Chapter 7

The rise of hospital centrism in China, 1835-2018, from the perspective of financing[1]

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Introduction

China was once considered an international model for low cost rural primary health care. Its historical achievement in improving health at very low cost provided some of the strongest empirical evidence supporting the World Health Organization's 1978 Declaration on Primary Health Care.[2] However, over recent decades the country has suffered from an over-concentration of high-quality resources in hospitals, despite efforts to strengthen primary care.[3] In this essay we examine the reasons for this apparently contradictory situation.

Our focus is on the historical evolution of hospitals and primary care in China from the perspective of financing, drawing from a historical study covering the years 1835 to 2018. 1835 is the starting point, as it marked the founding of the first Western medical institution in China. As we have argued elsewhere, this was the inception of

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a hospital-centric health system model.[4] We end in 2018 in order to link the historical analysis to the contemporary situation, in which hospital-centrism remains. Two other milestones, 1949 and 1978, represent key intermediate points: in 1949, the new People's Republic of China was founded, leading China towards rapid industrialization; and 1978 marked the start of the systematic reform that shifted China's economy away from command and control and towards the market.

We begin by showing that foreign actors, whose concern was not to achieve broad health service coverage, introduced the hospital-centric model. This model was unaffordable given China's lack of industrialisation before 1949 and it remained partially unaffordable between 1949 and 1978. Hospitals in China had a high-cost orientation that was excessive for the rural population. Hence, when the country's leaders attempted to extend health services to the whole population, they faced enormous challenges in finding sufficient financial resources, and repeatedly pushed towards a lower-cost model built around primary care. The result was a divided structure. As industrialisation rapidly progressed and fiscal space expanded after 1978, wider coverage became not only feasible but also politically important, particularly after 2002. However, efforts to reorient the health system towards primary care faced a complex set of challenges, which along with the policy choices made since 1978, affected primary care strengthening.

Our conceptual approach draws particularly on two strands in the historiography of the welfare state, historical institutionalism and transnational diffusion. Much of the literature explaining the rise and development of welfare and health systems has been Western-focused, so we have approached it selectively to find a helpful lens to view the situation in China. The early structural-functionalist analysis treated welfare states as general processes arising from industrialisation, a response to market failures in the social realm. Others paid more attention to the interaction of social forces in the political arena.

The Marxist tradition emphasised class conflict and the concern of the labour movement to orient state power away from capitalist priorities. Pluralist approaches focused on other types of economic or professional vested interests, treating the democratic state as a neutral presence responding to external social actors.[5] These interpretations, however, have been found inadequate to explain the timings and configurations of national welfare states in health and in general,[6] and thus do not fit well our attention to the historical evolution of hospitals and primary care in China.

Historical-institutionalists have instead focused on the state as an autonomous force. Some emphasise the agency of state bureaucrats as key actors with varied capacities, who are not just strictly executing the interests of certain social groups, or obediently answering the call of ideologies, but leading the development of policies.[7] Others have focused on the ways in which constitutional arrangements for governing and law-making determine national trajectories.[8] Does the political system, for example, allow interest groups to veto policies that run against their interests? Does it have mechanisms that favour the achievement of consensus-building, and so on? Others[9] place particular emphasis on the theory of path dependence: 'that what happened at an earlier point in time will affect the possible outcomes of a sequence of events occurring at a later point in time'.[10] The idea is there are decisive junctures that condition later events by creating new stakeholders and by setting in train policy feedbacks, related either to popular attitudes or to economic expectations, which then make change to another course more difficult. This framework has been fruitfully applied to China, to explain why retrenchment of government was weaker in urban than rural areas after 1978.[11]

An alternative, recent, approach switches attention from national forces of change to the transnational, attending to ways in which diffusion between countries explains the various shapes of health

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welfare and services.[12] Lucas[13] and Borowy[14] also described the role of policy diffusion from central and eastern Europe mediated by the Rockefeller Foundation and the League of Nations Health Organization in the development of the health system in China. Using 'interactive diffusion' as a theoretical lens, Hu Aiqun argued that China adopted the Soviet model of social welfare in the early 1950s both to imitate development of a Soviet-style socialist economy and to demonstrate loyalty to the socialist club. Hu argued that the adoption of the Soviet model led to instability of the welfare system, which was significantly changed in the 1960s and 1970s.[15]

Our previous article argued for the importance of a range of factors in generating a path-dependent trajectory of hospital-centrism in China.[16] Highlighting the role of financing, this chapter argues that the impact of industrialisation, historical-institutionalism and diffusion are all helpful in explaining the shaping of China's current hospital-centric health system.

Sources

These arguments are mainly built on four types of sources. First, books on general history of medicine in China such as *The History of Chinese Medicine* (Wong & Wu, 1936) and the works of other historians and social scientists who have studied history on more specific periods or topics provided a chronicle of medicine-related events and their historical contexts. Second, national and local official documentations of history, statistics and compiled policy documents, such as the *China Health Yearbooks* and provincial health gazettes from eastern, central and western China (Shandong, Jiangxi, Guangxi), were selected to complement the national yearbooks. Third, an extensive range of journals and

newspapers provided the perspectives of elite Western medicine doctors and other policy actors. Fourth, anthologies, biographies, memoirs and historical studies of important actors (such as Jin Baoshan, who was Director of the National Health Administration during the 1940s) were collected and analysed. Finally, although national archives are inaccessible for post-1949 periods, documents kept in the local archives of Beijing and Pinggu (a suburban district of Beijing and a rural county before 2001) were also searched and used.

In what follows, we work chronologically through the historical evolution of hospitals and primary care providers in China during the three periods from 1835 to 2018, and then wrap up with a discussion of the key historical stages, a brief comparison between China, the United States and the United Kingdom, and the role of financing in the historical process.

The origin of divergence, 1835-1949

In the traditional Chinese medical world, medical services were mainly provided on an ambulatory basis. As we are going to show, the precursory model of hospitals was brought in from Western medicine. As Hu's theory of interactive diffusion suggested, diffused institutional construction needs to respond to local context. During the period from 1835 and 1949, China went through a series of wars, revolutions and fragmentation, including the First Opium War (1839-1842) which opened its closed market, the Boxer Uprising (1899-1901) during which native Chinese rebelled against foreigners, the Xinhai Revolution (1911) which overthrew the imperial system, and the Warlord Era (1916-1928). Hospital-based Western medicine adapted to the historical reality in China upon its introduction and created a set of institutions that consol-

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idated step-by-step the model of hospitals in China over time. In 1928, the Nationalists unified the country and built a central government. The general peace was broken by the Japanese invasion in 1937, dragging the county deeply into the Second World War until 1945, the end of which was immediately followed by a major civil war, then the founding of the People's Republic of China in 1949. For the years between 1928 and 1949, we are also going to show how a model of medical development focusing on primary care was later introduced but was unable to shift the country's health development fundamentally away from hospitals.

The introduction of hospital-based Western medicine

The start of modern medicine in China is usually traced to the Canton Ophthalmic Hospital. This eye hospital was the first Western medicine institution (in Canton, now Guangzhou, Guangdong), and was opened by Peter Parker, a pioneer Christian medical missionary, in 1835. The narrow focus on eye problems was justified as they were among the most common illnesses amongst the Chinese,[17] and effective treatment (i.e. surgery) was not available but could transform patients' lives.[18] The Canton Ophthalmic Hospital became a success and treated more than 900 patients in the first three months.[19] Parker was also active in making known among his foreign sponsors the value of hospitals, and convinced newspaper reporters in England, for example, that his plan for hospitals not only advanced science, but also created good feelings between China and Western powers which facilitated greater engagement with the country.[20]

This was important because the Canton Hospital was built amid grave tension between China and the Western powers on the eve of the First Opium War (1839-1842). Eye surgery was considered an effective way to

demonstrate the power of Christianity as well as the technical supremacy of Western civilisation. The hospital, and Parker himself, became an icon for Western engagement with China[21] and prompted the establishment of the Medical Missionary Society in China,[22] and the building of more hospitals in the country after the Opium War.[23] Nevertheless, it was very limited in scale and services. The records of the Canton Hospital during its early years suggested patients were mainly using it for day surgery,[24] and it would also be difficult to establish conclusively the advantage of Western medicine, as it was not until the late nineteenth century when antisepsis and an anesthesia were developed for surgery.[25]

The missionaries over time consolidated a particular model of the hospital in terms of service organisation and financing. They came to the view that hospitals should be the centre of medical missionary work since they enabled lengthy engagement with patients that facilitated religious preaching.[26] The missionaries' guidance also suggests that they valued generalist outpatient care based in hospitals as a way to engage a wider community of potential believers.[27] The consensus around such hospital-centric model incorporating inpatient and general ambulatory care provided the justification for continuous missionary funding input. Furthermore, it allowed hospitals to develop using local sources of funding via substantial outpatient services, revenue from which supported seventy-four per cent of mission hospitals.[28] This was a critical factor, as the rich would try to avoid hospitals. With the expansion of patients' payment, the number of staff in hospitals was several times larger than those in dispensaries by the early 1900s.[29]

As mentioned above, the country was in chaos and fragmentation in the early 1900s. Progress in establishment of health services under the state was limited to either local initiatives or selected sectors (e.g. railways and customs). There was barely any national coordination of medical development by the government, and factions of Western medicine started to emerge because of the difference in training and

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background between medical missionaries from the West (and their Chinese apprentices) and an increasing number of Chinese medical doctors trained in Japan who were returning to China.[30] The latter had experienced the rapid development of modern medicine in Japan and started to open medical schools teaching Japanese-influenced modern medicine.[38] Their emergence challenged the image of Western medicine and the dominance of medical missionaries, and medical missionaries started to worry about being 'discredited in the eyes of the educated Chinese from a professional standpoint'.[31]

Scientific medicine started to be reinforced within the medical mission. New sources of money emerged, first through an indemnity for missionary hospitals after the Boxer Rebellion, and then via the establishment of the China Medical Board by the Rockefeller Foundation.[32] Benefiting from the newly found resources, and stimulated by rapid medical development in Western countries and China's engagement with Japan, medical professionals became increasingly assertive of professional values and started to demand modernisation of medicine through the building of modern hospitals and high-standard medical schools that could provide proper medical services and conditions for research. Balme wrote a report based on a large-scale survey of mission hospitals, exposing to their funders the poor quality of hospitals, which lacked both proper equipment and qualified staff.[33]The movement towards scientific medicine further consolidated the hospital-centric model by tying it firmly to medical professionalisation.

A report by the China Medical Commission,[34] noted that mission hospitals had most of their non-staff expenditures covered by local sources by 1914. This demonstrated the financial viability of hospitals and was an important factor contributing to the decision to strengthen mission hospitals. The locations of institutions receiving aid from the China Medical Board were thus concentrated mainly in coastal and large cities in alignment with existing missionary medical schools.[35]

In the face of financial difficulty during the Great Depression in the 1930s, Hume, a medical school leader, pushed for the admission of private paying patients.[36]The high cost of hospitals no doubt contributed to the concentration of medical schools and hospitals in large cities. Over time, local resources became critical in hospital financing.[37]

From hospitals to health organisations

A milestone event in extending health services to the mass population occurred with the establishment of the first central health ministry in 1928, when the Nationalist regime unified the country. The founding of the Ministry of Health triggered discussion of 'state medicine'. The idea of state medicine was inspired by the development of social welfare in Western Europe and Soviet Union,[38] but more importantly the emergence of community-based social medicine in eastern Europe.[39] Meanwhile, domestic experimentation with various projects of rural community health care was crucial in forging the agenda of state medicine.[40]

Among the various local experiments, the work of Zhiqian Chen (also known as C.C. Chen) in Ding County, an ordinary poor agricultural county, was the most influential and was directly incorporated in a nation-wide blueprint.[41] In 1932, Chen took charge of Ding County's Department of Rural Health of the Mass Education Movement—an influential rural reconstruction program. Chen conducted a simple economic evaluation of feasible public health interventions that could address the most pressing disease burden of rural populations. He soon realised the limitation of fiscal space—villagers spent only 30 cents (the currency unit was silver dollar—which was a coin made from Mexican silver) on average (based on an earlier survey in Ding

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County) on traditional medicine.[42] Chen designed the rural health programme to address the villagers' primary health problems, which were mainly infectious diseases, like smallpox, trachoma, dysentery, tetanus, and typhoid. He found that to address these most pressing needs it was neither feasible nor necessary to rely solely on doctors and nurses.[43]

The model Chen developed was a county-wide multi-tier health organisation approach involving facilities responsible for different levels of care, costing only 9.08 cents annually per capita—less than a third of villagers' annual health expenditure.[44] The health organisations included, from the bottom to the top: village health workers (with 10 days of training and continuous supervision), who provided most of the services for each village (about 1,000 people) and cost only 1.65 cents annually per capita; sub-district health stations (staffed by 'general practitioner[s] for public health'), which provided technical supervision to village health workers and outpatient services for conditions beyond their competence for all sub-district population (about 30,000 people), and cost 3.23 cents; and a county health centre, which provided comprehensive leadership of county-wide health affairs, and supervision and support for village and sub-district health centres, and which was incorporated with a hospital of 30-45 beds, and cost 4.2 cents.[45] There were two key aspects of the cost-effectiveness of the model: on the one hand were the short-term trained local village health workers, who in total cost less than 20% of overall budget. Running each village health station (including remuneration and the cost of drugs, vaccines and other basic supplies) cost only 1% of the budget for a subdistrict health station and only 1/2000 of the budget for a district health centre (including a hospital of 45 beds). The village health stations provided day-to-day management of health of the villagers. On the other hand, the village health workers were reinforced by the sub-district

and county health facilities as they formed a multi-tiered referral system. The Ding County Model therefore represented an effort to develop not only a model of primary care providers suitable to rural conditions, but also new roles for hospitals and doctors.

The multi-tier model of Ding County proved impossible to scale up. In 1935, China had only 0.01 Western medical doctors per thousand population as compared to 0.34 per thousand in Yugoslavia, the other classic example of interwar rural social medicine. Furthermore, almost all Western medical doctors 'followed the money' and practiced in large cities.[46] Because of limited resources and government commitment, it was not until the 1940s that the central government started to scale-up state medicine programs and recruit state medical doctors,[47] while efforts to mobilise private practitioners for state medicine were generally unsuccessful.[48] Some county health centres tended to focus on hospital-based curative care for neighboring residents only, rather than supporting the sub-district and village health providers.[49]

After this unsuccessful attempt to shift doctors towards primary care, training of state doctors in the 1940s shifted towards public health. A revised state medicine model, more narrowly focused on prevention than the Ding County experiment, was extended in inland provinces, along with the retreat of the Nationalist regime, during the Second World War.[50] This orientation towards prevention was problematic given the lack of support from hospitals and professional doctors. Some found that such doctors were not competent enough to provide curative services and were therefore unable to win the patient trust needed to deliver public health services.[51]

The period from 1835 to 1949 therefore saw two separate models of health service delivery. Primary care providers and hospitals had their own pattern of service organisation and financing respectively (see Table 7.1). While the model for hospitals was based on medical

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school-affiliated hospitals transplanted from the West, the primary care model was represented by rural health programmes under the state, influenced by social medicine ideas emerging in central and eastern Europe. The separation of the two models was marked by the failed attempt to scale up a multi-tier design of health services based on the Ding County experiment in the early 1930s. Reorienting the hospitals towards primary care strengthening failed due to the weak financial and regulatory power of the state medicine reformers, particularly given the separate funding bases of the two models.

Table 7.1: Financial sources of hospitals and primary care providers (1928-1949)

	Type of provider	Financial sources	Services
Hospitals	Urban hospitals	Mission Government Private out-of-pocket	Mainly curative
Primary care providers	Urban private practitioner	Urban private out-of-pocket	Mainly curative
	State medicine sub-district health stations	Government	Mainly preventive, curative
	Village health workers	Rural community	Mainly preventive

Source: authors

Establishing socialist medicine, 1949-1978

From 1949 to 1978, the Communist government took strong control of health services, recognising them as a major social project in its effort to build a socialist industrialising state. As industrialisation

developed in urban areas, the rural economy was developed based on collective agriculture. A two-tier economic and social welfare system was formed, where urbanites enjoyed substantially more benefits than their rural counterparts.[52] This structural reality affected the evolution of hospitals and primary care providers from 1949 to 1978. The early split in trajectories developed further. The 1950s was marked with a diffusion of Soviet model of health services, which further changed the balance of care and tilted it towards urban hospitals. The efforts to shift services towards primary care took place most evidently in rural areas and became embedded in the rural socio-economy.

Adapting the Soviet model of health services

In the years after 1949, leaders of the newly founded People's Republic of China decided to organise its urban health sector following the Soviet model of health service organisation, as part of a wider effort to adopt Soviet experiences of national development.[53] Two major urban insurance schemes, namely the Labour Insurance Scheme (LIS, covering formal industrial employees) and the Government Insurance Scheme (GIS, covering governmental and para-governmental employees and students) were established in 1951 and 1952 respectively, drawing on Soviet model.[54] Due to scant financial resources, only enterprises with 100 or more employees were covered by LIS.[55] While the LIS was funded by premiums collected from factories, the GIS was budgeted along with other government health expenditure.[56] The Nationalist government hospitals and mission hospitals started to be nationalised, enhanced, and the distribution of health care service became more evenly spread.[57] The Soviet model of shorter medical education with earlier specialisation was also adopted, while medical schools were reformed, created

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and redistributed across the country.[58] 19,770 students were enrolled at medical schools in 1951, dwarfing the accumulated number of medical graduates over the previous seven decades.[59] Thus the development of urban hospital financing (urban insurance schemes and out-of-pocket payments of urban patients) extended the pre-1949 medical school-based model of hospitals by adopting the Soviet system.

Hospital care soon became unaffordable for the new socialist state, as deficits in the insurance schemes emerged shortly after their establishment. GIS and LIS spending quickly surpassed the growth rate of the overall economy.[60] Growing hospital deficits were reported across the country.[61] For example, insurance scheme-affiliated institutions of the Shandong Provincial Government had increasing deficits in the GIS from 18% of fund budget in 1954, 33% in 1955 and 42% in 1956.[100] With weak administrative capacity, the excessive use of services and medicines covered by the insurance funds was widely reported.[62]

The Ministry of Health (MOH) and local health agencies responded with attempts to bring down the cost. First, a Soviet-style referral system called 'sectional health care' (*diduan yiliao*) was introduced to facilitate the coordination of care across hospitals and primary care facilities. In essence, this was another attempt to build a multi-tier referral system, this time where the primary care facilities functioned as the gatekeepers and higher-level facilities provided care to referred patients. However, the municipal health agency in Beijing reported that patients did not trust primary care facilities and patients still preferred to go to 'large hospitals'.[63] Second, hospitals were required to expand less costly services, including outpatient care and prevention.[64] The MOH required hospitals to function as centres for preventive services, although this was a political requirement not followed by corresponding financial reward.[65]

Third, the government also reinforced subsidy for hospitals with two other initiatives. Salaries of hospital staff were no longer to be recovered from service revenue but fully budgeted and covered by the

government.[66] Also, the difference between wholesale and retail prices of pharmaceuticals was to be used to subsidise hospitals so that hospitals could 'purchase [pharmaceuticals] at the wholesale prices and sell at retail prices to patients'.[67] The principle of service price reduction was 'less reduction for outpatient care, more reduction for inpatient care; less reduction for ordinary medical services, more reduction for surgeries, in order to reflect the spirit of less reduction for minor conditions and more reduction for serious conditions'.[68] Therefore, outpatient user fees and pharmaceutical sales became further institutionalised as important ways to subsidise hospital services.

None of these efforts were enough to reduce the expenditure on LIS and GIS. Over time, the risk pool for LIS collapsed and the scheme became solely based on individual enterprises.[69] The 'wasteful' use of fund-covered services and medicines was considered a constant problem facing GIS—the fund was eventually separated from the overall health budget in 1980.[70] Industrial health service providers continuously expanded in numbers of facilities, except during the recession after the Great Leap Forward.[71] As a result, it was never really likely that coverage under the two schemes would be extended to cover rural health services.

Rural health services and cooperative medicine

In rural areas, a different kind of state medical planning was introduced. This included the restoration and construction of county health centres and sub-district health stations, training village health workers as well as the retraining of midwives to provide modern midwifery.[72] The government allowed the continuation of private practice and group practices (essentially fee-for-service).[73] In return, health committees and associations of private practitioners were organised

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locally below the level of the county to ensure they carried out epidemic prevention and control, as well as maternal and child health work, under the supervision of local health centres and stations.[74] The government made it clear that the main concern for rural areas was prevention.[75] This focus was considered reasonable as prevention was more challenging in rural areas due to such problems as illiteracy, superstition and poor transportation.[76]

The issue of providing curative care to the rural population soon emerged. During the late 1950s, agricultural collectivisation started to develop rapidly in rural China, providing both political justification and a collective financial base to develop medical risk pooling. The first Cooperative Medical Scheme (CMS) was established in 1955.[77] Then a nationwide campaign was organised to promote CMS during the Great Leap Forward movement, but the scheme then collapsed following the fall of the movement.[78] Group practices (mainly union clinics) were made public and became the commune health centres, and later *township* health centres as communes were transformed into townships. The MOH, under tight fiscal constraints, was generally cautious in extending financial coverage for curative care in rural areas and repeatedly argued that grassroots health facilities should be allowed to charge user fees and not hastily become public providers of free care (see Table 7.2). Although the MOH tended to emphasise the role of county hospitals (the medical arm of the county health centres that became independent), the government eventually provided a 60% subsidy for the commune/township health centres. Meanwhile, the county health bureaux assumed responsibility for their administration.[79]

The lack of health care benefits for the rural population became unacceptable to Chairman Mao, who launched a reprimand condemning the MOH for neglecting rural health care and called for a shift of focus to the countryside on 26 June 1965. Two years after the start of the

Cultural Revolution in 1966, Mao openly endorsed the CMS and 'barefoot doctors'. This quickly led to scaling up of the CMS nationwide and its continuance until the late 1970s.[80] The CMS was mainly based on funds extracted from collective agriculture.[81] The barefoot doctors were peasants who completed a very brief training in medicine and undertook primary health care services at the village level, while still participating in collective agricultural work and earning work-points for their medical activities as members of the community.[82] Urban doctors were sent to county hospitals and commune health centres in large numbers, providing training for rural barefoot doctors. For example, in the two years of 1969 and 1970, 30% of total medical staff in Beijing were sent to settle in rural or remote areas.[83]

Just like the LIS and GIS, the CMS faced constant challenges of deficit, despite the fact that government lowered the prices of hospital services.[84] Sources from the Pinggu County Archive show that in 1972, 51.03% of cooperative medical stations were in deficit.[85] In 1974, the central government directly provided subsidy for the CMS.[86] However, still more than a third of cooperative medical stations were almost bankrupt by 1978.[87] With scant and unstable revenue from agricultural yield, a political campaign was launched to reconstruct the value of local resources—such as replacing Western pharmaceuticals by Chinese herbal medicine locally produced by agricultural collectives. For instance, the CMS in Pinggu County built 67 native pharmacies during the early 1970s,[88] and patients were encouraged to use these herbal medicines.[89]

The CMS thus relied on collective funds to subsidise pharmaceuticals and referral to hospital, collective work to subsidise production of local herbal medicines, and collective agriculture (where health service was just one component of labour) to finance the barefoot doctors. Although the rural health services were supported by staff from the urban areas, these doctors' participation was not institutionalised financially or organisationally. Therefore, although the rural health services in the late 1960s

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and 1970s had a multi-tier structure, the linkages between the hospitals and primary care facilities were very weak and highly dependent on the social circumstances of the Cultural Revolution.

As the MOH had weak control of local health facilities, staff with little training were also recruited into the township health centres.[90] Medical education was also reformed so that medical schools stopped producing university-degree graduates and instead produced graduates with only three-years training, who were later found to be poorly skilled.[91] These policies were not only to prove unsustainable but also created serious challenges for the future. Rather than consolidating primary care as a professional equivalent to hospital care, they generated a cohort of primary care doctors below the standard needed to lead primary care.

Overall, a fragmented financing structure emerged in China's health system, which both shaped and was shaped by the service-delivering facilities from 1949 to 1978. The Soviet model provided the initial framework of health financing and delivery. However, the model was too expensive for China, and therefore did not expand widely to cover peasants. When the government tried to reform the system and shift focus to rural areas, the highly constrained fiscal space of rural areas led to the development of rural primary care that was weakly institutionalised, underfinanced, and still not far advanced from its original private orientation.

Table 7.2: Policy statements on ownership of and financial responsibility for primary care facilities

Year	Policy
1957	'union clinics [group practices of mainly private practitioners] emerged from the people… are health welfare institutions with socialist nature, the state should not take them over'[a]
1959	'for the medical expenditures of the people… it is best to mainly rely on individual payment, with appropriate subsidy from the state and communes' [b]
1960	'collective health and medical schemes are considered preferable' [c]
1962	'the main form of rural grassroots health organizations should be doctor-owned group practices for a very long period of time'[d]
1965	'doctors' group practices are the most numerous and the most problematic, and should gradually move towards commune/brigade ownership' [e]
1974	'the policy of 'commune sponsorship with public aid' applies for collectively-sponsored commune health centres' [f]

Sources:
a. Ministry of Health, 'Directive on Strengthening Leadership of Grassroot Health Organisations', in *Collection of Rural Health Policy Documents (1951-2000)*, ed. by Keling Liu Changming Li, Zhaoyang Zhang, Chunlei Nie, Wei Fu, Hongming Zhu, Bin Wang (Department Grassroot Health and Maternal and Child Health, Ministry of Health, 1957).
b. ———, 'Opinions on Several Issues Regarding Health Work in People's Communes (*Guanyu Renmin Gongshe Weisheng Gongzuo Jige Wenti De Yijian*) (in Chinese)', (1959).
c. ———, 'Report on the National Rural Health Field Conference in Qishan, Shanxi (*Guanyu Quanguo Nongcun Weisheng Gongzuo Shanxi Qishan Xianchagn Huiyi Qingkuang De Baogao*) (in Chinese)', (1960).
d. ———, 'Opinions on Improving Several Issues Related to Hospital Work *(Guanyu Gaijin Yiyuan Gongzuo Ruogan Wenti De Yijian)* (in Chinese)', (1962).
e. ———, 'Report on Putting the Stress of Health Work in Rural Areas (*Guanyu Ba Weisheng Gongzuo Zhongdian Fangdao Nongcun De Baogao*) (in Chinese)', (1965).
f. Ministry of Health, *op. cit.* (note 86).

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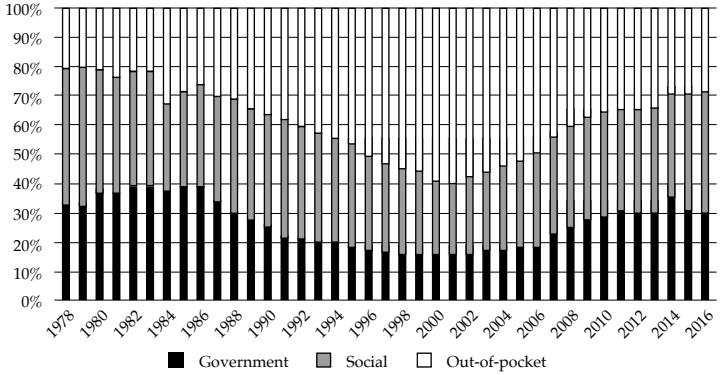
Reform and re-reform (1978-2018)

The period between 1978 and 2018 saw rapid and stable growth of the Chinese economy. China's industrialisation reached a new height and it became one of the world's leading manufacturing powers. This period saw a U-turn in public share (represented by government finance and social input—predominantly social health insurance in Figure 1) in overall health financing, which declined continuously for two decades before rising in the latter one and a half decades. Introduction of market-based financing mechanisms brought direct competition between hospitals and primary care providers and exposed the weakness of the latter. The links that connected the hospitals and primary care providers were essentially broken. After 1978, pharmaceuticals and technologies became critical vehicles for hospitals' revenue generation. Resources that became increasingly available due to the rise of the Chinese economy were absorbed primarily by hospitals, while the primary care sector struggled to secure a model of financing that allowed its sustainable development.

Figure 7.1: Composition of sources of total health expenditures in China from 1978 to 2016



Data source: National Health and Family Planning Commission, *China Health and Family Planning Statistical Yearbook 2017* (Beijing: Beijing Union Medical University Press, 2017).

Seeking revenue from market

The post-1978 reform brought challenges and new opportunities for financing both hospitals and primary care facilities. The reform started with decollectivisation of agricultural production which led to the collapse of the collective agricultural system that financed the work of barefoot doctors. The CMS also collapsed, largely because of a backlash against the ideology to which the CMS was tied during the Cultural Revolution.[92] Contemporary studies by researchers also highlighted the importance of local political leadership in determining CMS success.[93] At the central level, the worry about heavy financial burden of peasants and the tense relationship between local government (township and village) and peasants made the government reluctant to push harder for the resurrection of CMS in the 1990s.[94] Local governments were responsible for public expenditure on local health facilities, but they were predominantly concerned with economic growth and cut down on their health spending.[95] Urban enterprise-based welfare also encountered difficulties: as a result of the reform of state-owned enterprises during the post-1978 economic reform, businesses had to bear the consequences of economic losses. The state-owned enterprises were allowed to be privatised or closed, leading to the laying-off of many workers, who thus lost their entitlement to health benefits.[96]

The government was committed to the maintenance and modernisation of health facilities,[97] which required additional resources. As government financial input and insurance fund payments continued to drop as a percentage of overall health expenditures (see Figure 7.1), a main concern of policymakers was the financial deficits of health facilities, particularly urban hospitals which faced expanding demand.[98] The two issues were seen as related, as the lack of incentive due to poor cost recovery was considered a contributor to low service provision.

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The central government and the MOH used two main approaches to seek additional revenue for health facilities from the market.

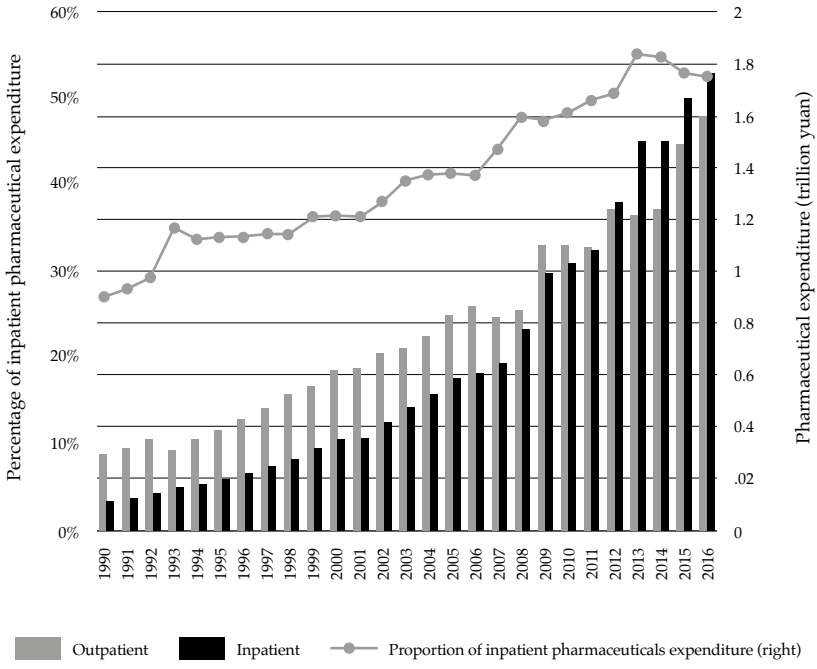
First, the price schedule was reformed. Low charges for hospital services were the result of the 1960 policy of government subsidy to physician salaries, which was believed not to have been well implemented: prices were reduced for both patients and insurance funds but not with a parallel increase in salary subsidy.[99] With declining government share in health financing, this price system had to be changed. However, the simultaneous reduction of social health insurance meant that increasing the price of medical services systematically would impose a heavy financial burden on those not covered by public health insurance.[100]

The government adopted new policies to allow hospitals to increasingly rely on private payment and revenue generated through expensive services. In 1981, the State Council approved a dual fee schedule, allowing hospitals to charge GIS and LIS patients at cost of services while keeping the prices for other urban residents and the rural population unchanged.[101] In 1985, the government again allowed price increases for new equipment, new medical procedures, and newly built, renovated and expanded facilities, and reemphasised the need for separate fee schedules for insured and uninsured patients, while again avoiding general adjustment of prices.[102] In 1996, the government further pushed for increased cross-subsidy from high technology services through higher charges which were then redistributed among the hospitals.[103] Although the policy document admitted the problem of encouraging excessive sales of expensive pharmaceuticals, the policy makers did not remove pharmaceutical mark-up, knowing that there would be no alternative revenue source.

Second, the State Council also implemented a management responsibility system for hospital economic operations.[104] In effect, hospitals were supposed to cross-subsidise among their own services:

non-basic services could be provided with a profit margin, while basic services were to be provided below cost.[105] The result was a rapid growth of pharmaceutical expenditures, which was particularly fast in inpatient services (see Figure 7.2). Official documents noted that hospitals borrowed heavily in order to purchase expensive equipment,[106] and regional quotas were exceeded.[107] Hospital debt increased much faster than assets and revenues.[108]

Figure 7.2: Pharmaceutical expenditures on outpatient and inpatient care



Sources: authors.

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The commercialisation of the hospitals was accompanied by the decline of the publicly-funded primary care sector, which had never been strongly embedded. Barefoot doctors had to rely on user fees paid by the peasants. The number of barefoot doctors started to decline, as their main source of revenue shifted to drug sales,[109] and many left the ranks. About half of the 1.2 million that remained passed a certification process and became village doctors, while the other half became village health workers.[110] In 1985, the term barefoot doctors ceased to be used.[111] The village doctors also tended then to neglect preventive services.[112]

The township health centres struggled to retain doctors, as their weak revenue basis was exposed when central financial subsidy and dispatch of urban doctors dwindled. The withdrawal of 'sent-down' hospital doctors became a common phenomenon. Local reports suggested that the conscripted doctors almost completely left township health centres: for example in the early 1980s, 166 technical 'backbones' (most of whom had been sent down from urban hospitals) left the health services of Pinggu, Beijing, destroying its technical capacity.[113] In a township health centre in Liaoning, only one out of 11 specialised secondary school graduates sent to work there from 1962 remained working there in 1982, while more than two thirds of its staff were temporary.[114] Some of the local health administrators said the rural health professionals were being 'eradicated'.[115] Those who exited tended to be the more qualified professionals. Financial concerns were critical drivers of the exodus of doctors, along with other non-financial issues such as lack of career prospects.[116]

The inheritance of unqualified, even semi-illiterate workers from the Cultural Revolution period up until the early 1980s, and the retirement of doctors trained before 1949, meant that many township health centres were far from ready to compete in the market. The only exception were those who had been able to develop specialties.[117] In other words, there was no sustainable financial model or fiscal

space for primary care. Fee for service payment further undermined the development of general practice, as the focus of primary care providers shifted towards curative care with neglect of prevention.

Towards universal health coverage

Around the turn of the century, China's poor health risk-pooling was exposed by the WHO *World Health Report 2000,* prompting a more assertive approach by the state towards population coverage and access.[118] In 1998, the LIS had been restructured as an urban insurance scheme for employees. In 2002 and 2005, two other extensive social health insurance schemes were established and started expanding. The three schemes and GIS eventually covered the whole population. The government started to invest in public health services on both demand- and supply-sides. In 2009 (a few years after the outbreak of Severe Acute Respiratory Syndrome (SARS) in 2002) the government launched a reform to provide basic universal health coverage. The increase in government and social (i.e. premium collected from employers and employees) financing was conspicuous (see Figure 1).

What did this mean for hospitals, primary care, and the balance between them? The three social health insurance schemes expanded in population coverage and fundraising, leading to a decline in out-of-pocket payments as a share of total health expenditure from 60% in 2001 to 37.5% in 2009 and further to 28.8% in 2016 (see Figure 1).[119] Besides the expansion of insurance, the reform in the early 2000s covered four other main areas: essential medicines, essential public health services, service delivery (focusing on primary care), and public hospitals.[120] All of the reforms included a financing element. The essential medicines policy required zero-price mark-up in pharmaceutical dispensing

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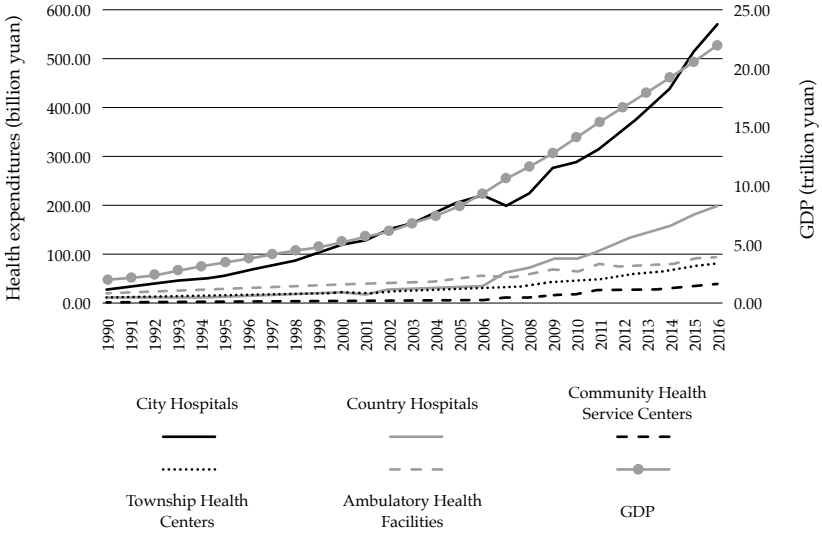
and replaced it with a set fee for each consultation, which removed the strong incentive to generate income through prescribing excessively. The essential public health services programme had a new benefit package and designated capitation-based funding. The service delivery reform replaced previous revenue-based salaries with a rigid but generally low salary, which seem ineffective in incentivising medical services. While these reform policies were launched in primary care facilities shortly after the 2009 health system reform, it took more than a decade to remove the drug mark-up in public hospitals.[121] The payment for hospital services was still primarily fee-for-service and reform for hospitals and hospital-based physicians were also patchy and mainly local. Hospitals' incentive to pursue revenue generation remained unchanged. This drove rapid accumulation of resources in hospitals, reinforcing the financial disadvantage of primary care.

With the essential public health services programme, primary care facilities started to receive a capitation-based budget for providing a package of essential public health services, separate from the social health insurance schemes which covered inpatient and outpatient services. There was some evidence that low salary and rigid policy targets related to non-clinical service procedures were demotivating for providers, nor did the reform resonate with patient's preferences for care.[122] The visits to primary care providers as a proportion of overall visits continued to decline. From 2004 to 2016, the number of visits to primary care facilities increased from 2.58 billion to 4.37 billion, a 69 % increase, while visits to hospitals increased from 1.3 billion to 3.27 billion or by 152%.[123]

As a result of the asymmetric timing of reforms, from 2009 hospitals grew ever more dominant in health financing (see Figure 7.3). By contrast, township health centres as well as primary care facilities overall experienced much slower increase in revenue. One particular phenomenon was the rise of county hospitals. County hospitals received support from the government because they were recognised as the local centre to provide

technical leadership for the rural multi-tiered health services. Indeed, the years after 2009 saw the rapid catching up of county hospitals with urban hospitals (see Figure 7.3). Among all hospitals, those with more than 800 beds grew the fastest, from 180 in 2002 to 1,602 in 2016 or by 8.9 times, compared to 1.6 times growth of all other hospitals; specialist hospitals also grew faster than general hospitals.[124] Larger hospitals also provided an increasingly large share of overall hospital beds—the proportion of total beds in hospitals with more than 500 beds increased from 41% in 2002 to 52% in 2016 (see Figure 7.4). The particularly rapid development of large hospitals and specialised hospitals suggests that the current model rewards increased specialisation of clinical services.

Figure 7.3: Health expenditures by types of facility (adjusted to 1990 price level)



Source: Authors' calculation from data from the China National Health Development Research Center, *op. cit.* (note 119).

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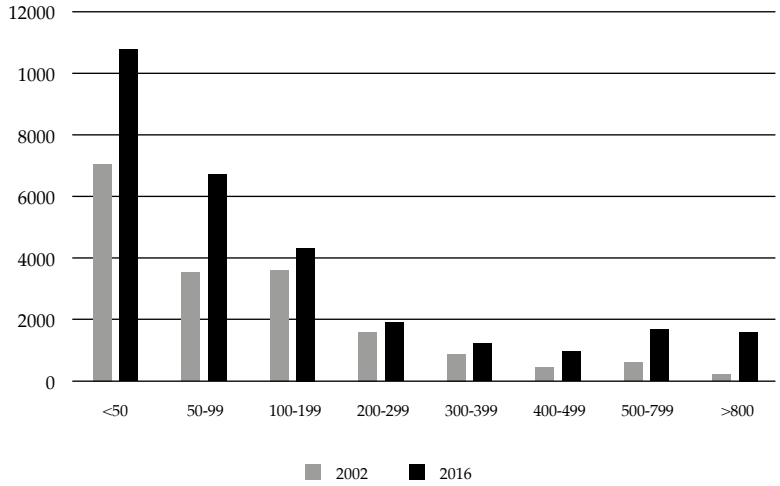
Figure 7.4a: Number hospitals classified by size (number of beds) (2002 and 2016)



Sources: Authors' calculation from data from:
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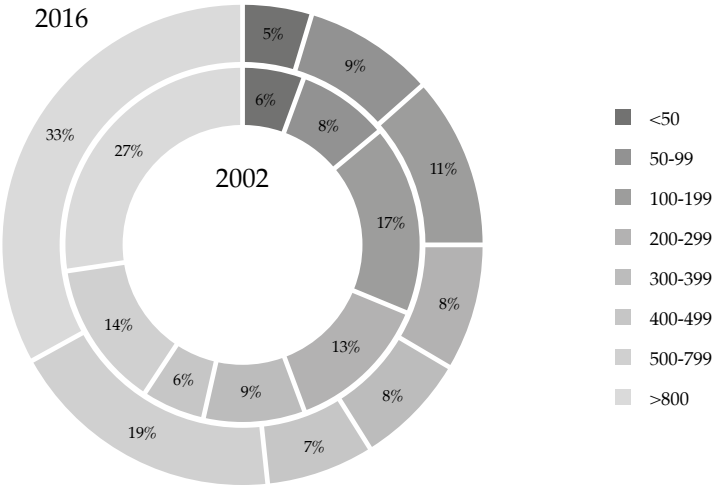
Figure 7.4b: Estimated proportion of beds in hospitals classified by size (number of beds) (2002 and 2016)



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Note: As the yearbooks cited here only reported average number of beds in each size category (e.g. hospitals with 100-199 beds), we estimated proportion of beds in hospitals classified by size. Number of beds of hospitals with fewer than 800 beds were calculated using the number of hospitals multiplied by the mid-point of the range of number of beds in each category shown in the figure. Number of beds of hospitals with more than 800 beds were calculated using the total number of hospital beds minus the total of beds of hospitals with fewer than 800 beds.

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Discussion

We have surveyed the historical evolution of financing for hospitals and primary care facilities in China from 1835 to 1949. Here we summarise the key historical stages and discuss the role of financing in the historical evolution of the balance between hospital and primary care.

Summary of key historical stages

Fiscal space in China before 1949 was extremely limited, inhibiting the growth of a public hospital system. The period 1835-1928 saw the rise of mission hospitals (incorporating substantial ambulatory care) as the dominant form of Western medicine supported by external funding sources and local revenue largely via outpatient care. From 1928 to 1949, a social medicine movement plotted a diverging trajectory of low-cost primary care. While the original plan was to reposition hospitals and doctors so as to strengthen primary health services provided mainly by lay health workers, the limited fiscal and regulatory capacity led to separation of hospitals from primary care facilities focused primarily on public health services. While the model of the medical-school-affiliated hospital was diffused directly from the West, the primary care model after 1928 was also heavily influenced by international practice, despite substantial local adaptation.

In the 1950s, hospitals were reinforced through the development of urban medical insurance schemes based on Soviet practice as well as fees from private paying urbanites. Specialist-oriented educational reform combined with an expansion of hospital-based ambulatory care further undermined the potential for primary care financing to develop based on general practice. The model was too expensive for the young

and mainly agricultural country, leaving the majority population—the peasants—without coverage. The pre-1949 model of focusing on public health services within primary health care was initially adopted during the early 1950s. Then it became unacceptable that the rural population could not enjoy health risk pooling like urban dwellers. Primary care was implemented nation-wide with central subsidy and mobilisation of professionals from hospitals in support, through training, sustained clinical guidance and even staffing. However, it remained constrained as local health providers still relied on meagre and unstable agricultural revenues during the late 1960s and the 1970s.

After 1978, market-based financing reforms introduced direct competition between hospitals and primary care providers, which exposed the weakness of the latter. Pharmaceuticals and technologies became critical vehicles for hospitals' revenue generation. Primary care suffered from chronic funding shortages. The post-2002 expansion of social health insurance schemes for urban and rural residents channeled funds disproportionately to hospitals. The much longer delay in reforming financing in hospitals as compared to primary care also suggested a stronger resistance to change.

Health financing history and hospital centrism

The effects of structural factors, diffusion and path dependent processes all seemed important in generating the historical institutions that underpin China's contemporary hospital-centrism, which not only provided limited value of health services despite rapidly increasing cost, but also proved difficult to change. The theories can complement each other and provide a comprehensive explanation for the evolution of the balance of hospitals and primary care.

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Structural factors played an obvious role. For example, the overall lack of financial resources and the gap between urban and rural socio-economic development up to 1978 affected the shaping of primary care which aimed at extending health care coverage to the vast rural population. Separated, differentiated and tiered financing contributed to the divergent institutionalisation of hospitals and primary care facilities over the long term.

Policy diffusion was also important. The rise of Western medicine hospitals in China involved the adoption of an American model of academic hospitals by philanthropists and a Soviet model supported by public health insurance. Apart from such bilateral diffusion, the later primary care movements were also affected by the transnational diffusion from the social medicine practiced in central and eastern Europe mediated by international organisations such as the Rockefeller Foundation and the League of Nations Health Organisation.

What we have demonstrated is that historical structural factors (such as the limited fiscal space due to lack of economic development) and diffused policy models (such as the establishment of Flexner-inspired elitist medical universities in China) were embedded in the historical institutions that affected later periods, even when the structural factors were modified and the diffused model became outdated. As in China, primary care strengthening has been a late comer in many low- and middle-income countries, which face the similar challenge of hospital-centrism based on models diffused from developed countries. The 1930s and 1960s marked two important periods when the two-model system of diverging hospitals and primary care facilities was formed. The relative success in the latter period relied heavily on the ability of government to mobilise professionals from hospitals to support primary care through training, sustained clinical guidance and referral. This was however unsustainable and undermined by the reform after 1978, as hospitals needed to generate revenue in competition with primary

care providers. Although reforms could relatively quickly increase public financial input, their effects might also be circumscribed by the long-term shaping effects of earlier financing policies. Thus, historical institutionalism is helpful to explain why it was so hard to create a primary-care-centric health system in all three periods (1835-1949, 1949-1978 and 1978-2018).

This chapter has highlighted the role of historical fiscal space in shaping the development of the service model of health facilities. This is supported by previous historical work in wealthy countries. In the United States, the emergence of privately-paying patients contributed to the specialisation of medical services and the rise of hospitals over primary care facilities.[125] In the United Kingdom, the early empanelment of doctors to provide general medical care, based on the National Health Insurance Act of 1911, provided a stronger institutional basis for primary care to consolidate financially and professionally.[126] Furthermore, we also hinted at the difficulty of transforming the complex financing system underpinning hospitals and primary care providers in China. The way health facilities were funded profoundly affected the positioning of service delivery. Revenue generation policies under tight fiscal constraints could create resistance to redirection of resources. This is illustrated by the long delay in adjusting price schedules and removing pharmaceutical mark-up in China in recent years.

Conclusion

A health system focusing on hospital care is associated with high cost as well as suboptimal health outcomes. As China experiences rapid population ageing and a sharp increase in a non-communicable disease burden, the importance of a primary-care-centred health

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system to provide continuous, coordinated and cost-effective services has become an imperative and has been well recognised by both the national government and key international agencies. Understanding the historical path that has led to the current uneven balance of care is important in framing our understanding of contemporary challenges facing primary care strengthening and developing solutions.

We have analysed the historical coevolution of primary care facilities and hospitals in China from 1835 to 2018, focusing on the role of financing in shaping the historical trajectories of hospital-centrism despite multiple waves of primary care strengthening. While hospitals consolidated their revenue-generation and service dominance over time, the late development of financing policies and fiscal space for primary care constrained its institutionalisation. As resources became increasingly abundant, they were increasingly allocated to hospitals while primary care continued to be poorly supported. For contemporary policies, a key implication is that these historically conditioned methods of financing health care institutions need to be understood, so that the resourcing of hospitals and primary care providers can become better aligned in order to drive them to work together towards primary care strengthening.

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