1 Introduction

One of China's great successes during the period of the command economy was to provide a large majority of its population with access to basic health services at an affordable price. This contributed to major improvements in the life of rural people. This issue of the IDS Bulletin asks whether China will be able to maintain cost-effective rural health services as it transforms itself into a market economy. The answer to this question is of immediate concern to the hundreds of millions of people living in the rural areas of China. It is also relevant to those interested in the health services of low and middle income countries and of countries in transition to a market economy.

This issue is an output of a collaboration between the Shanghai Medical University (SMU) and the IDS. Researchers from these institutions have been studying the impact of economic and institutional reform on China's rural health services for several years. The article by Tang et al. describes case studies they have undertaken in three poor counties. Several articles in this issue use the study findings as illustrative examples.

Several of the articles in this issue were written while its author was an IDS Visiting Fellow. Early drafts of the articles were presented to a two-day workshop held in March 1996. The workshop's aims were to contribute to debates on health sector reform in China and to explore the lessons from

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1 This issue is the product of a long-term collaboration between the Shanghai Medical University and the IDS Health Unit. This collaboration has been funded over a number of years by the International Health Policy Programme (IHPP), the International Development Research Centre (IDRC), the British Council and the Overseas Development Administration (ODA). In addition to supporting a major research project, these agencies facilitated the production of the Bulletin by funding visiting fellowships to the IDS for authors of the articles, a two-day workshop, and the translation and editing of papers. The views expressed in these articles are not necessarily those of any of the funders.

2 The study findings have been published in English in Bloom et al. 1995, and in Chinese in Gu (ed.), 1996.

3 In addition to the authors of the papers the participants included Lennart Bogg, David Britt, Sarah Cook, Bryan Haddon, Sheila Hillier, Bengt Hojer, Deana Leadbetter, and Hilary Standing. Their comments were incorporated into revised drafts of the articles.
China for other countries. The articles by Li et al. and Yu et al. discuss the impact of substantial user charges on access to medical care, particularly by the poor. The articles by Deng et al., Tang, Chen, Shu and Yao, and Kaufman et al. describe how different providers of rural health services have responded to changes in their economic and institutional environment. The articles by Gong and Wilkes and Zhan et al. discuss two major inputs to rural health services - personnel and drugs. These articles are followed by two on sources of finance - one by Zuo, on local government finance, and another by Carrin et al., on rural health prepayment schemes. The article by Gu and Bloom outlines a strategy for rural health service reform. An earlier version of this article was presented to a national meeting of health planners called to prepare for a National Health Policy Conference convened by the State Council.

Vietnam has also had very good health indicators for its level of economic development. It established a rather similar health service to China's during the period of the command economy. Vietnam began its transition to a market economy after China. The article by Witter identifies lessons that Vietnam can learn from China in formulating strategies for rural health sector reform. The article by Tipping and Dung discusses some attempts by Vietnam's government to address the problems in the rural health services. They argue that political leadership will have an important influence on the development of Vietnam's health services. This is also true in China, where the kind of health service that emerges from the period of transition will depend, to a considerable extent, on the priority government gives to meeting the most pressing health needs of the population.

2 Health Sector Reform

Until recently, the health sectors of command economies and many low and middle income countries were organised as government owned and financed enterprises. Health workers were public servants and the system was controlled through a hierarchical bureaucracy. However, many countries are questioning the appropriateness of this organisational model and some, including China, are introducing substantial reforms (Cassels 1995).

New thinking in low and middle income countries is often strongly influenced by changes taking place in advanced market economies. A number of the latter are exploring new organisational models for their health services (Saltman and von Otter 1992). Chernichovsky (1995) argues that a new paradigm is emerging which focuses on the relationship between three functions: health finance; organisation and management of consumption of publicly funded care (referred to in this article as 'purchasing of services'); and service provision. He argues that a key strategy for preserving the benefits of public funding while encouraging providers to be efficient and responsive to consumer needs is to separate finance from service provision because this puts pressures on health facilities to give value for money. This theory has not be fully tested, and there is not enough experience with different reform models to demonstrate their superiority to centralised management.

Organisational structures that work well in advanced market economies are not necessarily appropriate for low and middle income countries. This is particularly the case where administrative and regulatory systems are weak. Policy makers need to keep this in mind when thinking about health sector reform or they risk provoking a deterioration of services. Broomberg (1994) argues that decision makers need more information on how health sector structures operate in different economic and institutional situations, before they can make informed choices between reform options.

China has been a laboratory for testing models of health sector organisation for many years. During the 30 years after 1949 China pioneered the development of cost-effective services that combined public finance, a hierarchical management system and tight political control. Since the early 1980s China has reformed its economic and administrative system, and these changes have strongly affected health sector organisation. Its policy makers are struggling with fundamental questions about how the health sector should be structured in a market economy.

The Ministry of Health (MoH) has been aware for some time that the rural health services are finding it difficult to adapt to the emergence of a market

* According to Chernichovsky (1995), finance and purchasing are integrated in Australia, Canada, UK, and Sweden, and purchasing and service provision are integrated in Israel, Netherlands, and American HMOs under Medicaid.
economy. As part of its effort to learn more about the situation in poor counties, the Department of Health Policy and Law of the MoH encouraged the SMU and IDS to develop case studies in these areas. The State Council, the highest level of government, has recognised the health sector’s problems by convening a national conference on health policy in December 1996. The decisions of the State Council were not available when this issue went to press.

China’s experience has influenced international health policies considerably. The primary health care concept, on which the health policies of many international agencies are based, was strongly influenced by China’s rural health services of the 1970s. More recently, the leader of the team that prepared the World Development Report on Health (World Bank 1993) had extensive experience in China during the early 1980s. The current debates about restructuring China’s health sector will undoubtedly have a strong influence on future thinking about health sector reform (Hsiao 1995).

3 China’s Rural Health Services Prior to Economic Reform

During the 30 years after 1949 China transformed itself from a country with very poor health to one with less sickness and premature death than most countries with similar levels of national income. Most of this improvement was due to a dramatic fall in the prevalence of severe poverty, improvements in the rural environment, increases in literacy, and provision of preventive and curative health services.

By the mid-1970s China had established a highly structured, three-tiered, health service. Most villages (85 per cent) had a health station staffed by barefoot doctors, peasants who were trained as part-time health workers. The barefoot doctors led public health campaigns and provided basic curative care. Most townships had health centres that provided referral services and supervised preventive activities. Every county had a hospital and specialised institutes that organised the preventive programmes.

The three-tier health services ensured good coverage by preventive programmes and provided afford-
from 20 per cent to 42 per cent. Rural health facilities now finance more than three-quarters of their expenditure from payments by patients.⁶

4.2 Decentralisation of public sector health services
Government health services have been radically decentralised since the early 1980s, and higher levels of the government health service now have little influence on the behaviour of lower levels. Provincial and county health departments answer directly to their local government. Townships have been re-established to perform the administrative tasks previously undertaken by communes. They are responsible for the health centres and are their only source of government finance.

4.3 Increased autonomy of health facilities
Managers of health facilities have much more freedom from interference by administrative and political authorities than previously. This has been reinforced by the fiscal responsibility system which allows facilities to use surplus revenue to pay bonuses to their employees and to invest in new equipment.

4.4 Moves toward a labour market
Health worker pay used to be set nationally and people had to work where they were assigned. Health facilities now supplement basic salaries with bonuses, health workers are allowed to change their place of employment, and private practice is permitted.⁷ Managers of health facilities still cannot fire personnel and, in many cases, they have to take on additional staff, even if existing personnel are not fully employed. This is because of the government policy of providing newly graduated health workers with a job.

4.5 Decreased political mobilisation
China's health services no longer have the high political profile they had in the 1960s and 1970s, when communities were mobilised to take part in public health campaigns and the service ethic strongly influenced health work. Individuals and institutions now give priority to earning money. This change in ethos is reflected in the priority that local political leaders give to economic growth. The shift to household agricultural production has also made it almost impossible to mobilise people to take part in public health campaigns, since they can no longer be paid a share of collective production for the time they spend on them.

5 The Performance of the Rural Health Services
China's health indicators are no longer improving rapidly. For example, the under-five mortality rate declined steadily until the early 1980s, after which it stabilised at 44 per 1,000 (World Bank 1996). These figures are still very good when compared with 124 in India, and 61 in the Philippines, but they represent a slowing down of improvement and are worse than the rates of 19 in Sri Lanka and Malaysia (UNICEF 1994). The resistance to further mortality declines is due to the continuing existence of substantial numbers of people living below the poverty line and to the growing differences between regions in the provision of basic health services.

Rural health services have expanded rapidly in the booming eastern part of the country, where new buildings have been built, new equipment has been acquired, and sophisticated drugs are widely available. Residents of these areas expect much more than a basic health service. The major policy dilemma is how to reconcile their desire for more and better services with the need to control costs.

The situation is different in poor counties, the home of the majority of the estimated 80 million people with incomes below the poverty line. The major problems of their health services are related to inadequate funding and weak management and regulation. The remainder of Section 5 describes these problems.

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⁶ During a recent visit to poor rural counties in Henan Province, one of the authors found township health centres that earned 90 per cent of their revenue from user charges.

⁷ In 1990 almost half the village health facilities were private, 3.3 per cent of health workers, based outside of villages, were in full-time private practice, and an unknown number of public sector doctors worked part-time in private facilities or in other public hospitals (Liu et al. 1994).
5.1 Rises in the cost of health services

According to a large-scale survey, an average rural household spent nine per cent of its income on health in 1993 and those living in poor counties spent a slightly lower proportion (MoH 1994). The cost of personnel and drugs, the major components of rural health care, are rising rapidly.

Between 1978 and 1994, average wages of employees in health care, sports and social welfare almost tripled, after taking into account the rise in the retail price index. This was due to increases in basic pay and bonuses. The rise in health worker incomes reflected the rise in living standards in the regions that were growing rapidly. Government grants to health facilities have not kept up with salary increases and health facilities have had to generate additional revenue from charges for services and selling drugs at a profit. The pay rises were not necessarily accompanied by increases in productivity. On the contrary, the average workload of health workers has decreased in many rural facilities (see Gong and Wilkes this issue).

Drug expenditure has increased dramatically. For example, Bloom et al. (1995) report a quadrupling of drug spending by hospitals and health centres in two counties and an eight-fold increase in a third, between 1981 and 1992. There are disagreements about the importance of rises in drug prices as opposed to changes in prescribing practices. However, there are good reasons to believe that overuse of drugs has become a serious problem (see article by Zhan et al.).

5.2 Problems of access to services

A recent survey found that two-thirds of people reporting an illness had consulted a health worker (MoH 1994). The proportion was only slightly lower in poor counties (63.3 per cent), suggesting that access to basic health services is reasonably good. This is because most people live within easy walking distance of a village health worker. Also, the cost of a consultation is low.

The poor do not have access to all the services they require. They are less likely than others to consult a qualified doctor when they are seriously ill (Croll 1994) and they may find it difficult to pay for a full course of drug treatment. The article by Zhan et al. shows that the cost of an average prescription was between two and five times the average per capita daily income of peasants in three poor counties. Ability to pay is a major determinant of access to inpatient care. The survey cited in the previous paragraph found that 47.8 per cent of those referred to hospital in poor counties did not receive inpatient treatment, compared with 29.4 per cent in wealthy counties. Over half of those not admitted to hospital said this was because of its cost.

Severe illness and the cost of medical care is believed to be an important cause of poverty (Chen 1994). The article by Yu et al. shows that an average hospital admission costs almost 60 per cent of the annual net income of a poor household. Many households have to borrow money to pay medical bills for a seriously ill family member. In some cases this is the start of a cumulative process of increasing debts and asset sales, culminating in a shock that leaves the household destitute. According to government policy, the social relief system should prevent this from happening. However, local governments in poor areas do not spend much money on social relief and they allocate a very small proportion of this money for medical care (Ahmad and Hussain 1991).
5.3 Financial problems of health facilities

Many health facilities in poor areas are experiencing severe financial problems because they cannot generate enough revenue to compensate for the slow growth of government grants. Most village health workers earn money by charging consultation fees, selling drugs, and working their plot of land (see Deng et al. this issue). In some areas they receive modest payments from government for providing preventive services. These payments do not compensate for the time they should spend on these services. Many village health facilities are run down and ill-equipped because health workers do not spend money on maintenance or equipment.

Township health centres in poor areas are experiencing serious financial problems (Xiang and Hillier 1995). They find it difficult to compete for patients, since their most experienced personnel have left for better paid work in other facilities. Many of their employees have little work, yet many facilities have hired additional staff. Some health centres have cut spending on operating costs and neglected maintenance in order to pay salaries. As a result of these problems, many health centres are run down and play a diminished role in the three-tier network (see Tang this issue).

County hospitals have fewer financial problems. They have been more successful in attracting patients, including those covered by insurance (employees of government or state enterprises). The challenge for policy makers is to prevent excessive rises in the cost of care in these facilities (see Chen this issue).

5.4 Weakening of preventive services

The preventive services have continued to improve in the richer areas, but they face serious problems in many poor counties, as the article by Shu and Yao illustrates. One sign of this is the resurgence of preventable illnesses such as tuberculosis and schistosomiasis. Another is the relatively high infant mortality rate of 72 per 1,000 in poor areas compared with the average of 41 per 1,000 for all rural areas (MoH 1994). Shu and Yao (1997) report very high maternal mortality rates in two poor counties.

One reason for the problems in the preventive programmes is that village and township health facilities give priority to the better paid curative services. Another reason is that the county-level preventive institutes, the anti-epidemic stations (AES) and maternal and child health (MCH) centres, are no longer fully funded by government. A recent survey found that AESs received 44 per cent of their budgets from government and MCH centres received 33 per cent (MoH 1994). Many of these institutes have compensated for shortfalls in finance by charging for preventive services, competing for outpatients, and offering special services, such as annual physical examinations of food handlers. However, the success in revenue generation has been achieved at the expense of a deterioration in rural preventive programmes, because too few resources (personnel and operating expenses) are allocated for rural work.

5.5 Conclusions

The principal lesson of the experience described above is that the structure of the health sector and the economic and institutional context within which it operates strongly influences its performance. Section 6 discusses the influence of mechanisms of health finance, systems of payment of service providers, the relationship between purchasers and providers of services, and the health regulatory framework. Section 7 discusses the influence of factors outside the health sector.

6 China's Rural Health System

Since the late 1970s, health services in poor rural areas of China have been transformed from a tightly organised system to what increasingly resembles a weakly regulated market (see Figure 1). Policy makers are searching for an organisational structure that is appropriate to the changed economic and institutional circumstances.

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12 Some villages pay their local health workers a salary (Tang et al. 1994). These villages tend to be located in the richest regions, where the village welfare fund receives money from village-owned non-agricultural enterprises.

13 For example, during a visit to a poor county in Henan province, one of the authors met a health worker whose only job was to give 15-20 injections a day and another who took 3-4 X-rays a day.
6.1 Sources of finance

It is widely believed that the heavy reliance on user charges has diminished the demand for services (particularly for inpatient care) and denied the poor access to basic services. The government is encouraging localities to address these problems by establishing health prepayment schemes. The existing schemes derive revenue from local government, village collective bodies and individual households and spend most of it reimbursing scheme members a part of the medical costs they incur (see Carrin et al. this issue). Government hopes these schemes will become an important source of finance for rural health facilities.

Health prepayment schemes have been most successful in rich areas. One reason is that households and local governments are better able to make substantial contributions to the schemes. Another is that governments in rich areas tend to have more effective administrative systems (Wang and Bai 1991). This experience underlines the need to understand health prepayment schemes in the context of a broader effort to improve the finance and management of local services.

The management committees of most health prepayment schemes focus entirely on collecting money and ensuring that it is used for the benefit of scheme members. They pay much less attention to the services provided, or their cost. Or, if they recognise the problem, they have little power to influence the service providers. In other words, they do not play an effective purchasing role. This role was previously achieved by a combination of tight administrative control by different levels of the MoH, and close supervision of service providers by local political structures. It is generally believed that this system worked reasonably well, although it appears that problems with the management of prepayment funds contributed to their collapse during the early 1980s (Feng et al. 1995).

6.2 Providers of health services

The way that health facilities are financed encourages inefficiency. The size of their government grant tends to be related to the number of beds they have and the number of people they employ; it is also an outcome of negotiations between government officials and facility managers. In recent years, facilities

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Figure 1 Changes in China’s rural health system since the late 1970s

1. Increased reliance on user charges, collapse of local prepayment schemes, and decreased share of government funding
2. Increased autonomy of health facilities from central planning or political control
3. Diminished constraints on opportunistic behaviour
have had to finance an increasing share of their salary bill out of revenues they generate, themselves. In spite of this, local personnel bureaux have continued assigning people to health facilities, whether or not they are needed. Health facilities have had to increase revenue generation and control spending on non-salary items in order to pay their health workers.

Government price bureaux set the charges for health services. They keep consultation fees and bed charges low. However, they permit health facilities to earn a mark-up on wholesale drug prices and to charge relatively high prices for new technologies. The response of health facilities has been to increase the volume of drug sales and to buy new equipment. They have also given priority to curative services. This underlines the need to assess how changes in the system of health finance affect incentives to service providers.

The practice of financing different services through parallel vertical channels has also led to inefficiency. For example, it has created a complex system for providing reproductive health services, in which family planning services, treatment of gynaecological problems, antenatal examinations and deliveries are provided by different people, sometimes in different facilities (see Kaufman et al this issue). Zuo argues that it would be possible to improve reproductive health services at little additional cost by making better use of the available resources.

6.3 Purchasers of health services

Local governments have arms length relationships with health facilities. This relationship is frequently formalised in a contract that defines how much the facility will be paid and what services it will provide. Government should be able to use these contracts to influence health facilities. However, most local governments only care that health facilities meet financial targets.

The apparent inability of local governments to act as effective purchasers of health services reflects, among other things, the fact that they provide less than a quarter of the budgets of health facilities. Their ability to influence the behaviour of service providers will be greater if more resources become available through increased government grants or prepayment schemes. However, the following questions have to be answered before an effective purchasing function can be established:

- Should local government be the purchaser or should prepayment schemes, themselves, negotiate with health facilities?
- Will it be possible to make enough reliable information available to monitor the performance of health service providers?
- Will local governments or prepayment schemes have the expertise to act as effective purchasers?
- Will anyone have an incentive to act in the interests of users in monitoring health service providers?
- Can representative bodies of users play a role in monitoring the performance of providers?

6.4 Health service regulation

Most health services in advanced market economies have complex arrangements to prevent dangerous practices. These frequently include regulations that give professionals an exclusive right to provide certain services and protect them against criminal charges should they accidentally harm a patient. The organised professions ensure that members provide an appropriate standard of care, in exchange. They also use this power to prevent other people from competing for patients.

China does not have a highly developed health regulatory system. As the article by Gong and Wilkes demonstrates, the training of doctors varies considerably. Until recently, people who had not graduated from a medical college could be promoted to a doctor's position. In theory, health workers were closely super-
vised public sector employees, so they could only offer services they were competent to provide. In practice, this has not always been the case and now that health workers are no longer integrated into a functioning administrative system, many are virtually unsupervised. Increasing numbers of health workers are in private practice. The principal protection left to users is the reputation of individual health workers and competition from other providers.

The problems that can arise are illustrated in the case of drugs. All health workers, including rural doctors with less than a year's training, are allowed to sell any drug, except narcotics and some antipsychotic medication. Many of these products are ineffective if not used appropriately, and some can have serious side-effects. Furthermore, since the government's monopoly of drug distribution has ended, increasing amounts of defective drugs have entered the market. Patients are no longer certain they will obtain cost-effective and relatively safe drug therapy for common health problems. Some form of regulation is required to control drug quality and prevent inadequately trained practitioners from supplying certain pharmaceutical products. However, care needs to be taken to avoid regulations that disrupt the supply of essential drugs to patients in poor rural areas.

7 Economic and Institutional Context of the Health System

Changes in the economic and institutional environment have strongly affected China's health services.

7.1 Local government finance

The article by Zuo argues that China shares, with other transitional economies, the need to reform its system of local government finance (Bird et al. 1995). The lowest levels of government are responsible for many services, but do not have the resources to finance them. Many county and township governments in poor areas face serious financial difficulties, and they spend up to 80 per cent of their budgets on personnel (Wong et al. 1995). This problem arises partially because government has found it difficult to establish new taxation systems. It is also due to the inability of government to induce local governments in rich areas to transfer more revenue to poor regions (Wong et al. 1995).

Local governments supplement taxes by charging for services and collecting contributions from individuals and local enterprises. They are not part of the tax system and they are not subject to interregional transfers. These sources of revenue can be viewed as quasi-taxes, because they are imposed by legally constituted local administrations. There are parallels between this source of finance and 'community financing' in other countries.

Governments in rich localities collect a large amount of revenue from taxes and other sources. The MoH's advocacy of health prepayment schemes is a means of putting pressure on these governments to give health a higher priority. It is possible to envisage a time when successful schemes will be integrated into formalised systems of local government finance or social health insurance.

Local governments in poor areas, on the other hand, have a limited tax base and find it difficult to collect any other revenue. They may not even be able to finance basic health services out of local resources. In these areas, a successful health sector reform may have to include reforms to the system of local government finance that provide additional support from higher levels of government, according to Zuo (this issue).

7.2 The labour market

The most important characteristics of the market for health workers in recent years have been substantial pay increases, increasing mobility of health workers, and pressure on health facilities to maintain staffing levels. Health facilities in rich areas have been able to finance pay rises and increased employment, because they have benefited from increased demand for their services.

Health facilities in poor areas, where public sector pay has risen faster than average rural incomes, face increasing financial difficulties. China has the same choice as many other countries: to finance nation-wide salary levels by substantial fiscal transfers to poor areas, or to allow differences in levels of pay to grow, with the expectation that poor areas will lose skilled personnel. Health centres in poor areas have already lost large numbers of their most experienced staff.

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Many health facilities in poor areas no longer pay even the basic government salary.
7.3 Regulatory systems

The weakening of administrative and political controls has been more rapid than the establishment of regulatory structures to constrain opportunistic behaviour. Local governments, particularly in poor rural areas, have not replaced central planning with a rules-based regulatory system and local interest groups strongly influence both 'collective' and 'private' entities (Lichtenstein 1993). This highlights the importance to successful health sector reform of regulatory systems that include: independent financial audit, the legal definition of the rights and obligations of non-governmental entities, and the establishment of local accountability mechanisms.

7.4 Political factors

Political factors strongly influence health sector development (Reich 1995; Walt 1994). In recent years all levels of government in China have given top priority to economic development, and have paid relatively little attention to health. This is reflected in the anti-poverty programme which tends not to fund the provision of even basic social services.

In the absence of a national health development strategy that takes into account how the health sector is financed, health services have expanded substantially in the richer areas, where household incomes have grown. They have expanded even more in the cities, because many urban dwellers are covered by health insurance. The growth of modern medical care in the rich areas has affected services in poor areas by encouraging hospitals to obtain new equipment, putting an upward pressure on salaries, and attracting experienced personnel away from grassroots work.

Health facilities in poor areas have found it difficult to maintain standards, let alone expand services. This is due to the increases in the cost of inputs and the unwillingness and/or inability of local governments to increase their grants. The financial pressures have been exacerbated by the inability of facilities to rationalise their staffing levels.

The rural health services in China have adapted to major social changes over the past 15 years. These adaptations have been largely successful in preserving a network of health facilities and ensuring health workers a reasonable income. However, they have resulted in increased inequalities in access to services and substantial cost increases. Taken together, the articles in this issue present a strong case for systematic reform of the rural health system, as a whole. The successful implementation of such a reform programme will require strong political leadership to enable users, including the poor, to influence the outcome and ensure that their needs are met.

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