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## **The challenge of allocating resources for an effective health system in China**

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### **Abstract**

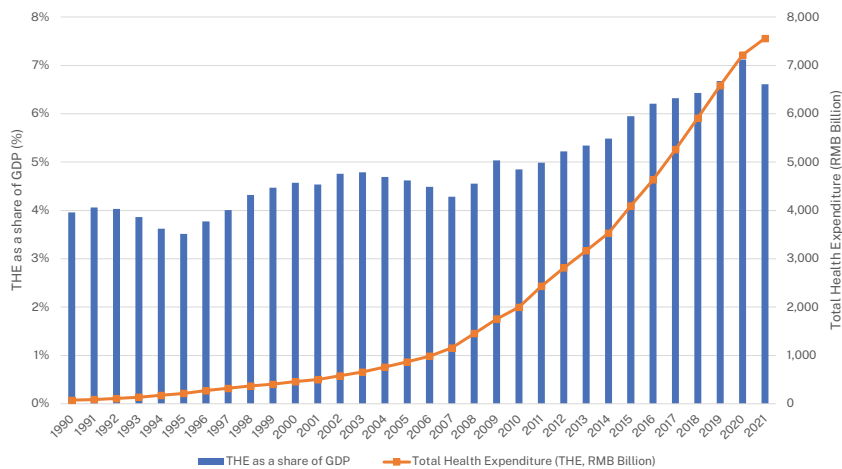
This chapter analyses resource allocation in the Chinese health system since the comprehensive 2009 reforms. While total health expenditure in China has increased dramatically since the SARS (severe acute respiratory syndrome) outbreak in 2003, primary care providers do not have enough resources and struggle to retain experienced doctors and procure advanced equipment. Well-equipped hospitals are concentrated in large cities, where qualified specialist doctors are concentrated too. Further, resources for healthcare services have been concentrated in the major metropolitan centres and there are significant inequities in access across and within provinces. The underfunding of the public health system was demonstrated during the outbreak of COVID-19, when the public health system came under stress. The intersection of three axes of hierarchies—hierarchies between hospitals, between medical institutions and between places—creates a huge disparity in the capacity of grassroots primary care and large hospitals and distorts their respective roles. While the amount of fiscal subsidy for primary care clinics has increased significantly and social health insurance schemes now cover over 90 per cent of citizens, there has been a shift from primary care and public health which may represent a decline in health-seeking behaviour in recent years.

This chapter argues that misallocation of resources in the health system is in large part a consequence of inappropriate incentives, including for bureaucrats. In particular, the way fiscal subsidies are allocated does not give priority to improving the quality of health care because other performance targets attract greater rewards. While the amounts of fiscal subsidies and social insurance support are increasing, these are not directly linked to the quality of services, particularly those provided in primary care clinics. In the future, resource allocation mechanisms should be designed to provide more appropriate incentives.

**Keywords:** health system; resource allocation; bureaucracy; China; COVID-19; public health; hospitals; primary care.

## Introduction

With a rapidly ageing population and increasing incomes in China, more and more resources have been allocated to the health system. The share of total health expenditure in gross domestic product (GDP) increased from 4.8 per cent in 2003 to about 7.1 per cent in 2020. Total health expenditure in China reached RMB7.56 trillion in 2021 (Figure 20.1). Between 2008 and 2020, the annual growth rate of total health expenditure was very fast (14.3 per cent on average).



**Figure 20.1: Total health expenditure (THE) and share of THE in GDP: 1990–2020.**

Source: NHC (various years) and NHC (2022).

A major guideline for health reform was released in April 2009 by the State Council. It is a comprehensive reform covering all major aspects of the health system. Initiatives include expanding health insurance, reforming public hospitals and reforming the pharmaceutical sector (Qian and Blomqvist 2014; Qian 2022).

More than a decade later, it is evident that the health reforms achieved a dramatic increase in both government health expenditure and in social insurance support. Government health expenditure includes the government budget allocated to various medical institutions (e.g. hospitals, primary clinics, among others) as well as the fiscal subsidy to social health insurance, among others.<sup>1</sup> Both government expenditure and social health insurance reimbursement are considered public sector financing. However, they belong to separate statistical categories. While the government health expenditure is part of the government's general budgetary expenditure, reimbursement from social health insurance is recorded in a separate account outside the general budget.

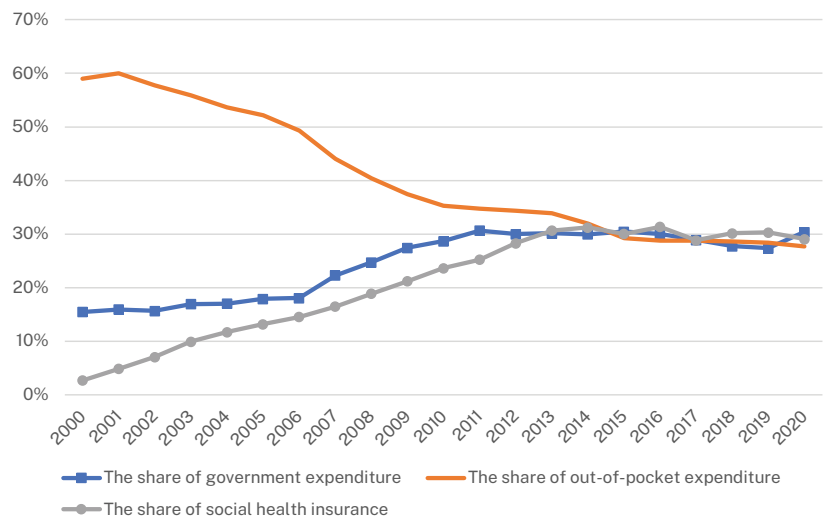
**Table 20.1: Composition of government health expenditure in the general budget (RMB billion).**

	2017	2018	2019	2020
Government health expenditure	1,520.6	1,639.9	1,801.7	2,199.8
Health insurance subsidy	502.4	548.3	586.4	606.6
Fiscal subsidy to public hospitals	219.3	229.5	253.5	284.8
Fiscal subsidy to primary care clinics	132.5	137.9	152.5	148.9
Budget for public health	188.6	203.9	221.2	387.9

Source: Ministry of Finance (2022).

In 2020, government health expenditure amounted to about RMB2.2 trillion, up from RMB359 billion in 2008. The annual growth rate of the government health expenditure between 2008 and 2020 reached 16.3 per cent on average. The government share of total health expenditure almost doubled to 30.4 per cent in 2020 compared to 17.9 per cent in 2005 (Figure 20.2). Over the same period, reimbursements from social health insurance funds have increased from 11 per cent in 2005 to around 29 per cent by 2020, remaining at about that level since. With the increasing government and social insurance expenditure, the affordability issue has been significantly relieved. Out-of-pocket health expenditure decreased from about 60 per cent in 2000 to about 27.7 per cent in 2020.

1 The definition of government health expenditure is based on NBS (various years).



**Figure 20.2: The composition of the total health expenditure in China: 2005–20.**

Source: NHC (various years).

Social insurance in health financing expanded greatly in the mid-2000s with the introduction of the New Cooperative Medical Scheme and the Urban Resident Insurance schemes for rural and urban residents respectively. The various social health insurance plans under these schemes covered 95 per cent of the total urban and rural population by 2011 (Qian 2021). Figure 20.2 shows that expenditure from social health insurance accounted for about 29 per cent of total health expenditure, or over RMB2 trillion in 2020, compared to 13 per cent, or RMB114 billion in 2005.

However, healthcare affordability remains a serious concern in China. Out-of-pocket expenditure still accounts for a significant share of total health expenditure (Figure 20.2) and can be a huge problem for some people, as a financial burden and/or a barrier to access needed healthcare services. Indeed, a nationwide administrative record in 2013 revealed that health conditions were the major cause of rural poverty, affecting over 42 per cent of the rural poor (Table 20.2).

**Table 20.2: Reasons for poverty for 89 million rural poor in China in 2013.**

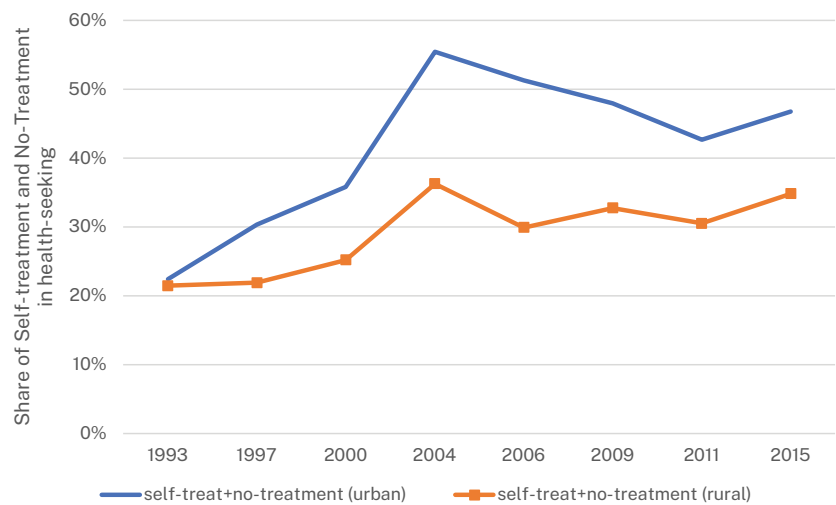
Reasons for poverty	Share of households
Illness	42.4%
Short of credit	35.4%
Short of technology	22.3%
Short of labour force	16.8%
Financial burden of tuition fee and schooling	9%
Disabled	5.8%

Source: Xinhua (2016).

Apart from affordability, accessibility to health care and public health support is another concern. People have few incentives to visit primary care clinics rather than hospitals, leading 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, these primary care clinics cannot provide the necessary services to their patients. The utilisation rate of health care needs to be improved to attract more patients to primary clinics. The share of primary clinics providing outpatient service has decreased since the 2009 reforms.

For example, based on data from the China Health and Nutrition Survey (CHNS),<sup>2</sup> many people still choose self-treatment or no treatment rather than seeking health from a healthcare service provider. The increase up until 2004 may reflect the then rising out-of-pocket costs in the absence of much social insurance and limited government expenditure. Concern for service quality could be another major reason for under-utilisation. In 2015, about 10 years after expanding of health insurance in urban and rural areas, a large proportion of people in both urban and rural areas still continued to engage in self-treatment or non-treatment when they fell ill (Figure 20.3). This may relate to the out-of-pocket expenditure that remains or the quality and availability of local services or personal attitudes towards modern healthcare treatments, or (most likely) a combination of these.

<sup>2</sup> The survey includes over 4,400 households in nine provinces. CHNS has been expanded to 12 and 15 provinces in the 2011 and 2015 wave respectively. See: [www.cpc.unc.edu/projects/china](http://www.cpc.unc.edu/projects/china), accessed 28 August 2021.



**Figure 20.3: The share of self-treatment and no-treatment in health-seeking, 1993–2015 (%).**

Source: China Health and Nutrition Survey datasets (CHNS n.d.). Further information about the dataset is available at: [www.cpc.unc.edu/projects/china/data/datasets](http://www.cpc.unc.edu/projects/china/data/datasets).

After the outbreak of the COVID-19 pandemic in early 2020, the public health system in Wuhan came under great stress, as most infected and suspected cases were found in Wuhan. While primary care clinics should have been able to respond, they lacked the necessary resources to deal with the crisis. There were not enough health workers in primary care clinics to treat infected cases and suspected cases. In 2017, only 2,500 doctors worked in primary care clinics, compared to the 76,000 doctors working in hospitals in Wuhan. Also, in primary care clinics, the supply of medical equipment was grossly insufficient. There were not enough devices for diagnosis and no isolation wards in many community-level hospitals/clinics (Fan and Yeng 2020).

This chapter argues that the affordability and accessibility issues are mostly the result of resource misallocation in the health system. First, too many resources have been allocated to hospitals rather than to primary care clinics, and this is likely to increase financial burdens for households. And this misallocation of resources leads to low service quality in the primary care clinics. As a result, patients have incentives to visit doctors in high-tier medical institutions, although for major social health insurance programs

in China, the reimbursement rate is lower in hospitals than in primary care clinics.<sup>3</sup> Higher-tier hospitals are also associated with higher non-medical costs (e.g. long waiting times).<sup>4</sup>

Second, the spatial distribution of resources is too concentrated in big cities. Many residents in smaller cities and rural areas have difficulties in accessing health care. Third, a decreasing share of resources has been allocated to public health institutions, especially before COVID-19. The capacity of public health institutions was shown to be inadequate in the early waves of COVID-19 in China as it spread beyond Wuhan. The spatial concentration of resources exposed the vulnerability of small cities during the COVID-19 pandemic.

This chapter argues that misallocation of resources in the health system is to a significant extent the consequence of the performance incentives for bureaucrats in the central and local levels of government. In particular, the central government's reform initiatives in the health system, including those relating to fiscal budget allocations and health insurance reimbursement, have not been reflected in the incentives for local government and health bureaucrats. Local health bureaucrats want to allocate resources to the areas in which their performance is best rewarded. Performance relating to public hospitals is generally more measurable quantitatively than performance in regard to public health (until a crisis actually occurs). Further, the tension between the multiple objectives of local government (i.e. between regional economic development and equalisation of access to health care) leads officials to concentrate health resources where they most contribute to economic growth.

Improving the way government budget funds and social health insurance benefits are allocated is a central policy issue for the next stage of China's health reforms. Bureaucrats' incentives, which reinforce the objectives of health service provision, health insurance and public health, are critical.

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3 As shown in the *Statistical communiqué of the development of health insurance* (NHSA 2020), the reimbursement rate was higher in lower tier medical institutions, see [www.nhsa.gov.cn/art/2021/6/8/art\\_7\\_5232.html](http://www.nhsa.gov.cn/art/2021/6/8/art_7_5232.html), accessed 29 September 2021.

4 Also see Yang (2020) for a discussion on this topic.

## Health resource allocation and the role of bureaucrats

In the initial stages of the move away from the central planned economy in the 1980s, the government reduced its financial responsibility for public health services (previously provided largely through collectives and public enterprises etc.) and transformed them into market-oriented services. Consequently, health resources were increasingly concentrated in regions where people could afford to pay for health. As a result, disparities in local economic conditions led to a greatly unequal distribution of health resources and high out-of-pocket costs.

After a long process of debate and various attempts to improve healthcare services and access to them, and revisions based on this experience, a comprehensive guideline for health reform was eventually released in April 2009 by the State Council. It represents a comprehensive reform covering all major aspects of the health system including health insurance, public hospitals, primary care clinics, public health and the pharmaceutical sector (Qian and Blomqvist 2014). The target of the health reforms, according to the guideline, was to build a health system that would be accessible to and affordable for all Chinese citizens by 2020. The government would play a lead role in this system while market mechanisms through competition and procurement would also be used. Local pilot programs were encouraged across all major policy arenas and would be pivotal for future implementation of the health reform.

As suggested in the health reform guideline, because the market mechanism has played a role in the uneven resource distribution in the health system, the government is critical to ensure equitable resource allocation. In general, government grants are allocated to healthcare providers for several purposes: upgrading infrastructure, paying for the basic salary of health workers and retirees, subsidising public health campaigns, and paying for the operating costs of certain services with regulated prices (Qian and Do 2019). In 2019, health service providers received in total RMB673.5 billion through government grants.

There are several ways in which the government can contribute to this. First, the government can allocate funds from its fiscal budget to support health service providers and public health institutions. At the central level government, there are at least three possible avenues to do so through



earmarked transfers to local governments: via the Ministry of Finance, the National Development and Reform Commission or the ministry directly responsible for the relevant health program or project (Zhou 2012). The Ministry of Finance is in charge of managing fiscal transfers. The National Development and Reform Commission is in charge of local planning of health resources that are related to investment in health infrastructure.<sup>5</sup>

All levels of government—central, provincial, prefecture and county—provide grants to medical institutions. The central government allocates healthcare grants for provincial governments through the Ministry of Finance. Provincial governments also use their own budgets to allocate healthcare grants to sub-provincial governments, including prefecture and county/city governments. Both provincial and sub-provincial governments use their budgets to allocate grants for service providers via local (‘township’) health bureaus. The local government allocates fiscal subsidies to public hospitals (over 11,000 in 2020). The Ministry of Health directly—or indirectly via provincial governments—allocates grants from its budget to ministry-supervised hospitals. Currently, there are 44 ministry-supervised hospitals in China, these hospitals being leading teaching hospitals.<sup>6</sup>

Second, the government in China plays a critical role as the regulator to support service provision and social insurance fund management. Social health insurance is funded by employers and employees and covers over 95 per cent of the population, reimbursing a proportion of the costs of health services. The government can also influence the behaviour of health service providers by regulating the number of hospital beds and personnel (Qian et al. 2019).

Third, the government also serves as a health insurer and sets insurance policies. While social insurance schemes in other countries are run by non-profit organisations or independent government bureaus, those in China are usually managed by the local government at the city/county level. Insurance policies vary across regions in terms of their scope, coverage and benefit levels (Mok and Qian 2019). For example, for urban resident health insurance enrollees in Shanghai, between 50 per cent and 70 per cent of inpatient costs in excess of RMB1,500 and up to a maximum of

5 For example, the National Development and Reform Commission manages the plan for building regional healthcare centres in the 14th Five-Year Plan (2021–25). See the report: [finance.sina.com.cn/tech/2021-06-07/doc-ikqcfnaz9688123.shtml](http://finance.sina.com.cn/tech/2021-06-07/doc-ikqcfnaz9688123.shtml), accessed 28 September 2021.

6 See a report about these hospitals in: [www.nhc.gov.cn/tigs/ygjb/201904/7ebf6cb546424ea8b35b2ffc9d988a8b.shtml](http://www.nhc.gov.cn/tigs/ygjb/201904/7ebf6cb546424ea8b35b2ffc9d988a8b.shtml), accessed 28 September 2021.

RMB550,000 were met by the city's insurer in 2020. In Xi'an city, while the reimbursement rate is similar, the ceiling for enrollees under its urban resident health insurance scheme was set at only RMB200,000 in 2020, much lower than that in Shanghai (Sohu 2020).

Bureaucrats at the different levels of China's central and local governments make and implement policies. The central government sets the overall policy targets and priorities, but local officials in China have considerable discretion in implementing the policies. Policymaking and implementation are dynamic processes, in which bureaucrats in government departments, local officials and citizens interact, and bureaucrats and cadres also interact across levels of government. The policymakers in the central government who design the policy reform, and define the direction of the policy process, interact with those at local levels who implement policy, taking into account their experience. Social policy reform reflects this dynamic interdependency.

## **Spatial concentration of health resources**

Healthcare resources are more likely to be concentrated in regions where people can afford to pay for health, either directly or through the local taxes and insurance premiums they pay. Therefore, disparities in local economic conditions explain much of the unequal distribution of healthcare resources. In principle, government grants—particularly through intergovernmental transfers—can be used to subsidise healthcare providers to improve accessibility and equality of healthcare services across regions. Through these government grants, health service providers in less advanced regions can upgrade their facilities and hire more doctors. Since the mid-2000s, China has implemented policies aimed at reducing disparities in accessibility to healthcare services in less developed areas, with an emphasis on basic health services, which include public health services and primary care. These include grants from local and central government budgets to healthcare providers, which can be used to pay for physician salaries, build infrastructure and/or subsidise specific healthcare services.

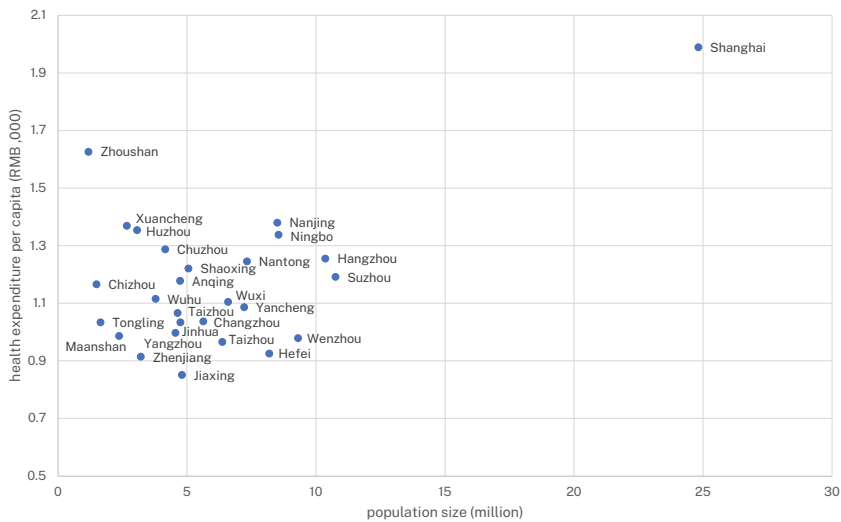
For a long time, place-based policies including regional economic development strategies have proven to be quite effective in China. For example, the special economic zones policy adopted since the 1980s has had significant positive effects on all those zones' major economic indexes, including investment, employment, productivity, and wage levels (Lu et al. 2019; Adler et al. 2016).

However, in support of regional economic development, some resource concentration is sometimes desirable. Specifically, the urban agglomeration effect, which refers to the spatial concentration of economic activities in cities including mega cities, is believed to have a positive effect on productivity and economic growth (Glaeser 2008).

Regional development policy in China is generally metropolis-oriented, to exploit the urban agglomeration effect (Jaros 2019). Disparities between urban and rural areas, across cities and across provinces continue to expand as provincial governments promote regional integration. These disparities have extended to health services, particularly through China's decentralised social insurance arrangements. The disparities in access to public services have been magnified as resources have been concentrated in the major cities in each region.

Wider metropolitan-related plans have been released in recent years such as Beijing–Tianjin–Hebei, the city cluster in the Yangtze River Delta, Changsha, the Zhuzhou–Xiangtan Comprehensive Reform Pilot Zone and so on. Many of these regional development initiatives have focused on investment and infrastructure building (Jaros 2019:36). Provincial governments are also supporting city-level governments to provide public services (Jaros 2019:40), with the risk of further disparities.

There is therefore some tension between the policy initiatives aimed to equalise access to health services across regions and regional economic development policies, which involve the spatial concentration of resources including for health services. In this chapter, we use Yangtze River Delta regional integration (YRD) as a case. Yangtze River Delta is a major government initiative to integrate both social and economic development in four provinces in the region (i.e. Shanghai, Jiangsu, Zhejiang and Anhui) (Podger et al. 2020). Occupying only 4 per cent of the total area of the country, the YRD was home to about 230 million residents, or about 16.7 per cent of the total population in China in 2020, up from 15.7 per cent in 2006. The share of the YRD in total GDP increased slightly from an already high 23 per cent in 1999 to 24 per cent in 2020. In comparison, the share of the Great Bay area decreased from 23 per cent of China's GDP in 1999 to 11 per cent in 2020. The share of Beijing–Tianjin–Hebei region in this period has remained relatively stable at between 8 and 9 per cent of GDP. The YRD economy is hence larger than other major economic regions in China.



**Figure 20.4: Government health expenditure per capita (RMB,000) and population size in 27 cities in the Yangtze River Delta in 2019.**  
Source: CEIC (n.d.).

Based on a national government guideline on regional development, the core area of the YRD includes Shanghai and 26 out of 40 prefectural level cities in Jiangsu, Zhejiang and Anhui (Podger et al. 2020). After the release of the 2019 national guideline for the integration of the YRD, all four major provinces released their own action plans and named their offices responsible for regional development. In these regional development initiatives, the development of city clusters is intended to support regional integration and facilitate labour mobility (migration), exploiting the agglomeration effect (i.e. spatial concentration of economic activities in cities). Further, to support regional integration, the portability of health insurance is essential for those workers who relocate from one place to another place in the region.

Figure 20.4 shows the distribution of government health expenditure per capita across 27 cities of different sizes in the Yangtze River Delta region in 2019. It is very clear that government health expenditure per capita in Shanghai, as the largest city in the region, has by far the highest level of government health expenditure per capita in the region (about RMB2,000 per capita). This illustrates that, given regional development policies, health resources are likely to be concentrated in the major cities (or city) in the region. Government investment in health infrastructure in Shanghai is believed to support regional development. To further exploit the urban

agglomeration effect, labour mobility is being encouraged and in the YRD areas, social health insurance has been portable across cities since 2020 (Qian 2021). In cities in the YRD, a social insurance contribution history in other cities is recognised by the local social insurance office. This initiative might further increase the attractiveness of Shanghai compared to other cities (i.e. even better amenities in Shanghai).

## **Under-utilisation of primary care clinics**

The increasing imbalance of demand for healthcare services among medical institutions is another major concern. Revenue from service provision in public hospitals as a share of total health expenditure increased from 21.7 per cent in 2008 to 28.5 per cent in 2019 (NHC various years). Further, in 2019, together with revenues from selling pharmaceuticals and direct government fiscal subsidies, revenues of public hospitals (a combination of social insurance reimbursement and out-of-pocket payment) accounted for about 48 per cent of China's total health expenditure, a very high rate compared to the OECD (Organisation for Economic Co-operation and Development) average of 38 per cent (World Bank 2016).

In most healthcare systems, primary care clinics are the major provider of most outpatient services and represent the front line of a health system. A person's first contact with the health system when he or she falls sick in most countries is with a primary care provider who also takes responsibility for continuity and coordination of care.

Primary care providers in China comprise community health centres and health service stations in urban areas and township health centres, township health clinics and village clinics in rural areas. There are generally 1–10 general practitioners (family doctors), 1–2 pharmacists and 1–10 nurses working in each of these institutions, depending on the size of the population within the community.

Much of China's success in improving its population's health during central planning before the 1980s related to the high standards of public health, through immunisation campaigns and improved environmental standards achieved by authorities through local health clinics within collectives and public enterprises etc. across China; the people in charge of public health functions at the time were often the providers of regular primary care.

With well-developed networks of primary care providers, accessibility and affordability of a health system can be improved for the following reasons. First, primary care providers are usually located close to the patients. Hence, it is more efficient for them to provide preventive health services and public health services. Primary care providers can also maintain long-term relationships with patients so they are well positioned to understand medical histories and contexts; this is particularly important for managing the growing incidence of chronic diseases.

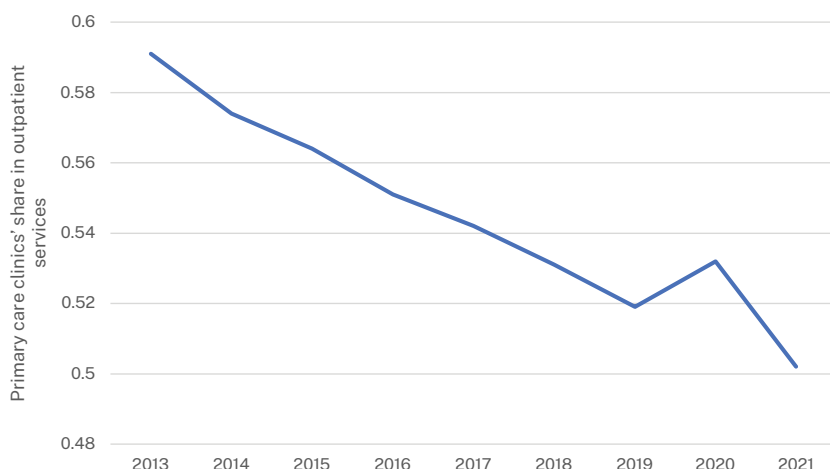
Second, with a well-established referral system, primary care providers can play the role of a ‘gatekeeper’, taking pressure off public hospitals and high-cost specialist services. With referral arrangements, patients are required to be diagnosed first by primary care providers before they are referred to a hospital. Health resources in hospitals can thus be used to help patients who are genuinely in need of specialist treatment.

Third, as patients usually have less knowledge of the range and quality of health services, primary care providers can make more efficient decisions on behalf of patients on secondary care.

However, the role of primary care providers has been eroded in China in recent years (World Bank 2016). The share of outpatient services provided by primary care clinics dropped from 61.8 per cent in 2010 to 51.9 per cent in 2019 (Figure 20.5) (NHC various years). After the outbreak of COVID-19, the share of primary care clinics in total outpatient services rebounded slightly to 53.2 per cent in 2020 but decreased again to 50.2 per cent in 2021. The share of outpatient services provided by hospitals increased from 34.9 per cent in 2010 to 45.8 per cent in 2021 (NHC various years, 2022).

The quality of services provided by primary clinics is a concern (Li et al. 2017). The low service quality may partly explain the low utilisation rate in the primary clinics. Under-development of a referral system, shortage of professional health workers, and a lack of coordination between clinical care and public health services are among the reasons for the low service quality in primary care clinics (Li et al. 2020).

The quality of primary care services may also be affected by the incentives the doctors face from the way the government, through its social health insurers, finances primary care clinics (Blomqvist 2011). Reforming payment methods could better align service providers’ incentives with quality in primary care clinics.



**Figure 20.5: Primary care clinics' share of outpatient services in China: 2013–20.**

Source: NHC (various years).

About half of service-related revenues in China's primary care clinics come from health insurance funds. Taking into account other revenues, a recent study reported that health insurance accounted for about 30 per cent of the total revenue primary care clinics in China receive (Yu et al. 2021). Given the importance of health insurance revenues, how those reimbursement payments are paid may well affect the behaviour of the doctors who work in the clinics. Currently, primary care is often delivered by salaried doctors in public clinics but the clinics are compensated by a fee-for-service schedule set by the government insurer. Fee-for-service compensates clinics according to the quantity of services rather than quality. An alternative approach would be a capitation system based on the population of patients served by the clinic.

While a capitation payment could provide an incentive for primary care providers to reduce their effort and costs including by referring patients to hospitals more frequently than necessary (Qian and Blomqvist 2014), it could be designed to improve service quality in primary care clinics and reduce the current emphasis on quantity.<sup>7</sup> Blended payments involving both capitation and fee-for-service might reward both quality and quantity. For

<sup>7</sup> See Qian and He (2018) about the impact of payment method on service quality in medical institutions in China.

example, reimbursement methods have been developed in the UK (e.g. the fund-holding approach), and in US managed-care plans, addressing over-referral issues and promoting more effective primary care.

## **Resource allocation between medical institutions and public health institutions**

The extent to which resources have been directed to hospitals has constrained funding of public health institutions as well as primary care clinics.

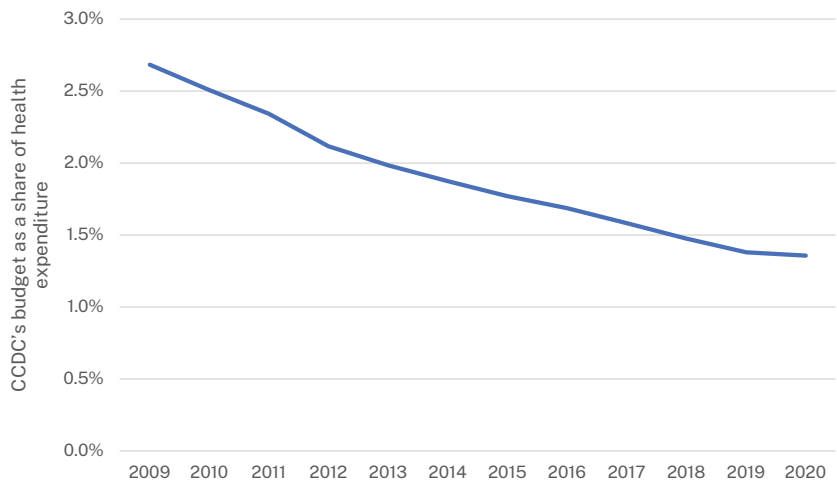
In many countries, government agencies for public health manage immunisation programs for children and adults. They also coordinate programs to prevent and contain various types of epidemics such as different types of influenza. Their responsibilities can also include the enforcement of regulations that indirectly influence population health (Qian and Blomqvist 2014).

The Chinese Centre for Disease Control and Prevention (CCDC) is the main bureaucracy providing such public health services. There are four levels of the CCDC system (district–city–province–national) (Bingqing et al. 2020). The national-level CCDC is mainly responsible for research and guidance on public health service provision. Sub-national level CCDCs are responsible for the investigation and surveillance of infectious diseases as well as community-level public health service delivery. Primary care clinics and hospitals are expected to play a supportive role in public health service delivery (NHC 2021).

Figure 20.6 shows that CCDC's share of total health expenditure has been decreasing in recent years. Figure 20.7 also shows the annual growth rates of health workers in different health institutions, revealing that CCDC and its local branches have had consistently and substantially lower growth compared to that of hospitals and primary care clinics. Only in 2020 in the context of COVID-19 did the growth rate of CCDC health workers (at 3.69 per cent) get close to matching that of hospitals and primary care clinics.

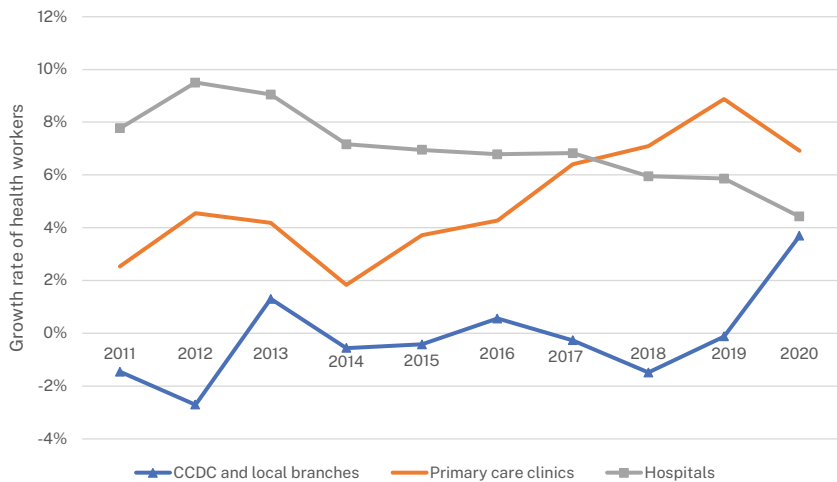


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**Figure 20.6: CCDC's budget as a share of health expenditure: 2009–20.**

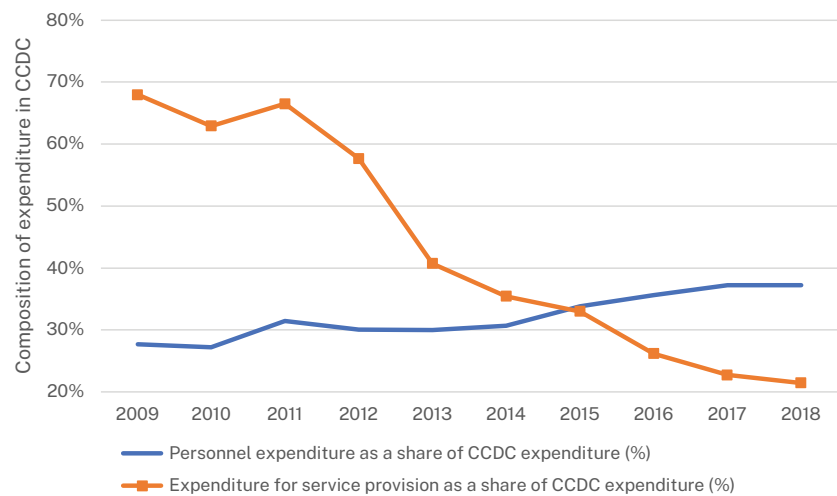
Source: NHC (various years).



**Figure 20.7: Growth of health workers in different health institutions (%): 2011–20.**

Source: NHC (various years).

Figure 20.8 shows that the share of the CCDC budget for service provision has also decreased in recent years while the share of the budget spent on personnel increased. This suggests that the volume of public health service provision by CCDC is likely to decrease.



**Figure 20.8: Composition of expenditure in CCDC: 2009–18.**

Source: NHC (various years).

The CCDC relies very heavily on direct government fiscal resources (for more than 70 per cent of the system’s budget). In contrast, direct government grants comprise only a minor portion (about 9.7 per cent) of total public hospital revenue in 2019 (Table 20.3), with the remainder coming from sales of medicine and payments by individuals and insurers for the provision of health services. Primary clinics also rely heavily on service provision, with over 60 per cent of revenue being service-related in 2019.

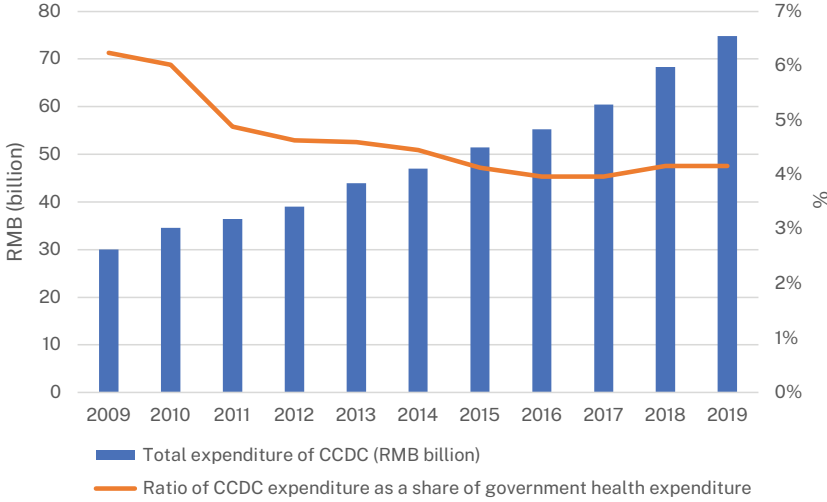
**Table 20.3: Breakdown of revenues for different types of medical institutions in 2019.**

Medical institutions	Revenue from direct government subsidy (%)	Service-related revenue (%)
Public hospitals	9.7%	88.1%
Primary clinics	30.7%	61.5%
CCDC	73.6%	20.6%

Source: NHC (various years).

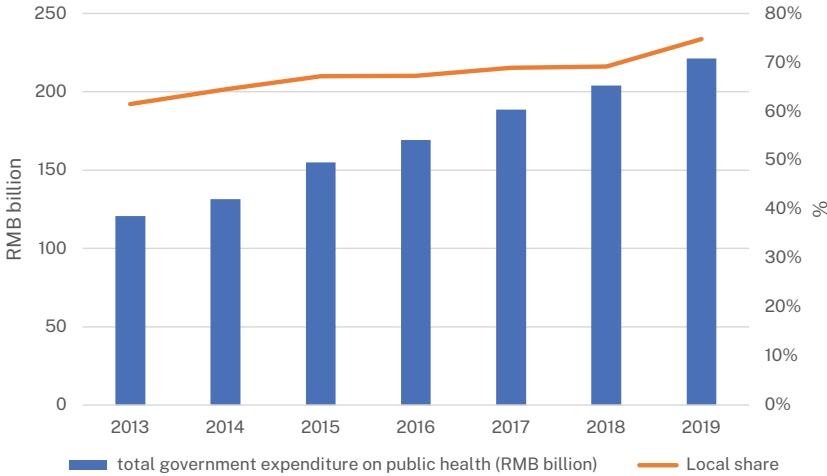
Despite its reliance on direct government support, CCDC’s share of total direct government health expenditure has been decreasing over the last decade, between 2009 and 2019 (Figure 20.9). Local government is responsible for the vast majority of government public health expenditure and this share has been increasing in recent years (Figure 20.10).

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**Figure 20.9: CCDC budget and its share in government health expenditure: 2009–19.**

Source: NHC (various years).



**Figure 20.10: Government expenditure on public health and the local share of government public health expenditure: 2013–19.**

Source: NHC (various years).

## **Incentives of bureaucrats and fragmented authoritarianism**

The Chinese political system has been described as one of ‘fragmented authoritarianism’ (Lieberthal and Oksenberg 1988). According to this literature, policymaking and implementation in China has not been very effective, as decision-making was fragmented and disjointed across various government departments (Lieberthal 1992). Major social policies are managed and implemented at the local level, and local officials may have different objectives from policymakers at the central level. Also, each government agency has a strong incentive to maximise its own interests (and marshal information accordingly).

Since the mid-1990s, a performance evaluation system for local officials has been used by the state to address this misalignment of incentives between central and local government (Whiting 2004; Landry 2008; Gao 2009; Jiang 2018). Local officials’ careers depend on whether they fulfil selected policy targets set by the upper-level government (Li and Zhou 2005; Xu 2011; Jia et al. 2015).

While local bureaucrats look to follow the policy targets set by the upper-level governments, and to allocate resources and efforts based on those policy targets, the scope for discretion in implementation and the way in which rewards for performance are managed can lead to disconnects, as illustrated in the following sections.

## **Bureaucrats’ incentives in regional development and health care**

Decentralised government financing of health care is worsening regional inequality. Health care is the responsibility of local governments, in particular city/county-level governments, rather than central government, both to fund healthcare provision and to regulate health insurance. With decent regional economic development, local capacity to provide health services can be improved, as is especially the case in more developed regions. However, in less developed regions, the fiscal budget of local governments is rarely enough to fund health, and social insurance is also reliant on the capacity of the local economy to pay. These facts reinforce regional inequality of health care.

Further, many provincial-level governments have strong incentives to support regional economic development policies. As previously discussed, in contemporary China, many of these regional development policies are metropolitan area-oriented to take advantage of the urban agglomeration effect. Accordingly, provincial bureaucrats are encouraged to allocate health resources to the major city in their region to attract people to migrate and work there. Accordingly, while there have been a lot of government initiatives aimed to equalise access to basic public services,<sup>8</sup> funding has often been directed to well-equipped hospitals concentrated in large cities.

### **Bureaucrats' decision-making in reforming payment methods in health reform**

The failure to relate service payments to service quality in primary care clinics is also related to bureaucrats' behaviours. Local government has a monopoly in managing health insurance and the social insurers themselves generally have little incentive to improve the affordability of healthcare services or to take full advantage of market mechanisms such as competition and service purchasing to promote the efficiency or effectiveness of the suppliers of healthcare services. Improving the effectiveness of social insurance in addressing affordability and improving its capacity to influence service quality and efficiency is the responsibility of the local officials in the design and regulation of social insurance.

Local governments compete with each other because cadres' promotion prospects are highly dependent on their perceived local work performance, including GDP growth, among other performance measures (Chan and Gao 2008; Xu 2011). When officials have multiple targets to fulfil, there is a tendency for them to pursue the more measurable tasks and in the health field these include accumulating more surpluses for insurance funds or promoting enrolment in social insurance plans rather than improving healthcare service quality, health outcomes or affordability. The measurable tasks have greater visibility and are hence more rewarding for officials. For example, in the 12th Five-Year Plan (FYP, 2011–2015), the coverage of the pension scheme for urban residents was pledged to reach RMB357 million by 2015. The 12th FYP also set the target for the annual growth rate of

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8 Including those initiatives to address the equalisation of accessing public services and those to equalise the fiscal capacity across local governments in different regions.

health insurance enrolment of at least 3 per cent. It is reported that in many counties, enrolment is inflated to appear to meet the target set by the top leadership (Qian 2011).

## **Government's incentives in allocating grants to public health institutions**

A key explanation of the continuing weaknesses of China's public health system suggested here involves the incentives and performance information for local cadres. These bureaucrats tend to respond quickly to observable and more rewarding measurements (Wilson 1989; Holmstrom and Milgrom 1991, Qian 2015).

The imbalance in evaluation indexes has also contributed to the comparatively low degree of investment in public health. The performance evaluation system for health bureaucrats is skewed towards observable outcomes, leading local officials to invest more in the construction and expansion of large hospitals at the expense of preventive investments. While some indexes of public health are included in the performance evaluation system for health officials (including CCDC technocrats) (NHC 2015), such as vaccination rates, public health campaign enforcement and the success rate of public health emergency management, the policy outcomes of preventive interventions are difficult to observe and more emphasis is given to the measures used for health care (e.g. volume of acute care, efficiency in hospital bed occupation rates, efficiency in human resource allocation).

## **Discussion and conclusions**

Over the last decade, the actual resource allocation pattern reveals an unintended consequence of the Chinese health reforms. While the total amount of fiscal subsidy to primary care clinics has increased significantly, hierarchies between hospitals, between medical institutions and between places have emerged, creating a huge disparity between grassroots primary care and large hospitals in particular.

This chapter argues that the misallocation of resources in the Chinese health system is to a large extent a consequence of the incentives of bureaucrats in the central and local levels of governments. Local health bureaucrats want to allocate resources to the areas in which their performance is more rewarding (such as health insurance enrolment rates and volume of acute

care) compared to those areas in which the performance cannot be as easily measured quantitatively (e.g. service quality, prevention of public health crises). Further, the tension between the multiple objectives of local government (e.g. between regional economic development and equalisation of access to health care) is contributing to the concentration of resources spatially, and inequality across and within regions.

Given there is very limited political participation and political controls of the legislature, bureaucrats' roles are critical in policymaking and implementation in China. How to motivate bureaucrats by addressing the misalignment of the incentives between the central-level policymakers and bureaucrats is critical (O'Brien and Li 1999; Gallagher 2017; Gilli et al 2018; Qian 2018). The performance evaluation system for cadres can shape the incentives of bureaucrats to some degree but also have some unintended consequences. As we suggested in this chapter, the performance evaluation system tends to highlight indexes related to economic performance which may lead to resource misallocation across regions and medical institutions. Further, the performance evaluation system tends to highlight those more visible and measurable indexes, which may lead to under-allocation of resources to the public health system.

A major policy implication from the chapter is the need to impose more appropriate incentive-compatible policy initiatives for health service provision, health insurance and the public health system. Ensuring local bureaucrats' incentives to meet these policy targets could be very important. The most recent policy initiatives can be conceived as a continuation of the 2009 health reform through which substantially more resources are being allocated to the health system by topping up the policy priority of public health and primary care. In the 14th Five-Year Plan, released in March 2021 (State Council 2021), enhancing inputs in primary care clinics and public health institutions have been highlighted as major policy targets. In May 2021, a vice-ministerial level government agency, the National Administration for Disease Control and Prevention, was established. The restructure of the bureaucracy is expected to address the problem of underinvestment in infectious disease prevention.<sup>9</sup>

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9 See article 13 in the government action plan for the health reform initiatives in 2021, at: [www.gov.cn/zhengce/zhengceku/2021-06/17/content\\_5618799.htm](http://www.gov.cn/zhengce/zhengceku/2021-06/17/content_5618799.htm), accessed 28 September 2021.

## References

- Alder, Simon, Lin Shao and Fabrizio Zilibotti (2016). 'Economic reforms and industrial policy in a panel of Chinese cities', *Journal of Economic Growth* 21(4):305–49. doi.org/10.1007/s10887-016-9131-x.
- Bingqing, Xu, Chen Rui, Wang Shanshan and Cheng Xing (2020). 'Why there were no new COVID cases for 12 days after January 6', *Yicai*. Accessed 15 November 2022. Available at: [www.yicai.com/news/100485217.html](http://www.yicai.com/news/100485217.html).
- Blomqvist, Åke (2011). 'Public-sector health care financing', in Sherry Glied and Peter C. Smith (eds), *Oxford Handbook of Health Economics*, Oxford University Press, Oxford. doi.org/10.1093/oxfordhb/9780199238828.013.0012.
- CEIC (n.d.). 'CEIC database [data set]'. Accessed 13 December 2022. Available at: [www.ceicdata.com/en](http://www.ceicdata.com/en).
- Chan, Hon S. and Jie Gao (2008). 'Performance measurement in Chinese local governments: Guest editors' introduction', *Chinese Law & Government* 41(2–3): 4–9. doi.org/10.2753/CLG0009-4609410200.
- CHNS (China Health and Nutrition Survey) (n.d.). 'Data sets'. CHNS website. Accessed 13 December 2022. Available at: [www.cpc.unc.edu/projects/china/data/datasets](http://www.cpc.unc.edu/projects/china/data/datasets).
- Fan Wei and Yang Chen (2020). 'Reports from community hospitals in Wuhan'. *The Paper*. Accessed 15 November 2022. Available at: [m.thepaper.cn/rss\\_news\\_Detail\\_5685761?from=](http://m.thepaper.cn/rss_news_Detail_5685761?from=) (in Chinese).
- Gallagher, Mary E. (2017). *Authoritarian legality in China: Law, workers, and the state*, Cambridge University Press, New York. doi.org/10.1017/9781316018194.
- Gao, Jie (2009). 'Governing by goals and numbers: A case study in the use of performance measurement to build state capacity in China', *Public Administration and Development* 29(1):21–31. doi.org/10.1002/pad.514.
- Gilli, Mario, Yuan Li and Jiwei Qian (2018). 'Logrolling under fragmented authoritarianism: Theory and evidence from China', *Public Choice* 175(1): 197–214. doi.org/10.1007/s11127-018-0526-4.
- Glaeser, Edward L. (2008). *Cities, agglomeration, and spatial equilibrium*, Oxford University Press, Oxford.
- Holmstrom, Bengt and Paul Milgrom (1991). 'Multitask principal–agent analyses: Incentive contracts, asset ownership, and job design', *Journal of Law, Economics, and Organization* 7:24–25. doi.org/10.1093/jleo/7.special\_issue.24.



- Jaros, Kyle A. (2019). *China's urban champions: The politics of spatial development*, Princeton University Press, Princeton. doi.org/10.1515/9780691192604.
- Jia, Ruixue, Masayuki Kudamatsu and David Seim (2015). 'Political selection in China: The complementary roles of connections and performance', *Journal of the European Economic Association* 13(4):631–68. doi.org/10.1111/jeea.12124.
- Jiang, Junyun (2018). 'Making bureaucracy work: Patronage networks, performance incentives, and economic development in China', *American Journal of Political Science* 62(4):982–99. doi.org/10.1111/ajps.12394.
- Landry, Pierre F. (2008). *Decentralized authoritarianism in China: The communist party's control of local elites in the post-Mao era*, Cambridge University Press, New York. doi.org/10.1017/CBO9780511510243.
- Li, Hongbin and Zhou, Li-An (2005). 'Political turnover and economic performance: The incentive role of personnel control in China', *Journal of Public Economics* 89(9–10):1743–62. doi.org/10.1016/j.jpubeco.2004.06.009.
- Li, Xi, Harlan M. Krumholz, Winnie Yip, Kar Keung Cheng, Jan De Maeseneer, Qingyue Meng, Elias Mossialos, Chuang Li, Jiapeng Lu, Meng Su, Qiuli Zhang, Dong Roman Xu, Liming Li, Sharon-Lise T. Normand, Richard Peto, Jing Li, Zengwu Wang, Hongbing Yan, Runlin Gao, Somsak Chunharas, Xin Gao, Raniero Guerra, Huijie Ji, Yang Ke, Zhigang Pan, Xianping Wu, Shuiyuan Xiao, Xinying Xie, Yujuan Zhang, Jun Zhu, Shanzhu Zhu and Shengshou Hu (2020). 'Quality of primary health care in China: Challenges and recommendations', *Lancet* 395(10239):1802–12. doi.org/10.1016/S0140-6736(20)30122-7.
- Li, Xi, Jiapeng Lu, Shuang Hu, KK Cheng, Jan de Maeseneer, Qingyue Meng, Elias Mossialos, Dong Roman Xu, Winnie Yip, Hongshao Zhang, Harlan M. Krumholz, Lixin Jiang and Shengshou Hu (2017). 'The primary health-care system in China', *Lancet* 390(10112):2584–2594. doi.org/10.1016/S0140-6736(17)33109-4.
- Lieberthal, Kenneth G. (1992). 'Introduction: The "fragmented authoritarianism" model and its limitations', in Kenneth G. Lieberthal and David M. Lampton (eds), *Bureaucracy, politics, and decision making in post-Mao China*, University of California Press, Berkeley.
- Lieberthal, Kenneth G. and Michel Oksenberg (1988). *Policy making in China: Leaders, structures, and processes*, Princeton University Press, Princeton. doi.org/10.1515/9780691221724.
- Lu, Yi, Jin Wang and Lianming Zhu (2019). 'Place-based policies, creation, and agglomeration economies: Evidence from China's economic zone program', *American Economic Journal: Economic Policy* 11(3):325–60. doi.org/10.1257/pol.20160272.

- Ministry of Finance (China) (2022). 'Central government budget', *Central budget and final accounts public platform*. Accessed 15 November 2022. Available at: [www.mof.gov.cn/zyyjskgkpt/zyzfys/](http://www.mof.gov.cn/zyyjskgkpt/zyzfys/).
- Mok, Ka Ho and Jiwei Qian (2019). 'A new welfare regime in the making? Paternalistic welfare pragmatism in China', *Journal of European Social Policy* 29(1):100–14. doi.org/10.1177/0958928718767603.
- NBS (National Bureau of Statistics, China) (various years). *China statistical yearbook*. Published annually: multiple years cited. China Statistics Press, Beijing.
- NHC (National Health Commission, China) (various years). *China health statistical yearbook*. Published annually. China Union Medical Press, Beijing.
- NHC (National Health Commission) (2015). 'Explanations for the "Guidelines for strengthening the evaluation of public owned health institutions"'. Accessed 15 November 2022. Available at: [www.gov.cn/zhengce/2015-12/21/content\\_5026174.htm](http://www.gov.cn/zhengce/2015-12/21/content_5026174.htm).
- NHC (National Health Commission) (2021). 'Replies to No. 9779 proposal to the third meeting of the 13th National People's Congress'. Accessed 15 November 2022. Available at: [www.nhc.gov.cn/wjw/jiany/202102/c464bad7b86c4675bb23b36d7380979e.shtml](http://www.nhc.gov.cn/wjw/jiany/202102/c464bad7b86c4675bb23b36d7380979e.shtml).
- NHC (National Health Commission) (2022). 'Statistic communiqué of health 2021'. Accessed 15 November 2022. Available at: [www.gov.cn/xinwen/2022-07/12/content\\_5700670.htm](http://www.gov.cn/xinwen/2022-07/12/content_5700670.htm).
- NHSA (National Health Security Administration) (2020). *Statistical communiqué of the development of health insurance*, National Health Security Administration, Beijing. Accessed 15 November 2022. Available at: [www.nhsa.gov.cn/art/2021/6/8/art\\_7\\_5232.html](http://www.nhsa.gov.cn/art/2021/6/8/art_7_5232.html).
- O'Brien, Kevin J. and Lianjiang Li (1999). 'Selective policy implementation in rural China', *Comparative Politics* 31(2):167–86. doi.org/10.2307/422143.
- Podger, Andrew, Michael Woods and Tsai-tsu Su (2020). 'The immense and continuing challenge of urban governance: Developments in Australia and across Greater China', *Australian Journal of Social Issues* 55(2):105–24. doi.org/10.1002/ajs4.111.
- Qian, Jiwei (2011). *Health financing reform and fiscal decentralization*, Working paper, National University of Singapore, Singapore.
- Qian, Jiwei (2015). 'Reallocating authority in the Chinese health system: An institutional perspective', *Journal of Asian Public Policy* 8(1): 19–35.

- Qian, Jiwei (2018). 'Policy styles in China: How to control and motivate bureaucracy', in Michael Howlett and Jale Tosun (eds), *Policy styles and policy-making: Exploring the linkages*, Routledge, London. doi.org/10.4324/9781315111247-10.
- Qian, Jiwei (2021). *The political economy of making and implementing social policy in China*, Palgrave Macmillan, Singapore. doi.org/10.1007/978-981-16-5025-3.
- Qian, Jiwei (2022). 'Health reform in China: Developments and future prospects', *Health Care Science* 1(3):166–72. doi.org/10.1002/hcs2.19.
- Qian, Jiwei and Åke Blomqvist (2014). *Health policy reform in China: A comparative perspective*, World Scientific. doi.org/10.1142/8607.
- Qian, Jiwei and Y. Do (2019). *Allocation of government health grant across regions in China: The role of bureaucrats' incentives and information*, Working paper.
- Qian, Jiwei and Alex Jingwei He (2018). 'The bonus scheme, motivation crowding-out and quality of the doctor-patient encounters in Chinese public hospitals', *Public Organization Review* 18(2):143–58. doi.org/10.1007/s11115-016-0366-y.
- Qian, Jiwei, Alex Jingwei He and Jason Dean-Chen Yin (2019). 'The medical arms race and its impact in Chinese hospitals: Implications for health regulation and planning', *Health Policy and Planning* 34(1):37–46. doi.org/10.1093/heapol/czz001.
- Sohu (2020). 'The list of reimbursement rates for inpatient services in Xi'An city'. Accessed 15 November 2022. Available at: [www.sohu.com/a/399651443\\_100300547](http://www.sohu.com/a/399651443_100300547).
- State Council (People's Republic of China) (2021). '14th Five-Year Plan for national economic and social development (2021–2025) and the long-term goals for 2035'. Accessed 15 November 2022. Available at: [www.gov.cn/xinwen/2021-03/13/content\\_5592681.htm](http://www.gov.cn/xinwen/2021-03/13/content_5592681.htm).
- Whiting, Susan (2004). 'The cadre evaluation system at the grass roots: The paradox of party rule', in Barry J. Naughton and Dali L. Yang (eds), *Holding China together: Diversity and national integration in the post-Deng era*, Cambridge University Press, New York. doi.org/10.1017/CBO9780511617157.004.
- Wilson, James (1989). *Bureaucracy: What government agencies do and why they do it*, Basic Books, New York.
- World Bank (2016). *Deepening health reform in China: Building high-quality and value-based service delivery*, World Bank, Washington DC.

- Xinhua (2016). 'Finetuning the path of targeted poverty alleviation', *Xinhua News*, 13 June 2016. Accessed 15 November 2022. Available at: [news.xinhuanet.com/politics/2016-06/13/c\\_129055964.htm](http://news.xinhuanet.com/politics/2016-06/13/c_129055964.htm).
- Xu, Chenggang (2011). 'The fundamental institutions of China's reform and development', *Journal of Economic Literature* 49(4):1076–151. doi.org/10.1257/jel.49.4.1076.
- Yang, Wei (2020). 'Understanding the non-medical costs of healthcare: Evidence from inpatient care for older people in China', *The China Quarterly* 242:487–507. doi.org/10.1017/S0305741019001115.
- Yu, Yahang, Xuan Zhao, Huiwen Li, Menggen Yu, Beibei Yuan and Qingyue Meng (2021). 'Environmental support for the delivery of integrated medical and preventive services in primary healthcare institutions', *Chinese General Practices* 24(1):52–59. doi.org/10.12114/j.issn.1007-9572.2021.00.039.
- Zhou, Feizhou (2012). *Taking benefit as benefit: Fiscal relationships and local government behaviours*, Shanghai Joint Publishing, Shanghai.

This text is taken from *Dilemmas in Public Management in Greater China and Australia: Rising Tensions but Common Challenges*, edited by Andrew Podger, Hon S. Chan, Tsai-tsu Su and John Wanna, published 2023 by ANU Press, The Australian National University, Canberra, Australia.

[doi.org/10.22459/DPMGCA.2023.20](https://doi.org/10.22459/DPMGCA.2023.20)