11/content_10158.htm), accessed on 7 April 2022.

<sup>16</sup><http://www.21jingji.com/2020/8-5/3MMDEzODFfMTU4MDEc3Mg.html>, accessed on 7 April 2022.

<sup>17</sup>[http://www.xinhuanet.com/politics/2018-01/21/c\\_129795423.htm](http://www.xinhuanet.com/politics/2018-01/21/c_129795423.htm), accessed on 7 April 2022.

### 3.3 Financing and payment

Primary care clinics' revenues come from a variety of sources, of which fiscal transfers, social insurance payment, and out of pocket payment (OOP) are the largest. The government offers subsidies to providers from general budget with the objective of lowering costs while health insurance programs reimburse members for the purchase of approved health services, including primary care.<sup>18</sup> OOP is the residual amount not covered by other sources that users must pay from their own funds.

Health insurance payments for drugs and services account for about 30% of the total revenues of primary care clinics (Yu *et al.*, 2021). However, insurance funds in China tend to be passive buyers and do not use their immense purchasing power to reduce prices or improve quality (Muller, 2019; Yip *et al.*, 2019). OOP continue to form nearly half or more of clinics' revenues clinics despite their decline over the past. For example, the share of OOP accounted for about 46% of service-related revenue of government-owned clinics in Hainan province in 2018, compared to 69% in 2011<sup>19</sup>. The large OOP erodes governments' policy leverage over both providers and users.

Reducing OOP expenses has the potential to boost the utilisation of primary care services and streamline the referral system in China. Research indicates that reducing out-of-pocket (OOP) expenses can positively influence health-seeking behaviours in China (Li and Chen, 2023). A recent study published in *The Lancet Public Health* revealed that China's surge in outpatient visits and hospital admissions was linked to an increase in insurance coverage and consequent changes in utilisation rates (Moses *et al.*, 2019). In certain scenarios, decreasing OOP payment at primary care clinics can enhance the efficiency of the referral system. A case in point is Qingdao city in Shandong province, where primary care clinic deductibles are waived for those enrolled in social health insurance. This strategic move has borne fruit, as evidenced by Qingdao's outpatient services in primary care clinics reaching 56.4% in 2020, markedly surpassing the national average of 53%<sup>20</sup>.

Fiscal transfers for public health, including primary care, more than quadrupled between 2009 and 2021, from RMB 15 to RMB 79 per capita.<sup>21</sup> Of urban community health centres' total revenues in 2020, fiscal transfers accounted for approximately 36%, sale of drugs for 40%, and service charges for 19% (China Health Statistical Yearbook, various years). Township health centres in rural areas rely considerably more on fiscal transfers as a result of increase in fiscal subsidies and a corresponding decrease in the share of revenues from sale of services and drugs, as shown in Table 3.

There are large differences in the composition of public financing for different types of facilities. In 2019, public health facilities run by CCDC derived 74% of their revenues from fiscal transfers compared to only 44% for township health centres and 36% for urban community health centres (Table 4). Government subsidies' share of total revenues is yet smaller for both public and private hospitals which makes them even more reliant on sale of services for income. The smaller the share of fiscal transfers, the larger the incentives for primary care facilities to augment their income from selling services to users, as evident in column 2 of Table 4. Clinics that rely heavily on sale of drugs and services for revenues are known to sometimes collude with local health bureaus in ignoring drug pricing and health insurance reimbursement rules to increase their revenues (Muller, 2019).

The unequal distribution of resources between rural and urban areas and among localities generates a negative chain reaction as it reduces the incentives for patients to visit primary care clinics

<sup>18</sup>[http://www.xinhuanet.com/2018-08/30/c\\_1123355848.htm](http://www.xinhuanet.com/2018-08/30/c_1123355848.htm), accessed on 7 April 2022.

<sup>19</sup><http://www.nhc.gov.cn/tigs/s7847/202005/145d1156bab847f6a6bba6fb36099df6.shtml>, accessed on 7 April 2022.

<sup>20</sup>[https://www.sohu.com/a/627941457\\_99908847](https://www.sohu.com/a/627941457_99908847) & [https://www.dailyqd.com/3g/html/2021-07/20/content\\_315608.htm](https://www.dailyqd.com/3g/html/2021-07/20/content_315608.htm), accessed on 7 August 2023.

<sup>21</sup><http://www.nhc.gov.cn/jws/s3578/202002/59310c05e27944dabfe68bcc405561d.shtml>, accessed on 7 April 2022.

**Table 3.** Composition of primary care clinics' revenue, % of total revenues, 2019 and 2010

	Services		Drug sales		Fiscal subsidy	
	2010	2019	2010	2019	2010	2019
Community health centres (urban)	23.2%	19.1%	48.2%	40.5%	23%	36.2%
Township health centres (Rural)	29.9%	25.7%	39.3%	25.7%	25.2%	43.7%

Source: China Health Statistical Yearbooks, various years.

**Table 4.** Breakdown of revenues of different types of medical institutions in 2019 (in %)

Medical institutions	Government subsidy	Sale of services
Public hospitals	10%	88%
Urban community health centres	36%	60%
Township health centres	44%	51%
CCDC and its branches	74%	21%

Source: China Health Statistical Yearbook 2020.

in rural areas which in turn leads to lower earnings for primary care providers. Without the financial capacity to improve their equipment and facilities or to hire qualified doctors or health workers, rural primary care clinics are unable to provide the necessary services to their patients. For example, service revenue of urban community health centres was RMB 619,000 per year per doctor in 2018, compared to RMB 333,000 for township health centres (China Health Statistical Yearbook 2021).

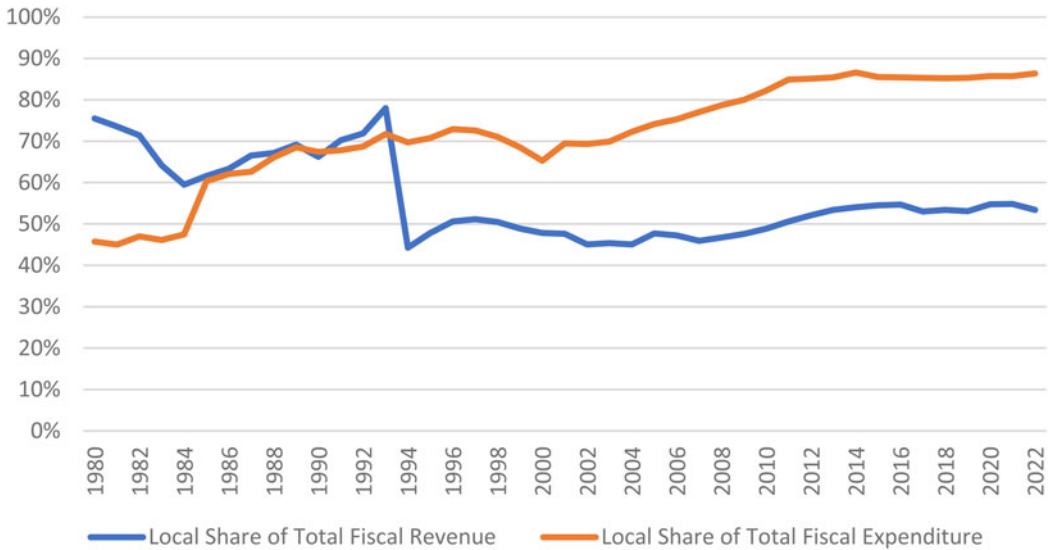
Fiscal reform in 1994 delinking local governments' responsibilities from their fiscal revenues had the effect of weakening primary care in the country. After the reform, the lion's share of tax revenue was allocated to the central government (Wong and Bird, 2008) while the responsibility for delivering services remained with local governments. Under the new fiscal framework, local governments bear a larger expenditure burden compared to the central government, as depicted in Figure 2. In recent years, the central government has contributed to less than 15% of the total expenditure, with local governments accounting for over 85%.

In this context, healthcare financing largely rests with local governments. In 2019, local governments shouldered 70% of the total governmental health expenditure (Qian, 2021). The operational expenses of state-owned primary care clinics, encompassing the basic salaries for their staff, are predominantly funded by local government budgets. Consequently, the financial health of these clinics is closely tied to local fiscal circumstances.

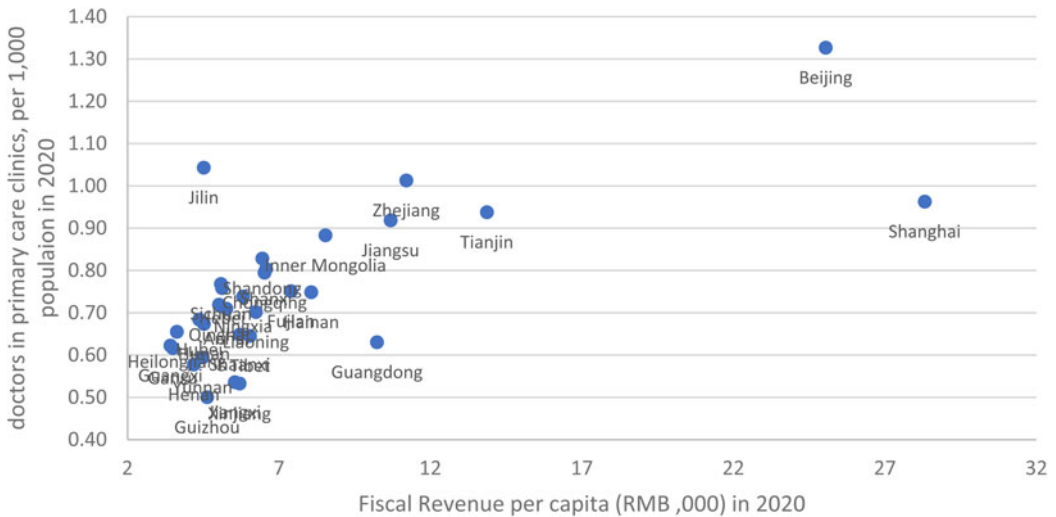
Such variations in fiscal conditions also influence resource allocation to primary care clinics. Figure 3 illustrates the relationship between per capita fiscal revenue and the number of primary care doctors per 1000 residents across various provinces in 2020. There's a notable positive correlation between the fiscal health of a province and its density of primary care doctors in Figure 3. For instance, provinces with robust fiscal standings like Beijing, Tianjin, Shanghai, and Zhejiang boast over 0.9 primary care doctors per 1000 inhabitants; Beijing even has an impressive 1.33, comparable to the standards of many OECD nations<sup>22</sup>. Contrastingly, fiscally challenged provinces like Jiangxi and Guizhou report lower figures of 0.54 and 0.50 respectively.

Given the limited governmental budgetary support, particularly in rural and underdeveloped regions, primary care providers increasingly rely on revenue generated from services and pharmaceuticals. Health care providers in China are paid on FFS basis according to a set fee schedule,

<sup>22</sup><https://stats.oecd.org/Index.aspx?ThemeTreeId=9> accessed on 7 August 2023.



**Figure 2.** Local shares of fiscal revenue/expenditure in China: 1980–2022  
 Source: CEIC.



**Figure 3.** Fiscal revenue per capita and number of doctors in primary care clinics per 1000 population across provinces, 2020  
 Source: China Health Statistical Yearbook, Various years. & CEIC.

which limits the prices but not quantity of services. In fact, FFS incentivise providers to enlarge the volume of services they offer which, while pleasing the users when paid through insurance, increases total health expenditures (Eggleston, *et al.*, 2008; Liu *et al.*, 2014; Qian and Blomqvist, 2014); To curb FFS, provincial and local governments have launched reforms introducing capped payments centred on some version of capitation for primary care and case-based payments (such as Diagnosis-related group (DRG)) for hospital care. For example, in Shanghai, primary care providers receive payment based on the number of registered residents from health

insurance fund. A proportion of the payment is made based on performance in health management, efficacy in referral decisions, and expenditure control.<sup>23</sup>

In addition to adoption of capitation payment, many local governments have ended or reduced physicians' bonus linked to the revenues they generate and put them on fixed salaries with only a small component tied to performance. Accordingly, a portion of salaries of employees of primary care facilities are tied to the number of local residents registered under the doctor at the facility. As is broadly accepted, performance and quality are notoriously difficult to measure in health care and it is unclear if these reforms in China are having the intended impact (Gaynor and Town, 2011).

However, there are problematic issues in payment reforms that remain unresolved. Under-servicing is a perennial problem in capitation payment which requires keen monitoring and regulatory interventions which are largely lacking in China (Liu *et al.*, 2014). Under the capitation payments, clinics face disincentive to treat primary care cases requiring more time or expenses because they are paid according to the number of patients registered with them, not the volume of services provided. As a result, GPs are incentivised to take on as many patients as possible but provide them with as little service as possible.<sup>24</sup>

#### 4. Conclusion

Primary care enjoys widespread support among both scholars and practitioners because of its contribution to disease prevention, epidemic surveillance, and health promotion in a cost-efficient manner (Donaldson *et al.*, 1996: 61; Boufford, *et al.*, 2002: 239; WHO, 2008). During Mao's rule, China built a strong primary care system at small cost based on central planning of all health care resources. The system unravelled with the liberalisation of the economy, collapse of social health insurance, decay of village communes, and reduction in government subsidy which led primary care providers to neglect public health services and concentrate on curative services that generated surplus revenues.

After more than a decade of piecemeal reforms patching the broken health care system, in the mid-2000s the Chinese government decided to adopt broad and deep reforms intended to rebuild the entire system with primary care at the foundation. Countless administrative measures were adopted and vast amount of money was spent in the following years on different components of the health system, including primary care. While the reforms have produced significant achievements, they have fallen short of expectations. The reasons for the reforms' limited achievements can be traced to misaligned governance structures and misdirected policy tools that do not sufficiently ameliorate the flaws that stymie primary care.

Governance of health care in China remains fragmented, despite improvements following the establishment of NHC and NHSA and associated reforms. Responsibility for primary care is split across provincial and local governments as well as local bureaus of national government agencies with their interests and objectives which make it hard for them to work in concert. The fissures are reflected in weak regulations that are enforced intermittently. The management structures for primary care are also weak, as managers have immense autonomy in financial matters but insufficient discretion in operational matters such as personnel. Accountability is also diffused and weak, as there are too many controls in some aspects and not enough in others.

Lack of integration between primary and secondary care providers, in addition to the separation between public and private providers, remains a major impediment for primary care to realise its full potential. Hospitals in China are a large provider of primary care, especially in urban areas, and compete aggressively with clinics for patients and revenues. Efforts to integrate them

<sup>23</sup><http://wsjk.gansu.gov.cn/wsjk/c113465/202012/1264626.shtml>, accessed on 7 April 2022.

<sup>24</sup>[http://www.npc.gov.cn/zgrdw/npc/zfjc/zfjcelys/2018-08/28/content\\_2060570.htm](http://www.npc.gov.cn/zgrdw/npc/zfjc/zfjcelys/2018-08/28/content_2060570.htm), accessed on 7 April 2022.

within region-based conglomerates have made little headway due to the competing financial interests of hospitals and clinics.

Government funding for healthcare has increased greatly in recent decades but much of it is to subsidise social insurance premium and build health infrastructure rather than pay for operational costs. Stark funding disparities persist both regionally and between urban and rural areas. For operational resources, primary care providers continue to rely on revenues from sale of services and drugs to users. Similarly, social insurance payments have increased vastly but this has not been matched by increase in their use as a lever for changing providers' behaviour. Social insurance funds in China are passive buyers and do not use their buying power to integrate primary and secondary care or improve their quality or reduce costs. With little impact of fiscal transfers and social insurance purchase in reducing costs, OOP payments remain large. The ill effects of OOP are compounded by FFS, which remain the dominant form of paying providers despite efforts to promote capitation payment. Both providers and users have an innate preference for FFS which need to be countered through concerted efforts that have not been forthcoming.

The Chinese government is aware of the problems that impede primary care and has made tremendous efforts to remedy them but progress has been slow, indicating the difficulties in reforming entrenched practices in the health sector (Ma *et al.*, 2019; Li *et al.*, 2020; Qian, 2022). It is expected that the experience with fighting the COVID-19 pandemic has not only highlighted the importance of primary care but also enhanced the government's capacity for promoting it.

The findings of the paper are relevant to governments everywhere seeking to on strengthen primary care. Both scholars and practitioners working in the area need to recognise that primary care is a part of a larger health system with a vast array of moving parts, all of which must work in concert to achieve desired results. Policymakers need to ensure that the governance structures in place and policy tools used explicitly promote primary care. Reforms need to be particularly well thought-out and implemented resolutely in contexts in which providers depend on users for revenues and are paid on FFS basis. No country, not even China with its immense policy capacity, can expect to make primary care the foundation for the health system without addressing these governance and policy challenges.

**Competing interest.** None.

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