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Health financing in China today: The need for reform

One of the sectors that have undergone particularly dramatic transformations since the beginning of the opening-up of the Chinese economy in the late 1970s is health care. The cost of health care has grown even faster than the economy as a whole, with total health expenditure in the early 2000s approaching 5% of GDP (in 1980 it was only 3.15% of a much smaller GDP (Ministry of Health 2008)). Moreover, the earlier system under which most of the cost of health care was paid for by third parties (either directly as government subsidies to providers, by employers, or by rural collectives) gradually disintegrated in the 1980s and 1990s. Government subsidies to providers were slashed, and doctors and hospitals had to raise an increasing share of their income from markups on drugs and charges to patients. By the late 1990s, as much as 59% of total health care costs was paid for by patients out of their own pockets (Ministry of Health 2008).

While the fees and prices for certain basic health services and drugs were controlled, others were not (particularly those involving new and advanced treatment techniques or recently invented drugs). Because doctors and hospitals could generate more revenue from the (non-basic) services and drugs that were not subject to controls, they tended to favour those treatment techniques and drugs, something that contributed to the rapid increase in costs. As a consequences of these developments, many individuals and families experienced severe financial hardship when serious illness struck (Liu, Rao and Hsiao 2003). Alternatively, many people did not seek medical care even when they needed it urgently, because they could not afford to pay for it, or feared that they would be impoverished if they did (Gu 2008).

What has been done so far

In recent years, and especially since the late 1990s, China has tried to deal with the problems in the health sector through various policy initiatives. Until the present, direct subsidies to providers have remained limited, but major efforts have been made to

protect consumers against the high cost of care by increasing the degree of third-party payment. The principal elements in this effort have been three kinds of social insurance programs: the basic Health Insurance Scheme (HIS) for urban employees, the new Cooperative Medical System (CMS) for rural residents, and the urban residents' plan (UR) for city residents that are not eligible for the HIS.

Detailed discussions of these social insurance plans are available elsewhere (Blomqvist and Qian 2008, Yip and Hsiao 2008); only a brief sketch is provided here. The HIS, established in 1998, is intended for urban employees and retirees and is financed through payroll deductions shared between employers (minimum 6% of salary) and employees (minimum 2%). Plans are managed by the municipal government in each major city in China. One part of the total contribution goes into either an "individual account" (similar to what in Singapore is called a Medisave account) which is owned by the insured person but which can only be used to pay for approved health care expenditures, particularly outpatient services and the deductibles and co-payments for which hospitalized inpatients are responsible under the plan. The rest goes into a "social pooling account" which pays for a share of approved categories of health expenditures for those with major illness episodes (typically requiring inpatient care), subject to an upper limit on benefits (in the basic plan, the limit was four times the annual salary in the city). The intention was that enrollment for regular employees would be compulsory though some employers have not yet joined the plan in many cities.

For those not eligible for the HIS (that is, dependents, the self-employed, and so on) most cities are now offering a more basic "urban residents' plan" (UR). These plans are voluntary, but they are heavily subsidized by government in the cities where they are offered. Their benefits are less generous than those of the HIS, with fewer services and drugs being eligible for reimbursement, higher deductibles and patient co-payments, and lower limits on maximum annual benefits.

Finally, in rural areas, county governments are now expected to offer a version of the Cooperative Medical Scheme (CMS). While local models vary, a common feature is that the plans must be voluntary so that only those individuals who have paid a premium (20 yuan in 2008) are covered. Again, however, the plans are heavily subsidized by state and local governments, which together contributed 80 yuan per insured person in 2008.

Like the HIS and URs, most CMs have both an individual component (sometimes equivalent to the premium the individual has to pay to join) and a social-pooling component. Because the premium and subsidies are low (much lower than the average for the HIS, and also than those in most URs), the benefits for which seriously ill individuals are eligible are typically modest, both because a narrower range of services and drugs can be reimbursed, and because of lower annual maximum benefits per insured person.

With the encouragement of the state (both in the form of subsidies and in other ways), enrollment in the three social insurance plans has been growing rapidly in the last several years. The most recent available statistics suggest that 730 million people (86% of rural population) had enrolled in CMS by the end of Sep 2007 while over 180 million people had register in HIS by the end of 2007 and 43 million people register in the urban residents' plan in year 2007.[1]

While these numbers are encouraging in that they show considerable progress toward the goal of universal health insurance in the sense of the entire population being covered by at least *some* form of insurance, it is nevertheless clear that the extent of coverage is limited: There are restrictions on what categories of services and drugs that are eligible for reimbursement, substantial deductibles and patient co-payments, and relatively low upper limits on annual benefits. As a result, even people who are covered by social insurance continue to face the risk of significant economic hardship if they become seriously ill. Thus, even if there is further progress toward the goal of universal coverage, most people agree that there is an urgent need for further changes to the system of health financing so as to strengthen the degree to which citizens are protected against this risk. However, there is considerable disagreement over the methods that will be used to accomplish this.

The proposals for increased provider subsidies

Most observers of the remarkable success of the Chinese economy in recent decades ascribe it at least in part to the dismantling of the earlier system of centralized economic management and the greater reliance that is now placed on the market mechanism for allocation of economic resources. The changes that have taken place in

[1] See the report http://politics.people.com.cn/GB/1026/7375806.html.

the health services industry since around 1980 are consistent with this trend. With reduced government subsidies, hospitals and clinics have, like most other kinds of firms, become dependent for their resources on the revenue they can earn from selling their services to buyers (patients) in the market. Although this method of financing implies higher charges to patients and hence a larger risk of financial hardship, those who favour the market-based approach argue that this problem can be substantially overcome through social insurance programs of the kind that are being introduced in China.

However, not everyone supports this approach. In particular, many of those currently debating Chinese health policy are arguing that a better option would be to return, at least partially, to a system in which there would be larger direct government subsidies to health service providers, and less reliance on charges to patients for financing them. Supporters of this view include representatives for the state Ministry of Health, many of whom also believe that hospitals and other providers should be more actively managed by the state than they have been during the last several decades (Gu 2008).

In concrete terms, the proposals for more direct state funding and management of health care focus on two state initiatives. One involves the supply and pricing of pharmaceuticals for hospital patients. Under the current system, many hospitals earn large amounts of revenue by the markups that they charge patients on the drugs they receive. In the proposed system, these markups would be strictly controlled and much smaller. In return, there would be increased direct state subsidies to the hospitals, and the state would also take greater responsibility for supplying hospitals with pharmaceuticals at low prices. The second initiative would consist of state subsidies to local governments for the purpose of establishing and operating a network of rural health centers and urban community clinics that would produce “basic” health services at low controlled prices for all residents. While few details have been provided with respect to the way the clinics would operate and be managed, it seems clear that these reforms have the objective of re-establishing a strong role for the government and the Ministry of Health in deciding on issues relating to the funding and operation of the institutions that supply health care.

Critics of the new proposals have characterized them as a move back to the earlier “command and control” approach to managing the health care sector, and predict that they would make the system both wasteful and less responsive to patient needs if they are

adopted. What they favour instead is continued decentralization and privatization of health services provision, and a strengthening of the social insurance system under which patients are reimbursed for part of the cost of the health services they use.

Social insurance vs direct subsidies to providers

The main purpose of the social health insurance plans is to help protect patients against the financial impact of the high cost of serious illness. They do so by partially pooling the risk associated with illness: Part of the cost of the health services that patients use in cases of serious illness is paid for from a fund to which all plan members have previously contributed. But social insurance is not the only method for pooling risk. In one sense, direct government subsidies to health services providers can be thought of as an alternative way of accomplishing the same thing. When subsidies to providers are used to pay part of the cost of their operations, they can lower the charges to patients and still balance their budgets. The shift of part of the burden of paying for health care to taxpayers and away from patients implies an increased degree of risk pooling as it reduces the financial risk associated with illness, just as a social insurance does.

However, the two approaches differ in one very important respect. Under social insurance, the revenue that providers use to cover their costs consists of what they can earn by "selling" their services to the patients they treat in the markets for health services. In contrast, when providers receive much of their funding through direct government subsidies, there typically is no direct link between the amount of subsidy they receive and the services they provide. In the view of those who support the social insurance alternative, the lack of incentive on providers is a critical weakness of the direct subsidy approach. When much of the providers' revenue is independent of the services they supply, the result may be low productivity in the sense that relatively few services will be produced, or that the quality will be low. Moreover, attempts at compensating for the lack of incentives on providers through administrative measures are unlikely to be effective, in the view of those who are critical of the direct subsidy approach.

Those who support the direct subsidy approach do so in part because they have more confidence that careful bureaucratic management of health service providers can raise productivity and maintain a high quality of health services. They also argue that in reality, the incentives that providers have to earn high revenue under a social insurance

system do not benefit consumers/patients. Instead, they lead to high fees and markups on hospital drug sales, as well as provision of many services that patients don't really need but which earn high revenue for providers. A major shortcoming of the current Chinese health care sector, in some of these critics' view, is that too many resources have been channeled to hospitals where doctors can earn relatively higher incomes, and not enough have gone to lower-level clinics that provide important public-health services (such as control of contagious diseases) and basic primary care. While this has happened in both urban and rural areas, the problems have become especially acute in the countryside. For these reasons, they feel that government subsidies to establish clinics that would both strengthen the supply of public health services and offer basic primary care, should be a policy priority.[2]

A compromise: Government purchasing of health services

In our opinion, there is some merit in the arguments of both sides in this debate. We agree with those who see an urgent need for devoting more resources to strengthening the provision of public health and primary care services in China, and for promoting more cost-effective utilization of pharmaceuticals. We also share the view that the trend toward decentralization of health system management and greater reliance on charges to patients for financing health care providers has produced highly undesirable side effects, including a tendency for health care costs to rise rapidly, as they have done in other countries that have followed such policies, most notably the U.S. At the same time, we also believe that it would be a mistake to return to the earlier "command and control" approach to management of health services providers. Both China's own experience in an earlier era, and that of other countries (such as the U.K. and Sweden) provide evidence of the difficulties of centralized top-down management of health services production in the absence of incentives on those that supply them.[3]

This leads to the question: Is it possible to imagine a system which preserves some of the incentives inherent in market-based health services production, but which

[2] The case for a change of direction in Chinese health care reform along these lines was forcefully made in the important collection of essays by scholars associated with the Development Research Centre of the State Council (Development Research Centre 2005).

[3] Helpful descriptions of the U.K. and Swedish health care systems are in European Observatory on Health Systems and Policies 1999, 2001. A discussion of the most recent reform approaches in the U.K. is in Talbot-Smith and Pollock 2006.

gives better protection for patients and society against the high cost of health care than what an unregulated market system does? In the rest of the paper, we discuss how such a compromise system could be constructed, based on the principle of insurers (whether private or government-organized) acting as "third-party purchasers" of health services from decentralized or private producers of health services.[4]

Why is third-party party purchasing needed in health care?

In an economic sector governed by the market mechanism, profit-seeking firms compete with each other in selling their goods and services to consumers who are free to buy from whichever seller offers the best alternative (combination of price and quality). For many types of goods and services, the market system works well for consumers, as China's experience in the past quarter century has demonstrated. However, there are some types of goods and services for which competitive markets are unlikely to work well on their own, so that they give rise to a need for an institution such as a third-party purchaser.

Why market competition in health care may not be effective

One instance when competitive markets may not work well is when the goods or services being bought and sold can only be understood and evaluated by someone with highly specialized knowledge, something that is very much the case in health care. When there is "information asymmetry" in the sense of sellers having much more knowledge about what is being sold than buyers do, the effectiveness of competition is reduced (McGuire 2000). In particular, sellers may be able to increase their revenue by advising buyers (patients) to pay for services that they do not really need, given the nature of their health problem. Moreover, it is even difficult in the case of health services or drugs to tell whether a particular patient was given proper medical advice even after treatment has taken place. Patients who recover might have done so even if they had received less extensive treatment or drugs; conversely, even patients that have been properly treated may get worse or die.[5]

[4] Yip and Hsiao 2008 also suggest that the idea of third-party purchasers should be further explored in the context of Chinese health system reform.

[5] In economic theory, a good whose quality can be inferred after it has been used is sometimes referred to as an "experience good". In contrast, goods such as health care are sometimes referred to as "credence goods" to signify that it may not be possible to ascertain its quality even after it has been used, so that effectively they are bought "on faith".

The effectiveness of competition as an instrument to promote lower prices and better quality also depends on how costly it is for consumers to search for alternative offers from different sellers. For patients who need health care, search costs may be very high, explicitly or implicitly. In rural areas, there may only be one provider within a reasonable travel distance. For patients with acute illness, delaying treatment may be dangerous and painful, effectively making it necessary to be treated by the first available provider. In other cases, the process of getting an accurate diagnosis of the patients' health problem may be time-consuming and expensive, making them less likely to look for an alternative provider even when they believe they might be able to find one that would charge a lower fee.

Because of factors such as information asymmetry and high search costs, competition among providers cannot, by itself, be expected to be very effective in keeping medical fees and drug prices at reasonable levels if health services and pharmaceuticals are sold directly to patients, with no involvement by a third party. If patients are insured so that insurance pays part of the costs of services and drugs, they have even less incentive to try to find a provider that will treat them at lower cost. For all these reasons it is not surprising that in countries where there is widespread insurance and medical fees are not regulated, the aggregate cost of health care tends to grow very fast. As already noted, the clearest example of this process has been the U.S. where the cost of health care currently has reached as high as 16.3% of GDP in 2007 (U.S. Department of Health and Human Services 2008).

Third-party purchasers in the private sector: Prepaid care and competition for contracts

In the U.S., one response to the upward pressure on health care costs has been the development of new forms of health insurance based on some version of the principle of "managed care". Private managed-care plans can be interpreted as examples of third-party purchasers of health services. While there are many types of such plans, they all have one feature in common: That they only cover the services of providers with whom the plan has a contract regarding the fees that they can charge, and perhaps also regarding other aspects of the care they supply (Glied 2000). By restricting fees and imposing rules on the services that providers are allowed to charge for, the plans can control costs more effectively than conventional plans that do not have such restrictions and rules. The

reason they are able to do so (that is, are able to make providers agree to these restrictions) is that providers can only get access to the patients in the plan if they agree to the plan contracts. That is, in a system with managed-care plans, providers do not compete directly for patients. Instead, they compete for the contracts that give them the right to treat (and be paid for treating) the patients covered by the plans. Negotiations of the terms of such contracts are much less affected by the problems of information asymmetry and high search costs that make competition for individual patients relatively ineffective. Because they represent many patients, managed-care plans can afford to hire medical experts that negotiate in advance regarding the terms of the care that all the plans' patients will receive. Because they have medical expertise, and because the cost of searching for competitive providers is born collectively by many insured patients, the plans can act much more effectively as buyers of health care than individual patients can.

From the viewpoint of patients, being covered by a managed-care plan may in some ways be less attractive than being in a conventional plan, since it restricts their choice of provider, and may place restrictions on what treatment they can receive in specific circumstances. However, the cost of their care on average is likely to be lower and most people may be willing to accept restrictions on the way they can be treated as long as they have confidence that doing so is not going to significantly increase the risk of adverse health outcomes.

Purchasers in publicly funded systems

In a system with private managed care plans, each plan plays the role of the third-party purchaser of health services. In some countries where health care is paid for by government, various government agencies may play the role of third-party purchaser if health services are supplied by private or decentralized producers. In Canada, for example, government pays for all physician and hospital services, but physician practices and hospitals are privately owned and supply their services on terms that are negotiated with government insurance plans or provincial health ministries or regional authorities. In the U.K., the government also pays for physician services and owns and operates most hospitals. Since the 1980s, however, there has been a trend toward more autonomy and decentralized management of hospitals, with agencies such as the District Health Authorities or (under the Labour government) Primary Care Trusts acting as third-party

purchasers from health services providers that, although publicly owned, are subject to the same market-like incentives as private providers would be (Talbot-Smith and Pollock 2006, Blomqvist 2002).

The role of purchasing agencies in publicly funded systems is similar to that of managed-care plans in that they also negotiate with physicians and hospitals about methods and rates of reimbursement for the services they supply to the insured. However, it is also different in some respects. First, in countries such as Canada and the U.K. where the public plans are financed out of general tax revenue and cover every citizen, the public-sector purchasers are automatically allocated their revenue from the government, and don't have to rely on insurance premiums paid by clients, as managed-care plans must do. Secondly, because the publicly funded plans cover every citizen, they are, effectively, the only third-party purchaser of health services in these countries, giving them a very dominant market position. (In contrast, when there are many managed-care plans, as in the U.S., they must compete for the services of doctors and hospitals, since the providers can choose with which plans to contract.)

Integrating the social insurance and provider subsidy approaches in China: A proposal

In China today, the existing social insurance plans are managed by local governments. In urban areas, the agency that is responsible for doing this is some form of a social insurance bureau (henceforth referred to as SIB)[6], whereas in rural areas the CMS schemes are managed by the county health bureau (HB). In the recent Chinese debate about health reform, it has already been suggested that these agencies should take on a more active role as third-party purchasers (Gu 2008). That is, they should negotiate contracts with health services providers regarding the methods and rates of payment that would be used to pay providers for services rendered to plan members, and possibly also regarding other restrictions on the services and drugs to be used in treating patients, similar to those in managed-care plans in the U.S. and elsewhere. Under the rules of the existing social insurance programs, SIBs and county HBs are already responsible for establishing lists of approved providers (hospitals and clinics) whose services are eligible

[6] In most cities, the body in charge of health insurance in urban areas is "Labor & Social Security Bureau". In some cities, there are independent health insurance bureaus to oversee all social health insurance plans. (e.g. Hangzhou city, Zhenjiang city).

for reimbursement under the HIS, CMS, and UR plans. In doing so, they presumably are in a position of requiring the providers to meet certain conditions with respect to the nature of the care they supply, and the way they will be compensated for their services.

In a later section we will discuss in more detail the specific methods that SIBs and county HBs can use in their role as purchasers on behalf of members of the social insurance plans. Our proposals for future reform, however, go further. Specifically, we suggest that these agencies should act as purchasers not only on behalf of members of the existing social insurance plans, but also on behalf of all Chinese residents that are entitled to care in basic care clinics and subsidized hospitals. That is, the increased resources that are to be made available by the government to subsidize the operation of basic care clinics and hospitals should first be transferred to the SIBs and county HBs, and then allocated to individual clinics and hospitals based on negotiations regarding the fees they would charge and other conditions of care. Under such an expanded purchaser role, the SIBs and county HBs would contract for health services not just on behalf of members of the existing social insurance plans, but indeed on behalf of all Chinese residents (since any resident would be eligible for subsidized care in basic care clinics, or in subsidized hospitals). Although most of the subsidies would go to government-owned providers (at least initially) private providers could also be invited to compete for them.

To see the logic of this proposal, it is useful to note that in one sense, direct government subsidies to health service providers can be interpreted as a form of partial risk-pooling or insurance. When subsidies to providers are used to pay part of the cost of their operations, they can lower their charges to patients and still balance their budgets. As noted above, such a shift of part of the burden of paying for health care to taxpayers and away from patients reduces the financial risk associated with illness in the same way that social insurance does.

If a subsidy scheme is implemented in such a way that all residents are eligible to receive health care at subsidized rates, it can therefore be interpreted as a limited form of universal public health insurance. This raises the question of how to treat those individuals that already are covered by one of the existing social insurance programs. The simplest answer would be to allow existing programs to continue in more or less the same form as they currently have. That is, the social insurance programs would continue to

reimburse patients for a share of whatever charges they had paid, even though these charges would be lower than before because of the subsidies. Since the reimbursements would be lower than before, the social insurance plans could either reduce their premium contributions, or offer increased insurance protection in the form of lower deductibles and patient co-payment rates, a wider range of services and drugs eligible for reimbursement, and higher upper limits on annual benefits.

In the next two sections, we will discuss two important issues that must be considered if such a model of expanded third-party purchasing is to be implemented: What methods should the purchasers use to pay for health services under the contracts to be negotiated, and how large a share of the cost should patients be required to pay?

How should purchasers pay providers?

The question how providers are to be paid by purchasers for the services they provide to insured clients is one of the most important ones to be decided in managing a health care system with third-party purchasers.

In China in recent years, most outpatient and inpatient services have been paid for through the method known as “fee for service” (referring to outpatient services) or “itemized billing” (referring to hospital services). Both are examples of *retrospective* payment methods, meaning that the total payment for a given treatment episode is determined *after* treatment has been given, and based on what services (drugs) have actually been supplied to the patient. Fee for service and itemized billing have been widely used not only in China in recent years, but also in many other countries.

Retrospective payment via fee for service and the cost of care

During the pre-reform era, providers were typically not paid through retrospective methods, but instead via methods such as fixed salaries (for doctors and other personnel) or fixed annual budgets for hospitals. In comparison with these methods, fee for service and itemized billing have the advantage that they give providers more of an incentive to be productive in the sense of supplying a high volume of services (since their total income or revenue increases with a higher volume). However, they also have a serious potential disadvantage: They may lead to very high aggregate costs of care for a given population.

The problems with payment through fee for service or itemized billing can be overcome to some extent by government regulation to reduce providers' market power by controlling the fees for different drugs and services, as the Chinese government currently does to some extent. Alternatively, providers' market power can be reduced in systems where there is an agent (such as a managed-care plan, or a government purchaser) that negotiates with them regarding fee levels, even if there is no direct government regulation. While this may help keep fees down, however, it does not address the problem that arises because doctors can exploit their information advantage to induce patients to utilize a larger volume (or more expensive kinds) of services than they would if they had better information.

Prospective payment methods I: Salary and fixed budgets

In contrast to fee for service and itemized billing which are retrospective financing methods, paying for outpatient and inpatient services via fixed salaries for doctors and fixed global budget allocations for hospitals means that one is using *prospective* (determined in advance) financing of health services.[7] From the viewpoint of a purchasing agency, prospective financing implies better ability to predict and control the aggregate cost of health care. At the same time, however, the fact that these forms of financing do not imply any immediate relation between the revenue that doctors and hospitals receive and the volume of services that they provide, is a potential weakness: Under such financing, providers have little or no incentive to be productive in the sense of supplying a large volume of services, since their income is independent of service volumes. Moreover, their incentive to provide care of good quality is also weakened since their revenue is independent of the number of patients they attract. The result may be overcrowded medical facilities, care of low quality, and generally provision of less health care services than is economically efficient.

Another possible consequence of payment for health services through fixed salaries or provider budgets is that it may give rise to an inefficient pattern of medical service production across health facilities at different levels. A well-functioning system

[7] Basic primary care clinics in Shanghai are paid prospectively with a global budget since 2007. See Shanghai Health insurance year 2006 document 160. Hospitals in Hainan provinces are also paid prospectively (Hainan province government 2007).

of health services production must have a mechanism to ensure that patients with different illness conditions are treated in the right kind of facility: A village or municipal health clinic, a township hospital, a county-level hospital, or a specialized urban hospital. Patients themselves cannot usually tell whether their health problem is an uncomplicated one that can be treated in a low-level clinic, or whether it may be serious and difficult illness that can only be properly diagnosed and treated in a higher-level hospital. In order for patients to be appropriately treated, therefore, a system of *referrals* must exist so that each patient can be steered to the right level of care.

But if outpatient doctors and primary-care clinics are funded via fixed budgets and are staffed by salaried employees, there may be tendency for too many patients to be referred to hospitals, as primary-care providers paid this way have little incentive to treat patients that they can refer: Clinics' or doctors' revenues will not suffer if they do so, and by referring patients for treatment elsewhere, they reduce their own workloads.

A tendency for too many patients to be referred to higher-level hospitals can be reduced through close monitoring of referrals, or by various forms of financial incentives (further discussed below). It is important to note, however, that a well-functioning system which efficiently allocates care between health facilities at different levels (such as primary-care clinics and higher-level hospitals) is more likely to emerge if both levels of facilities are funded and co-ordinated by the same agency, as they would be (implicitly) under a system where the same agency (SIB or county HB) is responsible for funding and negotiating terms of care for both kinds of institutions.

Prospective payment methods II: Capitation in primary care

Payment for health services via capitation has the same advantage as salary or fixed budgets in that it is a prospective method, so that the total cost to the purchaser of the services covered is known in advance of the services being produced. In addition, however, it can also be used in such a way that it gives providers an incentive to supply services of high quality, and to be productive in the sense of keeping the average cost of care low in the population for whom they produce services. In other countries, capitation is most often used as a method of paying for primary care, whether it is supplied by

individual privately practicing doctors or clinics similar to the basic care clinics that will be part of the future Chinese system.[8]

In a capitation system, each clinic must maintain a list (or a *roster*) showing the patients for whose care it is responsible during a given time period. Patients can only appear on the list of one clinic at any given time, but have the right to change clinics at particular times during the year. The funding that a clinic receives during a given time interval then is determined only by the number of patients that appear on its roster during that interval, but does not depend on the volume of services that has been provided to the patients. To reflect the fact that there are predictable differences in the amount of care that patients in different categories are likely to need, the capitation amount may be adjusted for factors such as age and sex (so that, for example, the payment is larger for an older person than for a younger one).

Under a capitation system, each clinic (or individual provider) has an incentive to sign up as many patients as possible on its list, but to provide as little care as possible to each patient, since its revenue does not depend on the volume of services it provides. Typically, clinics receive capitation funding in return for a contractual agreement to provide specified types of care to all patients on their list as needed, and are monitored by their funding agency to ensure that they do in fact fulfill this obligation. In addition, they have an incentive to earn a reputation for supplying care of high quality since if they don't, patients can leave and register with another one. As before, the incentives for clinics to produce services efficiently will be stronger if the doctors that work in them also are rewarded for providing care efficiently, for example, by having their income tied to the number of patients on the clinic's roster.

As noted in an earlier section, one issue that arises when funding is through a fixed budget is that clinic doctors have an incentive to keep costs and service volumes down by referring patients to hospitals (higher-level providers). A capitation system also gives rise to such an incentive (Blomqvist and Léger 2005). One method to overcome this tendency is to make the clinic where a patient is registered responsible for payment of at least a part of the cost of any treatment that this patient receives in hospital. A similar

[8] Zhenjiang city has started to experiment with a capitation system for its basic care clinics since 2007. See 21st Century Business Herald, Dec 22, 2007.

method can be used to give clinic doctors an incentive to reduce the cost of the drugs that the patient uses: The clinic can be made responsible for paying a share of the cost of the drugs that the patient uses on the clinic doctor's recommendation. The term *fundholding* was used in the U.K. in the 1990s to describe a capitation system with these features (Scott 2000).

From the patients' point of view, the fact that their choice of clinic is restricted during the time period that they appear on a given clinic's list, can be considered a disadvantage with a capitation system. (Under FFS, a patient can go to any clinic they want to, at any time.) The fact that the clinic doctors have an incentive to treat each patient with the smallest amount of services can also be regarded as a potential disadvantage, although its significance can be limited by purchaser monitoring, and by competition among clinics for patients.

In spite of these possible disadvantages, our view is that on balance, a system of adjusted capitation, with a fundholding element, is more promising than other alternatives, and we would favour a system in which purchasing agencies would at least have the option of choosing this method to pay for primary care.

Alternative payment methods III: DRGs for hospitals

While capitation is often used to pay for primary care, it is less commonly used to pay for inpatient care in hospitals. However, another payment method that is similar to capitation in certain important respects has been coming into widespread use in recent decades, namely that of payment according to "diagnosis-related groups" DRGs. The DRG method originated in the U.S. Medicare system, but other versions of it have been developed and used in Europe, Australia, and elsewhere (Canadian Institute for Health Information 2004).

The basic ingredient of the DRG method is a list of diagnostic categories describing what kind of illness a patient has and how he or she will be treated. The payment that the hospital will receive for treating a given patient is, in principle, determined only by the diagnostic category in which the patient is placed on admission. While the method is not prospective in the sense that it determines the purchaser's total cost of hospital services at the beginning of the contract period, it *is* prospective in the sense that gives the hospital a fixed revenue for treating a patient in a given category in

advance of actually treating him or her. Thus in contrast to payment via itemized billing (fee for service), under a DRG system the hospital cannot increase its revenue from a given treatment episode by providing and charging for things like extra bed days or diagnostic services, or more expensive drugs (Dranove and Satterthwaite 2000). At the same time, a DRG system gives the hospital an incentive to be productive in the sense of treating a large number of patients, something they can try to do by negotiating a low set of DRG rates with purchasers, or with the primary-care clinics or doctors that refer patients to them when the latter are responsible for paying part of the cost of their patients' hospital care (as they would be under a system of fundholding).

Like capitation as a method for paying primary-care providers, payment of hospitals through a DRG system has potential problems. In some cases, introduction of DRG-based payments has led to much higher aggregate hospital costs than purchasers had anticipated, as hospitals found ways of attracting more patients than expected for various kinds of procedures. Furthermore, by giving the hospital an incentive to keep the cost of each treatment episode low, the quality of care may suffer to some extent (for example, because patients are discharged earlier than they otherwise would be, or are given fewer diagnostic tests). Nevertheless, like capitation in primary care, some form of a DRG system may be considered a reasonable compromise between payment via itemized billing (which tends to drive up costs) and payment through a fixed budget (which does not give hospitals an incentive to be productive in the sense of treating many patients, or in the sense of holding down the cost of treating each patient.[9]

How much should patients pay? Demand-side vs. supply-side incentives

The question what method is used to pay health care providers is important because different methods create different incentives on those who supply the services that are produced in the markets for health services. But while decisions made by those on the supply side of the market are important in determining the quantities and pattern of health services utilization, decisions by those on the demand side (that is, patients) are

[9] In some instances, SIBs in China have begun using DRG-like reimbursement methods. For example, hospitals in Zhenjiang city are reimbursed in some cases by category of illnesses, which are determined by the SIB; see http://www.zjyb.gov.cn/ybzc2.asp?id=128. Under a pilot project in Beijing city, some hospitals will be reimbursed via a DRG system from the year 2008. See http://money.business.sohu.com/20080331/n255999130.shtml

important as well. Demand-side decisions are also influenced by incentives. In particular, utilization is influenced at least to some extent by the out-of-pocket costs (the "user fees") that patients have to pay for the services they receive.

The role of user fees in publicly funded health care systems is a very controversial topic, with some arguing that all payments to providers should be from third-party purchasers, and that patients should not be required to pay anything. Those who support payment of at least some fees cite at least three reasons for doing so. First, user fees deter patients from seeking medical care from health problems that are relatively trivial and that either are self-limiting or can be treated by patients themselves. Second, they help finance health care, thus reducing the amount of money the government has to raise via taxes or payroll deductions for this purpose. A third reason is that reducing the demand for care via user fees is more efficient than allowing waiting times for care to become long when the capacity to provide care exceeds demand at zero fees.

Those who oppose user fees do so for two principal reasons. Most importantly, they believe that in the health care system, most of the decisions that influence utilization and total cost are made not by patients, but by providers. In their view, therefore, the supply-side incentives that influence the way providers make decisions are much more important than the demand-side incentives (such as user fees) that influence patients. Another argument against significant user fees is that they are regressive, in the sense of imposing a relatively heavier burden on those with low income.

Different countries have balanced these conflicting arguments differently. In the U.K. and Canada, there are almost no user fees for any kind of hospital or outpatient care. In other countries (for example, Sweden and France), substantial patient charges are imposed even though most health care is publicly funded. In China today, an important argument in favour of significant patient fees is that by helping pay for health care they reduce the need for the government to raise tax revenue. Moreover, the burden of user fees on poor people can be reduced by exempting those who are classified as poor from paying such fees.

User fees: Paid to providers or purchasers?

In a system where payment for health services is shared between patients and third-party purchasers, the patients' share is usually collected by the providers. This can

be done either by requiring patients to pay the full amount that providers charge, and then let them collect partial reimbursement (the purchasers' share) from the purchasers, or by providers issuing separate bills to the patients and the purchasers for their respective shares of the total cost. In principle, these methods have equivalent incentive effects, but in practice they are somewhat different. The first one may pose problems for patients who may have difficulty raising the funds the pay for their treatment in the first place, even though they will be reimbursed for part of the cost by the purchaser. The second method overcomes this problem, but may involve a somewhat higher administration cost for the provider, as two bills have to be issued, and puts the responsibility on the patients to check that he or they have been correctly billed for their share of the cost.

An alternative method of patient cost sharing is to initially have the *purchaser* pay the full cost of the services that have been provided (in accordance with the terms that have been negotiated between the provider and the purchaser); the patients would then be billed by the purchasers for their share of the cost. The advantage with this method is that it removes any incentive on the provider to manipulate the patient charges in order to raise their revenue; it also seems a more natural one when providers are paid through methods such as fixed budgets, capitation, or DRGs.

One purchaser, several plans?

If access to care in subsidized basic care clinics and hospitals for all Chinese residents is regarded as a basic form of social health insurance, China's future system will have four social insurance plans, as discussed above: The "basic plan", meaning access to subsidized care, and the three existing plans (HIS, UR, and CMS) which further reduce patients' out-of-pocket cost for hospital care. An important feature of the scenario that we have proposed above is that SIBs and county HBs would act as purchasers of care from the publicly subsidized providers (basic care clinics and hospitals) on behalf of all citizens, whichever plan they belong to. This raises the question: should the purchasers negotiate separate contracts with providers for each insurance plan, or should there be only one set of contracts under which providers would be required to treat all citizens on the same terms (and be paid at the same rate), regardless of which plan they belong to?

A major advantage of the latter alternative of course is administrative simplicity. On the other hand, it can, in principle, be an advantage to offer patients a choice among

contracts under which providers are paid in different ways. For example, some individuals may prefer to be treated by doctors who are paid via fee for service, and therefore do not have an incentive to be conservative in their choice of diagnostic and treatment methods, even if this would be more expensive, while others prefer to be treated by doctors paid via capitation, and pay less. At the present stage of China's social insurance system, however, the task of negotiating a single set of provider contracts will be complicated enough, so that the objective of offering consumers a choice between plans that differ in this dimension should probably be left for future years.

Thus, the scenario we envisage is one under which a single public purchaser (SIB or county HB) negotiates a single set of provider contracts on behalf of all citizens in a city or county. Differences among the various social insurance plans would then simply consist in different payments by patients to the purchaser when they use health services. For example, those in the basic plan would pay the highest user fees for both primary and hospital care, while those in the HIS would pay lower fees to the purchaser, in accordance with the terms of their respective insurance plans.

Conclusion

Health system reform has become one of the most actively debated topics in China's economic and social policy in recent years. A large variety of approaches have been suggested, but the current debate has involved two main "schools of thought" whose views appear to differ quite sharply. On one side are those who are advocating a major change of direction in health policy, with a return to a substantial role for government subsidies to providers in the financing of health care, and for the state (especially the Ministry of Health) in owning and managing the institutions (basic care clinics and hospitals) that provide care. On the other side are those that instead advocate more autonomy and decentralized management for health services providers, and an expanded role for the social insurance system (in which a different ministry, that of Human Resources and Social Security, is playing the lead administrative role) in financing health care. Those who favour this approach argue that better control of health care costs and production efficiency can be accomplished through a more active role of the social insurance plans as "purchasers" of care.

At first glance, these two approaches seem largely incompatible. In this paper, however, we have sketched a way forward which incorporates elements of both these basic strategies. We believe that a model along the lines that we propose would make the system function better than it would either with a return to the combination of direct government financing and centralized "command and control" management which prevailed before the 1980s, or a strategy that relies mainly on competitive markets for allocating health care resources.

As discussed above, the approach we propose would involve substantial government subsidies to providers (basic care clinics and hospitals), but subsidies that would be channeled through local government agencies (SIBs and county HBs) that would act as purchasers of care on contractually specified terms. Indirectly, there would also be increased government management of the provider institutions, but management would take the form of monitoring and enforcement of the contracts that providers would have with these purchasing agencies. Because this form of management can take place whether providers are owned by government or privately owned, one of its advantages is that it can be designed so as to allow for competition between private and public producers. The expertise that the purchasing agencies would require would consist not only of financial expertise (such as that required to manage conventional social insurance plans), but also medical and health management expertise, so that their staff might have to be drawn from personnel currently working in several different local departments.

We believe that for the next several years, the emphasis in Chinese health policy reform should be on strengthening the publicly organized system of health care financing and services production, by means of increased public funding and training of the personnel for the local purchasing agencies. Over the longer term, however, there is another issue that should be carefully assessed: Whether there should be a major role for private insurance, either as a supplement of complement to the social insurance system, or as an optional substitute for it. Our view is that there should be, and in particular, that employers and individuals should have the right to opt out of the public system and sign up for private plans instead. While the rules for such substitution must be carefully designed to avoid negative side effects on the social insurance system, allowing employers and individuals to elect coverage through private plans instead has the

advantage of exposing the managers of the publicly organized social insurance plans to competition, giving them an incentive to manage the public plans efficiently and to ensure that those covered by the public system receive care of high quality. We briefly discuss ways in which this could be accomplished in Appendix 1. Appendix 2 provides a brief discussion of other countries where models similar to the one we propose have been used.

Appendix 1: Opting out and the role of private insurance

In China as in most Western countries, public funding will form the backbone of the health care financing system for the foreseeable future, and every citizen will be covered, to a greater or lesser degree, by social health insurance. However, this does not rule out a significant role for private health insurance.

In systems where private health insurance exists alongside social insurance to a significant extent, it can play several different roles. In the terminology of the OECD (Organization for Economic Cooperation and Development 2004), it can be *supplementary* to public insurance, meaning that private plans cover types of costs that are not covered by the public plans. Alternatively, if the public plans have significant cost-sharing through patient fees, private insurance can be *complementary*, meaning that private it covers the user fees that patients have to pay under the public plans. Finally, private insurance can be a *substitute* for the private plans, meaning that those with private plan give up the coverage that they otherwise would have under the public plans and rely on the private plan they subscribe to voluntarily instead.

Provided that the public insurance plans in China are comprehensive in the sense that most health services that patient may need are eligible for at least partial coverage, the role for supplementary coverage will remain limited, perhaps playing a role for things like dental care, eyeglasses, and the like. With respect to complementary private insurance, there is a case for not allowing patients to sign up for plans that cover the deductibles and co-payments for which patients are responsible under social insurance plans. For example, when private insurance covers patients' co-payments for eligible services, they may use a larger volume of services, which raises the cost to the public plan because it has to pay for part of this extra cost. However, when there are upper limits

on the total amount of benefits that the public plans will pay out for a given disease episode or in a given calendar year, complementary private plans that extend the public plan coverage may play a useful role.

The question whether citizens covered by social health insurance should be allowed to choose private plans as substitutes for their public coverage, is a more controversial one. Some economists oppose the idea of substitute private plans on the grounds that allowing them to exist will give rise to the problem of so-called "adverse selection" (see below). Other argue that when private substitute plans exist and citizens are allowed to "opt out" of social health insurance and choose a private plan instead, they play a potentially useful role by providing some degree of competition for the social insurance system. In the absence of private plans, purchasing agencies such as SIBs and HBs would have a monopoly in the local markets for health insurance. Even though they would not be expected to exploit their monopoly position in order to increase their profits (since they are public agencies, and not privately owned) some of them might do so to some degree, in response to local government officials' desire for larger revenue.[10] Potential competition from private plans could help prevent this, and might also spur them on to operate more efficiently, and to be more active in helping consumers' obtain health services of high quality.

One form of substitute private insurance with potential to play a significant role in systems with publicly organized and subsidized social insurance, is employment-based group insurance. Under such plans, employers negotiate with private plans to provide care to their employees on terms that the plans have negotiated with providers, and perhaps through primary-care facilities serving the firms' employees only. Effectively, the private plans then substitute for the local SIB or HB in carrying out the purchasing function that the latter would otherwise perform. In China, such a pattern would be especially likely since employers were responsible for organizing and paying for their employees' health care under the earlier system of health care financing.

In order for private insurance plans to give effective competition to the publicly organized and subsidized social insurance plans, there has to be a "level playing field", in

[10] Qian 2008 analyzes some problems that may arise for health system reform when local-government decision-makers are motivated to manage the health care financing system in such a way as to raise as much money as possible for the government.

the popular phrase. That is, if coverage through the competing social insurance plans is subsidized, the private plans must be subsidized as well, and to the same extent. In principle, this could be accomplished by the purchaser (SIB or HB) paying part of the premium for any approved private insurance plan on behalf of each person who would be eligible for one of the social insurance plans. The premium subsidy would be calculated as the expected cost to the purchaser of the benefits covered under the relevant social insurance plan, less the premium of contribution that the person would have had to pay in order to be covered by that plan.

As an example, for an urban employee that would be eligible for the HIS, an estimate would have to be made of the expected amounts that the purchaser would have to pay out in benefits for a person in the same age and sex category as the employee, and compare that with the contributions that the employee and his or her employer would make to the purchaser under the HIS. If the employee were to opt out, the premium subsidy payable by the purchaser to the substitute private plan would equal the difference between the two. (Note that this difference might be negative for employees with low expected expenditure, for example, the young. For them, the incentive to opt out would simply consist in a reduction in the amount they otherwise would have to contribute to the [compulsory] HIS.) Similarly, for persons eligible to belong to the UR or NCMS plans, estimates would have to be made of the expected expenditures that the purchaser would incur for average people in given age/sex categories, and the premium subsidy for an approved substitute private plan would equal the difference between that expected cost and the premium that each person would have to pay in order to belong to the UR or the NCMS plan.

Clearly, administering a system of this kind would not be easy, as relatively sophisticated actuarial calculations of expected health care costs for people in different categories would have to be made, and clear rules would have to be established regarding the conditions that substitute private plans would have to meet in order to be eligible for premium subsidies. Moreover, problems of adverse selection might arise, in the sense that opting out would be especially attractive for employees at relatively low risk of illness (even if the premium subsidies have been adjusted for risk differences associate with factors such as age and sex). Nevertheless, the advantage of exposing the publicly

organized social insurance plans to some degree of competition from private plans may be sufficiently great to justify at least some forms of opting out.

Appendix 2: Models of purchasing in publicly funded health insurance

In this Appendix, I briefly sketch the basic principle of countries in which public funding of health insurance has been channeled to providers through agencies that have functioned (explicitly or implicitly) as "purchasers", along the lines we have proposed above for the case of China. The discussion focuses on the cases of the U.K. and the U.S., but versions of the model have been used in other countries as well, such as Holland and Sweden. The model of purchasing agencies in publicly funded plans can be thought of either as an outgrowth of private insurance plans using the principle of *managed care* in the U.S., or as arising out of the attempts that have been made to streamline the operation of the U.K. National Health Service since the 1980s.[11]

The U.S.: Private managed care and the Medicare/Medicaid plans

The development of managed-care plans in the U.S. can be seen as a response to the tendency for health care costs to become very high when independent providers (doctors and hospitals) are paid on the basis of fee for service, and insurance passively reimburses the insured for all or part of the fees they have paid providers. The basic principle underlying managed care plans, as opposed to conventional passive reimbursement insurance, is that the insured can only receive services from providers that have entered into some form of contract or agreement with the plan concerning the way care can be given, and how they will be paid for their services. Generally, the payment methods and other contract provisions are intended to promote less costly patterns of care than under conventional insurance plans. For example, they specify prospective methods of payment that give providers an incentive to keep costs down (supply-side incentives), or require an independent second opinion before a patient can be referred to certain types of surgery. Under managed care plans, which now account for a large share of private health insurance in the U.S., the insurance companies do not just pay for their clients'

[11] A more detailed discussion of these and other cases can be found in Blomqvist 2002.

health services, they actively negotiate contracts with providers in order to obtain more cost-effective patterns of care.

Although various forms of managed care developed first in the private sector, in the U.S. elements of managed care have become increasingly important in the publicly funded insurance programs that cover the elderly (Medicare) and those with low income (Medicaid). In the 1980s, the Medicare plan developed the system of Diagnosis-Related Groups to pay for the hospital services that its clients receive. Under this system, versions of which are now widely used throughout the world, the hospital receives a prospectively determined amount for treating a patient in a given diagnostic category, regardless of what specific services are actually used in his or her treatment. Since 1997, clients insured under Medicare are able to choose either the basic Medicare plan (under which doctors are paid via fee for service) or an approved private insurance plan (which typically is a managed-care plan). When someone chooses the latter option, Medicare transfers to the private plan an amount equivalent to what the expected cost to Medicare would have been if the patient had stayed with the basic plan. In this case, Medicare subcontracts with the substitute managed-care plan to act as a purchaser of services. Similarly, under the state-administered Medicaid plans that provide publicly funded health insurance for those with low income, patients in many states are required to enroll in a managed-care plan, with the Medicaid paying a risk-adjusted premium. This can also be interpreted as an arrangement under which the Medicaid plan subcontracts the service purchasing function to the managed care plans that contract with providers (doctors and hospitals) to deliver the care needed by the insured population.

U.K.: The National Health Service and the purchaser-provider split

In the U.K., the current system of purchasing services evolved from the earlier version of the National Health Service that was founded in 1948. The NHS has used the service-purchase model for primary care ever since that time, in the sense that such services have been delivered by General Practitioners under contract, under a system in which they were paid through a model with a substantial element of capitation. However, until the 1980s, all hospital services were delivered through a network of publicly owned and administered hospitals that were funded on the basis of negotiated annual budgets. Under the Thatcher government, hospitals continued to be owned by the NHS, but were

given more managerial autonomy, and the funding system was changed to one under which they would receive their resources on the basis of service contracts negotiated with District Health Authorities. DHAs, in turn, were given fixed budgets with which to "purchase" hospital services for the populations in their districts. This so-called "purchaser-provider split" was one of the two cornerstones of the Thatcher reforms; the second was the system of *fundholding* under which GPs were given the option of receiving an enhanced capitation amount for each person enrolled in their practice, in return for agreeing to pay for a portion of the cost of the drugs or hospital care that their patients received on prescription or referral, respectively.

Reform of the NHS continued after the Labour government came to power in 1997. Although the management of the NHS has been rearranged in a number of ways, the system continues to be based on a set of agencies acting as service purchasers (currently, this role is performed by Primary Care Trusts, which have replaced the District Health Authorities that previously had this function), and while the system of GP fundholding has been abolished, a new version of it appears to be emerging (under the name of "practice-based commissioning"). Thus in the U.K. too, the system of publicly funded health insurance now is based on the principle of paying service providers through contracts with purchasing agencies (the Primary Care Trusts). These contracts are similar to the rules applying to hospitals paid via DRGs in the U.S. Medicare system, or to doctors and hospitals that provide care under contracts with managed-care plans to those insured through Medicare's managed-care option or through the Medicaid plans in many states.

Common principles and differences

The Medicare and Medicaid plans and the NHS in the U.K. are all examples of publicly funded health insurance systems, either for specific population groups (Medicare, Medicaid) or for all citizens (NHS). All of them differ from earlier forms of conventional health insurance in that they require providers to abide by certain rules regarding the how they treat insured patients, or how they will be paid. Under the basic Medicare plan, doctors must accept limits on how much they charge patients for different services, and hospitals must accept payment in accordance with the plan's DRG schedule. Both Medicare and Medicaid also contract out insurance for some patients to private

managed-care plans; these private plans typically restrict their members to treatment by providers with which they have agreements regarding treatment patterns and compensation methods. In this sense, therefore, both the Medicare and Medicaid plans act not only as insurers that pay for a part of their members' health care costs, but also as purchasers who (directly or indirectly) negotiate with providers regarding the terms according to which care will be provided. In the U.K., the Primary Care Trusts act as purchasers, entering into contracts with GP practices and hospitals regarding the terms on which primary and secondary care will be provided. While the contractual terms vary, a common way to compensate primary-care providers (at least partially) is through capitation (in subcontracted managed-care plans under Medicare and Medicaid, and in the NHS), and hospitals on the basis of some form of prospective DRG-system (in the basic Medicare plan as well as in many subcontracted managed-care plans, and in many contracts between Primary Care Trusts and hospitals in the NHS).

The three systems are similar in that the public insurance funding is channeled through purchasing agencies that negotiate with providers regarding the terms of care. However, they differ in some important respects. Patients covered by Medicare, and those covered by Medicaid in some states, can choose among several versions of coverage (the basic plan or a managed-care option in Medicare, one of several approved managed-care plans in the Medicaid case). In the NHS, in contrast, there is only one plan version.

The systems also differ to some degree with respect to the freedom of the insured to choose among providers. In the basic Medicare plan, patients can choose to go to essentially any outpatient doctor or hospital (most doctors and hospitals in the U.S. have agreed to provide care in accordance with the fees allowed under the basic Medicare plan). However, those with coverage through a private managed-care plan may be restricted to seeking care only from providers on the plan's list, and to get primary care only from their designated family doctor for the duration of a given contract period; they may also have to have their primary-care doctor's referral before getting specialist and hospital care. Patients in the U.K. system face restrictions similar to those in U.S. managed-care plans: They can only get their primary care from the GP practice with

which they have registered at a given time, and they have to have the GP's referral in order to obtain specialist and primary care.

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