

China's health system and the next 20 years of reform 17

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Introduction

Health care in China remains a topic of great popular discontent, particularly in rural areas, despite a raft of recent reforms and an unprecedented splurge in government health spending. The common phrase '*kanbing nan, kanbing gui*' (seeing a doctor is hard, and expensive) summarises succinctly the issues facing many Chinese citizens with regard to health care.

Analysing the future of the Chinese healthcare system requires some historical context. This chapter will divide the Chinese healthcare reform experience into three distinct periods. The first is the collective period, defined as the period 1950–79. Due to its efficient public finance system and 'step-up, step-down' delivery mechanisms, China's public health system was a world leader in terms of its high levels of 'bang for your buck'.

The second, post-collectivisation period (approximately 1980–2003) saw the Chinese system remain efficient compared with other developing countries of comparable per capita income. Yet it was highly inequitable in terms of access. The end of the collective within China has seen a constantly high rate of cost inflation, caused largely by physician-induced demand and the over-prescription of drugs and high-tech services, a disturbingly high level of inequity of access and falling rates of healthcare security. Providers and users alike were confronted with flawed institutions and incentives. Rural and urban differences and an ineffective public finance system that reinforces inequities have exacerbated these problems and hindered reform.

The beginning of the third period (2003 onwards), along with the introduction of the Harmonious Society Program, saw considerable debate about how to reform China's health system. The introduction of the New Cooperative Medical Scheme (NCMS) and the beginning of the 'Cover the countryside' campaign of public finance in 2003 also led to far greater public funds being introduced

into the healthcare system. A number of demand-side social health insurance projects were introduced, and these will be major drivers of the next 20 years of health reform in China.

These reform proposals can, on the whole, be divided into two major camps. The first camp looks largely at using demand-side strategies based on social health insurance schemes to increase the funds available in the system. The other camp concentrates on increasing spending to develop a Chinese system based on publicly funded outpatient institutions acting as a gatekeeper and referrer to public hospitals—similar to Britain’s National Health Service (NHS).

Each of these reforms appear to be insufficient. An institutional model reveals some of the problems facing the Chinese government. Increases in public spending appear to be unable to change the flawed incentives that exist for individual providers. Issues remain, stemming from a lack of supervision, coordination and governance that hinder the imposition of social welfare objectives from the central government, in spite of the addition of greater funds. The most recent health plan, released in 2009, has made some progress towards resolving the theoretical conundrums facing the Chinese health sector, but leaving structural problems. The effectiveness of the next 20 years of reform looks most likely to be determined by how effectively the Chinese government addresses the structural problems and flawed incentives hindering the system.

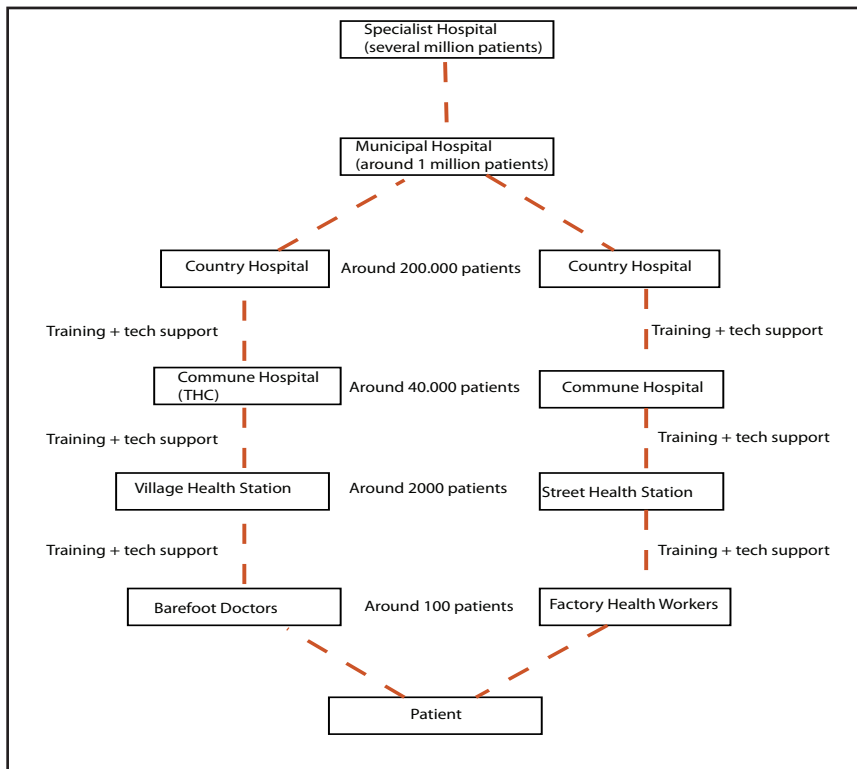
History of the Chinese health sector

There are three distinct phases of healthcare provision in China. The first phase—built within the socialist planned economy—was characterised by public provision of health services at all government levels with public financing in urban areas and community financing in rural areas (Liu 2004:149-156). This egalitarian social model used strong government structures in order to provide health benefits. The collective (in rural areas) and the work unit—or *danwei*—in urban areas both made provisions for health care for their members. Compulsory health insurance and primary-care provision could be provided through either the collective or the *danwei*. This situation provided a number of different tiers of treatment, which, combined with the innovative use of part-time doctors to provide localised primary health care (Smith 1974:429–35), led to extraordinary improvements in population health measurements across Chinese society. These achievements occurred in a low-budget environment and in a society that spent a disproportionately small amount of gross domestic product (GDP) on public health. Much of this improvement was attributed to the use of preventive and primary care and to the wide entitlement and access to health care present in the ‘egalitarian society period’ (Liu 2004:533).

Many authors argue that the structural features of China's public health system were instrumental to China's excellent health outcomes.¹ Under this system, village health stations, township health centres (THCs) and county hospitals were integrated within the three-tier system by a vertical administrative system. The county health bureau was responsible for the performance of local health services. It prepared plans and allocated the annual government budget. County institutions supervised township and village facilities and provided referral services, training and high-level tertiary care.

More importantly, social health insurance schemes organised at the village level funded more than 50 per cent of total health expenditures. At the peak of popularity of the Cooperative Medical Scheme (CMS), it covered 90 per cent of the rural population. Health services financed through the CMS were able to rely on prepayment plans. Hence, during this period, the State played an important role in funding providers (particularly at the secondary and tertiary levels), while the commune provided mandatory community health insurance to individuals.

Figure 17.1 Levels of healthcare provision in pre-1978 rural China



1 See, for example, Bloom and Tang (2000); Liu (2004); and Smith (1974).

By the mid-1970s, China had established an effective rural health system, supported by institutional arrangements including a network of appropriate facilities and personnel, social financing of a large proportion of health expenditure and mechanisms to coordinate service providers and to encourage health workers to act in the community's interest (Chernichovsky 1995). The incentives in this three-tier, 'step-up, step-down' system were highly effective, encouraging high levels of primary care.

Similarly, in urban areas an efficiently organised and managed system was married with state funding and a vertical administrative system. Unlike the rural areas, this system relied on the worker's employer, the *danwei*, to organise health care. Patients had to pay a very small fee; however, the *danwei* acted as the major purchaser and provider of health services. Like the barefoot doctors in rural areas, factory workers were given work points for performing basic primary healthcare tasks and for referring patients upwards when required. Above that level of treatment was a healthcare system staffed with full-time employees.

In both of these systems, major hospitals acted as the highest point of care and the public health mechanisms acted as gatekeepers for these hospitals. Before 1980, public hospital service fees were mandated by the government to be at very low levels (about 20 per cent of the costs) and the government protected against deficits in the hospital through a flexible government budget in which patients were subsidised for hospital care (Jing 2004). Hospitals had no incentive to provide unnecessary care or drugs that could increase the economic burden of patients, as budgetary constraints were largely soft.

This system laid the foundations for much of China's modern healthcare infrastructure. Although today there are no factory workers acting as primary-care providers, and barefoot doctors and village health stations are now private providers, the structure of the state system and the expectation of patient flow through the system remain much the same as during the collective period.

The end of communes and socialised medicine

Following the rise to power of Deng Xiaoping, China dramatically shifted the structure of its economy and the provision of public services. The fundamental role of the State itself changed. This change involved far greater application of competition and a varying degree of decentralisation to provincial, township and village levels of government. With shifts in models of governance—and the changes this led to in China's employment structure and taxation system—came a shift in the nature of health services. Social sector development including health care became low on the public policy agenda.

In spite of this—although somewhat unsurprisingly given China's economic growth—the health status of China's people, measured by broad population health indicators, continuously improved. Life expectancy at birth increased from 67.9 years in 1981 to 71.8 years in 2003. From 1991 to 2005, the infant mortality rate fell from 50.2 to 19 per 1000 live births and the maternal mortality rate declined from 88.9 to 47.7 per 100 000 (WHO 2009).

Moreover, China's primary healthcare system was, by per capita international standards, relatively comprehensive. The coverage rates of access to safe drinking water, antenatal care, hospital delivery and childhood vaccinations were 99, 96, 93 and 95 per cent for urban areas and 80, 86, 62 and 85 per cent for rural areas, respectively (Ministry of Health 2004).

In spite of these improvements in broad primary health objectives, this period also saw growing dissatisfaction with the healthcare sector within China. Self-reported morbidity rates and bedridden days increased remarkably from 1993 to 2003.² By 2003, hospital dissatisfaction rates in patients living in urban and rural areas increased to 61 per cent and 54 per cent, respectively, compared with 8 per cent and 14 per cent in 1993 (Ministry of Health 2004). This dissatisfaction with the hospital system appeared to be related largely to cost inflation and access.

This shift seemed to be the result of a broader shift of strategy, based on the Chinese government's acceptance of the principle referred to as the 'family responsibility system' for the rural sector in particular (Saich 2003: 18-30). At its heart, this principle holds that the family is the first line of social protection. As a corollary, the government becomes involved only 'when the family cannot take care of its own, and when government action can be effective' (Lin 2005:1). Most importantly, the burden of spending for social services falls initially on the individual.

Corresponding with the rise in private spending was a considerable fall in public spending. Between 1978 and 2004, the annual growth rate of health expenditure in China was 12 per cent, which was higher than the 9.4 per cent growth of GDP. Despite rapid growth in healthcare costs, the percentage of government spending as a proportion of total health expenditure declined from 32 per cent in 1978 to 17 per cent in 2004 (NBS 2005). In the overall government budget, health expenditure accounted for 2.4 per cent in 1980, decreasing to 1.9 per cent in 2004 (Ministry of Health 2010).

Thus, before the introduction of the Harmonious Society campaign, China's public spending on health care was far lower than that of most developing

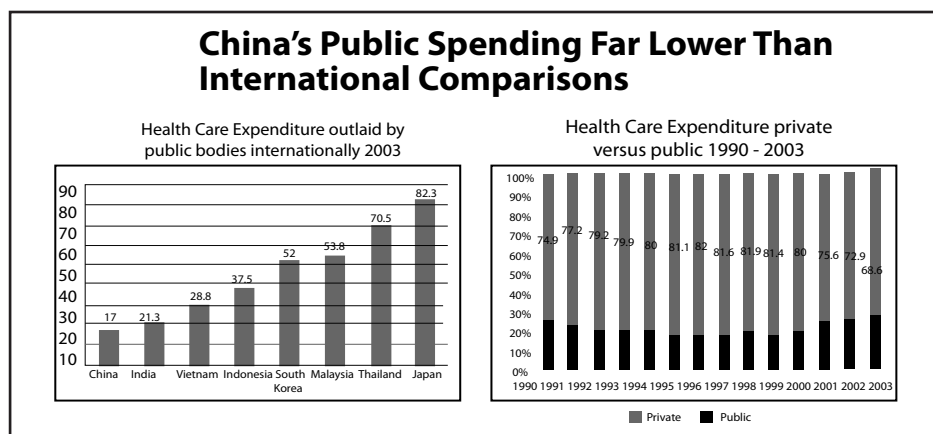
² Based on the three national household health surveys done in 1993, 1998 and 2003; see Ministry of Health (2004).

countries (Figure 17.2). This financial structure created significant shortfalls in government funding for healthcare providers. Hospitals were nominally publicly funded, yet needed to raise significant amounts of their own revenue. The end of the collective saw a dismantling of central government soft budgets, and in 1985 institutional health providers such as hospitals had to submit to hard budgetary constraints. This resulted in the rapid reduction in public funds available to the system. A World Bank (1997) survey estimated that overall government subsidies to total hospital operating costs amounted to no more than 15 per cent. This has had enormous ramifications for hospitals and doctors.

Even nominally fully funded public health institutions have suffered from severe budget shortages.³ At the beginning of the 1980s, all of the public health institutions' revenue was from government budgets, yet by 1992 the contribution from the government had dwindled to only 35 per cent of the total revenue. The rest of the budget was made up from service charges. By the end of 1996, the government budget covered only 50 per cent of the cost for basic salaries, or some 25 per cent of the public health institutions' total revenue (Xu 1997).

The result was to push responsibility for funding public health care onto the individual during this post-collectivisation period.

Figure 17.2 Public spending in the post-collectivisation period, 1990–2003

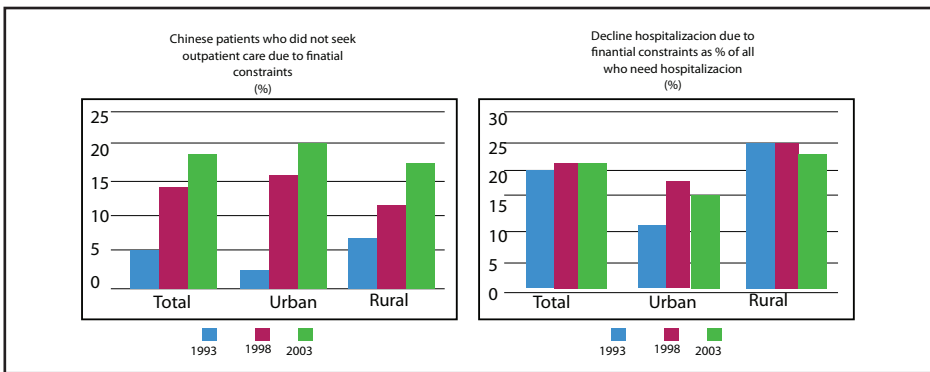


Major questions, which are still being asked today, arose about whether or not the individual could afford this larger burden. The 2003 Chinese National Health Survey showed that in type-four rural areas about 68 per cent of the population

3 Public health institutions here refers to bodies whose job is solely to provide public goods such as immunisations or primary health monitoring, as opposed to a normal hospital or Township Health Centre (THC), which provides a mix of public, private and merit goods.

reported that they refused to seek medical assistance for reasons of cost.⁴ Yip and Hsiao's (2008) retrospective study showed that 3 per cent of Chinese households per annum were pushed into poverty due to healthcare costs. Moreover, the real figures could be even more distressing, as many people fail to report illnesses even to their family due to concerns about the economic burden or a belief that the services provided will not be effective. Thus, it appears that there are many situations in which families are currently not 'able to take care of their own'. Worryingly, the increased number of people who did not have access to health services was due largely to a decrease in the perceived affordability of outpatient care, which should be the most affordable level of care.

Figure 17.3 People declining hospitalisation in the post-collectivisation period, 1990–2003



The impact of this rise in the amount of personal funds needed to access health care was exacerbated by a shortage of insurance available to Chinese citizens. Rural social health insurance coverage dropped from about 90 per cent in 1980 to 10 per cent in 1989 (World Bank 1993:28). This low coverage continued until the advent of the NCMS program. Likewise, coverage in urban areas dropped to about 2–3 per cent in 1993–95 (NBS 2006:125, 908–9). This led to patients accessing healthcare self-funding.

The effects of this period remain today. Much of the current debate is shaped by a desire to ameliorate the negative impacts of this period.

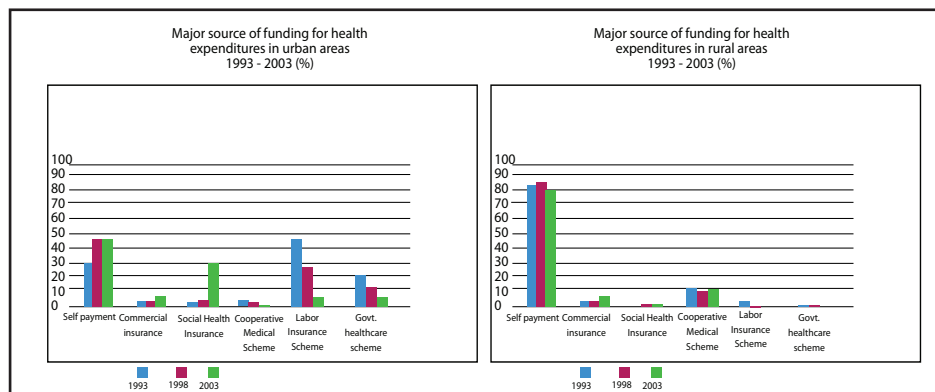
Structural problems

Central to understanding how and why this system developed when it did is an appreciation of the public finance system that funds health, and this

⁴ Type four is the lowest relative socioeconomic status rural area. Areas are classified one to four according to socioeconomic stratification using average income measures (Ministry of Health 2004).

appreciation is also crucial for understanding the future of Chinese healthcare reforms. This section therefore provides a brief introduction to the impact of public finance mechanisms on the Chinese health system, particularly during this post-collectivisation period.

Figure 17.4 Sources of healthcare spending in the post-collectivisation period, 1990–2003



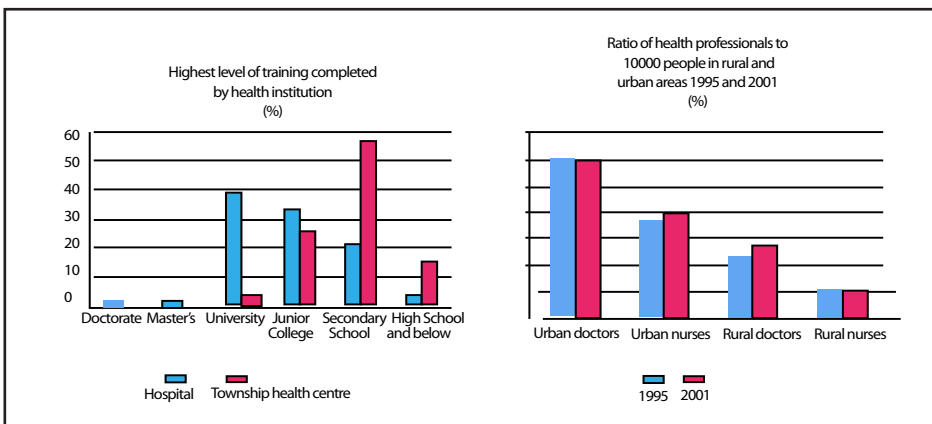
Following the end of the communes, a system of fiscal responsibility was introduced in the early 1980s, which lasted until 1994 (Wong 2007). This reform pertained mainly to the relationship between the central and provincial governments. Due to incentives to stimulate local industry, lower-level governments focused funds almost solely on local industry. This encouraged the hoarding of funds at the provincial level while reinforcing existing vertical and horizontal inequalities (Wong 20072). Moreover, it led to the near bankruptcy of the Chinese State as its tax revenue dwindled (World Bank 2005; Wong 2007; Fock and Wong 2008) and social spending withered.

In 1994, a ‘tax-sharing’ system, which formally delineated local and central taxes, was introduced. The main aims of this tax reform were to strengthen the centre’s financial position and to sever the direct link between the revenues of the local government and those of the enterprises located within their respective geographical jurisdictions. The system theoretically enabled the central government to play a redistributive role through the usage of fiscal transfers, ensuring that adequate funds were available throughout all levels of the Chinese political system.

This system, however, failed to solve the underlying structural imbalances of the Chinese taxation system. The central government increased its revenues more than twofold (Wong 2007:7). These gains in revenue came, however, from passing shortages in funding down to lower levels—as shown in Figure 17.5.

This is significant for public health as these lower levels of government are then mandated to pay for social goods. Figure 17.5 demonstrates which level of government is responsible for each social good. It clearly shows that distribution of revenues is not proportional to the allocation of mandates. Each level of government has therefore been under progressively more pressure to raise revenues to fund social programs. This puts considerable pressure on the finances of smaller counties. The inability to raise rural informal fees and charges (due to the 2002 mandate outlawing rural informal fees and charges) and the increase of top-down 'matched fund' transfers from above also reinforce horizontal and vertical inequities in spending to the detriment of service providers at lower levels, particularly within disadvantaged areas.

Figure 17.5 Changes in tax revenues versus expenditures, 1993–2004 (per cent)



Gaps in spending power are critical to understanding health care in China. A lack of taxation revenue makes it difficult to fund healthcare providers, healthcare policies or bodies to regulate healthcare provision. As Chou and Wang (2009:694) show, government budget deficits have a significant long-run impact on regional healthcare expenditures. An inability to raise funds imposes a considerable constraint on public health expenditures. Indeed, Chou and Wang argue that, all other things equal and on average, for every RMB10 million increase in budget deficits, health expenditure will be decreased by 26.3 per cent.

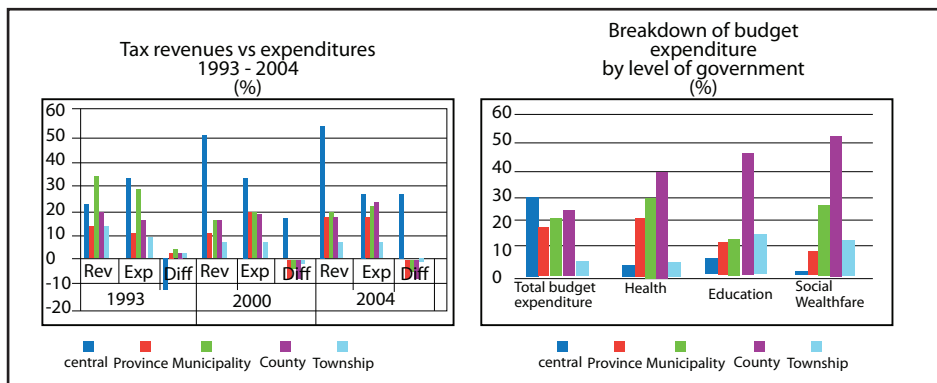
Apart from being vertically unbalanced among different levels of government, China's economic growth has also been horizontally unbalanced across regions, with much higher growth rates in the coastal provinces, on the whole, than in the inland provinces. With the shift to the tax-sharing system in 1994, the distribution of fiscal resources came to resemble more closely that of regional incomes, reinforcing the effect of income inequalities. Thus, Liu et al (2009:978-

979) note, transfers often reinforce rather than reduce horizontal revenue disparities. The more economically successful a province is, the more likely it is to benefit from tax-based transfer methods.

As a result, effective demand for health care shifts to those who can readily afford it, making citizens in the far wealthier coastal regions more likely to visit doctors when sick (Zhang and Kanbur 2005:194). This shift in demand has caused an enormous shortage of secondary and tertiary-level medical professionals in rural areas. Larger and better-equipped facilities can generate more profits and thus pay more bonuses, so there is a strong financial incentive for qualified personnel in district hospitals to leave for larger city hospitals and for trained health workers in rural areas to seek employment in county or city hospitals. The negative impact of this on the skills of doctors in rural areas is marked.

Gong et al.'s (1997) study, for example, showed that more than 80 per cent of qualified doctors sampled from eight Chinese provinces left poor counties for more lucrative positions in urban facilities. As a result, while about three-quarters of Chinese people live in rural areas, only about one-third of medical professionals work there. This, when combined with the higher skill levels present in urban hospitals, makes it difficult for rural areas to assure the same quality of standards as those present in urban areas—as shown in Figure 17.6.

Figure 17.6 Urban and rural health profession skills and ratios



Shortages in skilled staff have deleterious outcomes for patients. For example, the low proportion of health workers to residents in China's rural areas has serious repercussions. The recent study by Liu et al. (2009) showed the impacts of these structural problems on the amounts of coverage in China's health system. There were significant differences between provinces and between urban and rural areas. On average, coverage in urban areas (61 per cent) was 15 per cent higher than in rural areas. This low coverage is also reflected in poor health outcomes. As an example, wider research shows clearly that the density of health workers

physicians, nurses and midwives per 1000 population) is negatively correlated with maternal, infant and under-five mortality rates (Anand et al. 2008; Chen et al. 2004). In 2005, the infant mortality rate in rural areas was 2.4 times higher than in urban areas and the maternal mortality rate in rural areas was 2.5 times that of the urban population. Another study of health outcomes showed that in poorer areas, life expectancy was four years shorter than the country's average (Liu 2004).

The negative cycle of Chinese health care

The Chinese health system has reacted to these structural problems and has developed flawed incentives for medical providers. On the supply side, the attempt by the Chinese government to effectively subsidise the provision of basic services through allowing overcharging on more complex services forces physicians to choose between treating low or high-cost patients. On the demand side, patient responses to this system indicate that instead of having an efficient 'step-up, step down' system, the Chinese system is more of a 'doughnut' system in which demand is squeezed to the lowest and highest rungs within the system.

The incentives embedded in this system lead to a vicious cycle. Average hospital bills are nearly equal to the average annual rural salary and are about two-thirds the average urban disposable income (Ministry of Health 2009; NBS 2009). These high medical bills often contribute directly to poverty. Thus, farmers and workers alike avoid healthcare institutions.

Yet healthcare institutions—underfunded by the public purse—also suffer from revenue shortages. Their best staff often leave for higher-level institutions. They have incentives to raise prices, employ more high-tech machinery and oversupply medical care. Yet then, as noted above, poor citizens have an even greater disincentive not to seek medical care, and thus the cycle continues.

This then exacerbates the shortage of effective demand that exists because people are unable to afford health care. Underfunded public health providers are forced to charge for poor-quality care or fail to have sufficient supplies. This makes patients who can afford health care services to leave lower levels of provider such as those working in a village clinic or Township Health Centre (THC), and to join instead higher-level providers of care, who are more highly trained and have better resources. These higher-level providers are, however, also stretched for funds, and there is also an incentive to obtain extra funds by oversupplying care, through such means as excessive over-prescription, over-ordering of tests and forced repeat visits.

Hence, within the Chinese health system there is a paradox centred on demand. Many regions suffer acute problems of inadequate supply. Many more areas, however, suffer from chronic under-utilisation due to low effective demand.⁵ Although people want health care, they cannot afford it, or when they can they are pushed upwards towards county and municipal providers. These providers are not only more expensive, they are likely to be further away.

This price barrier affects access to health care. Those who are unable to pay remain ill, often becoming even more ill, necessitating even more expensive tertiary care. This leads to a dynamic whereby patients, if unable to obtain access providers as a low-cost patient, return as a high-cost patient, leading to both access and cost-inflation problems.⁶

Breaking this cycle through insurance

The Chinese government announced its first major response to these problems in the early 2000s through a number of demand-side initiatives designed to boost the overall coverage of Chinese health insurance schemes. These initiatives use basic social medical insurance schemes as a country-wide government system that was designed to be a third-party payer and a new mechanism for financing health care.⁷

The reforms in demand-side policy seek to break the cycle described above through altering the effective demand for health care. By providing subsidised, government-organised social health insurance, the government reduces the risk of catastrophic medical expenses and tries to make necessary health care affordable through risk pooling. The aim at initiation was to expand the programs to cover all citizens within 10 years. Although the programs still do not yet provide universal coverage, the program has been expanding rapidly into rural and urban areas in China in the past five years. The government has already proclaimed that universal coverage will be achieved by 2011, and almost all its targets for the coverage through the NCMS program have so far been achieved ahead of time.

Although the reimbursement rates differ, urban and rural social health insurance (SHI) schemes use co-contributions. In rural areas, funding is divided

5 To give a simple measure, the average bed occupancy rate in hospitals is about 60 per cent; it is about 40 per cent in THC's (Ministry of Health 2009).

6 Liu (2009) has two good recent examples, showing that only about half of urban and almost 60 per cent of rural patients who were treated for tuberculosis completed the treatment protocol. Similarly, only 12 per cent and 7 per cent of patients with hypertension living in urban and rural areas, respectively, had their blood pressure lowered to normal values as a result of treatment.

7 Dong (2009:595) has a good overview of the strategic implications of this policy.

between the individual, a mandatory local government contribution and a matching central government contribution. As an example, early iterations of the NCMS policy (2003–05) used a subsidy of RMB10 per person, an RMB10 local government subsidy and an RMB10 central government matching subsidy. The subsidies have been progressively increased through central government mandate to the point where today government subsidies are at a minimum of RMB80, and the minimum total fund contribution is RMB120.

In urban areas, the Urban Employees' Healthcare Insurance Scheme (usually referred to as Basic Medical Insurance, or BMI) is designed to cover all employees and retirees in urban areas. It is financed by employee (2 per cent of total salary) and employer (6 per cent of total salary) contributions. The local government is able to top-up the BMI funds if required; however, its role remains mainly one of governance and fund management. Users have two accounts: the individual account pays for outpatient expenses, emergency services and drug costs, while the social pooling account (70 per cent of the employer's contribution) pays for some inpatient costs within a predefined band. The patients pay upfront and are then reimbursed by the fund.

Urban residents without a *danwei* or employer had been left uninsured since the abolition of free urban medical services in the 1980s. In the mid to late 2000s, the State Council carried out pilot reforms for a special basic social medical insurance program for urban residents that covered these groups in 79 cities in China, which was then expanded to more than 300 cities in 2007. The structure of this program is similar to the NCMS in that there are contributions from the individual and from the government. Total coverage today is estimated to be about 40 million citizens. It is expected that this program will be further rolled out soon.

All of the new systems are catastrophic-event insurance funds the main aim of which is to reimburse patients for expenditure costs after inpatient episodes. In the case of the NCMS, these funds provide an account for 'serious illness and manpower fees' for the consumer, which is pooled into a cooperative medical fund at the county level (Zhongguo Weisheng Bu 2006). The consumer pays for the episode and is subsequently reimbursed post-treatment by the township-level administration body, which is reimbursed by the county-level CMS fund. The bulk of reimbursement by the NCMS is for inpatient expenses, even in counties where outpatient expenses are covered.⁸

8 A 2006 World Bank survey noted that in the 27 counties for which data were available, the share of reimbursements accounted for by inpatient care varied from 100 per cent to 66 per cent, depending on the coverage mode (Wagstaff 2007).

Reform effectiveness

Early evaluations suggest that despite its relatively short life and limited financing, the NCMS has improved access. A number of Chinese studies find that the implementation of the NCMS has improved overall healthcare utilisation and access and to some extent has reduced the financial burden of diseases for the insured. A study in pilot counties in Shandong Province revealed that the rural population covered by the NCMS had an average of 10–15 per cent higher healthcare utilisation than the uninsured (Jackson et al 2005). Wagstaff and Lindelow (2008), utilising a number of data-sets, find that the BMI in urban areas has increased the utilisation rate.

A number of problems remain. The inpatient focus of the insurance schemes means that the system of health security is geared towards more expensive tertiary care. The focus on the individual paying upfront and then being reimbursed encourages both adverse selection and moral hazard.⁹

Perhaps more significant are recent findings that the incidence of catastrophic spending appears to have increased since the introduction of the demand-side reforms. Thus, the early assessment of the NCMS in particular seems to show an increase in demand for services due to the lowering of costs through insurance.¹⁰ Yet the real cost of health care itself could still be increasing—in contrast with previous international evidence.¹¹

There is a notable theoretical gap here, which is that a causal relationship between health insurance and health outcomes requires health institutions to act as the intermediary. The reason for the distinct increase in cost inflation could lie on the supply-side—the fact that providers in China are paid by fee-for-service and face a fee schedule that strongly encourages demand shifting to drugs and high-tech care on which the margins are higher.¹² If physicians and insurance users already face flawed incentives and more funds are added to the system, the extra inflow of public funds into the health system runs the risk of merely fuelling cost inflation rather than changing behaviour in a favourable way.

9 See Manuel (2008) for a more in-depth description of this problem.

10 For more on the impacts of the demand-side reforms, see Lei and Lin (2009).

11 Wagstaff and Lindelow's study noted the cases of Vietnam and Mexico specifically.

12 Liu and Mills (1999) remains the classic study of this.

Demand-side strategies and structural problems

If we treat the demand-side reforms as increases in funds that do not change the incentives or the structure of healthcare provision, it is reasonable to assume that the structural problems of urban–rural and inter-provincial divides will also continue, and hence we will also expect to see similarly inequitable outcomes stemming from these divides.

There is some research currently emerging on these matters. Yip and Hsiao (2009), using the data from the 2003 Health Services Survey and their own data, report that government spending in urban areas is five to six times higher than in rural areas. Demand-side spending drives much of this: city hospitals absorbed 50 per cent of supply-side subsidies in 2002 and county hospitals 9 per cent; THCs, in contrast, received just 7 per cent.

Moreover, inherent regressive biases remain within the current demand-side policies. The city Basic Medical Insurance program, for example, is based on payments of a percentage of salary; however, the risk pooling for this program occurs at the city level rather than on broader county or provincial levels. There is no ability to transfer resources between cities. Hence, cities with advantageous demographic or public health endowments or with high revenues are able to provide more generous support packages than cities with higher actuarial risks or less well-paid workers.

This reinforces the fact that spending is often distributed unequally horizontally and vertically. The NCMS scheme, for example, can also receive extra contributions at the household or local government's discretion. World Bank studies of the 2005 iteration of the NCMS program showed the total NCMS budget tended to be higher than the RMB50 minimum mandated amount per person (RMB62.9 on average in a sample of 189 counties from 17 provinces), and it varied considerably once local income and coverage mode were factored in (Wagstaff 2007). More economically developed counties are thus able to provide greater funds to the scheme.

Establishing demand-side reforms requires the institutions running the reforms to have sufficient authority and skills for fund collection and risk transfer.¹³ Yet in the NCMS program there is a distinct lack of funding for institutional capacity building. For example, the central Ministry of Health declared that the management cost of pilot counties paid by the finance departments of local governments in 2004 was CNY85 million, or approximately CNY1 per capita

13 Bloom and Xingyuan (1997) have a comprehensive overview of this need for capacity in rural areas; their survey provides an extensive overview of the structure of payment in under-capacity areas.

(Hu 2004:2). The problem here is that the management costs for the poorer counties are likely to be relatively far more significant, due to their lower budgets. Meng (2005) notes that management costs account for 9.8 per cent, 5.1 per cent and 3 per cent of budgetary costs in the western, central and eastern areas, respectively. Thus, the very regions that need the extra revenue are far more likely to have a shortfall. Moreover, central government regulations forbid the use of funds from the NCMS to support management costs.

The manifestation of this precarious situation is that county governments often become more unwilling to spend even the funds they have raised through the NCMS. Poorer governments, concerned about budgetary shortfalls, are likely to contain costs and avoid overspending through designing very conservative plans that limit coverage and benefits (Wong 2007).

Depending on when measurements were taken, the minimum level of financing per beneficiary generally represented only about one-fifth of average per capita total health spending in rural areas.¹⁴ Hence, coverage of medical expenses tends to be shallow, many services are not covered or are covered only partially, deductibles are high, ceilings are low and co-insurance rates are high.

It is further revealed by a number of studies that the NCMS has not been effective in improving healthcare access and reducing the financial burden of disease, as expected, for the poor. Compared with the high-income insured, the low-income insured utilised less health care and received less reimbursement from the NCMS (Mao 2006).

How structural problems hinder reform

The current inequities in funding do not affect just the provision of services; they also affect the incentives for institutions.¹⁵ The impacts of the demand-side reforms outlined above provide an excellent case study. The administrative responsibilities for the NCMS fund are fairly clearly outlined.¹⁶ The central government—in a quest to improve social welfare and general health service provision—commits funds and gives targets to provinces. Provincial-level

14 Zhang (2005:20) uses 2004 calculations; Wagstaff et al. (2009) make similar assumptions for 2007. The data themselves each year are available from <<http://www.moh.gov.cn/publicfiles//business/htmlfiles/zwgkzt/pwstj/index.htm>>

15 This section follows the methodological principle of Wilson (1989) in arguing that bureaucracies can also act as self-interested units and that this self-interest is directed to assuring its own survival through the maintenance of funding.

16 This outline can be found in Zhongguo Weisheng Bu (2006); any translations and abbreviation mistakes are the fault of the author of this chapter.

responsibilities largely amount to target setting and analysis, and they decide the relative effectiveness of the counties, as well as exerting influence over annual decisions regarding fund allocation and spending.¹⁷

Counties bear most of the responsibility for the management and administration of the NCMS funds. They 'outline the level of cooperative medical care to be funded, set reasonable rebate guidelines and then calculate the ceiling payments, compensation and the proportion of the scope of compensation' (Zhongguo Weishengbu 2006). County governments, however, are allowed to loosely set NCMS reimbursement ranges and criteria according to 'funds raising and local conditions' (Zhongguo Weishengbu 2006).

Township responsibilities centre on the efficient management of the THC, which is generally considered the lynchpin of the NCMS model (Wu 2007). Most of these responsibilities focus on ensuring supplies of drugs and basic medical equipment and that 'medical institutions are functional'. Thus the THC, under the management of the township government, is the hub of the delivery system, performing outreach and connecting all preventive services for the township residents including child vaccination, disease control, prevention of infectious disease, maternal and child health and family planning, while also providing a link to more advanced tertiary services. THC receive no subsidy, however, for the services of their time and administration. Funding to THCs is expected to come from cash-strapped local governments. Not surprisingly, their relative funding is lower than other tiers of treatment.

Physicians in THCs face a difficult situation. They do not have the same levels of training or access to resources and supplies that larger hospitals have in order to treat their patients. Their envisaged role is as a gatekeeper and primary health provider. Under this THC usage system, however, prices tend to be set below cost for simple and non-invasive care and above cost for more complex care. Hence, the incentive for the physicians in the THC is to treat the complex patients themselves, in order to gain greater revenue.

Similarly, in a situation in which they face funding shortages, THC administrators' expected behaviour for more difficult cases is to contain THC costs by encouraging physicians to transfer patients to hospitals at the county or municipal level. This utilisation mode, however, gives THCs lesser income from the absence of more complex cases that act as a *de facto* subsidy.

In this way, the behaviour of THC administrators and township government officials is aligned. As the township government officials are measured for

17 Provincial governments are required to 'establish CMS essential drug list, formulate survey basis and analyse hospital admissions, fiscal balances and fund payouts', balance the books and 'strive to improve the level of benefit for the farmers of the Senate' (Zhongguo Weishengbu 2006).

effectiveness through ensuring that THC's do not become bankrupt, they have no incentive to force THC physicians or administrators to attempt to act as gatekeepers.

For the system to work, the county government would need to be able to force the township government officials to influence the behaviour of the THC. Yet the county government has very little incentive to do this. This is because county government officials have conflicting incentives. The performance of officials is measured, with some provincial variations, according to

1. whether or not institutions under their command become bankrupt
2. whether or not their NCMS fund is financially viable
3. the rate of enrolment in the NCMS program
4. the number of staff working on health care
5. general public health measurements including vaccinations and so on.

The information asymmetries present in treatment mean that measurements such as treatment protocols, prescription rates and use of medical testing are unable to be used to assess the performance of government officials. Unlike health outcomes, enrolment in NCMS *is* measured and can thus influence the provincial government's assessment of the county officials' performance. Hence, there is an incentive to make sure that all citizens are enrolled—in spite of the scheme being voluntary—yet there is no incentive for government administrators to take account of service delivery, in spite of the healthcare system being public.

Moreover, the inability to measure outcomes means that government officials need to rely on hospital administrators to ensure that physicians behave in a way that is socially beneficial. Although county hospitals and THC's are public, they have incentive schemes similar to the private sector. Local governments can provide some funding to hospitals and provide them with targets for specific public health interventions, such as vaccination targets. Yet, simultaneously, the major role of the hospital is to survive in spite of funding shortages.

Hospitals do this through ensuring an adequate supply of high-cost treatment patients. More importantly, hospitals have a controlling mechanism over the behaviour of physicians through the payment of bonuses. These bonuses are supplementary to salary and are generally not formally contracted—or available on the public record. A study done by the World Bank (2005:43) indicates that there appears to be a link between hospital revenue and physician bonuses, but data to prove this hypothesis have been difficult to access.

Finally, local governments and hospitals/THC's have incentives to increase the number of staff. As the base salary of staff is mandated by central decree, and there are generally soft budget constraints only, extra staff is useful for the

hospitals/THCs (who can use them to generate extra revenue) or for the local government (for whom they are a source of support, power and influence) (Shih et al. 2008). Capital grants or targeted transfers from the central or provincial government can similarly be used for purchasing or upgrading expensive equipment, which tends to allow for more complicated revenue-generating medical procedures to be performed.

Patients are then forced to respond to these incentives. The patient pays upfront and thus the patient decides which level of provider to visit as well as bearing all the financial risk. The post-visit repayment structures of the NCMS encourage the patient to be treated at the THC level. The THC has an incentive to treat the patient as high rather than low cost, and there are the usual asymmetries of information problems present in models of fee-for-service health systems. The THC workers are, however, less qualified than county hospital staff.¹⁸

Patients not only have to ascertain which level of provision is most suitable for them to be treated and pay upfront for the treatment, they are supposed to discipline provider behaviour. Theoretically, providing individual consumers with greater funds allows them to have a measure of voice, exit or loyalty.¹⁹ Yet patients are unlikely to have much voice since information asymmetry between patient and doctor makes it difficult for individuals to discipline providers one-on-one. Moreover, as patients have no say in the running of the NCMS or its purchasing behaviour, their choice becomes one of exit or loyalty. As the majority of the health system is publicly owned and managed, options for exit are also limited. Hence, it appears difficult for individuals to discipline provider behaviour.

Due to pushing the risks back onto the patient, and not having effective, aligned incentives for bureaucrats, the demand-side strategies of the Chinese government appear to be insufficient on their own. The social medical insurance system does not provide mechanisms for improving flawed incentives and fails to ameliorate or monitor agency problems between physicians. The conflicting incentives for government bureaucrats, hospital administrators and physicians force patients to attempt to navigate, fund and discipline the healthcare system themselves—a role for which they are ill equipped.

18 As discussed in the schematic of the collectivisation period supply, there is also a very low-level private alternative available to the patient—the village doctor—but as these doctors are unregulated and do not officially access public funds they have been left out of this model for the sake of maintaining reader interest.

19 Based on Hirschman's classic characterisation of consumer options for public providers (Hirschman 1970:17–37 outlines the model).

Supply-side reforms also hindered by flawed incentives

Significantly, these conflicting incentives also affect the Chinese government's ability to make supply-side reforms to the system. Take, for example, the idea of 'government leadership'—a supply-side theory that has gained considerable traction in the media and, according to some reports, within the government itself.²⁰ According to this theory, the government should be responsible for as much of the development of 'basic health care' as possible. Public community healthcare providers at the primary-care level will provide highly subsidised care, with a small co-payment from the users. These providers should improve their skills through greater, publicly funded training and are expected to also upgrade the skills of village doctors within the area. At higher tiers of treatment, public health insurance schemes such as the NCMS and BMI should be 'enhanced' and this enhanced funding should be used to provide social health insurance cover for hospitalisation costs.

There are two major problems with this proposed strategy of reform. The first relates to cost. The total revenue of public healthcare providers in China at the time was equal to about one-seventh of total government expenditure, and China lacked the fiscal capacity to introduce full supply.²¹ Rather, these supply-side strategies focused on creating a sort of 'mini-NHS' system in which the government attempted to focus its spending on community centres, including extensive training programs to ensure there were enough employees for the centres. Yet this does not deal with the problems of what to do with the hospitals. Supply-side reforms thus far have concentrated on intensifying the SHI programs in order to deal with 'non-basic care'.

Moreover, this exacerbates the problems with poor incentives currently faced by the Chinese healthcare system. Public hospitals would be able to use excess revenues to pay bonuses to staff. For this and other reasons such as prestige, it would be hard to retain community health workers in THC's or to ensure quality of health services within this area. The conflict in incentives for THC's, county hospitals and bureaucrats therefore continues.

²⁰ Gu (2009:124) has far more on the internal politics of this, although his preference for demand-side reforms is clear.

²¹ Gu (2009:125) does the calculations, based on Ministry of Health (2007) and NBS (2007).

The April 2009 health reforms

Perhaps the best indication of how the Chinese government sees the next 20 years of reform can be seen in its most recent health plan.²² The plan—the Opinions on Deepening Healthcare System Reform (2009–10)—was adopted in January 2009 and released in early April.²³ This plan promises to ‘effectively solve the problem of difficult and costly access to health care services’—a problem, the plan notes, ‘arouses intense public concerns’.

Much of the plan appears to be embracing supply-side reform proposals. Funding standards for basic public health services will be increased (‘in 2009, the average per capita public health funding shall be no less than 15 Yuan, and no less than 20 yuan by 2011’), with the expectation that this greater funding be used for improving public health and grassroots services. The central government also proposes to place more drugs on the essential medicine list.

Over and above this, there appears to be a commitment by the central government to ‘lead’ healthcare reforms on the supply side. It promises to ‘rationally determine the payment criteria for drugs, healthcare services and medical materials’; to check that the ‘salary level of healthcare workers is in line with the average salary level of staff of local public institutions’; to set the ‘service charges of grassroots healthcare institutions according to the costs after deduction of government subsidy’; and finally, to ensure that drugs are ‘sold at zero price margin’. It is thought that this will stop drug revenue from being the ‘major compensation source’ for funding grassroots healthcare institutions. Rather, the government thinks that it will ‘provide rational subsidies to rural doctors for providing public health services’. Crucially, local governments will regulate the criteria for these measures. There is no mention of which level of government will pay the providers themselves, but it is presumed from the choice of regulatory body that it will be local governments.

On the demand side, the subsidy on SHI programs will be increased so that the funds reach a minimum of RMB120 per capita per annum. Greater focus will be put on outpatient expenses and the reimbursement range will be increased.

22 The most recent bout of reform was intended to be a seminal reform. It was anointed by the State Council and Li Keqiang himself led the project. Many multinational consulting firms, foreign and local universities and think tanks also consulted on the project. The full details of the reform can be found at <<http://shs.ndrc.gov.cn/ygjd/ygwj/>>

23 The following section is taken from details of the plan, which can be found at <<http://shs.ndrc.gov.cn/ygjd/ygwj/>> Any translation mistakes are the fault of the author.

The scope and proportion of reimbursement for outpatient expenses will be expanded. In rural areas, county governments are mandated to reimburse a higher amount of NCMS funds.²⁴

The most radical part of the reform is a promise to shift away from public ownership. The government has pledged to compensate healthcare non-profit organisations for any 'grassroots' work they do. It has also encouraged 'qualified' physicians to run clinics or establish their own clinics or practices. The envisaged compensation mechanism is through SHI reimbursement, although providers will be forced to sign a 'designated insurance contract'. Similarly, 'efforts will be made' to transfer ownership of public hospitals to non-public institutions.

Finally, governance reforms are promised. These reforms include trying to 'encourage' local governments to 'actively explore effective formats of separating government agencies and public institutions' and to try to separate 'government administration and business operations'. The most significant of these is a mooted 'negotiation mechanism between medical insurance handling institutions and providers of healthcare services'. This, if done effectively, would undoubtedly be a major step forward.

Future paths and conclusions

Overall, however, the Chinese government appears to be caught in a bind in which it is trying to do too many things at once. It wishes to 'rationally determine the payment criteria for drugs, healthcare services and medical materials', yet simultaneously commits massive amounts of funding to demand-side programs in which individuals are forced to navigate flawed government incentives.

Clearly, as insurance coverage widens and the funds devoted to insurance increase, the ability to use these demand-side programs to reform the payment systems of providers will also increase. The current model, however, requires tweaking in order to change the behaviour of providers. The insurance mechanism would benefit from moving from a post-hoc reimbursement model to a more contractual model in which insurance bodies act as genuine third-party purchasers and in which insurance bodies are able to use mixed-method purchasing techniques. A number of studies in China across different geographical areas and service providers have all reported considerable improvements in affordability, access and patient satisfaction following shifts to mixed-method models (Yip and Eggleston 2001; Yip and Eggleston 2004; Wang et al. 2005; Hsiao 2007a, 2007b; Wagstaff et al. 2009).

²⁴ This is the so-called '85–93 rule', whereby county governments are mandated to reimburse no less than 85 per cent of the NCMS fund from the year but to not reimburse more than 93 per cent.

A shift such as this will also require the Chinese government to clarify its own political structure and strategy at a number of levels. For example, the responsibilities for the current insurance schemes at the central government level itself are divided between the Ministry of Health and the Ministry of Labour and Social Security. Reform proposals are often bitterly contested between these two ministries at the central level.²⁵

This lack of clarity is a problem that reinforces itself within China's governance structure both horizontally and vertically. For example, the central government thinks that it will 'provide rational subsidies to rural doctors for providing public health services', yet the local (most probably county) government will regulate the criteria for these measures. The very same local government, however, has considerable incentives to ensure that hospitals and community centres—underfunded by the public purse for a lengthy period—do not go out of business. As such, allowing the continuance of a distorted system in which providers are forced to choose between providing low and high-cost health services makes any sort of reforms difficult.

Changing this system is not merely administratively and fiscally difficult. It also runs parallel to recent political trends that point to the greater centralisation of Chinese governance. As Barry Naughton (2010) observed so perceptively about the 2010 National People's Congress, the current central government line following the global financial crisis is the effect of what Wen Jiabao called 'macro-control'. Macro-control is defined as continuing

to make use of both market mechanisms and macro-control, that is, at the same time as we keep our reforms oriented toward a market economy, let market forces play their basic role in allocating resources, and stimulate the market's vitality, we must make best use of the socialist system's advantages, which are making decisions efficiently, organizing effectively, and concentrating resources to accomplish large undertakings. (Wen 2010)

It is difficult to see how concentrating resources can accomplish large improvements in health care. For example, more generous earmarked transfers for public health programs have been mooted for the provincial level in order to attempt to reduce the horizontal fiscal inequities present in the current Chinese system. Yet the current vertical inequities indicate that 50 per cent of these extra funds would be directed into urban demand-side programs and would do very little to change the incentives for bureaucrats and providers at lower levels. It is hard to see how concentrating resources at the central level would not merely reinforce the current flawed incentives.

25 Hsiao (2007b) covers this at length.

A truly promising course of reform for the next 20 years of Chinese health care would be a shift away from macro-control towards what we can term 'micro-control'. Any program of reform would need to consider supply and demand-side issues.

True supply-side reforms would embrace sector neutrality. The government would need to eliminate the high-cost/low-cost patient distinction, decide the ownership status of health institutions and examine reform of the incentives for local bureaucrats. Similarly, attempts would need to be made to secure far higher levels of funding for township and county governments to act as effective monitors, measurers and regulators and to secure greater funding for public health providers to ensure more efficient 'gatekeeping'. There would need to be horizontal and vertical intergovernmental fiscal reform in order to ameliorate the current incentives for providers and patients to move to more developed areas. Finally, there would need to be some concessions to 'losers' from these reforms²⁶—and they would undoubtedly come at considerable fiscal cost and administrative difficulty.

The other option for the next 20 years is to truly embrace demand-side reform. Making demand-side institutions such as the BMI or NCMS agencies accountable to the populations they serve (and that fund them) would create huge incentives for improving service delivery. This would be particularly true if these demand-side institutions are allowed to embrace new payment mechanisms and active purchasing. Vital to this occurring would be to not only ensure universal coverage by 2011, as planned, but to counteract problems of portability and inequity. Allowing transfers between cities with basic medical insurance, for example, would be a good start. Better yet would be to continue and even expand the large funding increases for the demand-side programs; to make health insurance part of a single central government ministry's mandate; to merge urban unemployed and rural schemes and ensure they are aligned with the BMI program; and finally, to make health insurance packages fully portable.

When considering the next 20 years of reform, it is difficult to avoid the problems of today—and these problems are firmly anchored by events in the past. Specifically, inequalities in the fiscal and public good system were linked to inequality in service provision. Moreover, the intersection of these inequalities created flawed incentives that led to poorer outcomes for Chinese citizens and that today hinder reform. Reform proposals such as the most recent April 2009 plan must navigate the same flawed institutions that brought about discontent with the health sector. Without attacking these incentives, systemic reform remains highly difficult. As such, it is difficult not to feel somewhat cautious about the next 20 years of reform.

26 This point was first made by Eggleston et al. (2008:163).

The Chinese central government has, however, shown a considerable, and laudable, commitment to healthcare spending throughout the past decade. Although much remains to be done, a marrying of this commitment to funding with a commitment to redressing the flawed incentives in the system could have a dramatic impact in the next two decades.

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