Health care systems in transition II.
Singapore, Part I.
An overview of health care systems in Singapore

Lim Meng-Kin

Introduction

Singapore's approach to health care policy is a unique combination of free market principles with careful government control. Eschewing egalitarian welfarism in favour of market forces to allocate scarce human, financial, and medical resources, Singapore has succeeded in building a nation with impressive health indicators which place it among the best in the world. The economy has grown at an average of 8 per cent a year with health care spending averaging 3 per cent of GDP. Public spending accounts for roughly 1% of this and private spending 2%. Health care financing is achieved through a unique three-tier scheme involving compulsory savings, low-cost catastrophic illness insurance, and a state-funded endowment fund to pay for health care needs of the destitute. As Singapore proceeds to realize its National Health Plan, it grapples with new challenges such as a rapidly ageing population, shortage of medical manpower, and increasing commercialization of medicine.

Keywords: Singapore, health care

Background

Singapore, a tiny island-state of 640 km², three million people, and no natural resources, has done remarkably well since gaining independence in 1965. The former British colony – now a thriving ‘tiger economy’ – boasts a per-capita income which surpasses that of the United Kingdom. Its key health indicators are just as impressive (Table 1).1,2

Not too long ago, in 1950, the infant mortality rate was 82 per 1000 live births.3 Average life expectancy at birth was 62 years in 1957 – the earliest that such a statistic was published.4 Tuberculosis and pneumonia were the top two causes of death during this period. By 1970, they were replaced by cancer and ischaemic heart disease.5 What accounts for the dramatic improvements in health status over such a short period of time?

Singapore then and now

It is useful to recapitulate that post-war Singapore was a filthy, overcrowded city with barely one-third of the urban population housed satisfactorily.6 Singapore society – a diverse community of Chinese, Malay, Indian and Caucasian origin – was then ‘profoundly non-egalitarian, with 20 per cent of the population in a state of poverty and a virtual absence of social services’.7 The 1950s and early 1960s were a tumultuous period characterized by perpetual anti-colonial agitation, communist subversion and communal unrest, leading up to self-government in 1959 and culminating in independence. Initially, in 1963, Singapore was part of an independent federation with Malaysia but it became a separate and sovereign state in 1965 after the union with Malaysia failed. The prevailing wisdom was that an independent Singapore, cut off from its hinterland, was not viable. But against all odds, it not only survived but became one of Asia’s most prosperous nations.8

The story of Singapore’s ‘economic miracle’ is told elsewhere.9,10 Suffice it to say that Singapore’s excellent state of health owes much to the fact that a successful economy, which has expanded on average at 8 per cent a year since independence, has been translated into housing, water, sanitation, clean environment, nutrition, education – all important determinants of health. Health care has always been placed high on the national agenda.

Primary health care

Shortly after achieving self-rule in 1959, the Government – which has been returned in every general election since then – started a mass-inoculation programme against tuberculosis, smallpox, diphtheria, and poliomyelitis.11 Nutritional supplementation schemes were extended to children suffering from malnutrition. In fulfilment of a pledge to ‘bring primary health care closer to the people’,12 the Government had decentralized the focus of primary health care from an overcrowded main General Hospital, which used to register 2400 daily out-patient

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Table 1 Comparison of selected vital statistics – Singapore and United Kingdom (1994)

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<thead>
<tr>
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<th>Singapore</th>
<th>United Kingdom</th>
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<tr>
<td>Per capita GDP</td>
<td>US $23360</td>
<td>US $17800</td>
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<tr>
<td>Infant mortality rate (per 1000 live births)</td>
<td>4.3</td>
<td>6.2</td>
</tr>
<tr>
<td>Average life expectancy at birth</td>
<td>76.4 years</td>
<td>76.5 years</td>
</tr>
<tr>
<td>Doctor to population ratio</td>
<td>1.770</td>
<td>1.650</td>
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Sources: Refs 1 and 2.

This is a far cry from the situation before 1960, when less than 50 doctors had higher specialist qualifications.21

The push for medical specialization began in earnest in 1970, with the formation of a Committee for Postgraduate Medical Education.22 To develop the base for tertiary health care, the crème de la crème in the public sector were sent to the best medical centres in the world. Hospital facilities were upgraded and sophisticated equipment was acquired. The Government had to take the lead, it was explained, because the private sector will not for a very long time be able to develop the very sophisticated specialities such as radiotherapy, neurosurgery and cardiac surgery which involve extremely high capital cost.23 As it turned out, the timeframe for catching up was overestimated. By the mid-1980s, clusters of private specialist medical clinics were mingling with gleaming shopping centres in Singapore’s fashionable Orchard Road, anchored by two private hospitals with tertiary capabilities. The drive towards medical specialization had indeed been highly successful. The only problem was that the public sector was losing its top specialists to a booming private sector fuelled by rising domestic and regional demand. At times, it seemed as if it was the public sector that was doing the catching up.

**Hospital care**

Over the years, a number of inherited British-built hospitals – typically pavilion-styled, with high ceilings, long corridors, and open wards – have been upgraded and renovated. But in 1981, the Government embarked on an ambitious hospital construction and expansion programme that is still continuing and will

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**Medical manpower and specialization**

Singapore’s only Western-style Medical School, established in 1905, trains around 150 doctors a year. There are now 4495 registered medical practitioners, evenly distributed between the public and private sectors (Fig. 1): 41 per cent are specialists.20

![Figure 1 Supply of doctors.](chart.png)
not see completion until the early 2000s. The list of projects
either completed or nearing completion includes two tertiary
hospitals, two general hospitals, a women and children’s
hospital, a psychiatric hospital, a community hospital, an
institute of health, seven ‘national specialist centres’ – for eye,
heart, cancer, skin, dentistry, blood, and neuroscience – and
seven polyclinics.24

There is currently a combination of 10 public and 12 private
hospitals, providing a total of 10,557 beds. The lion’s share (74
per cent) of admissions, however, is still borne by the highly
subsidized public sector (Fig. 2). Six public sector hospitals
provide 24-hour accident and emergency services. There are, in
addition, 21 voluntary nursing homes providing 2438 beds (64
per cent) and 25 commercially run nursing homes providing
1373 beds (36 per cent) for the elderly sick. To encourage
community participation and initiatives, the Government funds
up to 90 per cent of capital expenditure and 50 per cent of
operating expenditure of voluntary organizations which provide
health care to the elderly, chronic sick, terminally ill or
mentally ill.

Health care costs

Today’s capital costs are tomorrow’s operating costs. With so
much invested in infrastructure, there is naturally concern about
cost-efficiency in the future running of these facilities. In
particular, having witnessed the fate of the developed countries
saddled with runaway health care costs, the Government is
determined to avoid cost escalations.

National health expenditure has remained at 3 per cent of an
expanding GDP throughout the 1980s and 1990s (Fig. 3), so
there is no spending ‘crisis’ as yet, at least not on the scale
experienced in the Western industrialized nations. There is,
nevertheless, official concern that in dollar terms health care
expenditure has been steadily increasing: it rose seven-fold
between 1967 and 1995, from Sin $455 million to Sin $3.38
billion (Fig. 4). The rising trend, as indicated by an annual
increase in real per capita health expenditure between 1973 and
1979 of 7.7 per cent,25 was seen as an ominous portent in the
early 1980s. This, coupled with the realization that increasing
life expectancy and rising aspirations would inevitably lead to
increasing demands for costly health care services, prompted
the Government to think about solving the problem before it
arrived. In 1983, it unveiled a National Health Plan,26 which,
besides detailing the health care infrastructure planned for the
next 20 years, announced Medisave – a novel scheme to finance
individual health care. The Government also proceeded
simultaneously to ‘restructure’ the public sector hospitals and
tertiary-care specialist centres.

Health care financing

To understand Singapore’s health care financing system, it is
essential to understand that it has long been Government policy
that nothing – not even medical services – should be provided
free. Thus, in a telling move in 1960, the ‘brave new’
Government introduced for the first time a system of user
charges, charging 50 cents per attendance at Government out-
patient clinics and doubling the fee to Sin $1 on public
holidays.27 This principle of co-payment – even though the
actual costs recovered may be negligible compared with heavy
government subsidies – is a central feature of Singapore’s
approach to cost containment.

Medisave was implemented in 1984 as an extension of the
larger existing Central Provident Fund (CPF). The CPF is a tax-
exempt, interest-yielding, savings scheme first introduced in
Table 2 Expenditure of Medifund for the financial years (FY) 1993–1996

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<tr>
<td>No. of approved applications</td>
<td>18,454</td>
<td>28,179</td>
<td>40,453</td>
<td>$87,086</td>
</tr>
<tr>
<td>Amount provided</td>
<td>$4.7m</td>
<td>$6.5m</td>
<td>$9.7m</td>
<td>$22.9m</td>
</tr>
<tr>
<td>Approval rate for Medifund applications</td>
<td>99.6%</td>
<td>99.7%</td>
<td>99.7%</td>
<td>99.6%</td>
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1955 to provide a financial protection for workers in old age and which, over the years, has evolved into a social security scheme of sorts. Singaporeans contribute an equivalent of 40 per cent of their gross salaries to their CPF: a 22 per cent employee contribution matched by an 18 per cent employer contribution. Under Medisave, between 6 and 8 per cent — according to age — of every member’s CPF account, subject to a ceiling of Sin $16,000, is set aside to meet his or her own future hospitalization expenses, or that of the immediate family. Any unspent balance in the Medisave account belongs to the contributor and will be paid to the beneficiaries upon the contributor’s death. Medisave is thus a savings, and not a risk-pooling scheme.

Initially, Medisave only covered public hospital stays and the full charge of lower-class beds but in 1986, it was liberalized to cover private hospital stays, and in 1988 extended to cover all classes of beds. In 1995, there were Sin $12.78 billion in 2.4 million Medisave accounts, or an average of Sin $5,400 per account, with withdrawals totalling Sin $311 million for the year.

Medisave is complemented by Medishield, a basic, low-cost catastrophic illness insurance scheme introduced in 1990. It covers hospitalization expenses for major or prolonged illness, and depending on the premium chosen, is subject to a claims limit of between Sin $20,000 and Sin $70,000 a year, or a lifetime maximum of between Sin $80,000 and Sin $200,000. There is a deductible and co-insurance (20 per cent) element, and an upper age limit of 70 years for participation. The premium can be paid annually from Medisave funds. Whereas Medisave is compulsory, Medishield is voluntary. At the end of 1995, Medishield covered 1.5 million lives or 87 per cent of eligible CPF members as well as a quarter million of their dependants. Payouts in 1995 totalled Sin $25.6 million for 43,919 claims. Cancer and chronic renal failure were the top two conditions for claims.

A third "M" — Medifund — is a state-funded safety-net which takes care of the health care costs of those without the means to pay, including people not covered by Medisave or Medishield, or those who have run out of their quota in these programmes. It is an endowment fund created by the Government, interest from which is distributed to the public hospitals to cover costs of patients who are genuinely unable to pay for their hospitalization bills. Since its inception in 1993, 99 per cent of those who turned to Medifund have been given the financial assistance they needed (Table 2). In all, 87,000 patients have received a total of Sin $23 million. This honours a personal pledge given by the Prime Minister that no Singaporean would be denied the treatment he needs because of lack of funds.

The result is a remarkable situation where the private sector’s share of the national health care expenditure has actually been increasing while the government’s share has correspondingly fallen — from 51 per cent in 1965 to 34 per cent in 1984 (when Medisave was implemented) to 20 per cent in 1995 (Fig. 5). All work in the private sector not covered by Medisave is covered by out-of-pocket payments, private insurance or employers.

Restructuring

'Restructuring', which started in 1985 with the newly built National University Hospital, refers to the granting of autonomy to public sector hospitals in the hope that with the adoption of business and financial discipline, greater efficiency and improved quality of service will result. Restructuring is not the same as privatization, although the latter term was initially used but later changed to avoid public misperception that it was a wholesale transfer of hospitals out of the Government’s hands. The restructured hospitals remain wholly owned by the Government through a 100 per cent government-owned Health Corporation of Singapore (HCS). Matters such as recruitment and remuneration of staff, as well as the hospitals’ strategic directions, are decentralized. But sensitive issues such as increases in fees would require governmental approval. This is to ensure that, although the hospitals enjoy flexibility of operations, they continue to fulfil their social mission.

Figure 5 Percentage of Government vs private expenditure.
Currently, only two institutions — a former British military hospital converted into a 462-bed, acute-care general hospital, and a brand new 2751-bed psychiatric hospital — remain unstructured.

Government subsidies enable the restructured hospitals to continue providing subsidized care, the amount of subsidy depending on the class of ward (Fig. 6). However, in spite of this, there has been a discernible shift of patients to the private sector in recent years. This may be due to a perception of better quality of service in the private sector in terms of creature comforts and personalized services, but it may also be due to the fact that many of the better-known specialists who have left the public sector are now found in private institutions. At any rate, even within the public sector, the admission trends show an increasing preference for the higher, and more expensive, classes of ward (Fig. 7).

From the Government's point of view, this should be welcome news, as it means less pressure on Government subsidies. But the exodus of top medical talent does cause concern; subsidized patients who cannot afford private medical care may be deprived of access to the best doctors, and the training of the next generation of doctors may suffer. Institutional doctors who set their sights on future private practice may concentrate on honing their clinical skills at the expense of teaching and research. A visiting consultants scheme is in place to encourage private specialists' continued involvement in the public hospitals' teaching and patient care programmes, and periodic pay adjustment exercises have also been carried out. However, despite current public sector salaries being among the highest in the world, the pay differential is still sloped in favour of the private sector.

**Health promotion and disease prevention**

No description of Singapore's health care system is complete without mentioning its emphasis on health promotion and disease prevention. A 1991 landmark report entitled *Healthy family, healthy nation* argued persuasively for healthy living to be actively encouraged in Singapore. Its recommendations have since been adopted and translated into a multi-pronged, multi-sectoral and continuing national health lifestyle programme. Regular health education, promotion of exercise and outdoor activities, and specific preventive health programmes (e.g. smoking, obesity and AIDS awareness) are well-funded and co-ordinated at the national level. Preventive health strategies are imaginatively tailored to suit specific groups such as schoolchildren, uniformed personnel and the workforce. There is an annual healthy lifestyle month, which is inaugurated by a mass-event launched by the Prime Minister, the 'Great Singapore Workout'.

**Health care philosophy**

Singapore's approach to health care can be summarized as follows: the Government eschews egalitarian welfarism in favour of a largely free market, which it views as the most efficient allocator of scarce resources. But recognizing the imperfections of the health care market, it will intervene whenever necessary, using incentives to encourage demand-side responsibility while discouraging supply-side waste. Government subsidies keep basic health care affordable. A state-funded safety net ensures the poor and needy are taken care of — but not before sitting out and allowing those able to pay for curative services to do so. A cost sharing of the proceeds of sales scheme encourages consumer prudence — which, being transferable within the family, also serves to emphasize family solidarity. A catastrophic insurance scheme protects households from large and unexpected financial losses. The encouragement of private services and the granting of greater autonomy to public institutions reduces state-funded health spending and frees up tax-based resources to meet health promotional and preventive activities that benefit the public good as well as other national priorities.

Singapore's unique approach and its potential as a model has, not surprisingly, drawn the attention of a number of health policy analysts from other countries. However, Singapore's system is not perfect. Singapore has made conscious choices regarding the allocation of health care resources and to tailor its system to its own unique set of circumstances. As a 1993 Government white paper pointed out, whichever way a country chooses to finance health care costs, the burden ultimately falls on the people: insurance premiums...
are ultimately paid by the people, as employee medical benefits form part of the wage costs, and taxes are paid by taxpayers. The question is therefore not “who pays?”, but what trade-offs to make between competing goals such as equitable access, freedom of choice for patients, affordability, and the freedom to organize production and to set prices.37

Future challenges

As Singapore approaches a new millennium, a number of challenges are visible on the horizon.38 These include:

1. cost containment vis-à-vis a rapidly ageing population: less than 7 per cent of the population are at present over the age of 65 and this figure is expected to double to 14 per cent by 2020;
2. quality of care, while medical audit and quality assurance are currently still relatively underdeveloped;
3. medical manpower planning: the Government has just announced that as an immediate step to alleviate the current manpower shortage in the public sector, it will increase the 1997 intake of medical students from 150 to 180 while simultaneously relaxing the registration of foreign-trained doctors;39
4. harnessing information technology: Singapore is working towards a National Health Information System that will allow the seamless flow of information, such as electronic medical records, across all health care establishments;
5. greater emphasis on medical research and development: the National Medical Research Council was established three years ago, committing Sin $80 million so far, and a further Sin $150 million has been allocated to medical research and development over the next five years;
6. tackling new medico-legal and ethical issues that will arise with progress in medical technology.

Added to these is the increasing commercialization of medicine. There is currently a government-inspired push to ‘go regional’, strengthening Singapore’s position as a hub of medical excellence in SE Asia. Leading this initiative are Parkway Holdings – the largest grouping of private hospitals in Singapore, listed on the stock exchange – as well as HCS’s own subsidiary, Temasea Health and several smaller players. The latest to join their ranks is the newly listed Raffles Medical Group, Singapore’s largest for-profit primary health care group, which has announced plans to expand into the regional hospital care market. Its public flotation in April 1997 was 50 times oversubscribed. Also planned is the creation of a multi-million-dollar medical services park, to be co-located with a tertiary hospital, to attract foreign investments and joint partnership ventures ranging from private hospitals to research and development facilities in pharmaceuticals and biotechnology.40

In Singapore, the medical marketplace has arrived. How Singapore grapples with this new medical reality and how it continues to strike a balance between the pursuit of medical excellence on the one hand and the need to keep domestic health care costs affordable and accessible to all on the other, will undoubtedly shape its health care system for the twenty-first century.

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