



Public Expenditure and the Role of Government in the Chinese Health Sector



Backdrop to the review

How much should China's government spend on health? And what should its role be in the health sector? This Briefing Note argues that these two questions—both the subject of much debate in China today—are inextricably linked.*

Governments intervene in the health sector to promote equity and to address so-called *market failures*—instances where a free market would produce socially inefficient outcomes. Relevant market failures in the health sector include: *externalities* and *public goods*, which together provide the economic rationale for public health programs; information asymmetries between patients and providers (patients know less about medicine than their doctor); and information asymmetries in the health insurance market (some people are more likely to fall sick than others, and people can conceal how 'risky' they are from the insurer).

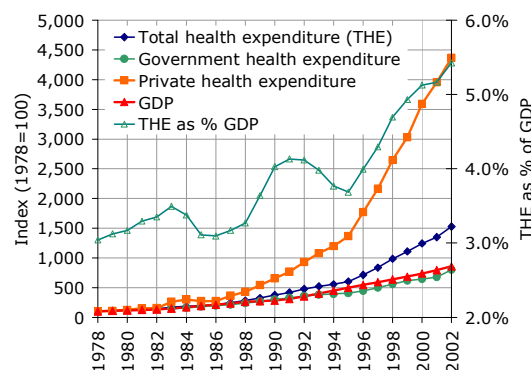
For each type of market failure, the government can choose between several instruments. In doing so, it needs to balance the costs involved (including the government spending

implications) and the benefits (how well the policy ameliorates the market failure in question). The merits of tackling market failures in different ways are discussed more fully in other Briefing Notes in this series, which also set out China's current approaches to the problem. This Note pulls these ideas together in a coherent whole, and considers the government spending implications of alternative policy options. It begins, however, with a brief overview of government health spending trends and patterns in China.

How much does China's government spend on health? And on what?

Government health spending in China (see Box 1) has risen in real terms during the last two decades. However, at 8.7% p.a. its rise has somewhat less spectacular than the rise in GDP (9.0% p.a.), and considerably less spectacular than the dramatic rise in real private health spending. Between 1978 and 2003, the latter increased at 15.7% p.a., and increased as a share of total health spending from around 20% to nearly 60% (Figure 1).

Figure 1: Government expenditures have grown, but private expenditures have grown faster



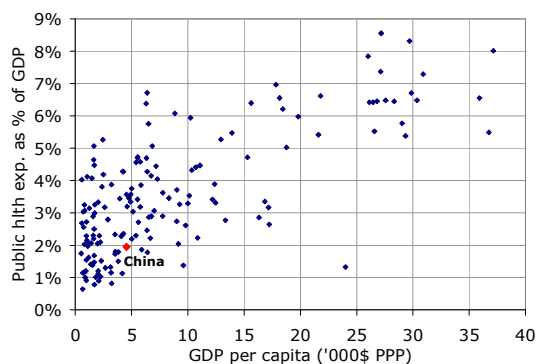
Source: China National Health Accounts¹; all data in real terms, normalized to 100 in 1978.

China's private share is considerably higher than in many other countries with similar levels of total health spending, and is higher than the

* This briefing note was prepared as part of the World Bank's (WB) ongoing study on China's rural health sector. The study—referred to as the *China Rural Health AAA* (Analytical and Advisory Activities)—is being undertaken in collaboration with the Ministry of Health (MOH) and other government agencies, as well as with selected international partners. The note is based in part on a review of China's government health expenditures prepared by a team that consisted of Professors Peter Smith of University of York (UK), Christine Wong of University of Washington (USA), and Zhao Yuxin of China National Health Economics Institute. The team benefited from the comments of Ms. Sun Zhijun, Deputy Director General, Department of Social Protection, Ministry of Finance (MOF), who was the discussant for this critical review at the AAA workshop in July 2004. The briefing note was prepared by the World Bank AAA team and draws on other material in addition to the government expenditure review. The findings, interpretations, and conclusions expressed herein are those of the authors, and do not necessarily reflect the views of the World Bank or those of its Executive Directors or the governments they represent, or the Government of China. For further information on the China Rural Health AAA and related activities, contact L. Richard Meyers (lmeyers@worldbank.org).

worldwide average of 43%.² By contrast, China's government health spending (expressed as a share of GDP) is somewhat *less* than one might expect. A cross-country regression of government health expenditure as a share of GDP on per capita income predicts that in a country with China's per capita income, government health expenditure would absorb about 2.4% of GDP. In the event, in China it takes up just 1.9% (cf. Figure 2).

Figure 2: China's government spends relatively little on health care by international standards



Source: World Development Indicators (2004); public health expenditure includes social insurance; China marked in red.

The low and falling share of GDP devoted to government health spending could be because of a low and falling share of total government spending spent on health, or a low and falling share of GDP devoted to overall government spending (equal to the tax share of GDP if the government is using taxes to finance its spending). The second of these—the tax share of GDP—declined steadily during the 1980s up to the mid-1990s due to shifts in the tax base during the economic transition, and weak tax collection incentives for local government (Figure 3). The government, as a result, was left with fewer and fewer fiscal revenues to finance health (and other) activities.* The first ratio—the share of the government budget devoted to health—has varied over time. As revenues declined, the share of health in overall government spending *increased*, reaching a peak of 6.1% in 1992. But since then, as government revenues have picked up, the share has fallen, and is now back to its 1980 level of around 4%.

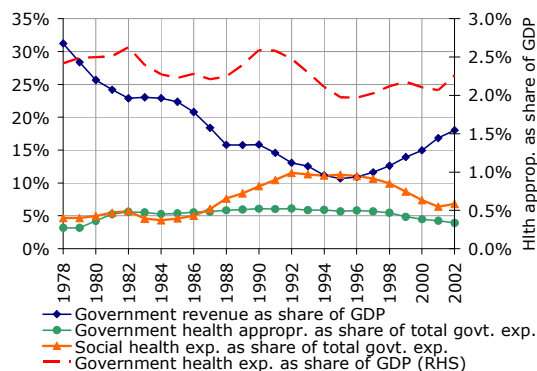
* During this period there was however a rapid expansion of extra-budgetary revenues at local government level.

Box 1: Government health spending—conventions and data sources

Pioneering efforts by the OECD³ and others on National Health Accounts (NHAs) have resulted in a fairly consistent treatment across countries of different types of health spending, including government spending. General government expenditure on health includes (a) health expenditures (from all levels of government) and (b) social health insurance expenditures.

Like other NHAs, China's NHA⁴ includes spending by all relevant ministries, not just the Ministry of Health. It conforms broadly to the OECD and WHO NHA conventions, although its 'social health expenditure' category does not exactly correspond with the OECD definition of social health insurance expenditures. The latter definition excludes occupational health insurance schemes for government employees, such as China's Government Insurance Scheme. In practice in China's NHA, as in those of most other countries, these are treated as part of government spending. China's NHA also includes private health insurance premiums, health payments from the rural collective economy, and extra-budgetary capital investment and of private practitioners as 'social health expenditure'—items that are considered private spending according to the OECD classification. Fortunately, these items are relatively small in China, so the misclassification is of little practical consequence.

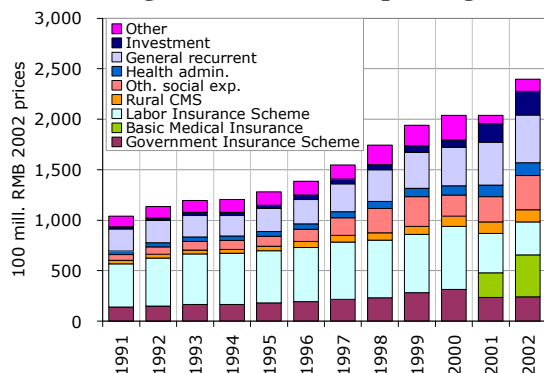
Figure 3: Fiscally challenged China



Source: China National Health Accounts¹; data on government revenue and expenditure from China Data Online (141.211.136.211/eng/default.asp).

The bulk of China's government health spending goes on social health insurance (Figure 4). General government recurrent expenditures have consistently absorbed around 20% of total government health spending.

Figure 4: The changing composition of China's government health spending



Source: China National Health Accounts¹; all data in real terms, 2002 prices.

Addressing externalities and providing public goods

While most health services benefit only the individual who receives the care, there are some that have broader benefits—so-called ‘public goods’ and ‘externalities’. Immunizing a child protects not only the child, but also others in her vicinity. Measures to prevent and control the spread of communicable diseases—environmental health programs, disease surveillance, etc.—generate benefits to the whole community. Because it is difficult to exclude individuals from enjoying these benefits, these programs and services tend to be underprovided by the market.

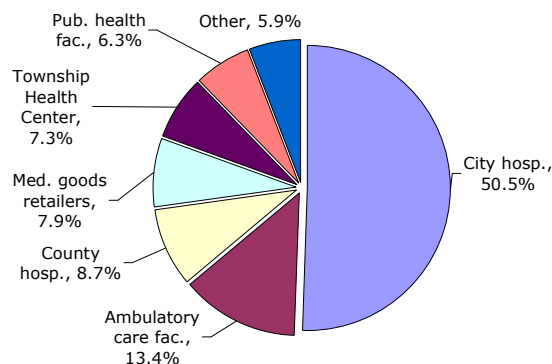
What should a government do to address health-sector externalities and public goods? At a minimum, it should *finance* relevant cost-effective activities. It is debatable whether China is doing enough in this regard.

Public health institutions (PHIs) in China account for 6.3% of the country's total health expenditure (Figure 5). An ever smaller share of their incomes is being financed by government, and an ever larger share is being financed from private sources including out-of-pocket payments by households (Figure 6). It is true that subsidies to PHIs have increased in real terms, and that it is the subsidy *share* of PHI business income that has fallen. But the data

* We ignore in this Note the control of activities or behaviors such as smoking, which generate negative externalities and where people, due to lack of information or other reasons, may not make the ‘right’ decision.⁵ A forthcoming Briefing Note on Public Health will address these issues in more detail.

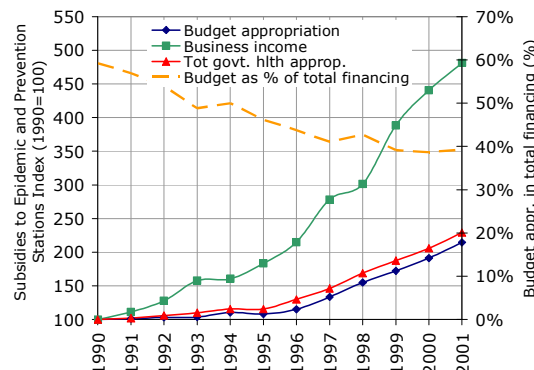
nonetheless raise the question of whether certain key public health activities are being underprovided in China.

Figure 5: Public health facilities account for a small share of total health spending in China



Source: China National Health Accounts¹; ‘Other’ includes health administration, nursing care facilities, city community health centers, other hospitals, and other.

Figure 6: Public health institutions have seen real increases in government subsidies but have increasingly relied on private revenues



Source: China National Health Accounts¹; first three series in real terms, normalized to 100 in 1978.

The answer to this question seems to be Yes. The activities generating private revenues for PHIs in China are largely public health activities. China—unlike almost all other countries—charges for childhood immunization, as well as for interventions against other communicable diseases, including leprosy and TB. Unsurprisingly there have been negative effects on coverage.⁶ The government may have succeeded in containing its expenditure on public health activities and in getting PHIs to generate additional revenues. However, this success seems to have come at a price, in terms of worse public health indicators. The government's approach has given PHIs an incentive to under-deliver, to skimp on quality, to take the subsidy but not deliver the activities the subsidy was intended to finance, and to

focus instead on activities that generate additional profits at the margin.

What might the government do instead? At the end of the day, the only economically logical option for any government is to fully finance priority public health activities. In China's case this will necessarily mean some increase in government expenditure. The government will presumably want to achieve the right level of public health activities at the right quality and at the lowest cost to the taxpayer.

What sort of payment mechanism would encourage this? And which providers should be eligible to deliver public health interventions? Should it be just dedicated PHIs? Or should public health activities also (or instead) be delivered by other providers, such as village doctors, as at present, and township health centers? Should there be some rationalization in the delivery of public health interventions? Should providers delivering public health interventions be allowed to generate and retain additional income on top of subsidies from the government?

The answer to these questions probably varies depending on the type of public health services. For 'personal' public health services, such as immunizations and other interventions delivered to specific individuals, the government will probably want to reimburse providers for services delivered, at a pre-negotiated but realistic price, and with a service verification and quality control mechanism built in. In terms of service delivery arrangements, international experience suggests that one does not need to look to dedicated public health institutions. Primary care facilities and hospitals can deliver such interventions, *provided the public health activity payment mechanism generates the right incentives.*

Where population-based public health services are involved, as in surveillance and monitoring programs which are not delivered to specific individuals, the government could establish contracts with providers or agencies, where the disbursement of subsidies (set at realistic levels) is linked to the achievement of targets on various performance indicators. These providers or agencies should probably be dedicated PHIs, and should not be allowed to generate additional revenues on top of government subsidies.

Dealing with information asymmetries in the health care market

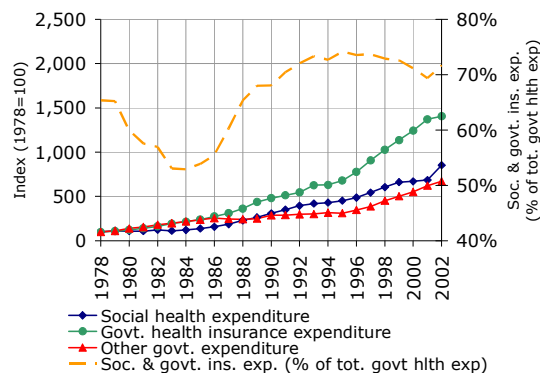
Information asymmetry between the patient and provider is another argument for government intervention in the health sector. The informational advantage the provider has over the patient creates scope for him to abuse his position by administering or prescribing unnecessary or inappropriate—but profitable—care, or by skimping on quality.

The least interventionist solution to this problem is to regulate private providers: licensing physicians, setting up a quality assurance process, providing a mechanism by which patients can seek redress if they receive poor quality or inappropriate care, and so on. This minimalist approach can, however, be both difficult and costly. Some countries therefore have chosen to 'soften' the profit incentives of providers—either by creating conditions for the establishment of non-profit providers or through public ownership. This softening of incentives may come at a price, however, as providers may be less cost-conscious.

The Chinese health system was long characterized by collective or government ownership, with providers 'fully' financed by the collective or government. The shift since 1980 towards private practice at the village and township levels, and the 'hardening' of financial incentives in government-owned facilities (by allowing them to retain additional revenues on top of government subsidies), raises the question of whether the government has in place mechanisms that can limit the extent to which providers exploit their informational advantage over patients. The answer to this question seems to be No.

The provision of unnecessary care and medicines is now a widespread phenomenon in China, and is contributing to the rapid escalation of health care costs. In fact, the government itself is paying a price for not having in place mechanisms to limit physicians abusing their informational advantage over patients—costs have escalated dramatically in its own social insurance programs (GIS and LIS), despite declining coverage (Figure 7).

Figure 7: Growing government health insurance commitments



Source: China National Health Accounts¹; first three series in real terms, normalized to 100 in 1978.

There are several ways the government might reduce the negative consequences of the provider-patient information asymmetry more effectively. In so doing, there is a good chance it could also reduce the pressure on its health budget—both by controlling cost escalation over time, and by making health expenditure more efficient.

Insofar as the government continues to be a *provider* of care (itself an issue for debate), it could take measures to better align the financial incentives of government-owned providers with social objectives. This could be achieved by limiting the ability of providers to generate and/or retain revenues, and by ensuring that the compensation of providers is closely aligned with costs.

In its capacity as *regulator* of the health system, the government could seek to make improvements in a number of areas, including certification and licensing, professional standards, helping promote self-regulation by provider organizations, and the monitoring and control of prescribing and dispensing of pharmaceuticals. Price-setting is another area where the government could make improvements that would reduce the incentives for providers to exploit their informational advantage over patients, since the current system gives providers a strong incentive to focus on high-tech care at the expense of more basic but less profitable care.

Finally, the government could further develop active *purchasing*, initially within its own social insurance programs (the new Basic Medical Insurance scheme or BMI, and the new Cooperative Medical Scheme or NCMS),

moving away from fee-for-service towards some form of prospective payment, and awarding contracts to providers based on competitive bids detailing price, quality and other key attributes of service delivery.* It could also develop purchasing in its public health programs, where informational asymmetries also arise. For example, there is evidence that PHIs have overprovided hygiene inspections in order to generate revenues for themselves.⁶

Making health insurance work

Illness and injury are unpredictable, and can result in potentially large costs of care. This makes health insurance highly desirable.

On the face of it, governments could leave health insurance to the market: if households are prepared to pay to reduce the risk associated with ill health and injury, insurers ought to be willing to cater to this market demand. In practice, of course, they do. However, the combination of heterogeneity in health risks and asymmetric information makes unregulated voluntary health insurance highly problematic.⁷

Risk heterogeneity points towards the segmentation of risk pools, with high risks (the elderly and frail, for example) paying more than low risks. However, this is likely to offend common notions of fairness. To get round this, the government might require that all individuals be charged the same premium (known as *community rating*) and keep participation voluntary. But this is likely to lead to low-risk individuals opting out of the scheme, forcing premiums upwards as the pool of remaining participants become more risky, prompting a further exodus of low risks, until in the end, the scheme may unravel altogether—a process known as *adverse selection*.

A more common approach to addressing health insurance market failures is for the government to *provide* universal insurance, either explicitly through a social insurance program, or implicitly through free or subsidized (tax-financed) care at public facilities.⁸ These schemes typically seek not only to promote access to care, but also to make financial contributions related to ability to pay.

* For details, see *Briefing Note 6: Rural Health Insurance: Rising to the Challenge*.

This was the route taken by China in the past, when (near) universal coverage was based on either commune affiliation in rural areas (the Cooperative Medical Scheme (CMS) or employment status in urban areas (the Government Insurance Scheme, or GIS, and the Labor Insurance Scheme, or LIS)). Since de-collectivization of agriculture and market liberalization, the coverage of these schemes has declined dramatically.*

The government is trying to restore coverage, in rural areas through its NCMS, and in urban areas through the development and expansion of the new BMI scheme. As the government proceeds, difficult choices will have to be made, with implications for government spending. What level of benefits is affordable? How and when can coverage be expanded? How can demand-side and supply-side cost sharing be better used to ensure *moral hazard* and costs are contained? And so on.

Given the novelty of the NCMS and BMI schemes, no detailed data are available on current and projected levels of government spending. What is clear, though, is that both will have important overall expenditure implications for both central and local government. BMI and GIS already absorb a large share of overall government spending. As BMI coverage expands, in particular to marginal segments of the population with lesser ability to contribute, the resulting expenditure commitments will comprise a considerable challenge. Similarly, although the government subsidies to the NCMS are relatively modest, they may comprise a substantial burden for some local governments. And the sheer scale of the scheme also adds a sizeable commitment to central government.

Equity and the poor

Most governments—China’s included—attach at least some importance to the idea that access to health care and financial contributions ought to be equitable, and that the poor and vulnerable should be protected against unmanageably high health care expenses.

* For details, see *Briefing Note 6: Rural Health Insurance: Rising to the Challenge*.

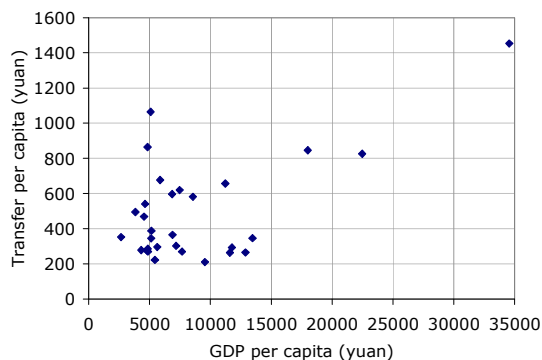
Demand-side subsidies have a long history in China. However, they have not been directed at promoting equity, and benefit the better off disproportionately. Over half of government health spending goes towards supporting urban health insurance schemes, the members of which are disproportionately from the higher income groups, *even within urban areas*.

Supply-side subsidies also have a long history in China, and have been paid in part to providers to enable them to cover the costs of treating the poor. But in practice, this is not done very systematically, and it is unclear how many poor people actually benefit from free or subsidized care through this mechanism. What is clear is that a large share of supply-side subsidies are directed at urban hospitals, and hence disproportionately benefits the better off.

Inequities in public expenditure outcomes are in part related to the design of supply- and demand-side programs. However, geographical disparities in spending are also important. Local governments in China have unusually large expenditure and financing responsibilities in the area of health. As a result, the capacity of local governments to finance health expenditures—in the form of provider subsidies or support to the new demand side schemes—varies directly with their per capita income. And in contrast to many other countries, there are very limited health-specific fiscal transfers in China. In fact, the more substantial fiscal transfers from central to province level—rebates for VAT, excise, and income taxes, support for pensions and unemployment benefits, and compensation for rising civil service pay—actually benefit the richer provinces disproportionately (Figure 8).[†] And these disparities are widening, not narrowing.^{9,10}

[†] It should be noted that VAT, excise, and income tax rebates form part of tax-sharing arrangements. By conventional definitions, these ‘transfers’ should be considered local tax revenues rather than transfer income. If these items, which account for approximately 40% of ‘transfers’ are excluded, the distribution of the remaining fiscal transfers is mildly redistributive.

Figure 8: The richer you are, the more money you get



Source: MOF, Treasury and Budget Departments, *Difang caizheng tongji ziliao* (local financial statistics compendium), Beijing, Chinese Fiscal Economics Press.

Recently, the government has taken steps to do more to promote equity in the health sector. A RMB 10 subsidy is to be paid by central government to each NCMS member living in the central and western provinces. The Ministry of Civil Affairs (MOCA) is setting up a Medical Assistance (MA) scheme, which will provide financial assistance with medical expenses to the poorest 5-10% of people in each of China's provinces. Both are likely to entail increases in government spending, but in both cases, the extra spending will disproportionately benefit China's poor.

The government could, if it chose to, do still more to promote equity in the health sector. It could start reforming the fiscal system to reduce the inequalities in the resources that local governments have available for their health spending. In most countries, central government expenditure plays an important role in supplementing local tax resources, and in compensating local governments for variation in both local tax base and health needs. The intention is to enable each local government to offer some standard package of health care for some standard local tax rate. To achieve this, many countries use transfers that reflect differences not only in revenue base but also health needs (see Box 2).

Box 2: Risk-adjustment schemes to promote geographic equity in government health spending

The level of sophistication of geographic risk-adjustment schemes varies considerably. At a minimum, most try to use data on age and sex. Some use significantly more detailed information—e.g. on employment status, sector of employment, housing,

etc.—but in most contexts, this level of sophistication is infeasible.

Although risk-adjusted capitation formulas tend to be based on individual level data, such data are sometimes combined with data on socio-economic conditions for regions or other geographical units. This is the case, for example, in resource allocation formula used in England since 1976, which currently uses information such as mortality rates, disability rates, older people living alone, children living in single parent households, unemployment rate, to adjust transfers to local health authorities. The redistributive effect of the formula is significant, with the most disadvantaged health authority getting 40% more per capita than the average, and the most advantaged health authority getting 20% less per capita.¹¹

The development and implementation of risk-adjusted capitation schemes take time. For example, it took 15 years to phase in the English system, and since then it has been adjusted several times to address shortcomings.

In China's case, one obstacle is that comparatively little of China's government health spending is financed centrally. This substantially limits its potential to equalize resources across local governments. But over time—with the continued growth of central government tax revenues, the renewed commitment on the part of central government to the health sector, and the removal of local agricultural taxes and the consequent likely small shift of financing responsibilities away from local governments—it seems likely that there will be increased scope for China's central government to exert a greater equalizing effect on geographic variations in government health spending.

There is something else the Chinese government could do to promote equity in health, namely gradually target its support of health insurance programs on the poor. Instead of using tax revenues to finance insurance for the better off, as was the case under the old GIS, the government could use them to subsidize the BMI contributions of the urban poor and unemployed. MOCA's MA scheme would be one vehicle through which this could happen.

The government could also do more to promote equity within and between health insurance schemes. BMI contributions tend to be a fixed percentage of income. Not surprisingly, there are considerable differences across cities and

counties in the financing base. As a result, the same contribution rates are associated with different benefits packages across localities. These disparities across cities and counties are likely to grow as coverage continues to be expanded beyond the public sector. To counter this, the government could establish—and perhaps contribute to—a BMI solidarity fund, the aim of which would be to reduce and ultimately eliminate the inequalities between rich and poor cities in BMI revenues per member. This approach is commonplace in other countries. For example, Slovakia has moved to a model of several health insurance funds with mandatory redistribution of 95% of revenues based on an agreed formula. Estonia introduced a centralized health insurance fund, with per capita allocations to regional branches that act as purchasers for their members.

This would narrow inequalities within the BMI scheme, but would do nothing to reduce the much larger inequality between the BMI scheme and the NCMS scheme. Reducing this gap need not necessarily involve a merger of the two schemes, but could happen through a gradual process of moving towards a more equal sharing of health risks and resources. An inter-scheme solidarity fund could be set up where contributions from the membership of the two schemes are based on their income, and payments from the fund to the schemes are linked to the risk borne by the scheme.

Looking ahead

This Briefing Note and others that it draws on suggests directions for reform in a number of areas, including the finance and delivery of public health activities, developing policies to reduce the degree to which providers exploit their informational advantage over patients, expanding health insurance but with an eye to the problems of adverse selection and moral hazard, and developing yet more programs and initiatives to improve equity in the sector.

In many cases, these reforms will require extra government spending. However, as argued above, China's government spending on health is low by international standards. Furthermore, tax revenues have been increasing recently, and the government has already accepted the need for an increase in government spending. Indeed, increases in spending have already been

announced. The important thing is that extra spending be coupled with policy reforms that will improve efficiency and equity in the sector.

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