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# Autonomy and Control in Public Hospital Reforms in Singapore

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The Singapore government began to reform public hospitals in the mid-1980s because of mounting public expenditures on health care. It granted public hospitals managerial autonomy and required them to compete for patients' fees. Correspondingly, patients were required to pay a larger proportion of the costs. When subsequent evidence showed that costs were increasing rather than decreasing, in the mid-1990s the government began to reassert its control while retaining the essence of the earlier reforms. In recent years, the reforms have emphasized management autonomy coupled with strong government guidance. This article assesses the autonomy and control mechanisms in place to promote effective service delivery in public hospitals in Singapore and concludes that reliance on market competition requires more state intervention than often realized. For market competition to deliver outcomes that are not only economically efficient and consumer-friendly but also politically acceptable, constant governmental oversight and coordination is essential.

**Keywords:** *public sector reform; health care reforms; public hospitals; privatization—public hospitals; health care system—Singapore; privatization—Asia; new public management—Asia*

The issue of reforming public hospitals has been high on the public agenda of most countries in recent decades. The policy makers' anxiety is rooted in the realization that governments' health care expenditures will escalate significantly in the near future because of population aging, proliferation of expensive medical technology and pharmaceuticals, and consumers' heightening expectations. Traditional public hospitals are viewed as lacking the incentives necessary to rise to the impending challenges because of their hierarchical structure, lack of flexibility, and absence of performance-based incentives (Preker & Harding, 2003, p. 2). The emergence of new public management (NPM) techniques drawn from the private sector and reliance on market-like mechanisms in the 1980s held out hopes that their adoption would allow governments to deliver more and better services at lower cost (Dent, 2005; Jakab, Preker, Harding, & Hawkins, 2002; Osborne & Gaebler, 1992). The assumptions and techniques had to be revised subsequently as the reforms did not deliver the expected outcomes (Dent, 2005; Dunleavy, Margetts, Bastow, & Tinkler, 2006). There were, however, vast differences in the paths that different governments took to reforming public hospitals and the level of success they achieved. Singapore is not only one of the early adopters of the NPM tools, but it also experimented with innovative combinations of tools that offer instructive lessons.

Singapore's accomplishments in health care and the means by which it achieved them have begun to be internationally acknowledged (Taylor & Blair, 2003; WHO, 2000), but much of the focus is on its financing arrangements emphasizing private payment for services

(see Cheong, 2004; Ham, 2001; Hanvoravongchai, 2002; Hsiao, 2001; Lim, 2002; Low, 1998; Pauly, 2001; Ruderman, 1988). Its medical savings account (Medisave) is particularly singled out for containing expenditures (see Lim, 2002; Massaro & Wong, 1995; Pauly, 2001). There is a lot more to Singapore's health care reforms than Medisave, which, in any event, forms a very small share of total health care expenditures (Ramesh, 2004). Its public hospitals occupy a more central place in the health care system and are a key to understanding the country's performance in the sector.

The objective of this article is to assess reforms targeted at public hospitals, which are the dominant suppliers of inpatient care in Singapore. It will argue that the dominance of public hospitals and the mix of autonomy and controls accorded to them is a critical reason why Singapore has achieved good health care outcomes at modest cost. Government controls allow realization of planning gains, whereas autonomy generates gains that flow from competition. Some of the institutions and practices adopted in Singapore are unique and defy traditional notions of public and private. This article concludes that the case of Singapore demonstrates that reliance on market competition requires more state intervention than often suggested by the public sector management literature and realized by policy makers. For market competition to deliver outcomes that are both economically efficient and politically acceptable, constant government oversight and coordination is essential.

There is a vast literature on the relative efficiency of private and public hospitals, with some arguing that the private sector is more efficient (see Altman & Shactman, 1997; Clarkson, 1972; Coles & Hesterly, 1998; Ferrier & Valdmanis, 1996; Hoerger, 1991; Hrebiniak & Alutto, 1973; Lindsay, 1976) and others finding evidence in support of the public sector (see Pattison & Katz, 1983; Robinson & Luft, 1988; Silverman, Skinner, & Fisher, 1999; Woolhandler & Himmelstein, 1997). In much of the literature on the subject, public is equated with government control and private with competition. The dichotomy is unhelpful as it dwells on distinctions between the two when in reality both can and do exist in the health care sector and, if properly designed, together deliver superior outcomes than relying only on one or the other. Public hospitals are not inherently incapable of competition and, indeed, behave like their private counterparts in their competition for revenues and surplus when given the opportunity. What is critical is how the government structures the incentives for managers (Organisation for Economic Co-operation and Development [OECD], 1992). The incentives should be such that they encourage managers to seek benefits for their hospitals while discouraging them from taking advantage of market failures to undermine consumers' interests. But this requires constant efforts on the part of the government, as the case of Singapore's hospitals will show in this article.

Traditionally, government involvement in the health care sector has taken the form of public ownership of hospitals and/or extensive use of fiscal and regulatory policy instruments. In the 1980s, many governments began to reduce their reliance on traditional policy tools in line with the growing popularity of privatization and deregulation (Cheung, 2005). However, they could not simply replicate their efforts in, say, telecommunications and air transportation sectors because of greater possibilities of market failure and stronger political backlash (Ramesh & Howlett, 2006; Rubsamen, 1989). Privatization of public hospitals is limited by not only technical difficulties in measuring productivity and information asymmetries but also in maintaining access for the poor, controlling infectious diseases, and so on (Over & Watanabe, 2003, p. 111). Once managers are given autonomy, there is

a distinct possibility that they would use their position to increase revenues (or profits, if permitted) rather than serve the public purpose of providing health care to all who need it. Indeed equity and access are usually the first casualties of privatization of hospital care (Preker & Carrin, 2004). Governments therefore tread carefully when it comes to privatizing public hospitals.

Short of complete *privatization* involving sell-off to private firm, there is a broad spectrum of market-oriented reforms relevant to public hospitals, including *autonomization* and *corporatization* (Preker & Harding, 2003, p. 2). Autonomization involves giving enhanced autonomy to managers to perform more like their private counterparts while maintaining public ownership and policy controls. Corporatization, in comparison, entails transforming hospitals into autonomous state enterprises with near-complete operational autonomy and significant exposure to market competition. Both strategies, however, allow a range of significantly different alternatives. Although reform of public hospitals in Singapore can be broadly described as being in the corporatization mold, what makes the city state remarkable is the way it combines an increased role for private payments and competition among providers with extensive government intervention in defiance of the traditional notions of division between public and private.

A central claim of this article is that public hospitals are a valuable health policy tool, provided they are backed by a conducive environment comprising an appropriate mix of autonomy and control. However, establishing such a condition is difficult, as it requires a strong autonomous state that is free from self-serving sectional interests and with the administrative capacity to implement its decisions. As widely observed in the literature, Singapore has a strong state par excellence, with a ruling party that works very hard at retaining voters' enduring support through superior policy performance (Chu, 1989; Haggard, 1990; Hobson & Ramesh, 2002; Yeung, 2006). Its constant attention to improving the health system is an indication of its appreciation of the importance the population ascribes to it.

## Health Care in Singapore: Background

Singapore is a prosperous island with a rare achievement: Its residents enjoy fine health status with neither the government nor the residents spending much on health care. The World Health Organization's (WHO) *World Health Report 2000* (which assessed national health systems in terms of care quality, cost-effectiveness, and accessibility) ranked Singapore sixth overall among the 192 countries it evaluated (WHO, 2000). Between 1970 and 2004, its infant mortality rate declined by more than 85%, while life span increased by 16%. Its infant mortality rate of around 2 per 1,000 births is less than half the average rate in OECD, whereas its average life expectancy of 79 years is superior to the average in OECD (World Bank, 2006). The health system also performs very well when measured for healthy life expectancy at birth: 69 for men and 71 for women, which makes Singapore one of the world's top performers in this regard (WHO, 2007).

Singapore's health status looks yet more striking if seen in the context of the comparatively small amount of money it spends on health care. Its per capita health spending of US\$915 is less than one fifth the level in the United States and less than one half the OECD average (World Bank, 2006). Similarly, total health expenditures forms only 4.4% of the

**Table 1**  
**Health Care Policy Indicators for Singapore, 1998-2003, Annual Average**

	Singapore		United Kingdom		United States	
	1998-2000	2001-2003	1998-2000	2001-2003	1998-2000	2001-2003
National per capita GDP (international \$)	21,309	23,890	25,251	27,886	32,682	35,394
Expenditures						
Per capita total expenditure on health (US\$)	834	915	1,755	2,098	4462	5,323
Total expenditure on health as % of GDP	3.9	4.4	7.1	7.7	13.2	14.6
Government expenditure on health as % of total expenditure on health	38.8	34.9	80.6	84.0	44.0	44.7
Government expenditure on health as % of total government expenditure	7.9	7.1	14.3	15.5	16.8	18.1
Out-of-pocket expenditure as % of private expenditure on health	97.2	97.1	55.3	67.9	27.0	25.0
Facilities						
Hospital beds, per 10,000 population	4.00	2.90	4.27	4.20	3.60	3.45
Hospital beds, % in public sector	81	75				
Physicians, per 1,000 population	1.49	1.40	1.90	2.05	2.17	2.25
Health status						
Infant mortality rate (per 1,000 live births)		2.02		5.02		6.02
Life expectancy at birth (years) females	19.8 (1970)	82.02		81.02		80.02
Life expectancy at birth (years) males	67.0 (1970)	77.02		76.02		75.02

Source: World Health Organization (2006); World Bank (2006).

GDP, which again is less than one third the level in the United States, and about one half of the OECD average (Table 1). Even when adjusted for Singapore's per capita income, the island state spends only half of what would be predicted for a country at its income level (Wagstaff, 2005, p. 4).

Significantly, the public sector accounts for only 35% of total health care expenditures in Singapore, and the remaining 65% comes from private sources. Indeed, the government's expenditure on health forms only 1.2% of GDP, compared to the OECD average of nearly 6%. Notably, nearly all private health care expenditures in Singapore is from out-of-pocket payments, as private insurance payments form less than 2% of total private expenditures.

In addition to out-of-pocket payment, health care financing system in Singapore consists of tax financing, compulsory savings (Medisave), insurance (Medishield), and means-tested

assistance (Medifund). Tax financing consists of government transfers to public hospitals as subsidy for treating patients who cannot pay the full costs of treatment. Such transfers form 25% of total health care expenditures and 70% of the government's health care expenditure. Medisave is a medical savings account arrangement under which the working population is required to compulsorily save 6% to 8% of their earnings (depending on age). The accumulated funds may be withdrawn to pay for approved hospitalization expenses. Medisave is supported by Medishield, which provides basic and low-cost medical insurance against catastrophic hospitalization bills. Annual Medishield premium range from S\$30 for those below 30 years of age to S\$510 for those aged 80 years. It is a voluntary but unsubsidized scheme, though the premium is kept low to increase uptake and about half of the population subscribes to it.

Both Medisave and Medishield impose numerous exclusions and severe copayment conditions and, unsurprisingly, form 8% and 2%, respectively, of total health care expenditures. Even together, government subsidy, Medisave, and Medishield leave a large payment gap that is covered largely from out-of-pocket payments. Private insurance plays an insignificant role in the financing system in Singapore. Those unable to pay from their pocket are assisted through a stringent means-tested program called Medifund.

Although private payments dominate health care financing, the hospital system itself is dominated by the public sector as government-owned hospitals provide three quarters of all hospital beds on the island. Public hospitals in Singapore are, however, unconventional in that they recover much of their costs from users. Beds in public hospitals are divided into four wards, according to the level of privacy and frills they offer. The highest class wards (A) recover the full costs of services from patients, whereas the government subsidizes 20% of the costs in B1 ward, 65% in B2 ward, and 80% in C class ward. Approximately 27% of public hospital beds are in C class wards, 38% B1 and B2 class, and the remaining 35% in A class ward (Ministry of Health [MOH], 2001).

There is no means test for selecting lower class, and hence more subsidized wards. Although residents have complete choice with regard to hospitals and wards, it is assumed that lower class wards will only be selected by those who cannot afford higher class wards, which offer greater convenience and reputedly better clinical service. Despite the lack of means test, the targeting seems to work. In 2002, more than 60% of the occupants of class C wards were from the bottom two income quintiles, though 10% of the occupants were from the top income quintile (Lee, 2004).

Nearly half of all physicians in Singapore are in private practice and around two fifths of all physicians are registered as specialists. Government physicians are paid a fixed salary, but those with heavy clinical load may choose instead an incentive based on their clinical billings. Physicians in public hospitals are well paid, though less than their private counterparts, which exert constant upward pressures on remunerations in public hospitals (Massaro & Wong, 1995).

Admission rate for acute care in Singapore is approximately 91 per 1,000 population per year, which is considerably lower than the 118 in the United States (but similar to some aggressive health maintenance organizations [HMOs]) and 147 in the United Kingdom (Khoo, 2004). The average length-of-stay at public hospitals is about 5.4 days, which is lower than the OECD average though similar to the American HMOs (Massaro & Wong, 1995).

In contrast to hospital care, three quarter of ambulatory care is provided by private practitioners. Government's role in primary care is confined to running 26 public clinics (poly-clinics) that provide heavily subsidized, but not free, services to those willing to queue.

Patients generally pay about 50% of the costs whereas the elderly and children pay 25%. The polyclinics allow the government to provide subsidized services to those who cannot afford private sector charges as well as to exert downward pressure on private clinics' charges (Hsiao, 1995).

Private hospitals exist and are indeed lightly regulated but they are not subsidized. The government regards private hospitals as a vital alternative source of innovation and a reference for performance benchmarking, in addition to the business activity they generate from servicing foreign patients. They are patronized almost exclusively by upper income Singaporean and international patients. Approximately 150,000 foreign patients sought treatment in Singapore's hospitals, mostly in private hospitals, in 2000, and their number is set to rise to a million in the near future (Khoo, 2003).

The conclusion to be drawn from this short description of the performance and organization of the health care system in Singapore is that it has delivered a fine health care status at modest costs. A distinctive feature of Singapore's health care system is the coexistence of choice and high user charges with overwhelming dominance of public hospitals in inpatient care. Because hospitals are the largest component of the health care costs (Preker & Harding, 2000), which in Singapore is overwhelmingly dominated by the public sector, in the following discussion we will review the organization and management of public hospitals in Singapore with the purpose of understanding their contribution to providing affordable health care.

## **Reforming Public Hospitals in Singapore**

Singapore was a British colony until 1959, and the colonial legacy is still strongly reflected in its hospital system. Over the decades, but especially in the 1950s, the British government gradually built public hospitals providing free tax-funded services in the colony. The People's Action Party, which first formed government in 1959 and has had an uninterrupted rule since, continued the arrangement and indeed expanded it as a part of its strategy to win popular support (Ramesh, 2000). The government's attitude began to change in the early 1980s in the face of rapidly rising health care expenditures and an aging population. The problem of rapidly rising health care costs was compounded by problems of rigid rules and unresponsive staff at public hospitals. But marketizing hospital care, while still keeping it accessible, turned out to be a more challenging task than the government initially realized, and it has had to constantly change and fine-tune its measures.

Efforts to reform public hospitals in Singapore have gone through three overlapping phases. The first phase lasted from the mid-1980s to early 1990s and concentrated on corporatizing public hospitals and promoting competition among them. The second phase started in the early 1990s and was characterized by the reassertion of government direction for the hospitals. The shift in direction followed the realization that competition had led to improvements in quality but also to increase in costs, which the government sought to contain through greater direction over hospitals' operations. By the late 1990s, the government was more knowledgeable about the working of the health care market and began to introduce subtler instruments of control and competition with emphasis on economy of scale, accreditation, and provision of information to consumers, thus ushering in the third reform phase which is ongoing.

Concerted reform of public hospitals began with the launch of the National Health Plan in 1983. Four guiding principles underlay the plan: free choice for consumers, greater cost sharing by consumers, market competition wherever possible, and government-financed basic health care for those who could not afford to pay (Hsiao, 1995). It accordingly recommended higher user charges at public hospitals and the establishment of a compulsory medical savings scheme to enable consumers to pay for the higher charges. To improve public hospitals' efficiency, the plan proposed appointment of professional managers with greater autonomy, along with adoption of commercial accounting practices. But the key to improving efficiency was to be competition for patients among hospitals, which was expected to lower costs and improve service quality.

The financing component of the Plan was accomplished through the launch of the Medisave scheme in 1984 and gradual increase in user charges. The reform of public hospitals was a more complex and prolonged process. In 1985, the government established a nonprofit holding company called the Health Corporation of Singapore Private Limited (HCS) for the purpose of owning autonomous public hospitals. It was registered as a private company, with the government as the sole owner. HCS, in turn, owned individual public hospitals that were also registered as separate private companies. The HCS and all its subsidiary hospitals had their own chief executive officer and board of directors appointed by the government in its capacity as the owner. The unusual arrangement was intended to allow broad autonomy to hospital managers while maintaining the government's ownership rights.

The establishment of the National University Hospital Private Limited (NUH) as a subsidiary of HCS in 1995 marked the beginning of the phased restructuring of public hospitals. The Hospital Corporation of America was hired to advise on corporatization and serve as consultant managers of the newly corporatized hospitals. Yet the government moved cautiously, taking 15 years to corporatize all public hospitals. Each restructured hospital was fully autonomous and given the power to recruit staff, set remuneration, and decide on deployment of resources. Each hospital's management was accountable to its board of directors and had to follow commercial accounting principles and procedures.

The tricky part of the reforms centered on promoting competition among hospitals without impairing access for those unable to pay. It promoted competition by encouraging hospitals to attract unsubsidized A and B1 ward patients because they could retain the surplus (revenues minus costs) generated from such patients. For the B2 and C ward patients, the government paid only for the gap between what patients were billed and what they actually paid. The objective of the unusual financing arrangement was to promote competition for full-fee paying patients without undermining the incentive to treat subsidized patients. However, it did not turn out as expected, because hospitals concentrated on full-fee paying patients. They began to offer new clinical services, purchase the latest medical technology, and hire well-known physicians with the objective of attracting well-heeled patients. These developments had the effect of raising prices at a faster rate than was the case before restructuring. At the same time, as the charges were rising, the hospitals were replacing subsidized beds with full-fee paying beds, ostensibly because of shifting demand but critics suspected ulterior motives.

By the beginning of the 1990s, there was widespread perception that public hospitals were concentrating unduly on revenue-maximizing activities to the detriment of the mass population. The perceptions, which provided fodder for opposition parties, led the government to

appoint a ministerial committee on health policy. The resulting white paper published under the title *Affordable Healthcare* bluntly noted that “market forces alone will not suffice to hold down medical costs to the minimum” (Liu & Yue, 1999, p. 27). It went on to say that “in healthcare, supply tends to create its own demand, thus raising healthcare expenditure. The Government therefore needs to intervene to prevent an oversupply of services, to dampen unnecessary demand and ultimately, to control costs” (MOH, 1993). The report particularly emphasized the need to regulate health care fees charged by providers and control the supply of hospital beds and physicians. It also boldly addressed the delicate issue of rationing demand: “We cannot avoid rationing medical care, implicitly or explicitly . . . . To get the most from the limited health budget, we need to exclude treatments which are not sufficiently cost-effective to belong to the basic health package available to all.” It was the clearest statement to the effect that the government was committed to providing only a “basic health package,” which not only excluded cosmetic surgeries but also transplant procedures; “artificial appliances other than the most basic models”; “experimental drugs”; and “high cost methods of investigation and treatment” (MOH, 1993, p. 24).

The publication of the white paper marked the beginning of the second reform phase. Its conclusion that “we need additional controls to keep hospitals efficient and to prevent cost inflation” (MOH, 1993, p. 35) accurately summed up the direction of reforms during the 1990s. First, to encourage public hospitals to concentrate on providing inpatient care to middle- and lower-income groups, the government limited their proportion of beds in A class wards to 13%. Relatedly, public hospitals were asked to maintain the share of beds in Class C wards at about 30% the total. Second, to further reduce the corporatized hospitals’ revenue-maximizing tendencies, the MOH imposed revenue caps in the form of set average cost per patient day for different services. The rates are adjusted annually and take into account CPI as well as “medical progress.” Hospitals exceeding the limit have their government subsidies cut accordingly. Conversely, hospitals staying within the revenue limit are allowed to retain any financial surplus they generate. Third, to incentivize provision of services to C and B2 class patients, the government introduced a funding formula based on units of service actually provided instead of block grant. Fourth, to control the supply of physicians, annual admission to local medical school was capped at 150 students, and the list of foreign medical schools degrees recognized for practicing in Singapore was reduced from 176 to 28 (Massaro & Wong, 1995). Fifth, corporatized hospitals were required to seek MOH’s approval before acquisition of expensive technology and introduction of new clinical specialties. Finally, although fees remained the purview of individual hospitals, MOH approval was required for decisions to significantly increase charges (Hanvoravongchai, 2002).

The third phase of reforms began in the late 1990s as the government sought to consolidate and build on its past reforms and establish institutions and processes that promoted desired behavior on the part of hospital managers without detailed intervention. The first measure in the direction was the decision in 1999 to cluster individual hospitals into two groups of hospitals. The intense competition among individual hospitals was viewed as hindering planning and optimal deployment of resources. The large disparities in the size and reputation of different hospitals also made competition difficult for the smaller and less reputed hospitals. The government therefore announced the creation of two similarly sized “clusters” of public hospitals and clinics to replace the HCS: the National Healthcare Group (NHG) and the Singapore Health Group (SingHealth). The reorganization was intended to

promote economy of scale, effective coordination and planning of resources, better integration of inpatient and outpatient facilities, and a more effective patient referral system within each cluster.

NHG and SingHealth are separate private companies owned entirely by the MOH Holdings Private Limited, which is a holding company owned by the government. Similarly, each public hospital (except Alexandra Hospital and Institute of Health) is a separate private company owned entirely by either NHG or SingHealth. A CEO who reports to a board of directors appointed by the MOH heads each cluster as well as each hospital. To promote vertical integration between outpatient and inpatient care, the ownership and management of outpatient “polyclinics” was awarded to the two clusters. Until then, primary care was provided by polyclinics owned and managed directly by MOH. The clusters are, thus, vertically and horizontally integrated firms offering full range of acute, specialist, and general outpatient services.

Notwithstanding government ownership, NHG and SingHealth and their subsidiary hospitals are separate firms subject to the same company laws that apply to private firms. Legally, they enjoy operational autonomy in all areas, including recruitment, remuneration, purchase, and pricing of services. They also have substantial revenues and surplus from treating patients in nonsubsidized wards, which reinforces their autonomy. Yet the fact that the government remains the sole owner means that it can control and direct them, if necessary, in ways not possible if they were truly private firms.

Another policy shift during the third reform phase was the government’s attitude toward physician numbers. By the late 1990s, the government realized that its policy of limiting doctors’, especially specialists’, numbers may have caused a shortage that was not only inflating their wages but also stunting hospitals’ capacity to expand their medical tourism business, which is heavily concentrated in nonessential services. It accordingly increased the number of students admitted to study medicine, expanded the number of recognized international medical degrees, and began to actively recruit foreign doctors (Balaji, 2004). These decisions were made and implemented in consultation with the Ministry of Manpower and the medical profession. Adjusting the supply of physicians was facilitated by the fact that medical education is monopolized by a public university, and the immigration policy in Singapore has for long been an integral part of the economic development strategy.

After it was found that the adoption of output-based funding formula in the mid-1990s was encouraging hospitals to increase the quantity of services they provided, in 1999 the government adopted a Casemix funding formula. The Casemix arrangement, which pays a set fee for standard services, creates incentives for hospitals to make better use of resources because they are allowed to keep any surplus. To prevent underservicing, a problem innate to Casemix, the government recently moved to a hybrid system comprising both block funding and Casemix. The minister of health explained as follows:

If hospitals are given piece-rate incentives, they would tend to pursue volume, leading to over-servicing and higher healthcare cost . . . . But subventing hospitals at a fixed block is also not the panacea. Hospitals may pocket the block budget and do the minimum, pushing patients to one another to shift their costs, resulting in longer queues and under-treatment . . . . I am [therefore] going for both. Where outcomes are well-defined, it would make sense to continue with piece-rate subvention. (Khaw, 2005, Block Budget section, para. 1-3)

About 70 medical conditions are financed on a Casemix basis and the remainder on a block grant basis (Khaw, 2005). There is continuing effort to understand the costs of various treatments to extend the scope of Casemix funding. Although government funding forms less than half of public hospitals' revenues, it is substantial enough for them not to want to lose it. In any case, the government owns the hospitals and indirectly controls the Medishield and Medisave schemes; it is imponderable that public hospital managers would defy the government on funding matters.

Another policy tool the government has employed recently to improve hospitals' performance is to encourage them to meet and indeed exceed national and international quality standards. In 2000, the MOH mandated all acute care public and private hospitals to participate in the Maryland Quality Indicator Project (QIP), which involves monitoring a set of clinical quality indicators and benchmarking them against national and international norms (Lim, 2004). All public hospitals have gone on to voluntarily acquire accreditation from Joint Commission International (JCI), a respected U.S.-based international industry standard for quality, far ahead of their private counterparts. Although the objective of the effort to acquire international accreditation is mainly to make public hospitals attractive to foreign full-fee paying patients, the benefits spillover to the entire hospital system.

To take advantage of modern information technologies available for hospital management, the government has encouraged hospital clusters to harmonize their financial, clinical, administrative, and diagnostic processes through integrated information systems. Both clusters now maintain comprehensive information on patients that can be shared by all institutions within a cluster, and efforts are under way to share it across the clusters (Kankhar, 2005). The government attained its objectives without explicit subsidy or directive, relying instead on persuasion and its close relationship with the hospitals.

An innovative measure the government has employed to improve service quality and lower prices is to increase the information on hospital charges and clinical outcomes available to customers. As the minister of health put it,

For economics and markets to work, we must make sure that the conditions for market competition exist. That is why I published the bill sizes for the common medical treatments . . . . When competition is brought to bear on these services, we will then have the right incentives for the health care providers to do the right thing, to raise standards even as they reduce cost. (Khaw, 2005, *Can Markets Work in Healthcare?* section, para. 6, 7)

Since 2003, public hospitals have been required to publish their average bill sizes (which includes charges for room, treatment, surgery, laboratory test, etc.) for different common conditions and procedures. The collated data are subsequently published on the MOH's Web page (MOH, n.d.). The published data show considerable variations across hospitals: The bill size for Appendicectomy at the 50th percentile ranges between S\$2,502 and S\$3,883 in Class B1 wards and between S\$532 and S\$895 in Class C wards (MOH, n.d., Appendicectomy).

The hospital managers were understandably resistant, but public hospitals were left with no choice but to comply. As of November 2006, the size of bill at the 50th and the 90th percentile was available for 140 common conditions and procedures. In 2006, the government turned its attention to clinical outcomes, starting with cataract surgery, which is a standard

procedure performed in large volumes. The government plans to expand the list of conditions for which it collects and publishes data, moving gradually from simple to more complex procedures. Private hospitals continue to evade the scrutiny and do not usually participate, or participate by providing noncomparable information, but may have to eventually comply because of pressures for more information from their customers.

## **Assessment of the Reforms**

The pattern of public hospital reforms in Singapore significantly parallel those found in OECD countries, especially the United Kingdom. Similar to NPM reforms in a variety of policy sectors, efforts to reform health care started with the introduction of competition and quasi-markets in the mid-1980s. The efforts were based on the assumption that lack of competition lay at the source of public hospitals' inefficiencies and poor services, which could only be addressed through exposure to competition (Jakab et al., 2002; Minogue, 2001; Osborne & Gaebler, 1992). Subsequently, when the results did not conform to expectations, attention shifted to reassertion of government control over health care providers. More recently, although the focus on competition and controls continues, governments have also emphasized decentralization, organizational autonomy, and self-regulation (Bevir & Rhodes, 2003; Dent, 2005; Dunleavy et al., 2006; Rhodes, 1997; Stoker, 1999). However, notwithstanding decentralization and organizational autonomy, the government retains the right, and indeed uses it unhesitatingly when necessary, to pursue its objectives (Hood, James, & Scott, 2000). These shifts in public sector reforms in many OECD countries have strong parallels in Singapore's health care sector.

Singapore's hospital reforms began on an ambitious note, in that they sought reduction in government expenditure on health care, although at the same time improving quality and maintaining access. The high ambitions were reflected in the broad scope of the reforms, targeting both demand and supply sides of the health care market. These are difficult objectives to pursue simultaneously, and the government has had varying levels of success with them.

On the demand side, all hospital users are required to pay at least a part of their health care costs, as there is no entirely free service in Singapore. To enable the population to afford health care, the government partially subsidizes lower-class wards in hospitals, requires the working population to contribute compulsorily to Medisave, and offers a low-cost insurance against catastrophic medical bills (Medishield). These measures are complemented by supply-side measures intended to restrain costs and maintain access.

On the supply side, the emphasis during the first phase of the reforms was on granting autonomy to the managers of newly corporatized hospitals and making them compete with each other and with private hospitals. The government hired private sector managers and consultants to give the public hospitals a kick-start in the direction. The result was immediate, as the general ambience and service quality at hospitals improved, and managers concentrated on attracting patients. Elimination of backlog of patients waiting for elective surgery, as hospitals increased supply to meet demand, was one of the most visible effects of competition. Productivity, as measured by the number of adjusted patient days per staffer, too increased by about 20% in the years following reform (Hsiao, 1995). A user survey in 1992 showed that 88% of survey patients were satisfied with the services at public

hospitals (Hsiao, 1995). A similar patient survey in 2003 showed Total Experience index of 91 and Value for Money index of 86 (NHG, 2005). Indeed public hospitals' service level is considered so high that private hospitals find it difficult to compete with them, not just in terms of price but also quality (Khoo, 2003).

However, competition among hospitals also brought higher expenditures because of the managers' focus on generating revenues. To enhance their appeal to full-fee paying customers, hospitals rushed to improve hotel-type frills, acquire latest medical equipments, and hire well-known physicians. At the same time, they underemphasized their commitment to providing affordable health care to the population, most evident in the reduction in the number of Class C wards and the perceived assignment of junior doctors to the subsidized wards. Most significantly, charges and expenditures skyrocketed: the per capita health care costs rose 2 percentage points faster after the introduction of the reforms compared to the prereform year (Hsiao, 1995). Part of this accelerated increase in expenditures was because of better quality services, but a lot was because of other factors. With new-found autonomy, hospitals competed not on the basis of price but quality, which was portrayed in terms of sophisticated equipments and reputed physicians. There was widespread duplication of underutilized equipments and the physicians' income rose sharply after the introduction of reforms (Hsiao, 1995). All these had the effect of increasing prices as hospitals sought to recover their increased costs.

The 1990s reforms concentrated on reinforcing practices that improved quality while imposing controls on those that raised costs or restricted access. The government imposed new controls over the number of physicians and hospital beds, the proportion of beds in Class C wards, acquisition of expensive medical equipments, and introduction of new clinical specialties. At the same time, the funding formula was fine-tuned to encourage public hospitals to expand the supply of needed services. The government first moved to output-based funding, which paid according to the number of medical procedures performed, later moving to Casemix financing when hospitals were suspected of overservicing to take advantage of the funding arrangement. The Casemix formula creates incentives for managers to make better use of resources while containing costs. Concerned about possible underservicing, the government recently moved to a hybrid system comprising both block and Casemix funding. The Casemix rates in Singapore are considered low by international standards and exert enormous pressure on managers to reduce costs. The formula for clawing back payments for services in excess of the stipulated quantity is another strong instrument for curbing oversupply and hence costs.

By the mid-1990s, public hospitals began to operate largely in ways the government intended: fee increases became less frequent, proliferation of new specialties slowed down, and the number of beds available in Class C expanded. Correspondingly, the government subsidies' share of total health care expenditures that had declined rapidly in the late 1980s and reached 18% of the total by 1992 began to creep up again and stabilized at 25% (Massaro & Wong, 1995). The economic recession, which started in late 1997, increased the demand for lower-class hospital wards and, hence, the amount the government spent on health care subsidies.

However, the government realized that the controls it had imposed were a blunt instrument not suited for a policy framework whose objective was autonomy and competition. Experience abroad, especially of some HMOs in the United States, showed that providing

standardized comparable information on cost, pricing, and clinical outcomes in an easily comprehensible form empowered consumers vis-à-vis hospitals (Gee, 2005). Although these reforms are too recent to allow definitive assessment, anecdotal evidence is encouraging. After the government compiled and published the average bill sizes for different conditions, hospitals with higher rates reduced their prices, sometimes by as much as half (Anonymous, 2003). The lowest bill size for each condition in effect became the benchmark for all hospitals to follow. There may be a similar trend emerging with respect to clinical outcomes. Recently published data on cataract surgery show that although the success rate is broadly similar across hospitals (around 95%), there is a vast difference in the price they charge, ranging from S\$2,300 to S\$4,600 (*Straits Times*, March 13, 2006). It is expected that patients will use this easily available information to decide whether they want to pay twice as much for a service whose clinical quality is similar to the lowest cost service.

Encouraging public hospitals to secure international accreditation is another tool for improving quality, which requires little direct government involvement. Once one hospital has it, others are pressured to secure it to remain competitive. The hospitals' accreditation efforts thus improve quality without costing the government anything. Hospitals, which spend considerable resources preparing for it and complying with the standards, hope to recover the costs from the extra business the accreditation attracts.

Clustering of hospitals into two large groups is also likely to have had beneficial effects. There have been discernible improvements in integration of primary, specialist outpatient and inpatient care since clustering. Economy of scale, the other objective of clustering, is more difficult to judge. Gains from bulk purchasing seem plausible, but more information on the sector is needed to evaluate its overall efficiency effects.

However, there is scope for improvement in the areas of information technology and transparency in pricing. The existence of two separate clusters makes sharing patient information more difficult as each tries to lock in its patients. It may therefore be necessary for the government to subsidize the information infrastructure and then require the two clusters to share them. The hospitals have also not been sufficiently transparent with regard to treatment costs and outcomes, and there is a lot the government can do to push them further in the direction. The island state certainly has the necessary technology, financial resources, and administrative capacity to require the hospitals to expand the information they provide to consumers.

If increasing the share of private expenditures on health care was an important objective of the reforms, then it has been substantially achieved. User charges' share (paid through out-of-pocket, Medisave, or employer) of public hospital revenues increased from 15% of costs in the prereform period to 55% in recent years, whereas the government's share shrunk correspondingly (Phua, 2003, p. 460). This is rather unique because public expenditures on health care typically expand with rising national income. Medisave has no doubt helped households with the extra financial burden, but they have had to also dig deeper in their pockets to pay for treatment. This is reflected in the fact that household spending on medical care rose from 1.7% of total household spending in 1978 to 2.6% in 1988 to 3.3% in 1998, and to 5.1% in 2003 (MOH, 2004).

The public hospital reforms adopted in Singapore have serious implications for equity but little is known about them. There is strong evidence from international experience that hospital autonomy and user charges have a negative impact on equity (Castaño, Bitran, & Giedion, 2004). The Singapore government's subsidy for lower-class wards no doubt

mitigates the problem. Similarly, Medifund alleviates access problems for the desperately poor, but there are households that do not qualify for assistance, but their income is not high enough to pay for services without financial hardship. Singapore has one of the lowest hospital admission and inpatient surgery rates in the world (Khoo, 2004), and it is unclear if this is because of financial barriers. The bottom income quintile of the population already spends nearly 7% of household income on health care and the share is rising fast because of stagnant wages for this income group (Leong, 2006). Although the cause of the inequities lie in the health care financing system, it adversely affects the public hospitals' commitment to providing affordable care to all. Although no one is currently denied essential care in public hospitals because of lack of ability to pay, ad hoc relief is unlikely to work in the long run because of demographic shifts.

It is unlikely that the goal of making households bear the bulk of health care costs will work in the face of a rapidly aging population. The number of the aged is still small enough for the government to be able to address the problem through meager Medifund and ad hoc relief, but it will not be enough when they will form more than one fifth of the population by 2020. There is a strong case in Singapore for establishing a comprehensive insurance scheme to complement its public hospital management reforms (Asher & Nandy, 2006). The government is aware of the problem but finds it difficult to deal with it because of its antipathy toward comprehensive health insurance and the associated third-party payment system.

## Conclusion

Similar to many other countries, Singapore began reforming its public hospitals in the mid-1980s in the face of mounting public expenditures on health care. Through the reforms, the government simultaneously pursued the objectives of reducing costs and improving quality, while maintaining access. The reforms combined a mix of autonomy and control, with the former intended to promote efficiency through competition and the latter to restrain managers' actions that would raise costs or compromise access. The hospital reforms paralleled changes in the health care financing system: User charges were increased, and a compulsory medical savings account was established to raise the share of health care expenditures borne by patients.

The corporatization of public hospitals and competition among them improved service quality and cleared surgery backlogs, but it also increased costs and reduced affordability. The adverse trends led the government to begin to intervene in all significant aspects of hospitals' operations, their autonomy notwithstanding: the types and volume of specialized clinical services they provide, the revenues they generate, the salaries they pay, and the expensive equipments they purchase. It also tweaked the formula by which it paid hospitals to ensure that hospitals did not under- or oversupply services. Subsequently, it grouped individual hospitals under two clusters for the sake of economy of scale and better integration of services. Recently, the government has taken measures to promote transparency in hospitals' bills and clinical outcomes.

Singapore's case shows that employing market mechanisms to improve public hospitals' performance requires targeted but extensive government interventions. Such detailed interventions require a close relationship between the government and hospitals but not so

close that the latter are able to use their privileged relationship to evade accountability to consumers. The Singapore government relates to public hospitals in three separate but intertwined roles: as a regulator, as a purchaser, and as an owner. Similar to other countries, it employs a broad range of laws, rules, standards, and licensing requirements to shape the health care providers' behavior, including close audit of financial accounts and clinical practices. Similarly, the government is the largest single purchaser of hospital care, which enables it to secure significant price concessions and impose stringent supply conditions. However, it is the unusual nature of its ownership relationship that is most notable.

Public ownership of what are legally private firms allows hospitals the autonomy they need to operate in a competitive environment but yet be within the government's direct reach. It provides the government with an instrument for receiving market feedback and controlling hospitals' behavior. As an owner, the government can shape hospitals' behavior without having to resort to onerous regulations or purchase negotiations that would be necessary if they were truly private firms. For instance, this has been particularly useful for controlling user charges, physicians' remunerations, and the number of hospital beds in different ward classes.

Singapore's hospital reforms are consistent with successful measures in OECD countries highlighted in a recent review by Docteur and Oxley (2003). They found evidence supporting expenditure-reducing potentials of publicly financed, single-payer systems. In Singapore too, the MOH purchases Class C and B2 beds centrally and in bulk, and the two hospital clusters conduct bulk purchasing of supplies. They also found positive effects for separation of purchaser and provider functions, greater competition among providers and, benchmarking against best performing hospitals, and these measures are in place in Singapore as well. Moreover, they found that ". . . output-related prospective payment systems can encourage providers to minimize costs without hurting patient care if associated prices are set correctly and there is appropriate control of quality and of strategic provider behavior" (p. 49). This is a difficult task and the Singapore government continues to refine the formula by which it pays hospitals. Docteur and Oxley found less success for measures promoting competition among providers, but Singapore could overcome many of the problems by maintaining a tight grip on hospitals while encouraging them to compete.

The case study shows that health care is a difficult sector to subject to traditional public management reforms emphasizing privatization, marketization, and deregulation. Although there is plenty of scope for substituting command and control policy tools of the past with subtler and more indirect policy tools (Salamon, 2002), the innate structure of the health care market is such that government control is essential if the services are to be efficient and consumer-oriented, as well as accessible to all. The challenge for governments is to understand the aspects of markets that function well on their own and those that do not, and target interventions only at the latter. Unfortunately, rising to the challenge requires a level of bureaucratic capability and political autonomy that is rare in governments. Singapore has the advantage of having a "hard state" with both the will and the capacity to do what it takes to make the public hospital system work.

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