Fixing the Public Hospital System in China

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China Health Policy Notes

China Health Policy Notes is a series of occasional papers on lessons and experiences from China's ongoing healthcare reform. The series is published by the World Bank in collaboration with the Government of China. The papers track and analyze the reform process, and evaluate early results. Each paper focuses on a key challenge that is central to success. The papers are written from a pragmatic perspective—namely, how the reforms can be refined and improved as the process unfolds over the coming 5 to 10 years. Experience is reported in the context of international best practice.

Research was carried out under the World Bank's Analytic and Advisory Assistance program, a particularly fruitful collaboration between the Bank and the Government that has been underway since 2003. Initial technical papers were prepared by teams of national and international experts. Preliminary versions were critically discussed with Chinese policymakers and technical counterparts, especially within the ministries that initially requested this assistance in mid-2008. All papers were then subject to rigorous peer review.

The purpose of *China Health Policy Notes* is to share these findings with a broader audience, especially to Chinese policymakers, health specialists, and scholars. Hardcopy versions of these papers can be obtained in English and Chinese by writing to the World Bank. They can be downloaded without charge at www.worldbank.org. The papers may be freely reproduced providing that source and copyright protection are clearly acknowledged. Comments and ideas are welcome. They should be addressed to the respective authors, or to the series editor (jlangenbrunner@worldbank.org).

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Fixing the Public Hospital System in China

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Acronyms, abbreviations, currency

AAA	World Bank Analytic and Advisory Services
ALOS	Average length of stay
CCCPC	Central Committee of the Communist Party of China
CHCs	Community health centers
DfID	UK Department for International Development
DRGs	Diagnosis-related groups (medical insurance reimbursement system)
FFS	Fees for services
MA	Medical Assistance (a social welfare program for poor families)
MCH	Maternal and child health
MOF	Ministry of Finance
MOH	Ministry of Health
MOLSS	Ministry of Labor and Social Security
MRIs	Magnetic resonance imagery (a high-tech radiological imaging procedure)
MSAs	Medical savings accounts
NHS	UK National Health Service
NICE	National Institute for Clinical Assessment, UK
NRCMS	New Rural Cooperative Medical Services
NRDC	National Reform and Development Commission
OECD	Organization for Economic Cooperation and Development
SHI	Social health insurance
SOE	State-owned enterprise
UEBMI	Urban Employee Basic Medical Insurance
URBMI	Urban Resident Basic Medical Insurance

Exchange rate

6.82 RMB = 1 USD

(May 1, 2010)

Executive Summary

Overview of public hospital reform

Since the mid-1980s—with the collapse of the previous era’s commune-based health system—the main impetus behind hospital reform in China has been to reduce the financial burden that hospital care places on government budgets. In 1992, the Ministry of Health granted substantial financial autonomy to hospitals, allowing them to charge for their services and to sell drugs at a profit. They are now permitted to keep the surpluses that they generate, and they are responsible for their debts and operating losses. They can use their surpluses to invest in new facilities and services, or to finance salary enhancement systems.

Prices for basic medical care are regulated. In general, medical services produce net losses, and drug revenues produce net gains. Hospitals have been given freedom to develop higher quality services for which they can charge prices above the levels reimbursed by social insurance. Public hospitals can also enter into joint ventures with the private sector. They are allowed to raise “social capital” from medical staff and retirees, which can then be invested in private for-profit units within the public facilities.

Reforms such as these have encouraged growth in the number of hospitals and the volume of their activity. Though still low by international standards, there were 19,712 hospitals nationwide by 2008, an average of 2.2 hospital beds per 1,000 population and 1.2 township health center beds per 1,000 rural population. About 20 percent of hospitals are private and for-profit (handling about 5 percent of total outpatient and inpatient services, though only about 1.5 percent of emergency cases).

The growth and character of the public hospital system has created additional scope for local reform initiatives. In some parts of the country, subnational governments and public hospitals have experimented with alternative management and governance models. There have been experiments with state-owned enterprise models, trustee models, contracting of hospital management, leasing of hospital assets, and creation of shared hospital management services company. Some local administrations have separated management of hospital facilities and assets from operational management of service delivery. Some subnational governments have reformed the regulations for appointing administrators and managers by

introducing performance monitoring of the senior management team or “leaders group.” Others have carried out reform of groups or networks of medical facilities. For example, they have integrated planning and management of groups of hospitals, sometimes including hospitals affiliated with non-health departments. They have strengthened cooperation between hospitals and other medical institutions, as well as between medical and family planning services institutions.

Some public hospitals have improved cost management by outsourcing support services such as hospital maintenance, administrative and information management. A range of pharmaceutical cost-reduction initiatives and pharmacy management reforms have been carried out. To some extent, management has improved as a result. The pilots have generated important lessons for broader reforms in the future.

Social health insurance has expanded in parallel with hospital organizational reform. Mirroring international models, reforms in provider payment methods have complemented hospital reforms. Some of these initiatives have followed the general principle that “money follows patient choice.”

The 2003 SARS outbreak spurred a review of public health functions of medical facilities. Since 2006, a series of “common sense” adjustments of hospital policy have been carried out—in particular, to address concerns about unintended effects of the self-financing policies. These adjustments included three key “separations”—separation of hospital management from operations; separation of medical services from drug sales; and separation of for-profit privately-financed from non-profit publicly-financed aspects of hospital operations.

Issues facing public hospitals in China

Policies regarding hospital organization face certain limitations and constraints. Although hospitals now enjoy considerable autonomy in their use of private revenues, governance continues to follow the traditional public-sector model. Hospital funds from government budgets are still allocated and controlled by the government hierarchy. Personnel management is still subject to central public sector controls over staffing structures and grades. Intervention from higher levels of government continues despite autonomous status. There is a lack of plurality in hospital provision; and in many areas, there is little competition among providers.

The reforms have had some unintended consequences—for example, the tendency for public hospitals to increase their private revenue by offering more-expensive and more-profitable services. Hospitals have expanded infrastructure and high-technology equipment in a chaotic way. There has been imbalance in the growth and distribution of hospital facilities. Especially in rural areas, county-level hospitals dominate at the expense of primary care and outpatient facilities.

Social capital investment in the private units of public hospitals has weakened management control over the staff who have invested and work in them. Self-financing has not created incentives for efficiency. Irrational over-provision of high-end services for more affluent patients and over-prescribing of drugs have led to uncontrolled growth in medical expenditure.

Patient dissatisfaction with hospital services has risen. The incentives introduced by self-financing have detracted from the essential social responsibilities of public hospitals—to ensure affordable access to quality medical services for the poor; to provide preventive health services and rehabilitation; to respond to public health emergencies; and to carry out medical education and research. Social health insurance and price-regulation have not served to fully protect these core social functions.

The main causes underlying these issues are related to financing, provider payment policies, and the market environment in which public hospitals operate. The mix of limited government subsidies, dominance of the fee-for-services model, and increasing exposure to market competition has sent signals to hospital managers that are inconsistent with the Government's social objectives for public hospitals. More generally, they have created incentives that work at odds with rational, cost-effective use of resources for health.

Government budget subsidies have been decreasing as a share of total hospital revenues since the mid-1980s. By the end of the 2000s, government subsidies accounted for only about 10 percent of average public hospital revenues. Fees for medical services and drug sales account for the remaining 90 percent.

New forms of public financing have gradually increased—for example, social health insurance reimbursement for medical services fees; compensation for developing capacity to respond to public health emergencies; and compensation for designated programs, teaching, and research. The effect of these new forms of financing is still relatively limited. Despite

piloting of provider payment reforms, for example, social health insurance reimbursement is overwhelmingly based on fees-for-service. Out-of-pocket payments by patients and drug sales remain the largest sources of hospital revenue.

Given the financing sources upon which they continue to rely, hospitals are faced with strong incentives to increase the quantity and cost of their services and to increase the volume of prescribing and drug sales. By 2008, drug revenue accounted for an average of 40 percent of gross income of hospitals, far higher than the 15 to 25 percent common in most OECD countries. From a financial point of view, public hospitals have good reason to promote more-profitable higher-technology services and drug prescription oriented to patients who are able to pay. Similarly, they under-provide basic services that are loss-making, including services for patients who cannot afford extra or higher-quality services.

In this financing and provider-payment context, many public hospitals in large cities—especially in affluent areas—have been able to obtain capital investment finance from the private sector. This has enabled them to expand, improve infrastructure, update equipment, and attract the most popular doctors. By contrast, *public* capital investment financing has focused on smaller municipal-level and rural county-level hospitals, that is, those with less capacity to obtain credit or attract private financing. In the absence of control mechanisms or coordinated planning, the mix of private and social capital investment has been wasteful and duplicated capacity in urban areas. At the same time, there has been underinvestment in rural areas and in facilities providing basic services to poorer populations.

An international perspective on hospital reform

The problems described above are not unique to China. Public hospital reform has been advocated in every region of the world to address widely shared symptoms of inefficiency, waste, user dissatisfaction, brain drain to the private sector, emigration of professionals, failure to reach the poor, mismanagement, and often corruption. These problems are often associated with the nature of public hospitals as *public*, which typically means without incentives for good performance and absence of managerial freedom to make change.

This paper uses a framework developed by Preker and Harding (2003) to look more closely at the nature of public hospitals and instruments of reforms. The framework decomposes the incentive regime a public hospital faces into, first, pressures originating from the external environment and, second, pressures originating from the hospital's

organizational structure. The pressures originating from the external environment derive from the relationship of the hospital to other actors in the health system. These come from four main sources—government oversight, organized purchasing, market pressures (from patient/consumer-driven purchasing), and governance from the owners of the hospital.

The instruments that allow hospitals to respond to the pressures of the incentive regime are managerial instruments. Preker and Harding posit five organizational attributes that create incentives shaping the ability of public hospitals and other healthcare providers to deliver on the Government’s policy objectives—first, the authority or autonomy given to its managers; second, the market environment created by the provider payment mechanism and exposure to competition; third, the extent to which the hospital keeps its surpluses and is responsible for its losses and debts; fourth, accountability mechanisms; and fifth, the extent to which social functions of the hospital are explicit and fully funded (rather than being implicit or unfunded mandates).

Countries have adopted a range of approaches to hospital organizational reform. For example, the United Kingdom, Estonia, and Colombia have adopted a planned “whole systems” approach. Turkey has adopted phased reforms linked to constituency building. Uzbekistan has embraced an ad hoc problem-solving approach. The United Kingdom, the Philippines, and Macedonia have focused reforms on priorities in public health outcomes.

Reforms in some countries have succeeded with radical “big bang” approaches—for example, comprehensive public hospital autonomy plus provider payment reform in Singapore, Australia, and Estonia. More cautious, gradualist approaches have been successful in the United Kingdom and Tunisia. Whether big-bang or gradualist, a common feature of *successful* reforms is coherence and consistency in how reforms are designed. Successful countries have typically invested in capacity development (management, contracting and supervision capacity), and they have matched the pace of reform implementation to actual capacity. On a smaller scale, a range of countries have carried out successful reforms at the level of individual hospitals—for example, in Thailand and Indonesia.

Many less-successful reform experiences can be traced to conflicting incentives within systems where public budgets and private revenues are mixed. Many countries (other than China) have allowed public hospitals substantial freedom in charging fees, retaining income, and selling medicines at a profit—without corresponding controls on budget management

and the financial behavior of personnel. Not only has supervision and accounting lagged. Reforms to address one set of policy objectives (for example, control of nonsustainable public expenditure) have often been implemented before effective mechanisms were in place to deal with another (for example, motivating public hospitals to treat those who cannot afford to pay). As social health insurance schemes later developed, hospitals were given undue autonomy in the use of social insurance reimbursements—in effect, reinforcing rather than correcting existing weaknesses in hospital financing.

In OECD countries, earlier reforms tended to focus on issues of efficiency and cost containment. More recently, reforms in OECD countries have tended to emphasize quality, safety, and evidence-based medicine. This trend is illustrated by the protocol guides for hospital practice in Spain and France, as well as the Healthcare Commission and National Institute for Clinical Excellence (NICE) in the United Kingdom. Countries such as France and the Philippines have implemented accreditation requirements that must be met before hospitals can receive social health insurance or other public funding for services.

Implications of international experience for China

The central government, subnational governments, and hospital groups have diverse interests in public hospital reform in China. A range of reforms are discussed in this paper, drawing heavily on international experience. Several lessons stand out:

- Public hospital reform is a complex undertaking requiring consistency and constancy over time. To succeed, government institutions must possess strong implementation capacity, as well as credibility among the many actors with whom they work.
- Results of reform initiatives tend to be disappointing where some but not all of the five key Preker-Harding organizational dimensions are addressed—decision rights, market exposure, residual claimant status, accountability, and social functions.
- Organizational reform requires close coordination between policy design and implementation. As ever, “the devil is in the detail”—especially the details in how operational policies are interpreted and implemented by managers and staff.
- Public hospital reform is seldom successful in the absence of levers that constrain bad behaviour and promote good behaviour through hospital budgets.

- There are few reform successes among governments with weak governance and poor stewardship (i.e., regulation, performance monitoring, and institutions that create accountability for public service providers). Similarly, there are few successes where hospitals have limited management capacity.
- Strengthening management systems and management skills is essential for successful hospital autonomization. These are beneficial even without organizational reform.
- The *pre*conditions for reform success need to be clearly identified and addressed. These include management systems and capacity, contracting capacity, and supervision capacity. Assessment is needed to determine if these preconditions are in place. Piloting is appropriate where they are, and building the prerequisites is required where they are not.

In applying international models, it is important to recognize that public hospital reform in China has a much different starting point than that of upper-income countries such as the UK or Australia. China is facing rapid expenditure growth of both inpatient and outpatient care, as well as declining hospital efficiency. Although cost containment and efficiency were also important reform objectives in the UK and Australia, these countries financed hospital care predominantly from public sources. This gave government health authorities powerful financial leverage over hospitals. By contrast, many public hospitals in China function like private hospitals, and many public-hospital doctors function like private independent practitioners, because both hospitals and doctors obtain significant revenue from charging fees-for-services and earning profits from drug sales on a cost-plus basis.

Continuing Challenges Facing China's Hospital System

In a country of the scale and complexity of China, there is not a single common set of problems or opportunities facing hospitals everywhere, nor is there likely to be a standard set of recommendations that are appropriate at all levels of the hospital system or in all parts of the country. China's many subnational governments and a full gamut of hospital groups has undertaken a range of reforms employing a variety of models. Starting points for organizational reforms vary widely by place. Thus, while comparisons across may be useful across international and subnational lines, so too generalizations must be made with caution. Not all experience is easily transferable, and there has not yet been enough evaluation to assess the full range of local experiments and ongoing reform models.

Hospital expenditure is growing faster than income from public budgets and social insurance. Expenditure control and improved efficiency pose formidable challenges. Meeting these challenges will require consistent, coordinated approaches that span planning and investment, organization and governance, management, and provider payment. The need for more rational, evidence-based service provision is particularly crucial in China's context of limited public and social health insurance financing, and substantial private out-of-pocket expenditure.

Building up a cadre of well-trained hospital managers is similarly important. This will take some years, and will require supportive policies to ensure that careers in hospital management are attractive for those with the necessary skills, aptitudes, and experience.

Finally, substantial investment is required in information systems for policy planning, performance monitoring and accountability, and evaluation. Both national and subnational investment is needed to steer the hospital system through the next phases of reform.

Fixing the Public Hospital System in China¹

1. Introduction

In recent years, Chinese health care has improved rapidly, especially in the areas of equity and accessibility of services, as well as the movement toward universal coverage. A new round of health care reform, which was announced in April 2009, began implementation in 2010, with reform pilots in 16 urban areas.

This paper analyzes a key pillar of this ongoing reform process—public hospital management. First, the paper reviews the history of public hospital reform, discusses hospital functions and responsibilities, and describes the structure and supply of health services. Second, it describes the main policy issues facing public hospitals, including financing sources and the hospital market environment. Third, it examines organizational arrangements in public hospitals, focusing on decision rights and governance. Fourth, the paper offers an international perspective and framework for assessing hospital reform. Finally, it summarizes the main policy issues and suggests next steps for policy reform. The paper draws on recent publications, grey literature, media reports, and interviews with key stakeholders.

¹ This paper was prepared by Dai Tao, Loraine Hawkins, Huihui Wang, Jack Langenbrunner, Shuo Zhang, and Robert Dredge. The authors are grateful to Jerry La Forgia (World Bank) and Professor Meng Qingyue (Shandong University) for critique and helpful comments on an earlier draft of this paper.

2. Overview of Public Hospital Reform

This section provides an overview of public hospital reform in China, including a review of the historical background, a discussion of the essential functions and social responsibilities of public hospitals, and a description of the organizational structure and supply of health services.

Historical background

The history of public hospital reform can be divided into three periods:

- Public hospital and reform before the Open Door Policy (1949-1980);
- Alleviating fiscal burdens and influencing hospital behavior (1980-2003); and
- Addressing access and costs of services (2003-present).

Public hospitals and reform before the Open Door Policy (1949-1980)

When the new China was founded in 1949, the main problem was providing adequate food and clothing. In the 30 years before reform, government subsidies to public-owned hospitals accounted for 15-35 percent of hospital budgets to ensure that needed social functions were carried out. Health services were supplied through the Free Medical Service and Labor Health Insurance in urban areas and the Cooperative Medical Scheme in rural areas, and a Loan Fund for Patients helped make medical services affordable. By 1957, a mature healthcare network was providing basic medical services and drugs.

“Put the emphasis of health work in rural areas” was often heard in the late 1960s. Health policies were typically carried out in the context of political activities—sending urban health teams to villages, providing financing to build or enlarge community health centers, using donations to set up village-based cooperative health stations, and training barefoot doctors. Between 1966 and 1976, nearly every community was equipped with health centers. Along with existing county health facilities, these shaped the rural three-tiered health network of primary care, secondary and tertiary (county) referral hospitals. This network expanded the supply of medical services and drugs for rural residents, improved disease

prevention and healthcare services, strengthened rural health teams, and decreased infectious diseases. Life expectancy and infant mortality moved closer to levels in developed countries.

This system was affordable and cost-effective. People received medical services and health insurance with financial support from the government, the collective, and their units. Financing was provided for hospitals through government subsidies and payments by third-party insurers. This model ensured citizens of the right to medical services, including the government responsibility to reimburse public hospitals for their expenditures. The main difficulty with this policy was the unmanageable government financial burden. Severe medical resource shortages resulted when government subsidies and reimbursement did not cover actual costs. Difficulties included slow adoption of new technology and equipment, inadequate depreciation and replacement of buildings and medical equipment, inefficient use of available technology, failure to contain costs, little monitoring of service impacts, low patient satisfaction, and long waiting periods for some procedures.

Alleviating fiscal burdens and influencing hospital behavior (1980-2003)

Since the 1980s, the main purpose of hospital reform has been to alleviate the government's financial burden. These reforms introduced market mechanisms and changed ownership to a state-owned enterprise (SOE) model. In 1985, the Ministry of Health addressed the lack of medical inputs and proposed community-run hospitals as a way to mobilize social forces in launching health institutions.² This reform allowed private capital to enter the health sector by encouraging retired medical staff to pool funds to launch medical institutions. Charging for services was permitted, thus moving medical prices toward actual market prices.

In 1989, the State Council developed the SOE reform by promoting various contracting systems for medical institutions.³ It also allowed public hospitals to earn profits from specialty medical services and to charge more for higher-quality services. This reform injected new funds for hospitals through the new means of funding.

In 1992, the Ministry of Health expanded the autonomy of medical institutions, including opportunities to increase revenues by “incentivizing” public hospitals and their

² “Report on Policy Issue for Health Reform,” State Council No. 62, 1985.

³ “Opinions on Issues Concerning Expanding Medical Health Services,” State Council No. 10, or “No. 10 Document,” 1989.

employees.⁴ Although incentives allowed hospitals to charge for services, the relationship between public hospitals and the government remained unchanged, as hospitals still followed the traditional model of public sector governance, without significant management improvements. Conceptually, these measures were similar to state-owned enterprise (SOE) reform. The key principle was “decentralization of power and transfer of profits.”

In 1997, the Central Committee of the Communist Party of China (CCCPC) and the State Council specified the government’s financial and management responsibilities to provide public health and basic medical services; defined the government’s role vis-a-vis hospitals’ rights, liabilities, and duties; and transformed public hospitals’ operating mechanisms.⁵ In addition, some local governments explored reform of hospital property rights, which further enabled nonpublic hospitals to develop independently.

In 2000, a series of documents classified management models for medical institutions and specified management policies for finance, taxation, and prices for services.⁶ Hospitals began to reform personnel systems and expanded their self-operating rights. The reforms regulated medical markets, strengthened management of nonpublic hospitals, strengthened supervision of medical advertisements, streamlined prices of medical services, reduced prices of examinations, and regulated the behavior of medical institutions and staff members.

Public hospitals have experimented with management models and internal governance over the past 20 years, and management improved to some extent as a result, but the tendency to expand and pursue economic benefit remains intact. Health providers are still compensated by both fee-for-service by patients and line-item budgets to cover some fixed costs. Prices are set by the government in ways that tempt providers to induce demand for drugs and services.

The early “decentralization of power and transfer of profits” and property rights reforms launched by local governments succeeded in generating additional revenues, but the price-setting mechanism has not addressed the goals of equity and improved quality of medical services. In addition, the SOE model and attendant government policies have had several unintended consequences, as described below.

⁴ “Several Opinions on Deepening Health Reform.”

⁵ “Decision of the CCCPC and the State Council on Health Reform and Development.”

⁶ Including “Guiding Opinions on Reform of Urban Pharmaceutical and Health System.”

- *Hospital management reform lags behind macroeconomic reforms.* Beyond the county level, hospitals are almost entirely public enterprises. The government serves as both owner and supervisor of the hospital and the manager. The lack of separation between governance and management means that the hospitals do not face strong pressure to be efficient, because they may perceive that the government would not allow them to fail nor would management be replaced if the hospital performs poorly.
- *The social responsibilities of public hospitals have been weakened, and the distribution of facilities is unbalanced.* Government financial contributions to hospitals have decreased and the government's interest lacks clear purpose. Hospitals are responsible for their own profit and loss, sell medicines to complement low revenues, and survive by providing more services. Conflicts between hospitals' self-funding interests and their social functions are pronounced, weakening their social role.
- *Incentives for public hospitals do not promote efficiency or competition.* The government views public hospitals as public enterprises. Financial subsidies based on beds and personnel help the government to track and manage budgetary support. The government also views public hospitals as business units. Hospitals are encouraged to profit from new technologies and new projects. Caught in the middle, hospital managers use information asymmetry to avoid governmental control and enhance their technical infrastructure, which increases overall medical expenditures. Human resources and remuneration reform is also lagging behind. Performance indicators are neither clear nor aligned with improved management, resulting in low efficiency and noncompetitive behavior. Hospitals are characterized by poor service and staff attitudes, tension with patients, lack of responsiveness, and poor quality of care.
- *Hospital-patient relationships are increasingly tense, and arouse public concern.* System defects and lack of regulation have increased medical expenses in the chaotic pharmaceutical market, over-investment and overuse of medical apparatuses and instruments, poor service attitudes, and lack of patient trust in medical institutions and workers.

Addressing access and costs of services (2003-present)

The 2003 SARS outbreak enabled the Chinese to propose a vision for developing the economy and constructing a harmonious society, and spurred a further review of health. As hospital reform enters a new stage, the public, the government, and scholars have

increasingly focused on the difficulty of accessing care and the high cost of medical treatment.

In 2006, the 11th five-year plan for national economic and development revised the 1996 “market-oriented” health fees, and proposed increasing government efforts.⁷ The State Council established a working group on deepening pharmaceutical and health system reform, and the CPC Central Committee issued “Major Issues of Constructing a Socialistic Harmonious Society,” which set the direction for medical and health reform.

In the 35th group study of the CCCPC, President Hu Jintao stressed the welfare nature of public medical and health activities, and advanced health system reform. The premier’s investigation of Jilin Provincial People’s Hospital in 2007 led to the following instructions:

- Reassert the roles of public resources in hospitals;
- Mobilize enthusiasm and innovation among medical staff;
- Improve hospital management and quality of services;
- Promote efficiency utilization of medicines and reduce patients’ expenses; and
- Strengthen pharmaceutical supervision to guarantee pharmaceutical safety.

Most countries set up public hospitals to address market failure in health care and to improve equity in the provision of medical services. In China, several decades of public hospital reform have witnessed different problems, an increasing understanding of reform, and policy measures correlated with socioeconomic policies.

In 2008, a series of “common sense” reforms⁸ were outlined to:

- Manage medical institutions in the larger context of regional planning and regulation;
- Clarify functions of public hospitals;
- Strengthen government’s responsibilities and input;
- Regulate the levels of and methods of payment;
- Establish hospital management structure with governing boards;
- Separate hospital management and operation by government;
- Separate provision of medical services and drug sales;

⁷ “Increasing Governmental Input Efforts—Addressing the Issue of Difficulty and High Cost in Getting Medical Treatment.”

⁸ “Deepening Pharmaceutical and Health System Reform (draft).”

- Separate profit and non-profit aspects of hospitals;
- Improve operations, incentives, and compensation of public medical institutions;
- Reform the practice of complementing medical insufficiency by selling medicines;
- Regulate expenditure and income management and strengthen social welfare;
- Implement a regional health development plan;
- Integrate medical and basic public health resources in the rural health service network; and,
- Strengthen a model of urban health service based on community health.

Although there was no overarching policy on public hospital reform, hospital reform pilots were an important topic of discussion in 2009 with a call for pilots in 2010. The “common sense” approaches proposed by the working group could become significant for future public hospital reform.

Essential functions and social responsibilities of public hospitals

As the core of public health and medical institutions, public hospitals save lives, prevent and cure diseases, and are key to attaining government objectives for health and social stability.^[1] Their essential functions and responsibilities include:

- Providing regular medical services;
- Providing preventive health care, rehabilitation, and health education;
- Responding to public health accidents;
- Supporting other government missions;
- Conducting medical education and research.

Regular medical services

Public hospitals provide two types of medical services. First, they provide low-cost medical services to ensure basic health services for everyone. Second, they provide diagnosis and treatment services for intractable diseases, treatment services for critical illnesses, emergency services, healthcare services for civil servants, and foreign patients. Public hospitals provide treatment services for acute, severe, and critical outpatients and inpatients,

and they fulfill education, research, prevention, and rehabilitation objectives by providing special medical services. With their service orientation, quality, price, and standards, public hospitals influence private health service providers, and guide the development of medical services markets.

The number of outpatients in a comprehensive, multi-specialty public hospital is more than 100,000 a year. The number of inpatients is more than 10,000 a year, and some could reach 20,000 to 30,000 in large-scale comprehensive public hospitals.

Preventive health care, rehabilitation, and health education

Preventive health care, rehabilitation, and health education are all important hospital functions. With the SARS outbreak in 2003 and other public health accidents, prevention has taken on increasing significance. All public hospitals now have preventive health care branches, which are responsible for reporting infectious diseases, health checks, health counseling, community prevention services, health education, disease screening, family planning and birthing guidance, and care of staff. ^[2]

With social and economic development, rising living standards, an aging population, and an increase in noncommunicable diseases, society's demand for rehabilitation medicine increases year by year, and rehabilitation services should be available in second-tier general hospitals.⁹ Public hospitals also deliver health education services for outpatients, inpatients, and the public. In 2005, one hospital held 50 weekend health lectures; issued over 3,000 leaflets; held lectures in communities, enterprises, and institutions; provided free medical diagnoses for 6,000 people; distributed over 8,000 copies of health promotion materials; and conducted more than 6,000 consultations.^[3]

Public health services, such as preventive health care, should be compensated by state finance. Government inputs to public hospitals have thus far been inadequate, limiting hospitals' provision of public health services.

⁹ "The Management Norms of Rehabilitation Medicine Branch in General Hospitals," Ministry of Health.

Public health accidents

Public hospitals play a significant role in responding to major natural disasters and other calamities. Public hospitals safeguard lives and social stability, and are a national and social stabilizer. Public hospitals actively responded to SARS, avian flu, the Sichuan Wenchuan earthquake, the ice and snow disaster in Hunan, and the melamine baby milk powder incident. During the SARS outbreak, 16 public hospitals in Beijing designated 3,600 beds for patients, and 63 public hospitals in Beijing set up fever clinics to receive suspected cases.^[4-7] After the Sichuan Wenchuan earthquake in 2008, public hospitals participated in emergency rescue and medical treatment. In the melamine baby milk powder incident, public hospitals provided children with free screening and treatment.

Other government missions

All public hospitals provide medical services for vulnerable groups, such as fixed price outpatient services, free registration, free infusion, free dressing, and free injection. They waive fees for surgery, laboratory, physiotherapy, medicine and other items; and they provide beds for low-income and poor people for basic medical services.

Public hospitals support teaching practical-level health organizations as an important social function, and they support international, rural, and peer-to-peer aid programs. In 2005, the Ministry of Health and other departments launched “10,000 Physicians Supporting Rural Health,” which addressed rural medical care costs, promoted the development of urban and rural health, improved rural health service quality, and safeguarded the health of hundreds of millions of peasants.

Foreign aid medical services are a part of China’s diplomatic outreach. In 1963, China sent the first foreign medical team to Algeria, and China has since sent more than 20,000 medical personnel to 69 countries in Asia, Africa, Latin America, Europe and Oceania. Chinese doctors have diagnosed and provided free treatment for over 2.6 million patients overseas.

Medical education and research

Public hospitals cultivate medical talent not only for their own units, but for teaching hospitals and community hospitals. Many public hospitals offer medical education. Training

includes clinical theory and practice, clinical and graduate internships, and standardized clinician training. Public hospitals also serve as training grounds for medical technology professionals. Clinical teaching and medical internships are provided by 90 percent of third-tier hospitals,^[8] and by almost all hospitals in the eastern provinces.

Most public hospitals also conduct scientific research. Clinical research addresses needs related to disease treatment and patient nursing, and has direct and indirect economic and social benefits through the application of scientific research.

Organizational structure and supply of health services

The discussion of the organizational structure and supply of health services includes four topics:

- Organizational structure;
- Ownership of medical institutions;
- Medical services provided by hospitals; and
- Efficiency of medical institutions.

Organizational structure

China's health system is composed of hospitals, nursing homes, health centers, outpatient clinics, community health service centers, maternal and child care stations, and centers for disease control.¹⁰ There are two types of institutions: medical and other. Medical institutions are licensed to diagnosis and treat diseases. Other institutions include public health agencies (such as centers for disease control), blood stations, and teaching and training institutes.

Historically, medical institutions are related to the rural or urban status of government structures and households. The major institutions for rural areas, from bottom to top, are township health centers and county hospitals/maternal and child care stations. The major institutions for urban areas are community health centers (stations), district hospitals/maternal and child care stations, municipal hospitals/maternal and child care stations, provincial hospitals/maternal and child care stations, and ministry owned (central level) hospitals. Each one reports to a corresponding health administration agency. Some

¹⁰ Village clinics (village posts) are not counted as health institutions for statistical purposes in China.

hospitals and outpatient clinics are owned by ministries other than the Ministry of Health, as well as state-owned enterprises.

The current array of medical institutions is the result of reform activities since 1978 as outlined above. There have been many reforms in recent years, including transforming enterprise-owned hospitals into local hospitals that are then administered by health bureaus. Community health stations/centers have only existed since the late 1990s. Many were transformed from smaller hospitals (at or below the level of district hospitals) in urban areas.

Hospitals and hospital beds

The number of hospitals more than tripled from 1960 to 2008. In 2008, there were 19,712 hospitals nationwide, accounting for 7 percent of all health institutions (see Table 1).

Table 1: Number and Type of Health Institutions (1960-2008)

Year	Total ^a	Hospitals	Nursing homes	Health centers ^c	Out-patient clinics ^d	Community health service centers	Maternal and child care stations	Centers for disease control	Others
1960	261,195	6,020	1,577	24,849					
1970	149,823	5,964	359	56,568	79,600		1,124	1,714	607
1980	180,553	9,902	470	55,413	102,474		2,745	3,105	1,138
1990	208,734	14,377	650	47,749	129,332		3,148	3,618	1,781
2000	324,771	16,318	471	49,777	240,934		3,163	3,741	1,839
2008	278,337 ^b	19,712	210	39,860	180,752	24,260	3,011	3,534	3,985

Source: Ministry of Health, China National Health Yearbook 2009.

Notes:

- a. Statistics in this table do not include village clinics, of which there were 613,143 in 2008.
- b. Totals for 2002 and later do not include tertiary and secondary medical schools, drug testing institutions, custom health inspection institutions, and family planning units not sponsored by the health sector.
- c. Health center data are for township health centers for 1996 and before.
- d. Outpatient clinic data do not include private clinics for 1996 and before.

Hospitals are not uniformly distributed across regions and provinces, as shown in Figure 1 and Annex Table 1. Beijing has five times more hospitals per capita (429 per 10 million population) than Guangxi (88 per 10 million). This variation exists across hospital certification grades, with the number of Grade III hospitals (the most resource-intensive) ranging from 3 to 41 per 10 million population, and half of the provinces having fewer than 9 Grade III hospitals per 10 million population.

Figure 1: Hospitals per 10 Million Population, by Province and Administrative Level

Source: Ministry of Health, China National Health Yearbook 2009.

Notes: Hospital grade is a comprehensive indicator that reflects scale and technical proficiency.

Grade III hospitals are the largest, most resource-intensive, and most proficient.

The number of hospital beds has increased in all types of medical institutions. By 2008, there were on average 2.17 hospital beds per 1,000 population and 1.20 township health center beds per 1,000 rural population (Table 2).

Table 2: Number of Beds per 1000 Population, by Year and Type of Institution

	Hospitals	Nursing homes	Health centers	Community health service centers	Maternal and child care stations	Specialty diseases centers	Others
1960	0.89	0.16	0.09	0.00	0.01	0.03	0.31
1970	0.85	0.06	5.36	0.00	0.01	0.00	0.16
1980	1.21	0.07	0.97	0.00	0.02	0.03	0.10
1990	1.63	0.11	0.86	0.00	0.04	0.03	0.12
2000	1.71	0.08	0.92	0.00	0.06	0.02	0.06
2008	2.17	0.03	1.20	0.16	0.09	0.02	0.01

Source: Ministry of Health, China National Health Yearbook 2009.

The rate of beds per population is considerably lower in China (second from bottom) than in most OECD and comparator countries, as shown in Figure 2.

Figure 2: Beds per 1000 Population, China and Selected OECD Countries

Sources: OECD 2009 health database (2007 data) and China National Health Yearbook 2008 (2007 data), Ministry of Health.

As with the distribution of hospitals, the number of beds varies widely across provinces (see Annex Table 2). The number of beds per 1,000 population is highest in Beijing (6.4) and lowest in Guizhou (1.4); the number of general hospitals per 1,000 is highest in Beijing (4.2) and lowest in Guangxi (1.1); the number of community health service centers per 1,000 urban residents is highest in Shanghai (1.3) and below 0.2 in 13 provinces. The number of township health center beds per 1,000 rural population varies less, ranging from 0.5 to 1.4.

Ownership of medical institutions

Starting in 2000, medical institutions were classified as either for-profit or non-profit, depending on whether net income from operations is returned to investors. Nonprofit medical institutions are operated for social and public benefit. Net income from operations can only be used for improving medical services, introducing technologies, and launching new medical projects. For-profit institutions return gains to investors. Based on their differing purposes and underlying character, the two kinds of institutions have different fiscal, taxation, and pricing policies.

In 2008, about 20 percent of hospitals (4,038) were classified as for-profit. Half are sponsored by either society or individuals. Outpatient departments and clinics are mostly for-profit (60 and 76 percent) and have non-government owners (94 and 96 percent). Community health service centers are mostly non-profit (92 percent) and have non-government owners (65 percent). Health centers are almost all non-profit (99 percent) with government owners (97 percent) (see Table 3).

Table 3: Medical Institutions by Ownership Type (2008)

	Profit Status				Ownership		
	Total	Nonprofit	Profit	Unknown	Government	Public organizns.	Individual
Hospitals	19,712	15,650	4,038	24	9,777	6,048	3,887
Nursing homes	210	208	2	0	96	113	1
CHCs/ stations	24,260	22,392	1,167	701	8,598	12,464	3,198
Health centers	39,860	39,764	43	53	38,636	920	304
Outpatient depts.	6,975	2,739	4,186	50	469	3,074	3,432
Clinics	173,777	40,523	132,250	1,004	6,373	41,315	126,089
Emergency centers	217	183	1	33	185	30	2
MCHs/stations	3,011	3,006	4	1	2,912	96	3

Table 3, continued:

Source: Ministry of Health, China National Health Yearbook 2009.

Notes: Medical institutions owned by the government include those owned by the Ministry of Health and other ministries. Medical institutions owned by public organizations include those owned by enterprises, public institutions, social groups and other social organizations.

Medical services provided by hospitals

In 2008, more than half the clinical visits (in-hospital outpatient wards and emergency departments), observation cases, and physical check-ups were provided by hospitals (see Table 4).

Table 4: Outpatient Services by Type of Medical Institution (2008)

	Clinical visits	Observation cases	Physical checkups
Total (number)	3,531,985,342	59,102,945	196,420,725
Percent (%) of this number by:			
Hospitals	50.4	57.5	51.2
Nursing homes	0.1	0.0	0.3
Community health service centers/stations	7.3	12.2	8.5
Health centers	24.4	23.5	28.2
Outpatient departments	1.5	0.7	2.0
Clinics	12.0	0.0	0.0
Maternal and child care stations	3.9	5.9	8.3
Specialty diseases prevention & control stations	0.5	0.5	0.2
Medical Testing Centers	0.0	0.0	0.2
Total	100.0	100.0	100.0

Source: Ministry of Health, China National Health Yearbook 2009.

As shown in Table 5, hospitals provided about two-thirds of inpatient admissions and discharges and more than 90 percent of inpatient surgeries and severe cases.

Table 5: Inpatient Services by Type of Medical Institution (2008)

	Admissions	Discharges	Inpatient surgeries	Emergency cases
Total number	114,828,056	115,507,672	23,884,499	5,637,531
Percent (%) of this number by:				
Hospitals	64.4	63.8	92.5	97.3
Nursing homes	0.3	0.3	0.0	0.0
Community health service centers/stations	1.2	1.5	0.0	0.0
Health centers	29.2	29.4	0.0	0.0
Outpatient departments	0.1	0.1	0.1	0.0
Clinics	0.0	0.0	0.0	0.0
Maternal and child care stations	4.5	4.5	7.3	2.5
Specialty diseases prevention and control stations	0.2	0.2	0.1	0.1

Source: Ministry of Health, China National Health Yearbook 2009

Hospitals also provide radiology, clinical lab testing, and pharmacy services. Hospitals are usually the only facilities providing radiology services and clinical lab testing services, and hospital pharmacy sales account for most of the pharmaceutical market.

Relative to their numbers, for-profit hospitals do not account for a proportionate quantity of services. About 20 percent of hospitals are for-profit, yet they provide only about 5 percent of total outpatient and inpatient services (see Table 6).

Table 6: Percentage of Outpatient Services Provided by For-Profit Medical Institutions (2008)

	Clinical visits	Observation cases	Physical checkups
Percentage of outpatient services provided by for-profit institutions	12.2	2.7	4.2
Percent of above total provided by:			
Hospitals	4.4	3.4	5.8
Nursing homes	0.2	0.0	0.0
Community health service centers/stations	3.2	3.4	3.4
Health centers	0.1	0.4	0.0
Outpatient departments	55.7	42.1	41.4
Clinics	74.3		100.0
Maternal and child care stations	0.1	0.0	0.1
Specialty disease prevention & control stations	1.2	0.2	4.6
Medical testing centers	24.8		17.8

Source: Ministry of Health, China National Health Yearbook 2009.

As shown in Table 7, inpatient services provided by for-profit medical institutions were responsible for handling only 1.5 percent of emergency cases in 2008.

Table 7: Inpatient Services Provided by For-Profit Medical Institutions (2008)

	Admissions	Discharges	Inpatient surgeries	Emergency cases
Overall percentage of these inpatient services provided by all for-profit institutions	2.7	2.7	4.6	1.5
Percent of above total provided by:				
Hospitals	4.0	4.0	4.9	1.5
Nursing homes	0.0	0.0	0.0	0.0
Community health service centers/stations	4.6	5.0	--	--
Health centers	0.0	0.0	--	--
Outpatient departments	45.9	55.9	69.2	22.6
Clinics	0.0	0.0	--	0.0
Maternal and child care stations	0.1	0.1	0.1	0.0
Specialty disease prevention & control stations	0.5	0.5	0.9	0.0

Source: Ministry of Health, China National Health Yearbook 2009.

Efficiency of medical institutions

Table 8 shows the number of visits per day per physician, bed occupancy rates, and average lengths of stay (ALOS) for discharged inpatients. Bed occupancy rates of hospitals are highest (81.5 percent), much higher than township health centers (55.8 percent), and higher than rates in many OECD countries (see Figure 3). For general hospitals owned by the Ministry of Health, bed occupancy rates increase with administrative level, and are as high as 104.3 percent.

Table 8: Hospital Efficiency by Type of Medical Institution (2008)

	Daily visits per physician	Bed occupancy rate (%)	Average length of stay for discharged inpatients
Hospitals	6.3	81.5	10.7
Ministry owned-general hospitals	9.0	104.3	11.9
Provincial general hospitals	7.1	101.2	12.6
Municipal general hospitals	6.7	95.2	12.0
County level municipal general hospitals	6.8	82.9	8.8
County owned general hospitals	5.4	82.0	7.6
Nursing homes	2.3	49.7	11.3
Community health service centers	12.7	57.6	8.5
Health centers	8.3	55.8	4.5
Maternal and childcare stations	6.9	69.0	5.4
Specialty disease centers	5.0	58.6	16.3

Source: Ministry of Health, China National Health Yearbook 2009.

Notes: Data by level of hospitals from hospitals reporting to health administration agencies.

Figure 3: Bed Occupancy Rates in China and OECD Countries (%)

Sources: Bed occupancy rates for China are for 2008 (Ministry of Health, China National Health Yearbook 2009). Data for OECD countries are for 2005 (acute care hospitals).

Hospitals' overall occupancy rates increased dramatically in recent years, rising from 58.7 percent in 2003 to 81.5 percent in 2008. Township Health Centers' occupancy likewise increased from 36.2 percent in 2003 to 55.8 percent in 2008. These increases could be the result of increasing insurance coverage, induced demand by providers, or both.

Daily visits per physician are not comparable across types of institutions because some of them, such as community health service centers, focus on outpatient service delivery. Even so, outpatient service working loads at general hospitals increase with administrative level, with daily visits per physician ranging from 5.4 to 9.0. The average lengths of stay (ALOS) for discharged inpatients is shorter at lower administrative levels, but this could reflect a less complicated case mix. Compared with OECD countries, the ALOS of China hospitals is second longest next to Japan (see Figure 4).

Figure 4: Average Length of Stay (ALOS) in China and OECD Countries

Sources: Data for OECD countries are from OECD health care database 2009 (ALOS for acute care hospitals, 2007). Data for China are from China National Health Yearbook 2008 (2007 data).

These indicators vary substantially across provinces (see Annex Table 3). Average daily visits per physician is highest in Guangdong (12.1) and lowest in Shanxi (3.2); the bed occupancy rate is highest in Shanghai (99.5 percent) and lowest in Jilin (67.5 percent); and the average length stay for discharged inpatients is longest in Shanghai (15.5 days) and shortest in Hebei (9.0 days).

3. The Challenges that Public Hospitals Face

This section discusses two of the main issues facing public hospitals: financing sources, revenues, and expenditures; and market environment for public hospitals.

Financing sources, revenues, and expenditures

Financing for public hospitals

Financing sources for public hospitals institutions include government fiscal budgets, medical service charges to patients, and revenues from drug sales.^[19] Fiscal budgets include recurring line items and investment or capital budget allocations. Recurring line items are for personnel (salary subsidies for staff and retirees). Investment and capital budget allocations are subsidies for purchasing large-scale equipment, infrastructure construction, research projects, partial public health projects, and medical debts. Line item budgets are based on the number of personnel and beds (regardless of the number of activities or levels of occupancy),^[20] while capital budgets are subsidies based on regional or market-wide factors.

Government fiscal budgets provide about 10 percent of total revenue for all medical institutions, and slightly more for township health centers (as high as 18 percent in 2006). As shown in Table 9 this proportion has decreased slightly since 2000. For hospitals, the proportion of government subsidy is less than 8 percent, while drug sales are more than 40 percent of hospital revenues (see Table 10).

Table 9: Revenues of Medical Institutions, 2001-2006 (RMB 100,000s)

	2001	2002	2003	2004	2005	2006
City hospitals general revenue	128.8	149.6	172.5	205.7	241.1	264.6
Government subsidy	11.0	12.6	14.9	14.6	16.4	19.8
Proportion of government subsidy (%)	8.6	8.4	8.6	7.1	6.8	7.5
County hospitals general revenue	47.2	51.1	60.9	70.7	82.1	89.2
Government subsidy	3.4	3.5	4.5	4.7	5.5	6.2
Proportion of government subsidy (%)	7.2	6.8	7.2	6.7	6.7	6.9
Township health centers general revenue	36.7	39.5	44.2	47.8	54.8	63.0
Government subsidy	4.7	5.1	6.0	6.8	8.5	11.2
Proportion of government subsidy (%)	12.8	12.9	13.5	14.2	15.6	17.7
Community health service centers/ stations general revenue	7.0	8.3	9.0	10.7	12.4	15.4
Government subsidy	0.7	0.8	0.9	1.0	1.3	2.1
Proportion of government subsidy (%)	10.4	10.2	10.0	9.2	10.1	13.6

Source: Ministry of Health, China National Health Yearbook 2009.

Table 10: Hospital Revenues, 2008 (RMB 10,000)

	Average revenue per hospital	Average government subsidy	Revenue from outpatient pharmacy	Revenue from Inpatient pharmacy
Total	9,283.1	646.9 (7 %)	1,556.9 (17%)	2,367.7 (26%)
Central	116,818.2	8,132.2 (7%)	23,161.2 (20 %)	26,424.9 (23 %)
Provincial	47,022.5	2,782.7 (6 %)	7,936.9 (17 %)	12,475.5 (27 %)
Municipal	15,284.8	1,120 (7 %)	2,567.2 (17 %)	3,868.2 (25 %)
County–Municipal	5,510.3	364.2 (7 %)	987 (18 %)	1,347.5 (25 %)
County	3,530.4	286.9 (8 %)	491 (14 %)	950.6 (27 %)

Source: Ministry of Health, China National Health Yearbook 2009.

Notes: Numbers in parenthesis indicate the proportion of average revenue per hospital. Data are from the statistics of hospitals reporting to health administration agencies

Government subsidies have decreased as a share of total hospital revenues for more than 20 years, and now account for about 10 percent of total revenues, with revenues from medical services and drug prescriptions accounting for the remaining 90 percent. As shown in Table 11, the ratio of medical revenues to total revenues rose from 46.1 percent to 49.5 percent between 2003 and 2007, while the ratio of pharmaceutical income to total income dropped from about 43.7 percent to 41.7 percent. On the expense side, personnel accounted for less than 25 percent of total hospital expenditure in 2007.

Table 11: Revenues and Expenditures of Health-Sector-Owned Hospitals, 2003-2007

	2003	2005	2006	2007	Annual rate of change (%)
Hospitals (number)	4,779	4,884	4,790	4,757	-0.1
Revenues					
Average total revenue (000 RMB)	39,694	55,756	61,638	75,065	17.3
Ratio of government grants to total revenue (%)	7.8	7.2	7.3	7.3	-0.1
Ratio of medical income to total revenue (%)	46.1	48.2	49.4	49.5	0.9
Ratio of pharmaceutical income to total revenue (%)	43.7	42.8	41.5	41.7	-0.5
Expenditures					
Average total expenditure (000 yuan RMB)	38,426	53,457	61,244	73,272	17.5
Ratio of government grants to total expenditure (%)	8.0	7.50	7.36	7.52	-0.1
Ratio of medical cost to total expenditure (%)	55.4	56.5	56.4	57.2	0.5
Ratio of personnel cost to total expenditure (%)	n.d.	n.d.	n.d.	24.9	n.d.
Ratio of pharmaceutical cost to total expenditure (%)	39.0	39.2	37.8	40.0	0.3
Average balance (000 RMB)	1,268	2,300	394	1,793	9.1

Source: China Health Statistics Yearbook, 2004 – 2008.

Note: n.d. = no data

Four factors have influenced the changing pattern of public hospital financing—government budgetary contributions; compensation for medical services; compensation for emergency services; and compensation for designated programs, research, and education. As discussed below, the emphasis in each factor is on the services that hospitals now provide.

Decline in government budgetary contributions. Government contributions to hospital revenue decreased from more than 30 percent at the beginning of the 1980s ^[21] to less than 20 percent at the beginning of the 1990s, and to less than 8 percent by 2000.^[22] Even when SARS erupted in 2003, this contribution only increased to 8.4 percent,^[23] and in 2007, it was still less than 8 percent (Table 11, previous page).

Compensation for medical services. During the planned economy, the government fully funded wages for hospital personnel, purchasing and maintenance of major equipment, and related social benefits such as housing construction. Hospitals provided medical services at little or no charge.^[24] In 2000, the Ministry of Finance and the Ministry of Health stated that patients and government would share the cost of medical services.¹¹ Government budget support would fill the gap not covered by revenues from medical services and drug sales.^[25] Up to this point, public hospital survival depended on increasing medical revenues from patients, but hospitals were not allowed to set prices based on actual costs. The state set prices below cost to ensure the widest possible access to basic health services. On drug sales, for example, providers were allowed a profit margin not to exceed 15 percent. Pricing policies of this sort distorted the market, as providers shifted demand from less profitable low-tech care to more-profitable drugs and high-tech procedures. The overall cost of health care ultimately rose as a result.^[26]

Compensation for emergency services. Hospitals provide emergency medical services under two compensation models: direct government subsidy and purchase. An example of the former was the SARS eruption in 2003. Hospitals offset the losses incurred from treating patients with direct government support. The earthquake disaster and the 2008 melamine milk powder incident were examples of purchase. Public hospitals received 28,000 RMB for treating one person injured in the earthquake, and 60 RMB for screening one child for melamine poisoning. With direct subsidy, hospitals prepay for all items, and then receive partial or full compensation from the government (excluding indirect expenditures). With reimbursement, hospitals also prepay for all items, keep a record of the patients receiving

¹¹ “Opinion on Subsidy Policy for Health.”

treatment, and are then compensated for each patient based on a measure of real cost. Gaps between government subsidies and losses are balanced by hospital revenues.

Compensation for designated programs, research, and education. Funds for public hospitals that provide designated support for teaching medical institutions are financed by the central government, provincial and municipal governments, and by the hospitals themselves. Public funds for special programs, research, and education are mainly used to pay wages, allowances, and subsidies for clinicians who are sent to provide basic support. When public funds are not sufficient, hospitals often cross-subsidize using their revenues from medical services. Sometimes hospitals use these designated programs to raise additional funding to cover infrastructure construction.

Research funding comes mainly from public sources, though supplemented with inputs from charges to departments, local departments, and enterprises. Hospitals apply for project funds from the government and social organizations. Some government support is provided to large-scale public hospitals for equipment, infrastructure, and personnel training. Hospitals also raise some funds themselves, including one-off inputs, and research funds that provide as much as 1 to 5 percent of hospitals' total revenue.^[27]

Medical education funds come mainly from the government, commission departments, and donations from individuals. Training and medical education expenses include the costs of teachers, personnel subsidies for resident physicians' training and research, depreciation of fixed assets such as equipments and housing, consumable such as water and electricity, as well as miscellaneous items such as medical clothing. Hospitals draw some teaching funds from their total revenue.

Private capital markets

Great changes have occurred with decreased public funding, increased patient services charges, and drug prescription charges. Under continuous pressure, public hospitals have expanded in size, improved infrastructure, updated facilities, and intensified their market competitiveness through additional funding from the private capital market. Public hospital financing activities have focused on municipal-level hospitals, with smaller rural county-level hospitals having weaker credit and financing capabilities than hospitals in large cities.

Public hospital financing sources include central level grants and loans, bank loans, and project cooperation. Public hospitals can obtain allocations only through the recognition and support of government authorities. As the capital involved is usually a large amount,

such loans are used to construct medical facilities. Bank loans, including foreign government loans and domestic commercial loans, are mainly used for hospital development.

“Project cooperation”—the most controversial source of finance—is a result of the combination of medical market diversification and social capital initiated in the mid-1990s. There are two approaches. In the first, the capital contributor affiliates with the hospital, an operating body is set up based on the contracting or cooperation agreement, and a subhospital group is formed. In the second, facilities are acquired through leases, mortgages, and profit-sharing arrangements. As this cooperation weakens the hospital’s control, rules are often avoided or side-stepped. Nonstandard business practices, though they are forbidden, have become standard procedure.

In recent years, some local governments have obtained financing from capital markets. The objective of this practice is to change the ownership of public hospitals, and the motivation of the government and health administration authorities is to reduce their financial burden. The government’s reform idea determines the means of finance and the modes of system transformation, and hospitals themselves have no voice.

Two forms of financing can be used. First, the government can *partially* withdraw its capital from public hospitals. In Xinxiang of Henan Province, for example, the government sold 70 percent of its assets in public hospitals to a state-owned company (Huayuan Company), established a joint-share system, and now public hospitals are controlled and run by social capital. Second, the government can *completely* withdraw capital from hospitals. In Suqian of Jiangsu Province, the government transferred nearly all public hospitals to social capital through auctions, transfers by agreement, and employee share ownership.

Different sources of funds have different pros and cons. For example, financing from capital markets can generate more funds for constructing and developing public hospitals. On the other hand, this can result in new problems, such as induced demand, increased financing risks, irregular operations, and loss of state assets and revenue.^[28]

Revenue and expenditure

Public hospitals in China are non-profit yet not fully subsidized. The government has not invested much financially. The government management model includes autonomous management with full responsibility for profits and losses. Hospitals are responsible for their own debts and losses, including cost overruns for any reason. Within a limited range, public hospitals can implement salary performance systems. In general, medical care services have

losses, while net drug revenues are positive. Drug revenue is over 40 percent of gross income, far higher than the 15 to 25 percent common in most OECD countries.

Table 12 shows total revenues and expenditures of general hospitals. Total revenue for public hospitals doubled between 2003 and 2007. In 2007, there were 4,747 public hospitals, with total revenue of RMB 357.1 billion and total expenditure of RMB 348.6 billion. County and urban hospitals, which were 27 percent of the hospitals, accounted for about 66 percent of total revenue and a similar share of total expenditure.

Table 12: Total Revenues and Expenditures of General Hospitals, 2003-2007

Year	Number of hospitals			Total revenues			Total expenditures		
	Total hospitals (no.)	County level (%)	Superior level (%)	Total RMB billion	County level (%)	Superior level (%)	Total (RMB billion)	County level (%)	Superior level (%)
2003	4,779	75	25	189.7	35	65	183.6	35	65
2005	4,884	74	26	272.3	33	67	261.1	34	66
2006	4,790	72	28	295.2	32	68	293.3	31	69
2007	4,757	73	27	357.1	34	66.4	348.6	34	66

Sources : China Health Statistics Yearbook, 2004 - 2008.

Average annual *income* per hospital increased from RMB 40 million in 2003 to RMB 75 million 2007, an average growth of more than 17 percent per year. Average annual *expenditure* per hospital increased from RMB 38 million in 2003 to RMB 73 million in 2007, an average growth rate of nearly 18 percent. The consistent upward trend in income and expenditure reflects the corresponding increases in their volume of services.

What is important to understand is that revenues can be kept. Whether or not a hospital has been responsible or accountable to the public, it keeps revenues that it generates, regardless of downsizing, poor management, or poor financial management such that operating costs may have exceeded revenues. No cases of hospitals being held accountable for such behaviors were documented in the review undertaken during this research.

Market environment for public hospitals

The hospital market environment includes product markets and factor markets. Chinese public hospitals usually face competitive product markets, with the level of income directly related to the quantity and quality of medical services provided. Factor markets include human resources, equipment, funds, information, and supportive services. The market environment shapes the character of hospital services in several important ways.

Fee-for-service charges link revenues with volume

Four features shape China's highly competitive market environment. First, direct budget funds represent only a small proportion of hospitals' income. Second, hospitals attract patients (who are free to choose providers) by improving service quality. Third, hospitals earn income by fee-for-service and sale of pharmaceuticals. Fourth, income is directly related to service quantity and perceived quality by consumers.

Although prices are set by local price administration authorities, payment standards for medical service are not uniform. Fee-for-service incentives have resulted in overuse of some services, resulting in soaring medical costs. To alleviate the adverse effects, some areas are exploring reforms to change how medical goods are purchased and sold. The recent reform of charges in urban public hospitals (excluding county-level hospitals) pilot tests the idea of case-based payments adjusted for disease profiles (using DRGs or diagnosis-related groups) or global budget caps, or a combination of the two approaches.^[29] New programs or pilots have been initiated by medical insurance departments or health administration departments to contain public costs and limit patients' financial burdens.

Some pilots have been initiated voluntarily to reduce patients' pharmaceutical expenses and enhance hospitals' competitive edge. The idea is to attract poorer patients by reducing medical expenses and to gain recognition in the increasingly competitive medical market.

In 2004, the Ministry of Health piloted a reform of charges in Tianjin, Liaoning, Heilongjiang, Shandong, Henan, Shanxi, and Qinghai. With government promotion and voluntary activities by some hospitals, piloting of DRGs has progressed. Besides the pilot provinces, Guangxi, Guangdong, Jiangsu, Hebei, and Beijing have carried out related work programs.

In recent years, reimbursement reform for county-level hospitals has focused on payment methods. This reform was mainly initiated by local health bureaus and the management office of the New Rural Cooperative Medical Services (NRCMS). The objective

is to improve the quality of services, reduce costs, control rising expenses, and ensure that cooperative funds benefit farmers through provision of low-cost treatments. Since NRCMS began practicing in rural areas in 2003, many counties have reformed payment methods by piloting DRGs and per diem methods instead of using budget line items. Sometimes a spending cap for each DRG category has been developed instead of paying an average. These methods can help change provider behavior and thus reduce unnecessary services. Some promising results have been reported to date.^[30-32]

Outsourcing hospital support service systems

Hospital support service systems include maintenance and “logistic” or administrative services, pharmacy services, IT technology services, and medical technology examination and testing services. Current reform focuses on three issues: outsourcing hospital maintenance and administrative services; reform of hospital pharmacy management; and hospital information management. These are discussed below:

1. *Outsourcing hospital maintenance and administrative services.* The Ministry of Health issued “Guiding Opinions about Socialization Reform on Logistics Service of Medical Institutions” in 2003, and officially launched the privatization of maintenance services in domestic hospitals. Payment for outsourced services is transitioning from allocation to payment by contract, instead of payment driven by market competition.^[33] Service reforms in domestic hospitals are generally classified into three types:^[34-35]

- *Classified contracts through competitive bidding.* Hospitals divide maintenance services into several parts. They select professional through public bidding, ending hospital-operated maintenance. Public companies undertake hospital cleaning, and professional teams are hired for repairs, renovations, and heating and cooling.
- *Completely outsourced services* (all-round management of hospital logistics). Maintenance services are outsourced to public professional service companies. The hospital plays a supervisory role. Concrete services are provided by logistic companies. For example, Shenzhen Hospital affiliated with Peking University implemented all-round privatization of maintenance.^[36]
- *Setting up centers or groups.* Centers are established to maintain services related to water, electricity, gas supply, air-conditioning, carpentry, machine and elevator repair, and others. Trusteeship centers outsource ward cleaning, ward protection, and security and transport to public service companies.

2. *Reform of hospital pharmacy management.* In 2000, the State Council issued the “Notice of Interim Measures for the Separate Administration of Hospital Medicine in Terms of Income and Expenses” to separate the management and accounting of pharmacy revenues from general hospital revenues.^[37] Pharmacy trusteeship separated ownership from management. Ownership was retained by hospitals, but management was transferred to commercial medical enterprises. These enterprises then transfer a portion of sales revenue back to the hospitals every month. Hospitals with pharmacies placed in trust no longer bid for drug purchases, and trustees purchase drugs in a unified way, such as through coordinated bulk procurement.

Almost all the pharmacies in Nanjing’s 156 hospitals (Class 2 or below) have adopted pharmacy trusteeships since they first appeared in 2006. On average, drug prices in city hospitals dropped by 30 percent with pharmacy trusteeships.^[38] The separation of prescribing and dispensing medicines has been piloted in Qingdao and elsewhere (though without success as of this writing). The purpose of separation is to eliminate the economic benefit that comes with the power to both prescribe and sell. Yet separation does not in itself address the underlying problem—hospitals’ need for an alternative source of revenue.

3. *Hospital information management.* Hospital information systems have improved markedly. A study by the Chinese Hospital Information Management Association^[39] shows that by the end of 2005, 61 percent of 488 hospitals had:

- Information system departments with 3 to 10 full-time staff members, with an average of nearly 9;
- Price limits and charge systems for emergency and outpatient services;
- Pharmacy management systems for emergency and outpatient services;
- Management systems for patient admission, discharge and transfer;
- Charge management systems;
- Inpatient ward pharmacy management systems; and
- Warehouse management systems.

Hospital information systems are still primarily used for billing and expense management, rather than strengthening the quality of care.^[40-43] A long-term vision for the use of information is lacking. Interdisciplinary talent and professional teams need to be broadened and integrated.

4. Organizational Arrangements

The Preker-Harding Model

A number of organizational reforms took place in public hospitals in China during the past decade. This paper categorizes these reforms using the Preker and Harding model (2002) of hospital reform, which posits the following levels of autonomy:

- *Autonomization.* Decision-making is transferred to semi-autonomous or autonomous government-owned bodies, such as autonomous hospitals. Autonomous hospitals sometimes have supervisory boards that include stakeholder representatives or a community board.
- *Corporatization.* Decision-making is transferred to an autonomous government-owned enterprise or corporation. These typically have legal structures, financial structures, and regulations that simulate private sector hospitals but retain government ownership. Corporatized hospitals usually have a board of external directors appointed by the owner (that is, the government) or by an appointments commission in the case of state enterprises.
- *Privatization.* Ownership and decision-making is transferred to private legal entities or shareholders. In some cases, the private legal entity is a nonprofit trust or foundation.

These models are evaluated across five organizational functions of the hospital:

- *Decision rights.* To what extent have they been shifted out of the Ministry of Health or government hierarchy to the hospital's management and board? What is the level of managerial autonomy?
- *Market exposure.* To what extent does the organization receive revenues through "sales" of services to patients or institutional purchasers, rather than a subsidized budget allocation for inputs such as salaries, operating costs, and capital expenditures?
- *Residual claims.* To what extent can the hospital retain surpluses from reducing costs or increasing revenues? Can the hospital freely allocate its revenues for operations or

investment? Is there a “hard budget constraint” above which the hospital expects sanctions if the government is required to finance operating deficits?

- *Accountability.* To what extent are nonhierarchical means in place to hold the organization accountable for compliance with contracts and regulations? Is the organization accountable to its board, its owners, and the public?
- *Social functions.* Does the hospital subsidize care for the poor or uninsured? Does it comply with ethical codes of conduct and with public health priorities (whether explicitly contracted for or mandated)? Are these social functions fully funded, or do they represent implicit expectations and “unfunded mandates”?

Figure 5 provides a schematic that shows how the five organizational dimensions change as traditional public sector hospitals are reorganized from budgetary units of a ministry of health to autonomous public hospitals, corporatized public hospitals, or privatized hospitals.

Figure 5: Dimensions of Organizational Reform

The Preker-Harding analysis indicates that reforms to market exposure and residual claims are particularly important in providing hospitals with incentives for efficiency. Box 1 shows that reforms to accountability and social functions are particularly important for providing incentives for clinical quality, rational use of health resources, and equity.

Box 1: Organizational Dimensions and Incentives for Performance

Source: World Bank, Preker, et al., 2002 adapted by L. Hawkins, 2010.

The present paper adapts this framework and analyzes how organizational decision-making and governance has evolved in China's hospitals. The following sections discuss consider these two topics in greater depth.

Hospital decision rights

Decision rights authority refers to the ability to make decisions about hospital operation and development strategies, including employing personnel; managing salaries; disposing of assets such as land, buildings and large-scale equipment; purchasing materials such as drugs, medical consumables, and small-scale equipment; choosing the quantity and quality of medical services to be provided; and managing finance, medical affairs, and operational processes. Before 1978, public hospitals were fully financed by state budgets. In the past 20 years, government support to public hospitals has decreased, and hospitals have obtained revenue from autonomous operation and by taking responsibility for profit and cost, and their autonomy has increased as a result. There are now no public hospitals with full state budgets, and most have considerable autonomy, even facilities that work with large state enterprises. The types and levels of autonomy vary, as described below:

- Less autonomy in personnel employment;
- Increasing autonomy in setting salaries for employees;
- Little autonomy over land, buildings, and major equipment;
- Licenses define autonomy in diagnosis and treatment services; and
- Full autonomy in the purchase of drugs, medical consumables, and equipment.

Less autonomy in personnel employment

Public hospital assets are owned by the state or the collective, and public hospitals have limited autonomy in personnel employment. Staffing is fixed and staff members have the status of those working in state public institutions, drawing salaries in accordance with public institution standards. Given the requirements on numbers of personnel, employment could be managed through examinations and the approvals of concerned departments and the personnel bureau. However, defects in civil service rules make it difficult to fire personnel. Hospitals that pilot new employment policies should take responsibility for eliminated personnel by providing social support when they leave their posts, assisting with starting their own businesses, developing internal pension systems, providing early retirement, and having liberal leave for learning and training activities.^[9]

Appointing public hospital administrators (“leaders group”) is usually left to higher health administration or cadre authorities, under the model of collective governance under the director’s responsibility. Rarely is there an open, competitive process based on merit. Besides the appointment and supervision of a hospital’s leaders group, there is little external oversight of the operation and management of public hospitals. Instead, cadre authorities manage hospitals by regulations, rules, and policies. As a result, hospitals are in charge of their own day-to-day performance.

Reform in selecting managerial staff mainly focuses on competitive employment of middle-level staff and less on hospital-level leaders, though there are some exceptions. For example, the Third People's Hospital of Wujin of Changzhou adopted the medical reform model of “state-owned, private-run, and entrusting management.” The hospital superintendent is nominated by the management company and employed by the supervising committee or board established by the health administrative department. The management company and the hospital then elect the superintendent, who in turn employs the vice superintendent and assistants at his or her discretion.^[10]

Public hospitals do determine department settings, section staffing, and personnel composition; and they have more autonomy in middle level and ordinary staff employment. They may have competitive employment for internal staff and middle-level cadres, and two-way selection and competitive employment for department staff.^[11] These reform are mostly initiated by the hospitals themselves, but to ensure smooth progress they usually seek support and guidance from local government departments. The Central Hospital of Tai'an in Shandong Province used open competition to employ middle-level cadres in 2003^[12];

Xuzhou Hospital had 164 posts available for open competition, and 266 staff members participated^[13]; and People's Hospital of A'cheng in Heilongjiang Province selected candidates for middle-level posts by combining self-recommendation and mass recommendation.^[14]

Increasing autonomy in setting salaries for employees

The salary system of public hospitals has gone through several stages. In the command economy, salaries for public hospital employees were determined by the united standard regulated by the government. After the reform and opening-up, the salary system changed from the Grade Salary according to position in the command economy to the Structure Salary composed of basic wage, position wage, seniority wage, and incentive pay. In 1979, "The Opinion on the Pilot Work of Strengthening Economic Management of Hospitals" (Ministry of Health, Ministry of Finance, and General Bureau of Labor) stated "follow the socialist distribution principle of distribution according to one's performance and more gain for more pay, and bonus should be given to those who over fulfill their work."^[15] Subsequently, many hospitals introduced bonuses as an important part of salaries.

With changes in hospital economic policy, autonomy in salaries has been extended. Based on public institution salary policies, further reforms in hospital salary systems are possible. In principle, these could establish salaries according to position; provide bonuses in addition to basic salaries; or link bonuses to performance for technical staff and managers.

Reforms are still inadequate in terms of personnel autonomy, performance assessment, and salary arrangement. Most hospitals still use performance assessment systems for administrative units and public institutions that focus on subjective evaluation, do not reflect staff performance, and provide little incentive for improvement.^[16]

Little autonomy over land, buildings, and major equipment

State-owned public hospitals have no right to dispose land. Buildings and large-scale equipment are state-owned assets, which must be disposed through higher-level health administrative departments or the Government Offices Administration of the State Council. According to "Methods of Disposition and Management of State-owned Assets of National Administrative Departments of the Central Government," state-owned assets can be disposed by examination and approval. Assets valued below 200,000 RMB must be

examined and approved by the concerned department and reported to the Government Offices Administration of the State Council before disposition. Assets valued over 200,000 RMB must be disposed through application and reporting to the Government Offices Administration of the State Council for examination and approval. State-owned land, buildings, and cars must be reported to the Government Offices Administration of the State Council for examination and approval before disposition. Health administrative departments devise regional health plans that allocate major items of medical equipment through bulk procurement.^[17] If a hospital needs to purchase a major item or a large volume of medical equipment, it reports to the provincial health administrative department. The procurement is examined and approved according to the “Management Method of Utilization and Allocation of Large-scale Medical Equipment.” A “Practice License of Medical Facilities” must be obtained before purchasing.^[18]

Licenses define autonomy in diagnosis and treatment services

All public hospital medical services must be provided in accordance with their license to practice. The “Practice License of Medical Facilities,” issued by the Ministry of Health, clearly defines the diagnosis and treatment services that hospitals can provide. A hospital that wants to provide additional services must be examined and approved by the health administrative departments. Although the volume of service provided by a hospital is not restricted by health administrative departments, the quality of its services must be assured.

Full autonomy in the purchase of drugs, medical consumables, and equipment

Public hospitals can purchase drugs, medical consumables, and small-scale medical equipment with full autonomy. The government does not directly intervene in internal finances and operations. However, it monitors and audits the financial status of public hospitals to maintain or increase the values of state-owned assets, and it supervises medical behavior and service quality to ensure that medical services are provided at a reasonable cost.

Hospital governance

With the increase in hospital autonomy, the government has moved beyond direct hands-on administration of hospitals. Hospital responsibility has been strengthened through hospital management committees, contracts, regulations, and supervision. Patients, payers, hospital owners, and regulation-makers have differing needs and expectations for hospitals, and play separate roles in governance. Primary reform methods include: appointing hospital

administrators and managers; establishing hospital management centers; founding hospital management committees; implementing new governance models that separate management from operation; constituting hospital groups; and integrating various hospital functions.

The remainder of this section is divided into three topics: regulation by appointing administrators and managers (“leaders group”), models of public hospital governance reform; and group reform and integration of functions.

Regulation by appointing administrators and managers (“leaders group”)

The government regulates hospitals by appointing leaders groups (the senior management team) and measuring their performance. Health administration or cadre authorities usually appoint public hospitals’ leaders groups based on a collective governance model with director-level responsibility. In the leaders group, there is no community involvement. Patients and medical insurance bureaus exercise limited supervision. Beyond appointing and supervising the hospital leaders groups, health administration departments retain little control over the operation and management of public hospitals. For the most part, the hospitals are in charge of their own performance.

Models of public hospital governance reform

Public hospital management reform has been pushed forward mainly by local government leaders. Some have been inspired by the results of market-oriented reforms in other parts of the economy. They believe that a competitive environment and management reform can help reduce hospital staff, improve efficiency and service quality, and improve attitudes. Some leaders argue that public hospitals could attract social capital fund investments in the health sector through system-wide reform, which would reduce the financial burden that hospital impose on local governments.^[44] Some hospitals have embraced this change; others have reacted passively. Localities such as Suqian (Jiangsu Province) have reformed property systems in public hospitals and township hospitals. Although some local health authorities have attempted public hospital reform, there have been no significant breakthroughs.

Several models for public hospital governance reform are briefly described below:

- Establishing management centers and separating management and operation;
- Hospital management council in Suzhou;
- Designated management in Weifang;

- Shareholding in Shanghai Renji Medical Management Company; and
- Board of Directors in Dongyang Municipal Hospital.

Establishing management centers and separating management and operations. In 2005, Shanghai Shengkang Hospital Development Center was established as a nonprofit entity responsible for state-owned investment, management, and operation of municipal public medical institutions. It invests in and establishes municipal public medical institutions, and it manages their state-owned assets under the management and guidance of the municipal health bureau (Figure 6).

Figure 6: Reform Model of Public Hospital Management in Shanghai

In 2005, reform was initiated to separate management from operations and establish a hospital management center to operate hospitals in Wuxi, which further separated the ownership and management of hospitals.^[45-48] The reform model is illustrated in Figure 7.

Figure 7: Reform Model of Public Hospital Organization System in Wuxi

Because the hospital management center is responsible for operations, the health bureau's administrative responsibility shifts to management. The hospital management center is on the same administrative level as the health bureau. It operates and manages the assets and business of state-owned hospitals on behalf of the government, under the administration of the health administrative department. The hospital management center employs the superintendents, and is in charge of medical services and operations. Hospital operation and management, including financial and personnel matters, is delegated to hospitals, with annual performance evaluations of trustee hospitals. The hospital management center attempts to find superior candidates for superintendents by targeting disciplines, public announcement of employment opportunities, and public recommendation and competition for posts.

This reform promoted the role of health bureaus in sector-wide supervision and the role of hospital management centers in hospital operations. Hospital autonomy increased, and the supervision of public hospitals was reinforced. Private hospitals also viewed this as encouraging development. In the short run, the quality and efficiency of hospital services were improved, medical costs were controlled, and patients' interests were better protected.

Hospital management council in Suzhou.^[49] In 2004, the Health Bureau of Suzhou issued "Rules for Implementing the Reform of Separation of Management and Operation of

Municipal Hospitals,” establishing a council of the hospital management center to manage hospitals under government supervision. The government withdrew from managing public hospitals to avoid interfering with the administration of public hospitals and to “separate the functions of government from those of institutions.” The relationship between the health bureau and public hospitals changed from administration to contract. The health bureau included hospitals’ social responsibilities in the contract, thus retaining the supervisory functions of health administrative departments. Council members receive annual salaries that are divided into post salary and council salary. The council chooses its employees and establishes contract practices for all staff members and personnel. The council makes its own decisions with respect to its internal organization (Figure 8).

Figure 8: Management System Reform in Suzhou City, Jiangsu Province

Designated Management in Weifang.^[50] In 2005, the Weifang Health Bureau established a hospital management center affiliated with the health administrative department to manage public medical institutions. The Bureau was established to solve the problems resulting from the ambiguous rights and obligations of the administrative department. Public finance, organization, personnel, and medical insurance were designated as responsibilities of the health administration bureau, which is in charge of coordinating these bureaus while supervising and supporting public hospitals (Figure 9).

Figure 9: Designated Management Model in Weifang

Shareholding in Shanghai Renji Medical Management Company.^[45] Shanghai Renji Medical Management Company was established in 2003 as a shared services management company. As its core, Renji Hospital provides other hospitals with technical service, standards, and management. Currently, it works with nine hospitals, which have no ownership relations with each other. The management company assigns or appoints superintendents and institutes standard management practices. Superintendents are responsible for routine business, and the management company is in charge of nonroutine business such as advertisement and publicity. The management company can employ or dismiss

superintendents based on their performance. Human resources can be shared among the hospitals, which has created an internal market for professional managers.

The hospital management committee consists of government representatives and the management company staff. Along with the system of operation and management, the committee serves as a board of directors for the company. It makes policy decisions, carries out supervisory functions, and establishes a governance structure comprising owners, operators, and laborers. The reform does not change the property rights of hospitals or staff, only its internal management. As a result, there have been fewer problems.

Board of Directors in Dongyang Municipal Hospital. In 1993, Taiwan businessmen invested \$US10 million to renovate the emergency center of Dongyang People's Hospital and rebuilt Weishan Hospital in Zhejiang province. The hospitals established a board of directors; separated the functions of government from those of the institutions; separated operations from ownership; established legal governance structures for the Board of Directors as well as the Board of Supervisors and Superintendents; and implemented a system of superintendent responsibility under the leadership of the board. The hospitals remained nonprofit, state-owned medical institutions with assets belonging to the state.

Boards of Directors are the supreme executive bodies of hospitals. They are responsible to the municipal government, defining development strategies and rules for hospitals, making policy decisions for major events, defining overall work objectives and examination standards, and choosing candidates for superintendents. Boards of Supervisors consist of representatives assigned by the government and hospital staff representatives. Their major functions and rights are reviewing accounts and conducting supervision visits. Superintendents are nominated and employed by the Boards of Directors; vice superintendents and major accountants are nominated and employed by the superintendents upon discussion and approval of the Boards of Directors. Mid-level administrative and technical management staff members are employed by superintendents directly.

Group reform and integration of functions

The institutions currently providing medical health services in China are hospitals affiliated with health departments, hospitals administered by other departments, centers for disease control, women and child care hospitals, and service institutions for family planning. These institutions provide specific medical and health care services of various types. Although these institutions compete with each other to provide some services for pay, it

might make more sense to integrate and coordinate some services in order to realize economies of scale. Below are three models of group reform and integration of medical functions: hospital group reform; reform of hospitals affiliated with non-health departments; and cooperation between medical and family planning services institutions.

1. ***Hospital group reform.*** Integrating medical resources and building hospital groups is one way to bridge the gap between the population's growing need for medical services and the hospitals' limited capacities to meet those needs. Hospital groups combine advantages of technology, talent, management, services, and sound social foundation with investment and management institutions' skills and capacity for assets reorganization, mergers, contractual arrangements, and joint ventures, which results in medical technology penetration, popularization of management concepts, and system reform. They can also form consolidated medical institutions with high-level technology, scientific management, complete functions and services, and economics of scale.

Although public hospitals are affiliated with governments at various levels (military forces, higher education institutions, enterprises, and so forth), hospital group development is mostly led by the government.^[51] Spurred by market competition, medical institutions have been active in developing hospital groups—more than 120 in recent years.^[52] These groups are categorized in four types: cooperative hospital groups; hospital chain operation; merged hospital group; and hospital group with reorganized assets.^[53-54]

- *Cooperative hospital groups.* This approach makes use of regional or technological advantage. Members retain their existing ownership, financial accounting methods, ownership of assets, staff management, civil liabilities, and operational policies. Most medical groups have adopted this mode. Members typically establish a cooperative operation through an agreement or contract. They set up a management committee to conduct operations under the leadership of government institutions; and they make strategic decisions through consultation as equal partners. Examples include the Nanjing Drum-tower Hospital Group, established by the Drum-tower Hospital; the Children's Hospital; and the Dental Hospital under the leadership of the Nanjing Health Bureau.
- *Hospital chain operation.* This type has a core hospital as its parent body, with members linked through specialization. Members operate as a chain, providing medical services and conducting hospital management and operations in a unified way. By expanding its medical market, the group develops a structure similar to that of a parent company

with many subsidiaries. The group is composed mostly of specialized medical institutions, or comprehensive institutions specializing in a shared area such as dentistry, ophthalmology, laser therapy, or plastic surgery. A hospital chain operation is usually small in scale, flexible, and may include members spread across provinces or cities. Examples include the privately owned Phoenix Healthcare Group, the Shanghai Huashan Neurosurgery Group Hospital, and the Liaoning Shenyang Bo'ai Dental Industry Group.^[55]

- *Merged hospital group.* This type uses capital and the right of long-term operation and management to link members. It is led by a core hospital that purchases, merges, and combines with other hospitals. Core hospital staff members participate in managing the combined hospitals. They guide work in areas such construction, recruitment, and acquisition of medical technologies. Ownership, property rights, classes, and personnel remain unchanged, and the merged hospitals are under the jurisdiction of the core hospital. The previous system is cancelled, property rights are transferred, and working staff are allied with the core hospital. Examples of this approach include Shanghai Ruijin Hospital Group, Shenyang Dongfang Medical Group, and Daqing Oilfield General Hospital Group.^[56]
- *Hospital group with reorganized assets.* This type uses assets to link members, with one core hospital merging or reorganizing many medical institutions on the basis of loose cooperation. The core hospital, in combination with other specialized hospitals or hospitals of other classes, forms a medical agglomerate with a shared name, legal representation, and clear property rights. The advantages include optimizing resource use, group purchasing, and unified distribution. Hospitals adopt unified management to reduce operational costs and share medical resources. Examples include the Haici Medical Group, which implemented systems for superintendent responsibility, cadre employment, labor contracts, and unified distribution of assets to ensure unity and coordination between overall group operations and the independent operation of secondary units.

Hospital groups such as these play key roles in hospitals development. They help to attain economies of scale and synergy effects, and they can be viewed as a viable direction for future development.^[57-59] Like any new model, hospital groups will inevitably encounter problems.^[60-63] Among others, these could include imperfect policies, rules and regulations; weak market forces in the medical industry; administrative interference; diseconomies of

scale; unclear property rights; distorted hospital appraisals; lack of incentives for capital; difficulty in changing staff members' identity; and cultural differences among hospitals.

Market orientation can serve as an organizing mechanism in forming groups. The government can play an active role, changing its function from operator to policy formulation and system arrangement, thus promoting the development of groups. The government can also oversee the allocation of medical resources and advance the development of health causes.

2. *Reform of hospitals affiliated with non-health departments.* Hospitals affiliated with non-health departments are mainly medical institutions run by large enterprises such as railroads or major industries. In 2000, the State Council issued “Guiding Opinions on Reform of Urban Pharmaceutical and Health System,” which stipulates that urban enterprise medical institutions shall be gradually transferred to local government for overall management and be integrated to the urban medical service system. State-owned enterprises have been relieved of operating schools and hospitals.

There are two ways in which a hospital and non-health enterprise can be separated.^[64] First, the hospital can be completely separated from the enterprise. It then becomes a medical health service entity with independent accounting, responsibility for profits and losses, and the status of a legal person as a public institution. Second, the separation can be accomplished through restructuring—for example, separated enterprise hospitals could merge with local hospitals.^[65]

In recent years, there has been remarkable progress in delegating railway hospitals to local governments. In 2003, the Ministry of Railways “separated the public departments which bear no direct relation with core businesses gradually, separated such social and public units as hospitals from the railway system and delegated them to local governments for uniform management.” According to the 2004 Statistical Communique of MOR, in 2003 the railway administration delegated 13 hospitals with 4,000 staff to local governments.^[65]

By merging enterprise hospitals with local hospitals and delegating them to local management, enterprises free themselves of long-term burdens by using short-term funds. Leading hospitals use capital funds and the geographical location of other units to expand their markets through mergers, thus realizing the potential for further development. During this reform, local government support and promotion plays an important role, and many enterprise hospitals have developed after reorganization and integration.^[65-66]

Many problems still exist. Regional planning in some areas failed to include enterprise hospitals in overall planning, and no specific policies and rules regulate the delegation, separation, and overall management of enterprise hospitals. In some provinces and cities, the results of spinning off enterprise hospitals are not satisfactory.^[67]

3. ***Cooperation between medical and family planning services institutions.*** Cooperation between family planning service institutions and medical service institutions has been reformed in some regions. In 2003, Tongshan County in Jiangsu Province integrated resources and established new services to meet the growing need for family planning and health care in rural areas.^[68] The integration of health and family planning satisfied people's need for quality services and expanded the scope of health care.^[69] However, the reform also affected departmental interests in a political sense. Administrative departments for family planning and health continue to function independently in many areas, pursuing their own policies, and hindering the operation of "joint medical services of family planning and health."^[70] The horizontal integration of functions, as it involves different departments and industries, requires advocacy and coordination among local governments.

5. An International Perspective

Many upper-income countries, transition economies, and developing countries have implemented organizational and management reforms of public hospitals during the last 25 years. These include the United Kingdom, Germany, Singapore, Hong Kong, New Zealand, some Australian state governments, and some local governments in the United States. Among middle income and transition economies, Taiwan-China, Indonesia, Brazil, Colombia, Costa Rica, Tunisia, Czech Republic, Hungary, Poland, and many former Soviet countries have undertaken reform. Many countries and local governments have undertaken pilot reforms in selected hospitals (often major tertiary teaching hospitals)—for example, in Malaysia, the Philippines, and Thailand.

Public hospital reform has been advocated in every region of the world because of common problems—inefficiency, waste, user dissatisfaction, brain drain of personnel to the private sector or emigration, failure to reach the poor, fraud, and corruption. Fairly or not, these problems are often attributed to their nature as *public* hospitals, which are typically characterized as lacking incentives for good performance, penalties for poor performance, and managerial freedom for hospitals wishing to change.

The primary way of influencing hospital performance in a “traditional” public sector hierarchy is through *direction*. However, civil servants’ compliance with policy directions may be only weakly enforced. Public sector facilities are often expected to respond to conflicting policy directives that make social sense or political sense but are actually at odds with each other—for example, to control budgets, respond to patients’ medical needs, achieve clinical excellence, expand access to the poor, and provide public sector employment opportunities all at the same time. Middle and low-income countries typically commit to providing a much wider range of quality services than is realistic relative to actual budgets. There may be little or no policy guidance on how civil servants should set priorities when faced with unachievable directives. In the long run, these conditions weaken accountability.

Health services have distinctive features that make vertical hierarchical models of control and accountability more difficult to implement than in other sectors. First, hospitals produce a complex mix of outputs. Second, expenditure on diagnosis and treatment is

uncertain, as demand for services, changes in medical practice, and costs of care are hard to forecast. Third, hospitals do not function as hierarchies. Decision making is dispersed across “four worlds” (Glouberman and Mintzberg 2001): first, the “world of cure,” in which doctors with multiple specialties, each with its own hierarchy, treat patients; second, the “world of care,” in which nurses manage work flows around patient care; third, the administrative hierarchy that manages budgets and logistics; and fourth, the “world of governance,” the relationship of the organization to governing or supervision structures above the hospital.

For an autonomous public hospital or a nonprofit private hospital, this governing structure may be a board with links to the community. For traditional public hospitals, the relationship of hospital managers to the civil service hierarchy and the government plays this role. The flow of information within the hospital or clinic—up through the public sector hierarchy and back to the hospital—is often incomplete and fails to capture the complexity of health service delivery, making performance measurement problematic. Public sector mechanisms for accountability and control often fail by being too rigid to respond to the complexity and uncertainty of health care delivery, and too weak to demand accountability for outputs and results. These accountability mechanisms scarcely touch the worlds of cure and care, and operate with frameworks that are not reconciled with those of practicing doctors and nurses.

The remainder of this section discusses the following topics:

- Key drivers of hospital performance;
- Framework for analyzing organizational reforms;
- Objectives of organizational reform;
- Approaches to reform;
- Impact of hospital reform; and
- Lessons from international experience.

Key drivers of hospital performance

Five key drivers shape the ability of public hospital and other health care providers to deliver on their objectives:

- Incentives facing the organization, its managers and staff;
- The authority or autonomy given to its managers;
- The capacity of managers and staff to respond;

- The intrinsic motivation or professionalism of staff; and
- Accountability mechanisms (adapted from Roberts, Hsiao, Berman and Reich 2004).

Public providers in other countries often face attenuated or distorted incentives for performance (Gauthier and Reinikka 2007) similar to those in China. Incentives are created by the methods that health care providers have to obtain resources. Public healthcare providers are typically organized as monopolies, serving a defined locality, with patients having no choice. Budget allocations to health facilities operating under traditional public sector management are not affected by the number of patients treated or by the quality or efficiency of services. Providers do not face market pressure. Staffing and budget controls often restrict managers' freedom to reallocate resources to achieve efficiency. Unspent funds are retained by the government, while overspending is prevented or severely penalized. User fee revenues often must be returned to the government. As a result, public providers may benefit by treating fewer patients or reducing service quality, thus saving staff effort and facilitating budget control. Better services for citizens may be less likely to attract budget resources than patronage-based strategies. Highlighting the poor quality of public health care can be used to dramatize the need for more resources—but also undermine staff morale and public perception of services.

Health facility managers must respond to the directions that they receive and the incentives of the larger system; yet many of them have little or no authority to control inputs, organization, range of outputs, or management processes. Personnel decisions, reallocation of budget resources, capital investments, and large procurements are often outside management control, and may require centralized approval by oversight agencies. In many developing countries, managers are medical staff without management training and little professional motivation to be good managers. Appointment and promotion in management is often based on seniority rather than aptitude, skills, training, or performance.

Many countries have reformed poorly performing public sector services by privatization, but most have been reluctant to privatize hospitals for a wide range of reasons. First, privatizing hospitals generates criticism that the government is reneging on obligations to provide health care, and thus might not be politically or even constitutionally feasible. Second, some attempts at privatization in low and lower-middle-income countries have been unsuccessful—often because uncertainty about future revenues or contracts for hospital services makes these assets unattractive to private investors. Additionally, because it is difficult to contract hospitals to achieve a complex mix of equity, clinical quality, consumer-

perceived quality, and efficiency objectives, many governments are concerned that for-profit private hospitals will neglect some of these objectives. A few countries (such as Estonia) have successfully transformed public hospitals into private nonprofit organizations. Third, in many countries, the hospital sector is a large employer, and powerful public sector unions have been unwilling to accept the risk of reductions in medical manpower or the risk of reduced job security and pension rights following privatization.

Public hospital organizational reform

The alternative adopted by many countries is hospital organizational reform within the public sector. This reform is often referred to as autonomization or corporatization (as discussed in section 2). It is characterized by three themes. First, ownership of service delivery is kept in the public sector. Second, hospitals are moved out of the core public service and transformed into more independent entities with greater control of management decisions. Third, hospitals are made responsible for the services they produce, often through contracts for service delivery.

Organizational reforms often strive to give hospitals clearer, less conflicting objectives. This type of reform is frequently associated with provider payment reform, often a form of case-based payment. This exposes the hospital to competition or patient choice based on the expectation that market pressure will reward good performance while increasing the cost of poor performance, thereby contributing to greater efficiency and quality.

Some countries have reformed public hospitals by changing their relationships and interactions with the private sector. Reforms in this category include:

- Contracting the private sector to build and operate hospitals as part of the public sector network, transferring ownership to the public sector at the end of the contract;
- Contracting private sector organizations, often nonprofit private hospitals or NGOs, to manage public hospital facilities and public hospital staff and services;
- Contracting out selected hospital functions—often nonclinical support services such as cleaning, laundry, security, IT, and diagnostic services;
- Contracting in private sector personnel or teams for some hospital management or technical functions;
- Joint ventures between public hospitals and private health care providers;
- Developing private wards, rooms, or clinics for private patients in the public hospital; and

- Leasing space on the hospital campus to private providers of complementary services.

Hospital organizational reform is often undertaken as part of a wider package of complementary health system reforms. These often include:

- Technological reform. Technological capacity is enhanced by restoring, maintaining, or renewing broken or redundant equipment. This requires resources for ongoing training of operational staff and future preventive measures.
- Health financing and payment reform. Productivity, efficiency, and responsiveness are improved by introducing systems such as diagnosis-related groups (DRGs), global budgets, and other patient-weighted activity payments.
- Managerial reforms. These touch on the number, capabilities, and competencies of managerial staff. The reforms are supported by enhanced information and performance management processes.
- Personnel reforms. Private sector recruitment and compensation techniques have been introduced in many countries with limited success, perhaps because most health systems employees enjoy the full rights of lifetime civil servant employment. This reform is limited by national mandated staffing structures, staff numbers, and remuneration, which can impede further movement to semi-autonomous status.

Framework for analyzing organizational reforms

There are robust, well-documented frameworks for analyzing the design and implementation of hospital organizational reform. Section 2 referred to Preker and Harding's (2003) book, *Innovations in Health Care Service Delivery*, which offers a framework for analyzing hospital organizational reform. The Preker-Harding framework includes the key factors in hospital behavior that were introduced above. It uses the economics of organizations to generate hypotheses about how *autonomy* (degree of delegation of decision rights to hospitals), *incentives* facing hospitals, and the *accountability* mechanisms of hospitals might affect hospital performance. Actual country results compared to those predicted by the framework are affected by variations in the *capacity* of hospitals to respond to incentives and variation in the capacity of governments to implement reform policies. Within this framework, availability of information to decision makers is critical to improved performance. The authors also acknowledge the relevance of *intrinsic motivation* as a factor in

hospital performance, though no studies have been found of how this affects hospital organizational reform.

As illustrated in Figure 10, the Preker-Harding framework decomposes the overall incentive regime a hospital faces into pressures originating from the *external environment* and pressures originating from the hospital's *organizational structure*. The instruments that allow hospitals to respond to the pressures of the incentive regime are *managerial instruments*.

Figure 10: Determinants of Hospital Behavior

The pressures originating from the external environment come from the relationship of the hospital to other actors in the health system, and come from four main sources: government oversight, organized purchasing, market pressures (from patient/consumer-driven purchasing) and ownership/governance from the owners of the hospital, who are also responsible for appointing the hospital's board and/or director.

- *Government oversight.* Government oversight in health is threefold: (i) it formulates health policy by defining vision and direction; (ii) it regulates actors in the health system; and (iii) it collects and uses intelligence by monitoring the performance of the health system and the health service needs of the population. When hospitals are given autonomy, government oversight should change from day-to-day direction and control

to a focus on performance, with direction given through more arms-length methods such as regulation and contracting.

- *Organized purchasing.* Hospital relationships with collective purchasers such as social health insurance funds, public healthcare purchasers (in tax-financed systems), and private health insurers or health plans, determine the financial incentives embedded in payment mechanisms and the competitive pressures on hospitals from organized collective purchasers.
- *Market pressures.* Hospital relationships with patients/consumers (market driven purchasing) determine the extent of competitive pressures that hospitals are subject to from unorganized individual consumers exercised through choice and user fees.
- *Ownership (governance).* Hospital relationships with owners influence the powerful incentives of residual controls and residual returns. The health system function related to ownership is called governance. The owner is usually responsible for financing major capital investment and for appointing the board of the hospital, or if there is no board, the owner typically appoints the hospital director. For autonomous public hospitals, the Ministry of Health often carries out the responsibilities of the owner, in conjunction with the Ministry of Finance and Cabinet.

Objectives of organizational reform

Among upper-income countries, those with predominantly public hospital provision and tax finance were the first to undertake management and organizational reforms in the 1980s and 1990s. The main drivers of reform were economic and fiscal. Following a period of relatively poor economic performance, some OECD governments sought to contain public sector costs while improving efficiency and responsiveness to customers. Governments turned to health following broader public sector reforms, including a wave of privatization and marketization of many public sector industries. In this sector, most countries proceeded with caution, as they did not want to jeopardize universal coverage and access to health care (which was free of charge or had minimal user copayments). They were also wary of the risk of weaker cost containment in some health systems with greater private provision, notably the United States. Additionally, public opinion and health sector staff opinion in these countries strongly favored continued public provision. While efficiency and consumer responsiveness were reform goals, the overriding issue was cost containment. It was hoped

that hospital efficiencies from reform would mitigate cost pressures from demographic change and from the rapid uptake of new medical technologies and drugs.

In the decade of the 2000s, a new wave of health reform and hospital organizational reform occurred in some upper-income countries. Sustained economic growth permitted higher real growth in public spending on health. The priority goal in this phase was improvement in service quality, including both clinical quality and healthcare outcomes, as well as consumer-focused aspects of quality such as the “hotel” and “customer service” standards of hospitals, waiting times, physical conditions of the hospital, and patient choice.

Among middle income and transition countries, the major goal of hospital organizational reform has often been to permit public hospitals to increase revenues from patient charges, private patient services, and health insurance reimbursements. Many countries hoped this would reduce hospital reliance on government budgets, with private revenue replacing and supplementing public revenue. These countries also aimed to increase staff incomes in public hospitals from increased nongovernment revenue, to reduce the brain drain to private practice and outward migration of health professionals. As with upper-income countries, many transition and middle income countries aimed to increase the quality of services, often with a focus on modernizing infrastructure and medical equipment, by allowing public hospitals to enter into joint ventures and leasing arrangements with the private sector.

Approaches to reform

Countries have adopted a range of approaches to hospital organizational reform:

- *Planned “whole systems” approach.* This approach addresses the multiple dimensions of hospital policy alongside primary healthcare reform, health financing, and provider payment reform. The whole systems approach has been adopted in the United Kingdom, Estonia, and Colombia.
- *Phased reform implementation.* Countries often implement phased reform in the context of a broader health systems strategy. This is generally viewed as a “second best” solution where the Ministry of Health cannot secure wide political support and strong stakeholder backing for its holistic strategy. Progress at least can be made while momentum builds toward the reform goals. One example is Turkey’s phased reform of primary health care, social health insurance, and incremental introduction of hospital autonomy. In the same vein, countries also opt for pilot reforms that test

- and refine reform models before scaling them up. This approach is frequently adopted in countries with large, decentralized health systems.
- *Ad hoc problem-solving.* This is incremental reform without a fully developed health systems strategy—for example, Uzbekistan’s introduction of “self-financing” status for some national tertiary hospitals, and raising user fees and limited financial autonomy for regional and city hospitals. Here the policy was not fully implemented because of equity concerns in the absence of comprehensive protection from catastrophic medical costs. There has also been no systematic development of new financial management and supervision policies for self-financing hospitals, so it is particularly difficult to track resources and performance.
 - *Reform focusing on improving priority public health outcomes.* Examples include the UK’s national service frameworks for coronary heart disease and cancer. The Philippines has proposed and Macedonia has implemented strategies to reduce maternal mortality rates and perinatal mortality by reform across all levels of health care.
 - *Constituency building for reform.* Strategies to build constituencies for reform can be a way to address problems in the face of entrenched obstacles to improvement—for example, introducing patient choice in the UK National Health Service (NHS) for those facing long waits for surgery, as well as introducing some market pressures on the NHS. Trusts appears to have created pressure for NHS hospital managers to improve their performance and reduce waiting times.

Impact of hospital reform

High quality evaluation evidence of the impact of hospital organizational reforms is rather sparse. Most reviews are case studies or comparisons of performance before and after reform. However, some cross-country syntheses of case studies have been carried out, and attempts have been made to find correlations between key characteristics of reform design and implementation and the results of reform using the frameworks discussed above.

The Harvard School of Public Health published a series of case studies of hospital autonomization in developing countries and developed guidelines based on analysis of these cases (Chawla et al., Harvard School of Public Health, 1996). Preker and Harding’s *Innovations in Health Care Service Delivery* (2003) examines autonomization and corporatization in upper and middle income as well as transition countries. Case studies are used for an evaluation based on a synthesis of evidence.

Evidence on hospital reform is available for many upper and middle income countries in Europe, Central Asia, Brazil, and selected other countries. In general, provider efficiency improves where organizational reforms combine strong organizational incentives with the following: (i) hiring and promoting managers based on qualifications and track record; (ii) health service management training; (iii) stronger accountability for managers for organizational performance (often by creating a board of external directors or trustees); and (iv) increased managerial authority to shape workers' incentives (through freedom to hire, promote, set tasks and hours of work, and decide on performance rewards and sanctions); and (v) increased managerial authority over other inputs (internal allocation of budget, purchasing, assets), structures, and processes (Figueras, Jakubowski and Robinson 2005; Preker and Langenbrunner 2005; Harvard School of Public Health 1996; Preker and Harding 2003, La Forgia and Couttolenc 2008; McKee and Healey 2001).

These findings cannot be assumed to hold in all country contexts. Some countries have constitutional, legal, or institutional arrangements that entrench centralized civil service employment provisions and create major obstacles to more flexible, delegated management of human resources (McCourt 2002). In some countries, central ministries and ministers—fearing loss of power, reduction of scope in management control, and other loss of privileges—have created powerful political constituencies blocking reform.

Hospital autonomization by itself can reduce equity, reduce the less visible dimensions of clinical quality, and contribute to excessive intervention in profitable areas of treatment. Equity, clinical quality and cost-effective medical practice are not likely to be achieved without complementary reforms to strengthen accountability for these dimensions of hospital performance, and to use financing, contracting, and provider payment to create financial incentives for hospitals to adopt these social objectives.

Where external monitoring of autonomous health providers is weak, some case studies have found evidence of abuse of resources by autonomous providers (Harding and Alvarado, 2005). In small rural hospitals with weak internal financial capacity, health care providers may be unable to cope with the increased accounting and reporting requirements associated with financial autonomy. Even in countries with relatively strong capacity (such as the UK, Hungary, and Thailand) this type of reform has usually been accompanied by substantial investment in preparing organizations for additional management demands through capacity assessment, training, recruitment of professional management expertise, and support for business planning and systems development.

More successful hospital reforms

No single approach to public hospital reform is guaranteed to achieve success, whether measured by attainment of reform objectives or by improved performance on dimensions such as efficiency, cost containment, quality, patient satisfaction, and equity.

Some reformers have succeeded with radical “big bang” reforms—comprehensive public hospital autonomy plus provider payment reform. These include Singapore, the UK, some Australian states, Estonia, and some Eastern European transition countries. Other reformers have been successful with more cautious, gradualist approaches, including the first phase of UK reform and Tunisia. A common feature of these successes was coherence and consistency in reform design. These countries also invested in capacity development (management, contracting and supervision capacity) and matched the pace of reform implementation to capacity. There are also small-scale successful reforms of individual hospitals in a range of countries (including Thailand, Malaysia, and Bali in Indonesia).

Countries improved hospital performance by contracting out management of public hospital (and primary health care) facilities to experienced nonprofit hospital organizations. Organizations have been contracted based on measurable outputs and intermediate performance indicators, thereby justifying a considerable degree of managerial and financial autonomy in hospital operations. Upper or high-middle-income countries or states with reasonable levels of purchasing capacity have contracted out hospital services using relatively sophisticated output contracts. Among middle-income countries, the Brazilian experience in Sao Paulo has been well studied and documented (Box 2, following page).

A range of countries have allowed or encouraged public hospitals to contract or form joint ventures with the private sector to provide nonclinical diagnostic and treatment services. This more limited reform has allowed the private sector to finance the upfront capital cost of higher cost technology and to provide specialist technical staff that are difficult for the public sector to recruit and retain (such as IT specialists, medical equipment engineers, and diagnostic imaging technicians). The public sector may contract with private partners to diagnose or treat public patients, or alternatively may pay the annual recurring costs (including depreciation and financing charges) of private services. Contracting out to the private sector has also been used for nonclinical support services such as cleaning, security, catering, and laundry. Contracting often serves to enhance staff productivity by using private sector employment contracts and management practices to overcome rigidities and poor incentives in public sector employment and management. Many upper- and

middle-income countries, including Romania, Turkey, and Slovakia, have documented experience with this type of reform.

Box 2: Brazil: Sao Paolo State Case Study

A Brazil study compared traditional, directly-managed public hospitals with indirectly-managed autonomous public hospitals as well as nonprofit and for-profit private hospitals. It found better performance, quality, and efficiency indicators among facilities with more flexible structures. The Sao Paolo state government's autonomous hospital reforms were complemented with multiple reform elements (La Forgia and Couttelenc, 2008), including:

- Contracting out public hospital management to pre-certified nonprofits called Social Organizations in Health (OSS), under renewable contracts (Matzuda et al. 2008);
- Performance-related financing features in the contracts, consisting of global budgets allocated in monthly installments, and a 10 percent retention bonus fund for compliance with performance indicators including good quality (hygiene and sterilization practices); patient satisfaction (no overcharging and perceptions of quality); and no fraud (ghost patients);
- Increased flexibility for management to hire and fire and set other human resources policies under private sector employment law, including salary adjustments, bonuses and staff promotions flexibility;
- Staff mix flexibility;
- Outsourcing of services flexibility;
- Regular performance audits by a state agency.

Compared with traditional hospitals, the pilots showed, first, improved quality as measured by general and surgical mortality and lower infection rates; and second, higher efficiency as measured by bed turnover rates, occupancy rates, substitution rates, length of stay, physician hours, and expenditure per admission.

If OSS hospitals do not meet the performance targets specified in their contracts, they receive less funding, so they have an incentive to meet targets. Among reasons for better performance, salaries, performance pay, and better career development options were *not* found to be important; however, the flexible staff selection process at OSS hospitals that enabled managers to hire the most suited staff and the authority to fire underperforming staff were important (World Bank 2006).

Other research on understanding why more flexible, autonomous hospitals perform better than hierarchically managed public hospitals finds that organizational structure is associated with managerial behavior. Managers in hospitals with more flexible, autonomous organizational structures generally demonstrate more "strategic" autonomous organizational behavior (the managers "really managed") while managers in hospitals with traditional hierarchical organizational structures demonstrated "normative" (administrative rule-based) organizational behavior.

Differences in the governance and managerial environment that explained poor performance in traditional hierarchically organized and normatively managed public hospitals included: cumbersome centralized procurement and purchasing that reduced availability of drugs and supplies; rigid centralized human resource management rules that made it difficult to motivate or discipline staff; lack of information for managers in planning and monitoring; and a disconnect between planning and budgeting. The study found evidence of management innovation and strategic behavior in some directly managed public hospitals; however, this appeared to be limited by the structural constraints of hierarchical public sector controls (La Forgia and Couttolenc 2008, Chapter 6).

Less successful hospital reforms

Less-successful experience with reform is often related to imbalanced incentives in public hospitals with mixed budget and private revenues. Many countries, for example, have gone down this path by allowing hospitals unrestricted freedom to charge and retain fee income and to sell medicines at a profit without undertaking necessary reform on management of hospital budgets. Many countries have introduced such policies with little attention to supervision and accounting before effective mechanisms were in place to motivate public hospitals to treat those who cannot afford to pay. As social health insurance schemes later developed, hospitals were also given autonomy to use social insurance reimbursements.

In partial reforms, it is common for public hospitals to operate under two different organizational settings—traditional “budget unit” rules for subsidies they receive from the budget, and other rules for payments from patients and insurance funds. Often the latter rules are like those of an autonomous or private hospital. “Dual organizational settings” are illustrated in Figure 11.

Figure 11: Dual Organizational Settings for Budget Funds and Private Revenue

Note: Budget revenue settings indicated in brown; private revenue settings indicated in red.

There are few successful examples of hospital autonomization in countries that introduced partial public hospital autonomy focused primarily on increasing income from fees and charges to patients. Studies of Indonesia’s Swadana Hospital reform found that this limited approach to autonomy reduced equity. Expectations that autonomy would reduce

the need for budget finance for hospital care were not met. Few formal studies have been carried out in countries with dual organizational settings; however, existing case study evidence points to significant concerns that are consistent with predictions generated by the Preker-Harding framework.

Case studies find the most serious concerns about imbalanced reform in urban settings where public hospitals' medical staff derive most of their income from private sources, such as out-of-pocket fee-for-service payments and profits on drug sales. In these situations, the small share of revenue that comes from the budget becomes "infra-marginal." It is not affected by hospital outputs or other dimensions of hospital performance, and does not create incentives for the hospital to improve if it is managed under a traditional line-item budget. Hospital incentives are dominated by private revenues over which the hospital has great autonomy and the ability to retain revenues and profits, and it behaves like an unregulated private hospital in many respects.

Similar unsuccessful experiences have occurred in countries that privatized public hospitals with the aim of reducing burdens on the state budget and allowing hospitals to earn unlimited private revenue, without introducing effective models of corporate governance, without adequate regulation of fees or quality, and without adequate social insurance. Studies of hospital autonomy and privatization in Armenia found marked reductions in equity. High informal payments persisted, even in private hospitals. The Armenian government recently tried to reassert greater control over autonomous and privatized hospitals, yet it faces formidable opposition from the entrenched financial interests of private hospital owners and senior hospital specialists.

Countries adopting either of these flawed approaches have run into problems with excessively high intervention rates for paying patients driven by profit motives. Health care under these circumstances becomes costly and nonrational. Unregulated, unaccountable privatized and autonomous hospitals have engaged in wasteful, duplicative investment in profitable high-technology services (such as in Lebanon and Armenia). In the worst cases (for example, Armenia) hospitals found themselves in a lower-utilization, lower-revenue trap because of high user charges and informal fees. In Indonesia, allowing hospitals to operate joint ventures with for-profit pharmacies resulted in irrational and inappropriate prescribing.

Countries with these dual organizational settings face the twin challenge of reforming how budget subsidies support hospitals and reforming the poorly regulated, unaccountable fee-for-service system. In this second challenge, countries are in a situation similar to that of

United States hospitals in the era of “fee-for-service medicine” before the development of managed care. The literature and experience on the US transition to managed care is as relevant to public hospitals in many middle-income countries as to private hospitals.

Box 3: Turkey’s Hospitals: Reform in Dual Organizational Settings

Turkey’s long-term health reform is based on comprehensive hospital autonomy combined with universal social health insurance (SHI). Under the strategy, budget subsidies to MOH hospitals are phased out, and public funding for health is channelled “through the demand side” through social health insurance. social health insurance coverage was extended, patient out-of-pocket payments were reduced as a result, and the purchasing and provider payment system was strengthened. Reform of public hospital organization has been controversial, and legislation to transform hospitals into autonomous “public hospital unions,” nonprofit corporations with boards of directors, was repeatedly blocked in the legislature. The MOH continues to employ hospital staff as public servants and pays their salaries from the budget, which also finances capital expenditures and core facilities operating costs (such as utilities). The MOH has introduced incremental changes in the decision rights of hospital managers, such as the freedom to hire contractual staff, to contract out some nonclinical functions, and to lease equipment. The MOF has introduced public financial management reforms that transfer some control and accountability for financial management from the MOF’s internal auditors to the MOH’s own finance department. However, the use of most budget funds remains tightly controlled by the MOH.

As social insurance coverage expanded, MOH hospitals were allowed to charge patients for items not fully financed by the budget. SHI reimbursed these costs. A way was needed to enable public hospitals to benefit from increased revenue. To motivate hospitals and doctors, and to reduce the loss of doctors to the private sector, hospitals were allowed to set up revolving funds to manage SHI payments and user fees. Revolving funds had separate, parallel systems of financial control, allocation, accounting, and reporting from those used for budget subsidies. Hospitals were allowed to manage the revolving revenues. The system allowed MOH and hospital managers to regulate and control private and SHI payments for health services, rather than individual doctors in public hospitals supplementing their income through private fee-for-service practice and medicine sales. The MOH regulated how revolving fund revenue could be allocated, including a share of revenues to staff as output-based salary supplements. As this perpetuated the undesirable incentives of fee-for-service medical practice, the MOH developed regulations to pay medical staff using a performance-based scheme that included a mix of individual and organizational performance indicators.

Turkey’s approach to regulating and managing the “dual organizational settings” meets the core requirements for public financial management, helped stem the loss of medical staff to the private sector, and improved incentives for performance in hospitals. Nonetheless, Turkish authorities do not see this as ideal, but rather have used it as an adaptive strategy to make the best of a situation in which other options were blocked by political constraints.

Comprehensive hospital autonomy is superior to using parallel revolving funds for several reasons. The MOF has been concerned by the off-budget expenditures and revenues channelled through revolving funds, and has improved the reporting and disclosure of these revenues and expenditures in the public financial management system. The dual system also means that there is no integrated presentation of hospital expenditures and revenues, which is needed to manage and monitor hospital financial performance. With dual accounting and control processes, hospital managers have little incentive to use budget funds efficiently, and budget funds mostly pay the salaries of public sector employees who enjoy job and salary protection regardless of their productivity.

A few countries have achieved positive results through partial public sector autonomy with dual organizational settings. Countries in this category include Turkey (see Box 3, previous page) and Madhya Pradesh's RKS hospitals in India.

There are also unsuccessful experiences with contracting out management of public hospitals to NGOs in cases where the Ministry of Health failed to monitor contracts effectively, and where contractors lacked experience in hospital management, altruistic motivation, or community accountability. Contracting nonclinical and diagnostic services out to the private sector has encountered problems where quality specification was poor; where contracts were not well monitored, payments unreliable or delayed; and where there was lack of competition or conflict of interest in procurement. Coordination between contractors and public sector staff has also been a source of conflict and failure. This occurred in the UK under the Private Finance Initiative.

Recent trends

Piloting and scaling up of hospital autonomy was launched in the 1990s in many OECD countries. A second wave of governance reform has taken place during the past five to ten years, which is quite diverse in its range of governance models. There is no blueprint: each country forging solutions specific to the problems of its public hospital system.

Although earlier reforms focused on efficiency and cost containment, recent reforms in OECD countries have emphasized quality, safety, and evidence-based medicine. This is illustrated by the protocol guides for hospital practice in Spain and France, and the Care Quality Commission and National Institute for Clinical Excellence (NICE) in the United Kingdom. France and other countries have implemented mandatory accreditation that hospitals must receive before they can become eligible to provide publicly funded services.

Changing roles and relationships of ministries of health vis-à-vis providers is a significant theme in recent UK health reforms. Past reforms in the UK, as in many other countries, have been undermined by a central department of health exercising excessive, ad hoc, day-to-day direction, but not credible monitoring and supervision of hospital performance. The UK's Foundation Trust reforms in the late 2000s increased autonomy by cutting ties with the Department of Health and Treasury that reversed the changes of the first wave of autonomization in the early 1990s. The UK also introduced community and staff participation in hospital boards to respond to public and political perceptions of an overcentralized and unresponsive NHS bureaucracy.

By contrast, the French Hospital 2007 Plan strengthens the role of doctors in hospital governance and management, and reduces the role traditionally played by trade unions representing other staff groups. There is no focus on community representation or participation in the French Plan, and a centrally determined model for organizational reform of all public hospitals has been adopted (see Eeckloo et al. 2007).

There are common themes in the recent reforms that may be relevant in further development of East Asian hospital policy. Clinical and safety-related dimensions of governance receive greater emphasis than in the 1990s reforms, and arrangements for performance assessment and monitoring are more elaborate. As a result, accountability and oversight of public hospitals has become increasingly multifaceted.

Lessons from international experience

International evidence arguing for one form of hospital governance over another is not easy to apply to specific countries, as there are no standard recommendations for public hospital reform without considering the local context. The positive drivers and dysfunctional aspects of hospital performance in any country interact in complex ways with system design; public administration and finance; other institutions (such as professional associations and trade unions for health workers); the relationship between the public and private health sectors; and relationships between patients, citizens and communities, and hospitals.

In a country of the scale and complexity of China, there is unlikely to be a standard set of recommendations that are appropriate at all levels of the hospital system in all parts of the country. As different subnational governments and hospital groups have undertaken reform using different models, the starting point for hospital organizational reform in China varies widely, and generalizations are difficult to make.

Key contextual differences

China faces rapid growth in expenditures on inpatient and outpatient care, and declining hospital efficiency. Cost containment and efficiency were also important objectives for reforms in upper-income countries such as the UK and Australia. However, reform in China has a different starting point. Many public hospitals function like private hospitals; many public hospital doctors function like private independent practitioners; and both hospitals and doctors obtain significant revenue from charging fees-for-services and earning profits from drug sales on a cost-plus basis.

Government authorities do not yet have strong levers to regulate or manage the revenues earned by public hospitals and their doctors. As a result, many hospitals do not face hard budget constraints. In contrast, in upper-income countries with autonomous public hospitals, authorities are able to use a combination of policies to drive efficiency by imposing firm budget constraints. Public hospitals in these countries earn most of their income from public sources, either tax-financed or mandatory social insurance, and these sources have annual or multi-year limits. Government authorities and/or social insurance schemes regulate payment methods and price levels. They influence overall resources going to hospital care for public patients, either directly through contracts that manage both volume and prices or indirectly through measures to control the volume of interventions.

Government authorities use their influence over hospital management through mechanisms of accountability and public financial management as an additional means to drive efficiency and ensure cost containment. Some countries see this leverage as a reason to keep hospitals in public ownership.

Alongside these mechanisms, other policies operate that help to create incentives for cost effective, evidence-based clinical practice. For example, doctors are almost always prohibited from selling the drugs that they prescribe. They cannot own private pharmacies or diagnostic services, or sell these services to their public hospital patients. The cost of drugs is generally included in case-based payments or the hospital budget, so the pharmacy is seen by management as a cost center to be controlled, not a profit center to be expanded.

Hospital managers, social insurance funds, and health regulators have considerable influence over the clinical practice of hospital doctors and other clinical staff. In countries such as the UK, incentives have been devised to discourage doctors from reducing the quality of care for public or socially insured patients, or for steering public patients towards their private medical services. There is a clear distinction between “public patients” and “public services” on the one hand and “private patients” or “private services” on the other. Public patients know that public services should be free of charge or subject to a controlled user copayment. In this way, patients help monitor hospital budget constraints. Although doctors may have part-time private practices and part-time employment contracts with public hospitals in countries such as the UK and Australia, this is highly regulated. If abused, the privilege can be withdrawn by hospital managers.

In China, subnational administrations may be able to adopt some of these approaches to constrain public hospital budgets. This would require greater capacity to monitor the diverse

dimensions of hospital performance, as well as institutions that specialize in holding public hospitals accountable for performance. Above all, setting firm budget constraints is required. One way is to control payment methods and prices that hospitals charge socially insured patients. Another is separate regulatory control over hospital budgets. These strategies are easier to adopt when public revenues (budget and social insurance revenues) represent a large portion of total hospital revenue, and are growing in line with demand.

For hospitals that have dual organizational settings, Turkey's strategy may provide a path to introduce greater regulation and management of fee-for-service revenues. However, for hospitals where private fee-for-service revenues and drug sales dominate revenue, the transition path from "fee-for-service medicine" to managed care adopted over the past 30 years in the United States could be considered. Even where hospitals are in public ownership, many techniques and strategies used to develop managed care are relevant in China because of the multiplicity of revenue sources, the dominance of fee-for-service revenue, and physician autonomy. The US experience is particularly relevant to a move from fee-for-service payments to case-based payments, or in reducing reliance on profits from drug sales and encouraging a focus on lower-cost effective medicines. Similarly, lessons from managed care in the US are relevant to thinking about strategies to increase hospital managers' influence over the quality and cost-effectiveness of doctors' clinical practices. One of the most difficult and fundamental challenges is that hospital specialists who earn substantial private fees and income for selling drugs can be expected to oppose changes that threaten their incomes or professional autonomy.

The US experience with overcoming these obstacles is also relevant. China too has complex and pluralistic system with multiple funders, hospital owners, and government agencies involved in regulation and stewardship. Relevant lessons include strategies by US hospitals in the transition to managed care. Hospitals used the power to grant doctors with private practices "admitting privileges" by attaching conditions that gave managers more leverage over their practices and use of resources. Social and private health insurance schemes adopted more selective approaches to contracting and reimbursing specialists and hospitals, and created financial incentives to limit fees, adopt cost-effective protocols, and manage utilization. China could explore opportunities to pilot a range of these techniques.

General lessons from international experience

Several lessons drawn from cross-country reviews are becoming increasingly relevant to the growing number of subnational governments and hospital groups that are interested in

hospital reform in China. These are complex reforms requiring policy consistency, stability, government institutions with strong implementation capacity, and government credibility.

- Disappointing or unintended results are likely where the process implements some but not all of the five Preker-Harding dimensions of organizational reform (decision rights, residual claimant status, market exposure, accountability, and social function). Little improvement is likely in efficiency or patient perception of quality unless hospitals retain their surpluses, are responsible for their losses and debts, and are exposed to market pressures. Improving the less visible clinical aspects of quality, the rational use of health services, and equity require new forms of results-oriented accountability for performance and explicit contracting and funding for social objectives, such as treating the poor and uninsured. Inequity and inappropriate use rise where increased hospital autonomy is not accompanied with attention to accountability and social functions.
- Organizational reform requires close coordination between policy design and implementation, because “the devil is in the detail.” Several rounds of review and revision may be needed to fully address reform and to adjust reforms to changing circumstances and priorities.
- There are few successes with hospital reform in countries that lack levers to create firm hospital budget constraints. This does not mean fixed limits on annual expenditures, but it does require control of cost-plus pricing, a move away from fee-for-service payment, and limits on the volume of services provided.
- There have been few successful hospital reforms where government capacity for governance and stewardship is weak (regulation, performance monitoring, and institutions of accountability for public service providers), and in hospitals with limited management capacity. In these conditions, successful reform usually involves contracting partnerships with accountable, experienced nonprofit hospital organizations.
- Strengthening management systems and management skills are essential for successful hospital autonomization; however, these are beneficial even without organizational reform.
- Successful implementation strategies involve (i) identifying the preconditions for reform success, including management systems and capacity, contracting capacity, and

supervision capacity; (ii) assessing hospitals (and local health administrations in decentralized countries) to determine if these preconditions are in place; (iii) piloting in hospitals/localities where these conditions are in place; and (iv) building the prerequisite conditions in hospitals/localities where they are not yet in place before rolling out reform.

6. Conclusion

This paper has summarized recent attempts at reform in the Chinese hospital system, described a methodology for analysis of hospital reform, and applied this methodology to the main features of reform in China. It has compared the Chinese experience with international experience, illustrating that many initiatives from other countries are potentially relevant to China.

There has been little consistency in the approach or the priorities of policy makers across China. Initiatives have been driven more by local (provincial or municipal) politicians than by central direction, control, or evaluation. Few initiatives have been transferred to other provinces, and little or no policy evaluation has been carried out. Nevertheless, identifying the strengths and weaknesses of these initiatives could inform the next stage of reform.

The 1985 reforms that introduced private capital into health care and helped develop user charges that were linked to market prices. This led to the 1989 reforms that clarified the position of state-owned enterprises, the use of service contracts, and the retention of profits by public hospitals. In 1992, local power over arrangements for personnel was suggested but not fully implemented, as state control and quotas for staff and bed numbers remained firmly in place. This was followed in 2000 with attempts to localize personnel policies within a framework of defined finance, taxation, and copayment financing rules.

A significant breakthrough occurred after 2005. Local health authorities introduced local reforms more consistent with autonomy and modern management techniques. Some of this focused on conventional outsourcing of nonmedical services, some on more radical near privatization. Other authorities developed models based on trusteeship, with autonomy on day-to-day management issues but with ownership of assets vested in the state. However, recent reforms appear to be more focused on relieving financial burdens on the state than on technical or allocative efficiency.

In spite of the achievements of the policy reforms of the last 30 years, reforms have had some unintended effects. Hospital expenditure is growing faster than income from public budgets and social insurance. There are signs of declining efficiency, of wasteful investment,

of irrational over-provision of some services and relative neglect of others. A summary of current issues is provided in Box 4.

Box 4: Summary of Main Policy Issues

1. Policy deficiencies

- Under self-financing policies, public hospital have been driven by powerful incentives to expand profitable private services and drug sales to patients who can afford to pay, while basic services and social functions, particularly for the poor, are under-emphasized.
- There is weak control over total public hospital expenditure and a lack of incentives for efficiency and rational, evidence-based service provision.
- The financing mix has led to unequal growth and distribution of hospital facilities with dominance of urban, county-level hospitals at expense of primary care and outpatient care, especially in rural areas.
- Public hospitals as public enterprises still operate under a traditional governmental governance model, without any separation between ownership and management role; they continue to face central controls from the government hierarchy in relation to management of personnel and budget subsidies.
- There is a lack of plurality (public and viable private sectors) and competition across providers.

2. Policy achievements

- The number of facilities and volume of activities has increased.
- The scope for local reforms and management models has led to many experiments with state-owned enterprise models, trustee models, separation of asset ownership and management from operational management of service delivery, contracting of management, leasing of assets, shared management service companies, hospital groups and networks.
- The introduction of provider payment reforms mirroring international models of choice.
- Outsourcing of support services has improved cost management.
- Pharmaceutical cost-reduction initiatives have yielded some measurable successes.

The framework for the current reforms was set at the 2007 National Health Work Conference, which described a model for a purchaser/provider split. This was put alongside ambitious policy reforms including the delineation of profit and not-for-profit hospitals, financing, social insurance, and medical staffing regulations. It included objectives to give

more comprehensive access by looking at a system of medical coverage for public health, medical services, pharmaceutical, primary health, and hospital services.

Reforms in the governance and management system of public hospitals in China are still evolving. A wide economic and social gap exists in development across the country. Likewise, the hospital sector is characterized by huge variations in scale, functions, tasks, management systems and operational mechanisms, as well as overall performance.

This paper aims to serve as a reference point for future designs and plans. In a country of the scale and complexity of China, there is not likely to be a standard set of recommendations that are appropriate at all levels of the hospital system in all parts of the country. As different subnational governments and hospital groups have undertaken reform using different models, the starting point for hospital organizational reform in China varies widely. It may be impossible to move to one mode in pushing the reform of public hospitals.^[71] Instead, it may be better to encourage vigorous pilots as modes of exploration and learning across the country. With pilots there can also come evaluation, documentation of experiences and dissemination of lessons learned.

In late 2009, the government announced that pilots would be initiated in 16 urban areas. Pilot design would benefit from the framework for analysis and implementation that has been developed in this paper. For example, the discussion of management decision rights in the paper suggests there may be a need to increase delegation of human resource management and operational affairs to hospital management. Budget subsidies to hospitals could be more effective if used to contract for outputs or reward performance. Greater accountability could include development of governance bodies for hospitals with appropriate expertise, more robust information systems, well-developed performance contracts, and performance assessment systems. Community-based representation in governing bodies may be helpful for public facilities. Social responsibilities may need to be clearly defined, explicitly funded and contracted.

The challenge of achieving hospital expenditure control and efficiency improvement will require a more consistent, coordinated approach to hospital reform covering multiple dimensions: planning and investment, organization and governance, provider payment reform to restructure incentives, development of institutions and instruments of accountability, financing of social functions, and management. There are few successes with hospital reform in countries that lack levers to create firm hospital budget constraints. In China, multiple policy mechanisms will need to be used consistently to create pressures on

hospitals to contain costs and use resources more effectively. In addition to those already listed, complementary reforms could include strengthened primary care, development of a gatekeeper function and referral system, expanded insurance coverage, a coordinated and well-regulated private sector, development of clinical pathways, management capacity development, and provider payment reforms that restructure incentives.

In order to strengthen government stewardship to steer the hospital system effectively through the next phase of reform, the national and subnational health authorities need substantial investment in information systems for policy, planning, performance monitoring and accountability, and reform evaluation. Building up an adequate cadre of well-trained hospital managers will be critical, but will take some years, and will require supportive policies to ensure that hospital management is an attractive career option for those with the necessary skills and experience.

International experiences that may have relevance to China's next phase of reforms are summarized in this note. Cross-country reviews of hospital organizational reform are relevant to a growing number of subnational governments and hospital groups that are considering this type of reform. But the note also emphasizes the need to understand the difference in the starting point for reform and the context compared to China, in order to assess the transferability of international and subnational models to each local context.

Health reforms are complex, and require policy consistency, stability, and government institutions with strong implementation capacity and government credibility. Organizational reform requires close coordination between policy design and implementation, and a matching of the scale and pace of reform to the capacity for implementation. Over time, through iterative evaluation, policy review and adjustment, China can identify what works best, and move to more consistent policies, standards of service delivery, and equity of access across its hospital system.

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Annex 1. Hospital Data by Province

Table A-1: Number of Hospitals per 10 Million Population, by Province and Administrative Level

	All Hospitals		Grade III		Grade II		Grade I	
	Absolute	Rank	Absolute	Rank	Absolute	Rank	Absolute	Rank
Beijing	429.3	1	40.6	1*	74.7	9	259.7	1*
Tianjin	253.5	5	37.0	2	73.9	10	92.4	4
Hebei	155.6	16	5.5	27	61.6	13	46.8	10
Shanxi	299.0	4	11.4	9	69.4	11	51.6	9
Inner Mongolian	193.3	14	12.3	8	87.0	5	41.1	13
Liaoning	201.1	13	20.3	4	67.4	12	57.9	8
Jilin	209.6	12	7.7	21	80.1	7	36.9	14
Heilongjiang	237.8	6	17.2	5	87.5	4	81.7	5
Shanghai	214.9	10	21.6	3	84.8	6	17.3	22
Jiangsu	148.1	17	8.7	18	37.4	27	64.4	6
Zhejiang	135.5	19	16.2	6	50.8	16	4.9	30
Anhui	106.8	28	4.5	30	35.8	28	35.8	16
Fujian	95.5	30	10.1	10	41.7	23	15.8	25
Jiangxi	107.2	27	5.7	25	43.0	20	7.2	29
Shandong	133.4	20	9.2	14	42.8	21	41.2	12
Henan	111.6	24	3.3	31*	41.2	24	36.1	15
Hubei	97.0	29	9.8	11	39.8	26	20.8	21
Hunan	110.4	25	6.0	24	42.5	22	25.6	20
Guangdong	124.3	22	8.8	17	35.4	29	27.0	19
Guangxi	87.5	31*	8.9	15	33.3	30	13.8	26
Hainan	216.3	9	6.9	23	27.8	31*	27.8	18
Chongqing	109.0	26	5.5	26	40.5	25	16.3	24
Sichuan	128.4	21	5.3	28	46.6	18	12.5	27
Guizhou	117.7	23	5.2	29	43.4	19	32.7	17
Yunnan	156.6	15	8.4	19	59.8	14	17.0	23
Tibet	351.9	3	7.1	22	49.8	17	135.1	3
Shaanxi	214.0	11	8.9	16	75.8	8	45.6	11
Gansu	140.8	18	9.3	13	59.8	15	9.0	28
Qinghai	237.0	8	13.2	7	148.6	1*	3.8	31*
Ningxia	237.0	7	8.0	20	110.5	2	64.0	7
Xinjiang	355.9	2	9.6	12	103.3	3	200.8	2

Source: China National Health Yearbook 2009, the Ministry of Health.

* **Orange** shading in cells indicates highest rank (#1); **blue** shading indicates lowest rank (#31).

Table A-2: Number of Beds per 1000 Population, by Provinces

	Hospitals		General Hospitals		Community Health Centers		Township Health Centers	
	Absolute	Rank	Absolute	Rank	Absolute	Rank	Absolute	Rank
Beijing	6.4	1	4.2	1*	0.1	19	1.0	11
Tianjin	3.9	3	2.3	6	0.5	2	0.8	24
Hebei	2.1	17	1.6	18	0.3	7	1.0	14
Shanxi	2.7	10	1.9	11	0.2	11	1.1	7
Inner Mongolian	2.4	13	1.8	13	0.4	4	1.0	13
Liaoning	3.4	5	2.3	4	0.3	10	1.1	6
Jilin	2.9	6	2.1	8	0.1	27	1.0	16
Heilongjiang	2.9	7	2.2	7	0.1	22	0.7	26
Shanghai	5.5	2	3.5	2	1.5	1*		
Jiangsu	2.2	16	1.5	20	0.3	9	1.4	1*
Zhejiang	2.8	9	2.0	10	0.2	13	0.5	29
Anhui	1.5	28	1.2	28	0.2	17	0.9	18
Fujian	1.8	22	1.3	24	0.1	24	0.9	20
Jiangxi	1.5	29	1.1	30	0.3	6	0.8	25
Shandong	2.3	14	1.7	14	0.2	18	1.3	3
Henan	1.7	25	1.3	23	0.1	26	0.8	21
Hubei	1.9	21	1.4	21	0.3	8	1.0	9
Hunan	1.8	24	1.3	25	0.2	15	1.0	15
Guangdong	2.3	15	1.7	16	0.0	29	1.0	8
Guangxi	1.5	30	1.1	31*	0.0	28	0.8	22
Hainan	1.8	23	1.4	22	0.0	30	1.0	10
Chongqing	1.6	27	1.2	27	0.1	20	1.0	12
Sichuan	1.7	26	1.2	26	0.2	14	1.2	4
Guizhou	1.4	31*	1.1	29	0.3	5	0.6	28
Yunnan	2.0	18	1.6	19	0.2	12	0.8	23
Tibet	2.0	20	1.7	15	0.0	31*	1.2	5
Shaanxi	2.5	12	1.9	12	0.1	25	0.9	19
Gansu	2.0	19	1.6	17	0.2	16	0.9	17
Qinghai	2.6	11	2.1	9	0.5	3	0.7	27
Ningxia	2.8	8	2.3	5	0.1	21	0.5	30*
Xinjiang	3.7	4	2.9	3	0.1	23	1.4	2

Source: China National Health Yearbook 2009, the Ministry of Health.

* **Orange** shading in cells indicates highest rank (#1); **blue** shading indicates lowest rank (#31).

Table A-3: Hospital Efficiency Information in 2008, by Provinces

	Daily Visits per Physician		Bed Occupancy Rates (%)		Average Lengths of Stay for Discharged Inpatients	
	Absolute	Rank	Absolute	Rank	Absolute	Rank
Beijing	8.1	6	83.0	10	15.0	30
Tianjin	7.5	8	75.5	22	13.2	28
Hebei	4.1	27	76.4	21	9.0	1*
Shanxi	3.2	31*	69.7	29	11.3	22
Inner Mongolian	4.0	28	71.4	28	11.0	19
Liaoning	4.5	25	76.5	20	12.0	27
Jilin	3.9	29	67.5	31*	10.7	15
Heilongjiang	3.7	30	68.8	30	11.3	21
Shanghai	11.2	2	99.5	1*	15.5	31*
Jiangsu	8.1	5	89.0	4	11.4	26
Zhejiang	9.6	3	89.8	3	11.3	24
Anhui	4.9	20	83.3	9	11.3	23
Fujian	8.5	4	92.7	2	10.4	11
Jiangxi	5.6	15	80.6	17	9.1	2
Shandong	4.8	22	78.8	19	9.8	5
Henan	5.4	16	82.6	12	10.5	12
Hubei	5.8	13	87.3	6	10.7	16
Hunan	4.7	23	86.7	7	10.4	9
Guangdong	12.1	1*	84.6	8	9.5	3
Guangxi	7.6	7	81.9	15	9.8	6
Hainan	5.7	14	72.9	25	9.7	4
Chongqing	6.9	9	82.2	14	11.4	25
Sichuan	6.3	11	87.5	5	10.6	14
Guizhou	4.3	26	79.3	18	9.8	7
Yunnan	6.7	10	81.9	16	10.8	18
Tibet	5.4	17	71.7	27	14.3	29
Shaanxi	4.9	21	74.6	23	10.7	17
Gansu	5.1	18	72.8	26	10.5	13
Qinghai	4.6	24	73.5	24	10.0	8
Ningxia	6.0	12	82.6	11	11.2	20
Xinjiang	4.9	19	82.4	13	10.4	10

Source: China National Health Yearbook 2009, the Ministry of Health.

* **Orange** shading in cells indicates highest rank (#1); **blue** shading indicates lowest rank (#31).

Annex 2. Human Resource Development and Management Reform

As scientific management becomes increasingly important, substantial progress will need to be made in training health managerial staff. Training programs for health managerial staff include short-term training, communication forums, degree course classes, and professional degree education.^[72]

Training Health Managers

Short-term training

Training courses with different themes and orientation are organized for existing health managerial staff. Short-term training has advantages of great orientation and involves training on fundamental management skills, enabling the managerial staff improve their abilities to carry out routine management activities. With relatively low cost and flexible time schedules, short-term trainings for various levels and contents can be widely organized.

Communication forum

This is mainly for high-level health managerial staff, and is organized by governments, health administration institutions, scientific research colleges and institutions, academic groups, and training companies. The forums usually target newly issued policy and regulations (such as Notice of Interim Measures for the Separate Administration of Hospital Medicine in terms of Income and Expenses), a difficult health management problem, or a specific event. This forum has advantages of time-efficiency, orientation and communication, in which many high-level health managerial staff members can discuss, learn, and communicate with each other, which helps broaden their horizons and develop their abilities.

Degree course classes

To improve training on systematic health management knowledge, in recent years many higher education institutions have established classes for professional degrees, and cultivated superior professional talent in hospital management. The MHA project was jointly launched by Peking University Health Science Center, Harbin Medical University, and Australian La Trobe University. Advanced training courses for hospital superintendents were set up by Fudan University and Peking University-Pfizer China. Advanced training courses on hospital

management were jointly organized by Health Policy and Management Research Center of Peking University, North Shore-LIJ Health System, and Pfizer Pharmaceuticals Limited. An advanced training program for administrative management staff in health and medicine industry and an advanced training program on professional management of modern hospitals was organized by Zhuo'er Training Center of Further Education Institute of Tsinghua University.^[11]

Professional degree education

Professional degree education is mainly for students preparing for entrance exams, graduate entrance exams, or doctor entrance exams, and is a fundamental way to achieve professionalism in health management teams. The health management degree education system is now established at a preliminary stage, and multi-level teaching is in place for college students, university students, and postgraduates. However, education is oriented toward bachelor degree education. Specialty teaching and the course system are not unified. Teaching content and methods are backward. Policy research, operation and management courses, and case-based-teaching are lacking. Speeding up the development of degree education for health management will gradually change the professional structure of health management teams and make health management teams more professional.^[73]

Future Demand for Health Management Training

Within the coming five to ten years, to cultivate international managers for health institutions, more efforts should be made to train health management cadres. In 2004, the Ministry of Health pointed out that the current health management cadre team cannot develop the health sector, and that improving post training for health management cadres was essential for developing teams of high-qualified and professional health management cadres.^[74] Mr. Gaoqiang, the former minister of Ministry of Health, in deploying health work in 2005, said that three types of talents were needed, among which are those who are good at operations and management.^[75]

Of the current directors of Chinese hospitals, 99 are expert superintendents who “act as experts full time and as superintendents in spare time.” They must manage hospitals while providing expert clinical services, teaching postgraduates, and working for academic groups, which limits their energy for each.^[76] A study of 96 hospitals in 21 provinces and cities shows that only 28 hospitals managerial staff had short-term professional post training, and that 53 acquired their management knowledge from experience in daily work.^[73] The task of post training for health managerial staff is difficult and it is urgent to cultivate professional health managerial staff.

A study by Pei Likun on management training needs for hospital managerial staff shows that the training centers around personnel management, including intensifying team construction, enhancing leadership, human resource management, cultivating talent,

psychology, financial management, project management, medical market situation, and rules and regulations concerning medical services. Leadership science and communication skills are most important. Managerial staff training needs are consistent with the difficulties they encounter in their work. Human relationship skills are most needed, as managers expect to master effective incentive methods that will enable them to communicate with their subordinates and build harmonious teams.

The study by Li Lu and others shows that the top three choices of training methods include regular on-job training, multi-time short-term off-job training, and correspondence education.^[77] The study of middle-level hospital managerial staff by Yang Li and others shows that 59 percent of respondents prefer centralized training, 41 percent prefer lectures, and that department directors prefer centralized trainings of two or three days' duration.

As far as restructuring courses are concerned, inter-disciplinary health management staff should understand state health system and health policies, management sciences, health economics and market economics, health law, social and human sciences, and medical fundamentals. Attention must also be paid to social practices and developing the ability of management staff to solve actual problems.

The study by Li Lu and others shows that 85 percent of the cost is borne by superior departments and units, and 15 percent by individuals, indicating that health managerial cadres will generally participate in health management training. However, they regard learning specialized knowledge on health management as tasks assigned by superior authorities, and improving their management knowledge and abilities as the responsibility of units instead of as a need for their own development or investment in education. This indicates that health managerial cadres lack a sense of professional crisis, and lack enthusiasm and initiative for learning management sciences. The deeper reason is the lack of a qualification system for health managerial cadres and standards for examinations in the specialized knowledge and skills of health management.

Research and exploration is needed to assess the training needs for cultivating internationally competent leaders of health institutions.

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