

Medical Savings Accounts: The Singapore Experience

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NCPA Policy Report No. 203

April 1996

ISBN #1-56808-071-9

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Executive Summary

In 1984 Singapore adopted a system of Medisave accounts, individually owned accounts used to pay for many of the health care expenditures that in the United States would normally be covered by health insurance. The fact that people are spending their own money rather than that of a third-party insurer has helped to curtail Singapore's health care costs, which are about 3.1 percent of gross domestic product. Even with these low expenditures, the income of Singapore doctors is about the same in relation to average wages as physician income in the United States, and patients have easy access to such technology as CAT scans, organ transplants and bypass surgery.

Singapore also compares favorably to other "Asian tigers" in terms of spending and overall health indicators. For example, Singapore had an infant mortality rate of five per 1,000 live births in 1992, equal to that of Japan and lower than that of Hong Kong, which was six.

To achieve this record, the government has implemented three programs that help people pay for medical expenses: Medisave, Medishield and Medifund.

The Medisave Program. Created in 1984, Medisave is a compulsory national health care savings program designed to help citizens meet their individual responsibilities and to supplement funds drawn from their own savings. Medisave contributions range between 6 and 8 percent according to the worker's age, and can be used to pay for a variety of specified inpatient and outpatient medical services, both before and after retirement.

The Medishield Program. Since Medisave accounts alone may be insufficient to cover a serious or prolonged illness, Medishield was established in 1990 as a catastrophic insurance program to pay extraordinary hospital expenses for those under 70 years of age.

The Medifund Program. Since the combination of out-of-pocket, Medisave and Medishield payments may not cover all low-income workers' medical expenses, Medifund was established in April 1993 to provide assistance.

Public institutions dominate Singapore's hospital sector: 13 of the 23 hospitals and 8,640 of the 10,469 beds are in facilities controlled by the Ministry of Health. A key component of the government's

policy is a tiered structure of subsidies based on the setting in which care is delivered and the amenities provided with it. In the public hospitals, there are five classes of wards that receive varying degrees of subsidy, while private hospitals are unsubsidized.

In principle, individuals are free to choose among the five levels. Medical social workers provide financial counseling to everyone at the time of admission into the public hospitals. They advise patients that it is their responsibility to choose a ward class they can afford and to cover their expenses through a combination of subsidy, Medisave, Medishield and personal funds. If necessary, patients can draw on their spouse's, children's or parents' Medisave accounts.

Quality of service is an important issue for Singapore's hospitals. Hospital personnel are responsible for improving service, and senior management makes decisions based on the satisfaction of patients and other customers. For example, patients waiting less than 15 minutes at admission increased from 40 to 71 percent between 1991 and 1992.

Singapore has one of the most sophisticated health care delivery systems in Asia, serving citizens and foreign nationals alike in both private and public hospitals. In terms of efficiency of delivery, Singapore is comparable to U.S. managed health networks and point-of-service plans.

- The hospital admission rate for residents is approximately 1.10 per year per 1,000 population, about the same as aggressively administered HMOs in the U.S.
- The ratio of caregivers to support personnel is 5:1 at Singapore General Hospital — it is 2:1 in benchmark American hospitals — reflecting the increased efficiency that comes from lighter bureaucratic and regulatory loads that Singapore places on the delivery system.
- The average length of stay at Singapore General Hospital is 5.4 days, also comparable to the best American managed care and far less than that in other developed countries.

The Singapore programs provide incentives to reduce consumption and offer protection against extraordinary events and free-rider abuses. The system is efficient and effective, the health status of the people is improving and the national investment in health care is surprisingly low, while hospitals are profitable and physician incomes are relatively high.

Introduction

In 1984 Singapore adopted a system of Medisave accounts, individually owned accounts used to pay for many of the health care expenditures that would normally be covered by health insurance in the United States. The fact that people are spending their own money rather than that of a third-party insurer has helped to curtail Singapore's health care costs. Singapore spends only 3.1 percent of its gross domestic product (GDP) on health care, while the U.S. spends about 14 percent, yet Singapore's hospitalization rate is about equal to that of HMOs in the United States.

"The fact that people are spending their own money rather than that of a third-party insurer has helped to curtail Singapore's health care costs."

In addition, Singapore spends less than many of the other "Asian tigers," while maintaining strong health statistics. For example, Singapore had an infant mortality rate of five per 1,000 live births in 1992, equal to that of Japan and lower than that of Hong Kong, which was six.¹ But even with these low expenditures, the Singapore experiment has succeeded in expanding patients' choices and providing easy access to technology.

Since the U.S. Congress is moving to make tax-free Medical Savings Accounts available to the public, an examination of Singapore's experience should prove beneficial.²

Singapore's Economic and Social Welfare Systems

Singapore is a small (240 square miles) island city-state at the tip of the Malaysian peninsula. Its four official languages (Chinese, English, Malay and Tamil) reflect the ethnic and cultural diversity of its 2.9 million people. In 1965, after 140 years of British rule, Singapore became a semiautonomous state in the Federation of Malaysia and achieved complete independence in 1965. With no natural resources other than a hardworking and tolerant population, this tiny nation has in three decades built one of the most robust economies in the world.

In 1993 the Singapore economy grew by 9 percent and generated a per capita income of S\$27,864, or about \$18,116 in United States dollars.³ Its foreign reserve account is the fifth largest in the world after those of Japan, Taiwan, Germany and the U.S. The unemployment rate is 1.5 percent and the literacy rate 91 percent.

Since independence, the ruling People's Action Party⁴ has managed a paternalistic and authoritarian government and promoted an aggressive social program, under which people are required to save to finance benefits that are provided by government in most developed countries.⁵

The Central Provident Fund

The cornerstone of Singapore's social welfare structure is a government-mandated savings program managed by the Central Provident Fund (CPF). Singapore's provident fund system was originally designed to force citizens to save for their own retirement. With the passage of time, the government has permitted account holders greater freedom to use their funds for a wide range of options, including purchasing a home, buying investments, paying medical bills, purchasing health insurance and paying college expenses. [See the Appendix.] With about 2.4 million participants, CPF accounts totaled \$57 billion, or 72 percent of GDP, at the end of 1994. Because of its size and the inclination of the government to use it for a variety of purposes, the CPF plays a very important role in the economic and social life of Singapore.⁶

Although the deposits are made by both employee and employer, the accounts belong to the individual employee. Currently, required deposits equal 40 percent of wages up to S\$6,000 per month (the average annual wage, including the employer's contribution, is S\$30,038),⁷ with 20 percent each coming from employer and employee. All savings, at both the time of deposit and the time of withdrawal, are tax exempt.

Members maintain three accounts with the Central Provident Fund Board — Ordinary, Medisave and Special accounts. Among these three, the total contribution of 40 percent of income is credited as follows:

- 30 percentage points go to the Ordinary account, which can be used for housing, approved investments, certain types of insurance, loans for college education expenses and topping up parents' retirement accounts.⁸
- Between 6 and 8 percentage points, depending on age, go to the Medisave account for hospitalization and certain other medical expenses.
- 4 percentage points go to the Special account for old age retirement and contingencies.

This targeting of different accounts for different purposes encourages members to spend money on some goods and services (e.g., housing, health care, education) rather than others. Presumably, society as a whole has an interest in encouraging people to obtain these so-called merit goods, many of which are provided by the government — through taxes — in other developed nations. The targeting of accounts for specific purposes also may encourage members to regard their CPF contributions as personal savings rather than as taxes, thus minimizing the work disincentive effects of the contributions.

“Singapore's provident fund system was originally designed to force citizens to save for their own retirement.”

Financing Medical Care in Singapore

In 1992 Singapore spent S\$2 billion, or 3.1 percent of its GDP, on health care. The delivery system is a mix of private and public services. Eighty percent of hospital care is delivered in public facilities, and 75 percent of ambulatory service is provided by private practitioners. Twenty-six government-run clinics provide outpatient treatment, health screening, immunizations, diagnostic testing and pharmacy services for those who use the less-expensive public sector. Even though these clinics are subsidized, they charge for most services, reflecting the philosophy that health care should not be free.

Objectives of Singapore's health care system. The government has defined five fundamental objectives for the Singapore health care system:⁹

- To promote good health throughout the nation as a whole;
- To encourage individuals to take responsibility for their own health and avoid over-reliance on state welfare or medical insurance;
- To provide good and affordable basic medical services to all Singaporeans;¹⁰
- To rely on competition and market forces to improve service and increase efficiency; and
- To intervene directly when markets fail to curtail health care costs.

To promote these ideals, the government has implemented three programs that help people pay for medical expenses: Medisave, Medishield and Medifund. With these three programs, Singapore has managed to create a largely self-funded health care system that requires people to first look to their own resources for health care, relying on the government only after their resources are depleted.

The Medisave Program. Created in 1984, Medisave is a compulsory national health care savings program that operates under the umbrella of the CPF. Consistent with the belief that self-reliance is the cornerstone of social policy, the Medisave system is designed to help citizens meet their individual responsibilities and to supplement funds drawn from their own savings. The program also indirectly helps manage price levels and resource allocations by limiting reimbursements for individual services and procedures.

Medisave contributions begin at 6 percent of the total wage, rise to 7 percent at age 35 (up to a maximum contribution of S\$360 per month) and to 8 percent at 45 (with a maximum of S\$420 per month).¹¹ When an individual's account balance reaches S\$16,000, future contributions are automatically transferred to that person's Ordinary account. Retirees are required to keep S\$11,000, or their actual Medisave balance, whichever is

“Singapore designed the Medisave system to help citizens meet their individual responsibilities and supplement funds drawn from their own savings.”

lower, in the account, and they may withdraw any surplus.¹² Like other CPF contributions, Medisave contributions are not taxed and accounts earn tax-free interest.

Medisave funds can be used at all private and public hospitals. In 1992, 83 percent of hospitalized patients paid at least a portion of their bills from their Medisave accounts.

Patients can use their accounts to pay up to S\$300 per day for hospital charges, S\$50 for attending physicians fees and between S\$150 and S\$5,000 per surgical procedure (including surgeon, anesthesiologist and facility fees), based on its complexity. They must pay the rest of their expenses, if any, out of pocket. Medisave also provides up to S\$150 per day for psychiatric treatment (to a maximum of S\$3,000 per year) and for the delivery of a family's first three children; prenatal and postnatal care must be paid out of pocket.¹³ In the outpatient setting, only a few relatively expensive treatments are covered (e.g., hepatitis B vaccinations, assisted conception procedures, renal dialysis, radiotherapy, chemotherapy and AZT therapy).¹⁴

The Medishield Program. For low-income workers and others without large fund balances, Medisave accounts alone may be insufficient to cover a serious or prolonged illness. For that reason, Medishield was established in 1990 as a catastrophic insurance program to pay extraordinary hospital expenses for those under 70 years of age. Although 88 percent of all Medisave account holders participate in Medishield, perhaps only slightly over half of the total population is covered by the program. This is because children and the very elderly (who were retired when the Medisave system was created) do not have Medisave accounts.¹⁵

“Medishield is a catastrophic insurance program that pays extraordinary hospital expenses.”

Annual Medishield premiums range from S\$12 for those under the age of 30 to S\$132 for those between 66 and 70 years, and are deducted automatically from Medisave accounts unless the employee requests otherwise. Claims are limited to S\$20,000 per year with a lifetime maximum of S\$70,000. [See Table I, which compares the three Medishield options that are available.] Like Medisave, Medishield has preset limits based upon the complexity of the care provided. Medishield provides coverage only when the length of stay reaches 1.5 times the average for that procedure. Thus, if the average time needed for a hip replacement is 10 days, the patient will receive Medishield reimbursement only on the 15th day of hospitalization. Given the wide variation in hospital stays for any given procedure, only between 20 and 25 percent of hospitalizations receive any Medishield reimbursement.

Also like Medisave, Medishield does not cover everything. For example, Medishield does not cover normal deliveries, vaccinations, psychiatric treatment, AIDS-related conditions or drug and alcohol rehabilitation. Preexisting illnesses, congenital abnormalities or hereditary conditions and overseas medical treatment also are excluded.¹⁶

TABLE I

Comparison of Benefits of Medishield Plans

	Plan A	Plan B	Basic
Deductible¹	\$4,000	\$2,500	\$500-\$1,000
Claim Limits	\$70,000¹	\$15,000¹	\$20,000¹
	\$200,000²	\$150,000²	\$70,000²
Room & Board³	\$500	\$300	\$100
ICU³	\$800	\$500	\$200
Procedures	\$400-\$5,500	\$300-\$4,500	\$100-\$600
Implants¹	\$3,500	\$2,500	\$1,000
Outpatient Treatment			
— Radiotherapy³	\$100	\$80	\$40
— Chemotherapy⁴	\$800	\$600	\$200
— Renal Dialysis⁴	\$2,000	\$1,600	\$600
— Erythropoietin⁴	\$500	\$400	
— Cylcosporin⁴	\$500	\$400	\$200

1 per policy year

2 per lifetime

3 per day

4 per month

Source: Singapore Ministry of Health, 1994.

“Under the three Medishield plans, coverage varies according to the level of service chosen.”

“The Medifund program aids those whose out-of-pocket, Medisave and Medishield payments may not cover all of their medical expenses.”

The Medifund Program. Because mandatory Medisave deposits are a percent of wages, deposits are smaller for lower-wage workers, and the least affluent may not be able to pay much out of pocket. Thus the combination of out-of-pocket, Medisave and Medishield payments may not cover all of their medical expenses. Medifund is a government-funded program established in April 1993 to provide financial assistance to the poor whose Medisave accounts are low and who have few resources to pay the difference out of pocket. Initiated with a government grant of S\$200 million, Medifund receives an additional S\$100 million each year there is a government surplus. This provision is only theoretical at present, since government surpluses have been robust, but it underscores the government’s position that health care is a good to be purchased within the limits of available resources and *not* an

entitlement. Funds are distributed on a case-by-case basis. Preference is given to patients who have made regular contributions to Medisave/Medisshield and to the elderly whose Medisave accounts have not grown adequately to cover expenses.

Third-party insurance. The Singapore government has not encouraged the growth of American-style third-party insurance on the grounds that it encourages the perception that medicine is a free good. Tax deductions for all allowed medical expenses are limited to 2 percent of the employee's base salary. Firms are encouraged to make additional Medisave contributions of up to 2 percent of salary instead of providing employees with additional hospitalization benefits. Since Medisave does not pay for most outpatient treatments, many companies provide some coverage for them.¹⁷

Government Subsidies for Health Care

In 1992 the total amount of subsidized care in Singapore was approximately S\$360 million, equivalent to 19 percent of the total health care expenditure, or 0.7 percent of GDP.

A key component of the government's policy is a tiered structure of subsidies based on the setting in which care is delivered and the amenities provided with it. In the public hospitals, the five classes of wards receive varying degrees of subsidy, while private hospitals are unsubsidized.

In principle, individuals are free to choose among the five levels. Medical social workers provide financial counseling to everyone at the time of admission into the public hospitals. They advise patients that it is their responsibility to choose a ward class they can afford and to cover their expenses through a combination of subsidy, Medisave, Medisshield and personal funds. If necessary, patients can draw on their spouse's, children's or parents' Medisave accounts.

Class A wards have no subsidy and compete with private sector hospitals, offering private rooms with such amenities as air-conditioning, television and VCRs, in addition to the government's list of basic services. Care delivered in the remaining four wards — B1, B2+, B2 and C — is supported by varying levels of government allowances. For example, the subsidy level in a class B1 ward is 20 percent of the total charges. Patients are responsible for the remaining 80 percent, which may be covered by Medisave, Medisshield and/or personal resources. The fraction paid directly by the government increases incrementally, reaching 80 percent for class C, with the patient responsible for the remainder. As the subsidies increase, the amenities decrease. B1 wards have four beds to a room; B2 patients do not have choice of physicians; class C wards are unair-conditioned, open wards.

“Medical social workers advise patients that it is their responsibility to choose a ward class they can afford.”

In addition, Medishield pays a greater fraction of the hospital charges for poorer patients and those who elect to receive their inpatient care in the subsidized hospital settings.¹⁸

Physician Services

In 1993 half of the approximately 4,000 physicians were in private practice. By the year 2000, the total number of physicians will rise to 5,200, with most of the growth expected in the private sector. The population per physician will drop from 800 to 650, with specialists remaining at the current 40 percent of total.

Physician training. The government strictly monitors the licensing and specialization of doctors. To manage physician supply, the medical school class at the National University of Singapore is limited to 150, and the number of foreign medical schools whose degrees are recognized has recently been reduced from 176 to 28.¹⁹ Training is not dissimilar to that in the U.S. The five-year undergraduate medical school experience is followed by one year as a house doctor and two or three additional years of basic training. Those who choose and are able to find slots must train for an additional two to three years to practice a specialty.

Physician compensation. Doctors appear to be reasonably well-compensated. Physicians in government-owned facilities receive a civil service pay scale plus a “clinical faculty supplement” of 25 percent of their base wage. Those with very heavy clinical loads, especially in procedure-based specialties, may opt for an incentive based on their total billings in place of the fixed 25 percent supplement. Table II shows average salaries for clinical personnel. A senior registrar (roughly equivalent to a post-residency fellowship in the U.S.) receives a salary equal to three times the country’s average annual wage. A junior staff physician receives five times the average wage, and a senior physician earns about six times the average wage. These income levels are comparable to the U.S., where five to six times the average wage is normal.²⁰

Private physicians are probably better compensated than their public sector counterparts. They are generally paid on a fee-for-service basis. Office visits cost S\$12 to S\$120, depending on duration, complexity and qualifications of the physician. Surcharges apply for first visits, after-hours service and emergency care. Hospital consultations bring S\$50 to S\$200 per day. Maternity care, including prenatal and postnatal visits, costs S\$1,500 to S\$4,000.²¹ Table III shows excerpts from the *Singapore Medical Association Guideline on Fees* for billing in the private sector.²²

Paperwork. How do Singapore doctors generate their high personal incomes while being compensated at the low reimbursement rates shown in

“By the year 2000, the population per physician will drop from 800 to 650, with specialists continuing to make up 40 percent of the total.”

Table III? The answer uniformly given by those who have practiced in both the U.S. and Singapore is: relative freedom from administrative encumbrances. Singapore restricts practice options by limiting the number of physicians, the ratio of specialists and the amount and location of high-technology services, but it imposes little regulation on the interaction between patient and physician. As a result, physicians see more patients and their practice costs are lower because billing is simple. Thus a greater fraction of the professional fee goes to the clinician’s salary.

The Hospital Sector

Public institutions dominate the hospital sector: 13 of the 23 hospitals and 8,640 of the 10,469 beds are in facilities controlled by the Ministry of Health (MOH). But these government hospitals are being restructured with seven of the largest facilities organized as separate corporations, each with its own board of directors. The goals of restructuring are to introduce “accounting responsibility and commercial discipline” into hospital management and to improve the standard of hospital services and responsiveness to patients’ needs. Their newly created quasi-independent status presumably gives the hospitals greater entrepreneurial flexibility and allows them to respond rapidly to the changing marketplace.

TABLE II¹

Representative Salary Scales

Position	Base Salary S\$Month	Annual Compensation w/ Bonuses & Supplements	Exchange Rate Equivalent in US\$	PPP ² Equivalent in US\$
Junior Nurse	1,500	22,000	14,200	17,000
Senior Nurse	3,000	45,000	29,000	36,000
Senior Registrar	7,000	105,000	68,000	84,000
Junior Medical Faculty	10,000	150,000	97,000	120,000
Senior Medical Faculty	13,000	195,000	126,000	166,000

¹This table represents data based on the clinical faculty supplement option, which is normally lower than the incentive based on total billings. Thus these figures probably represent the lower range of salaries.

²Purchasing Power Parity.

Source: Ministry of Health.

“Physicians earn five to six times the average wage, which is comparable to the United States.”

TABLE III

Recommended Fees for Selected Procedures

	Fees	Selected Procedures
Group A	S\$200 - \$400	Sigmoidoscopy, Lymph Node Biopsy
Group B	S\$400 - S\$700	Paracentesis, Diagnostic Arthroscopy, Liver Biopsy, Insertion of Swan Ganz Catheter
Group C	S\$800-S\$1,400	Radial Keratotomy, Tracheostomy, Unilateral Herniorrhaphy
Group D	S\$1,500-S\$2,500	Right Heart Catheterization, Wedge Resection of Lung, Partial Thyroidectomy, Laparoscopic Lysis of Ovarian Adhesion
Group E	S\$2,400-S\$4,000	Arthroscopy, Knee Reconstruction, TURP (>30 gm)
Group F	S\$3,000-S\$5,000	Cataract Extraction and Intraocular Lens Implantation, Breast Reconstruction
Group G	S\$4,000-S\$6,000	Anterior Pelvic Exenteration, Spinal Fusion, Laparoscopic Cholecystectomy
Group H	S\$5,000-S\$8,000	Liver Transplant, Total Pelvic Exenteration
Group I	S\$7,000-S\$10,000	Complicated Spinal Instrumentation, Complex CABG, Craniotomy
Radiology	S\$30-S\$40	Per Film Chest (one view)
	S\$50 - S\$70	Maxilla
	S\$200 - S\$275	Ultrasound Liver & Gallbladder
	S\$425 - S\$500	CT Scan Head
	S\$680 - S\$1,100	MRI Per Region

Source: Singapore Medical Association Guideline on Fees for Doctors in Private Practice, 1992.

“More of the professional fee goes to the clinicians because of the relative freedom from bureaucratic encumbrances.”

Singapore General Hospital (SGH), the largest hospital in Singapore and one of the two public tertiary centers, where high-technology procedures are concentrated, was restructured in 1989. It is managed much like a private hospital in the United States. Although the fraction of the total hospital cost due to labor in Singapore is very similar to that in the United States,²³ SGH is considerably leaner than its American counterparts, with a total of 3.6 full-time equivalent employees per occupied bed. This efficiency comes primarily from fewer clerical and administrative personnel rather than from fewer direct caregivers.

- Of the 3,640 nonphysician personnel at SGH in 1992, 2,077 were nurses and paramedical personnel, and another 953 were involved in ancillary services.
- Only 610 were involved in administrative and clerical functions.²⁴

Even in benchmark American hospitals, the ratio of caregivers to support personnel is 2:1.²⁵ The 5:1 ratio seen in SGH reflects increased efficiency as a result of the lighter bureaucratic and regulatory loads Singapore places on the delivery system.

Although nurse-to-patient staffing ratios in Singapore hospitals are in line with international standards,²⁶ nurses are relatively underpaid.²⁷ As Table II shows, a junior nurse receives about 80 percent of the average annual wage for the country as a whole, and a senior nurse receives about one-and-a-half times the average wage. This is about 50 percent of the level for junior nurses in the U.S. and perhaps 35 to 50 percent of the level for senior administrative positions.²⁸

“Singapore General Hospital is efficient primarily because it has fewer clerical and administrative personnel.”

Quality of care. Quality of service is an important issue for the re-structured hospitals. Hospital personnel are responsible for improving service, and senior management makes decisions based on the satisfaction of patients and other customers. Two examples show recent improvements:

- Patients waiting less than 15 minutes at admission increased from 40 to 71 percent between 1991 and 1992.
- Outpatient visits begun without the medical record were reduced from 388 per month in 1990 to one per month by 1993.²⁹

The government is encouraging private hospital growth. By 2010, the private sector should provide 30 percent of the country’s total beds. Coupled with the reduction in the proportion of Class A beds in government hospitals, this means those who opt for full amenities will increasingly be channeled to the private sector, while the public sector will focus more on providing subsidized, no-frills health care. Even though Class A service is not subsidized, MOH hospitals are generally less expensive than the private hospitals. The reduction in numbers of Class A beds began after a study showed that 17 percent of patients choosing Class A services earned less than S\$1,000 per month. Thus patients are discouraged from selecting service levels beyond their means.³⁰

The government has begun to place revenue caps on MOH hospitals. It is establishing limits on average charges per patient day and will adjust them annually.³¹ Hospitals that exceed the limits will have their government subsidies cut by that amount, while hospitals with a budget surplus will keep the additional funds.

Historically, the rate structure of MOH hospitals may have indirectly influenced rates in private hospitals under the assumption that the public would be price-sensitive to the incremental cost differences between the two. Recently, the government began to impose more direct cost constraints on private hospitals. For the first time, private physicians and hospitals will face limits on the balances billed to Medisave patients. Billing practices for those patients who do not use Medisave will not be changed.

Delivery of services. Singapore has one of the most sophisticated health care delivery systems in Asia, serving citizens and foreign nationals alike in both private and public hospitals. In terms of efficiency of delivery, Singapore is comparable to U.S. managed health networks and point-of-service plans.³² The admission rate for residents is approximately 1.10 per year per 1,000 population, about the same as aggressively administered HMOs in the U.S. Average length of stay at Singapore General Hospital is 5.4 days, also comparable to the best American managed care and far less than that in Organization for Economic Cooperation and Development (OECD) and other developed countries.

Community health programs. Both culturally and structurally, Singapore is ideally positioned to achieve community health goals. Large educational and behavioral programs are in place within the public health clinic network. Smoking rates have been cut by 50 percent, and the government has set a target of less than 10 percent of the population using tobacco by the year 2000. When studies showed 13.2 percent of school-age children were significantly overweight, the government set a target of 9 percent by the year 2000, and the health system achieved a 2 percent reduction during the first two years of the program.³³

Administrative efficiency. Overhead costs of the Medisave program are less than 2 percent, while the administrative costs of the U.S. Social Security insurance system are 2.8 percent of benefits.³⁴ U.S. Medicaid shows a 4.4 percent computable administrative and training cost.³⁵

New technology. High-technology services are provided at what appear to be appropriate levels. In 1993, of the 1,051 coronary artery bypass surgeries performed, 676 were provided to Singapore residents for a raw utilization rate of 24 per 100,000 population.³⁶ Because the Singapore population is relatively young, on an age-adjusted basis the utilization rate, while lower than in the United States, probably approaches that of Canada, Germany and most West European nations.³⁷ These data suggest that services are available at levels acceptable by most international standards.

They are also available at reasonable cost. The charge for coronary artery bypass surgery at Singapore General Hospital, is S\$13,000, including physician fees. SGH requires a S\$28,000 deposit from foreign residents to cover anticipated expenses and probably to bar overuse of the public sector by non-Singaporeans. The private hospital service is presumably more expen-

“The hospital admission rate and average length of stay are comparable to the best American managed care.”

sive, but even it is inexpensive compared to average American charges for the same procedure.³⁸

Finally, high-technology services are available in a timely manner. Singaporeans do not face the queues and long waiting times that characterize heavily regulated systems like the National Health Service of Britain and many other developed countries. MOH data indicate that the longest waiting times — slightly less than two months — are for cataract surgery in public sector clinics, and the Ministry is working to reduce these to more acceptable levels.

Evaluation of the Singapore System

Legislative proposals to permit U.S. citizens to make tax-free deposits to a Medical Savings Account (MSA), which they would combine with a catastrophic insurance policy, closely resemble Singapore's combination of Medisave and Medishield programs.³⁹ MSAs provide incentives to reduce consumption, and they offer protection against extraordinary events and free-rider abuses. The comparable approach in Singapore works very well. The system is efficient and effective; the health status of the people is improving; and the national investment in health care is surprisingly low, while hospitals are profitable and physician incomes relatively high. How much of this is due directly to the savings program? Stated another way, is Medisave the cause or the consequence of Singapore's successful health care environment?

"The Singapore system is efficient and effective."

Philosophy of saving. Singapore is the optimum climate for a medical savings program. Singaporeans have an average savings rate of 46 percent of wages, and the CPF is a cornerstone of social policy, an effective conceptual framework and infrastructure for the saving process.

Proper incentives. Medical Savings Accounts force individuals to anticipate future risks and to accumulate reserves during periods of low use (early adulthood) for periods of anticipated high use (later in life). Young people must plan to care for themselves as they age. This intragenerational accountability contrasts with most European systems, where young people must pay for the needs of their elders, and pressure to limit consumption is nil. Medical Savings Accounts address overconsumption directly by providing incentives for patients to conserve.

Concerns facing the Singapore system. A primary concern is whether Singaporeans can create sufficient reserves early in life to cover their expenses later.⁴⁰ Given the rapid introduction of new technology and new services, estimating how much to set aside for future health care needs is difficult. The government originally opposed risk-sharing across larger pools, but it now recognizes the potential for underestimating the growth of health care costs and acknowledges that the basic Medisave contribution alone might prove inadequate. That is why the Singapore government adopted the Medishield program.

In addition, the government recently initiated a program of Medisave augmentation for government employees and civil servants who have not had access to standard Medisave accounts and is increasing salaries significantly so government workers can contribute more to the system.

While these programs are too new to evaluate, their existence demonstrates government efforts to help all Singaporeans meet medical care needs.

Can Medisave Work in the United States?

Singapore has a well-defined health care policy. The state actively manages all aspects of the medical system, from physician supply and education to price setting and service criteria. Such aggressive government intervention in the marketplace, which would probably be unacceptable to most Americans, is at least as important to the success of the Singapore system as is the individual savings mechanism.

Despite the nation's economic success and the government's paternalistic nature, the welfare system is spartan and public assistance is meager. Individuals are expected to provide for themselves and their families, and the population of Singapore generally accepts the role of personal responsibility in areas of social welfare. Without this sense of personal responsibility the Medisave system would work less well.

Nevertheless, Medisave works in Singapore because the prudent buyer can obtain quality health care at low cost. Currently, even prudent buyers find the U.S. system expensive. Few Americans would be comfortable with only \$11,000, to cover health care costs. Yet this amount purchases a good bit of care in Singapore. This fact suggests that, if MSAs were available in the United States, prudent buying would begin to chip away at the high price of care and might reduce it significantly.

"If MSAs were available in the United States, prudent buying would begin to chip away at the high cost of care."

Conclusion

A key component of American health care reform will be the intelligent balancing of market forces and government interventions. Singapore has achieved a balance appropriate for its population through a savings orientation, strong economic growth and aggressive government intervention. Medisave and Medishield work well as part of its balance, and they are replicable. Cultural acceptance of personal responsibility may not be. Still, Medical Savings Accounts should be considered one part of the solution to the global problem of growing health expenditures.

NOTE: Nothing written here should be construed as necessarily reflecting the views of the National Center for Policy Analysis or as an attempt to aid or hinder the passage of any bill before Congress.

Notes

¹ For example, in 1990 Singapore spent only 1.9 percent of its GDP on health care, while Hong Kong spent 5.7 percent and the Republic of Korea 6.6 percent. See *Human Development Report, 1994*, United Nations Development Programme (New York: Oxford University Press, 1994); and *World Development Report, 1994: Infrastructure for Development*, World Bank (New York: Oxford University Press, 1994).

² Medical Savings Account (MSA) legislation would give people the opportunity to move from a conventional, low-deductible health insurance plan to one with a high deductible and to put the premium savings in a personal, tax-free savings account. The account would be used to pay for routine and preventive medical care and would be combined with a high-deductible health insurance policy that pays for major expenses. Employees and their families would pay all medical bills up to the deductible from their MSAs and out-of-pocket funds. Their catastrophic insurance would pay all expenses above the deductible. Money left over in the MSA at the end of the year could be withdrawn or rolled over to grow with interest. See John C. Goodman and Gerald L. Musgrave, *Patient Power: Solving America's Health Care Crisis* (Washington, DC: Cato Institute, 1992). See also Mark V. Pauly and John C. Goodman, "Tax Credits for Health Insurance and Medical Savings Accounts," *Health Affairs*, Spring 1995, pp. 125-39. Although they do not enjoy the tax advantage, many companies already offer Medical Savings Accounts to their employees. See "Medical Saving Accounts: The Private Sector Already Has Them," National Center for Policy Analysis, NCPA Brief Analysis No. 105, April 20, 1994; and Stephen Barchet, Janine Anderson and Larry S. Chapman, "Medical Savings Accounts: An Option to Reduce Health Care Costs and Increase Health Care Satisfaction," *American Compensation Association, ACA Journal*, Autumn 1995.

³ Unless otherwise noted, all financial data are in Singapore dollars at a rate of S\$1.00 to US\$0.65.

⁴ Singapore has a parliamentary government with a strong prime minister. The People's Action Party of Lee Kuan Yew, who was prime minister until recently, has dominated Singapore politics since the country won independence. While the country is officially democratic, the dominating party permits little opposition.

⁵ Both the national culture and official government policies are influenced heavily by the nation's Chinese roots. Community needs take precedence over individual prerogatives, and self-reliance is a basic obligation in addressing social concerns.

⁶ Mukul G. Asher, "Compulsory Savings in Singapore: An Alternative to the Welfare State," National Center for Policy Analysis, NCPA Policy Report No. 198, September 1995. See also *The Statutes of the Republic of Singapore: Central Provident Fund Act*, rev. ed. (Singapore: Singapore National Printers Ltd., 1994), ch. 36.

⁷ Thus a maximum of \$1,200 each from the employer and employee.

⁸ Children are required to help their parents after retirement by providing funds should their parents' account run low.

⁹ *Affordable Health Care*, a white paper presented to Parliament by command of the President of the Republic of Singapore, October 22, 1993 (Singapore: SNP Publishers Pte. Ltd., 1993).

¹⁰ "Basic medical services" are those the government defines as cost-effective, essential and of proven value. Kidney transplants meet the criteria, but liver and heart transplants do not. All routine primary and specialty care is guaranteed. Only very high-technology services like liver and heart transplants, which do not meet "cost benefit" criteria, are not guaranteed. Choice of physician and free access to specialty care, although routinely available for those who wish to pay for them, are not guaranteed to all. Nonessential and purely cosmetic services, experimental drugs, techniques of unknown efficacy and expensive efforts to keep terminally ill patients alive are not included in the basic plan.

¹¹ Thus the CPF requires older people to pay more into their accounts. The financial reduction in the individual's income caused by the additional percentage point is normally lessened, however, since it comes when most workers normally reach their peak earning years.

¹² In 1992 the mean balance in the two million Medisave accounts was S\$4,500. An average of S\$695 was contributed to each account, and S\$125 was withdrawn.

¹³ The restriction on using Medisave money for more than three children is meant to discourage large families.

¹⁴ This limited coverage is meant to reinforce the concept that nothing in health care is free. Even in public clinic facilities set up to provide low-cost services such as prenatal care and immunizations, there is a nominal charge (\$1 to \$45) to remind patients that they are making a choice.

¹⁵ Family members can still be covered by Medishield.

¹⁶ It is not always clear why the bureaucratically controlled decision makers choose to cover some conditions and not others. However, Singapore is a relatively conservative society that frowns upon conditions such as AIDS and drug and alcohol dependency.

¹⁷ Companies are allowed to deduct up to 2 percent of the cost of wages to provide direct payment for employees' medical care. In 1992 employers spent an average of S\$270 per worker on medical/dental benefits and workers' compensation premiums in addition to the Medisave contributions, an amount equal to 1 percent of total labor costs.

¹⁸ Medishield Plus, implemented in July 1994, expands coverage for patients in the less-subsidized wards and has significantly higher premiums.

¹⁹ Eleven of these are American: Columbia, Cornell, Duke, Harvard, Johns Hopkins, Stanford, University of California at San Francisco, Michigan, Pennsylvania, Washington University and Yale.

²⁰ Even with these data, a meaningful comparison of incomes in different countries is complex. One technique is to convert to a common standard (usually the U.S. dollar) using published exchange rates. The junior faculty physician with a monthly salary of S\$10,000 receiving the "normal" three-month bonus nets S\$150,000 per year, or about US\$97,000 based on current international exchange rates. An alternative and perhaps more realistic approach takes into account the actual buying power that a given income has in the local environment. Purchasing power parity (PPP) estimates how much local currency is necessary to obtain a certain level of goods and services in different markets. For example, at official exchange rates (about 100 Yen/US\$1), the per capita GDP of Japan is higher than that of the United States. But those Yen buy fewer goods and services in Japan than the equivalent income in the U.S. Based on PPP, or cost of living calculations, the value of the Yen is closer to US\$200. The opposite is true in Singapore. The purchasing power of a Singapore dollar is greater in the local market than the official exchange rate indicates. When adjusted for PPP, the economic value of a Singapore income rises by roughly 20 percent, and the PPP-adjusted equivalent income for the junior faculty member is closer to US\$120,000, which compares quite favorably with similar positions in the United States or other countries.

²¹ Dr. Tan Yew Ghee, ed., *Guideline on Fees for Doctors in Private Practice in Singapore*, 2nd ed. (Singapore: Singapore Medical Association, 1992).

²² These fees are comparable to those in a U.S. fee-for-service payment system.

²³ Approximately 65 percent of expenses are for labor, including physician services. American hospitals spend about 52 percent on non-physician labor, on the average. Since physician services add approximately 20 percent to the total cost of hospitalization, total labor costs as a percent of all costs are similar in both countries. For the comparative performance of U.S. hospitals, see *The Sourcebook*, 5th ed. (Baltimore: Health Care Investment Analysts Inc., 1991).

²⁴ Singapore General Hospital *Annual Report* 1992 (Singapore: MI-SA Press Pte. Ltd., 1993).

²⁵ M. Boosalis, S. Allawi, T. Collins et al., "Tracking 'the Best' Hospitals," *Healthcare Forum Journal* 1993, vol. 36, pp. 53-57.

²⁶ One nurse serves two to three patients in intensive care, and one serves six to eight patients in the general wards, which is about equal to the international average.

²⁷ The Ministry of Labor report on wages for nursing personnel shows salary levels between S\$1,000 and S\$1,500 per month for junior and S\$2,000 and S\$3,000 for more experienced nurses with the high end of approximately S\$4,000 for those who have clinical management responsibilities. See *Wages in Singapore* (Singapore: Research and Statistics Department, Ministry of Labour, 1993).

²⁸ In U.S. dollars, junior nurses earn between \$14,000 and \$17,000, and senior nurses earn between \$29,000 and \$36,000 — depending on the method of measurement.

²⁹ Lawrence Lim, "Health Care Restructuring: A Case Study on the Singapore General Hospital," presented at the Pan-Asia Hospital Development Summit, Kuala Lumpur, Malaysia, October 28-29, 1993.

³⁰ The government does not believe it should compete with the private sector for people who want full amenities during a hospital stay.

³¹ The maximum allowable growth each year will be "CPI+X," where CPI is the Consumer Price Index and X is a factor allowing for "medical progress." X will be determined every few years by the Ministries of Health and Finance. For 1994, X was 2 percent.

³² J. P. Weiner, "Forecasting the Effects of Health Reform on U.S. Physician Workforce Requirement: Evidence From HMO Staffing Patterns," *Journal of the American Medical Association*, no.3, vol. 272, July 20, 1994, pp. 222-30.

- ³³ R. Ray, L. H. Lim and S. L. Ling, "Obesity in Preschool Children: An Intervention Programme in Primary Health Care in Singapore," *Annals of the Academy of Medicine*, Singapore, vol. 23, no. 3, 1994, pp. 335-41.
- ³⁴ *Disability Insurance Trust Fund: Status 1957-1993*, Social Security Bulletin 1993 (Washington, D.C.: U.S. Government Printing Office, 1993), vol. 56, p. 108.
- ³⁵ Paul Gurny, David K. Baugh, and Thomas W. Reilly, "Payment, Administration, and Financing of the Medicaid Program," *Health Care Financing Review*, 1992 Supplement, pp. 285-301.
- ³⁶ The Singapore population is relatively young. Only 6.2 percent of the population was above age 65 in 1990, compared to 12.6 percent in the U.S., 11.4 percent in Canada and 15.4 percent in the United Kingdom and West Germany. The mean age of coronary artery bypass surgery patients in the United States and Europe approaches 65 years, so any meaningful comparison must be age-adjusted.
- ³⁷ D. Naylor, M. Ugnat, D. Weinkauff et al., "Coronary Artery Bypass Grafting in Canada: What Is Its Rate of Use? Which Rate Is Right?" *Canadian Medical Association Journal*, vol. 146, no. 6, March 15, 1992, pp. 851-59.
- ³⁸ In a Medicare "best practice" demonstration project, charges started at \$40,000, but in some heavily managed markets coronary artery bypass surgery costs \$15,000 to \$20,000.
- ³⁹ See, for example, Pauly and Goodman, "Tax Credits for Health Insurance and Medical Savings Accounts"; William C. Hsiao, "Medical Savings Accounts: Lessons From Singapore"; Thomas A. Massaro and Yu-Ning Wong, "Positive Experience With Medical Savings Accounts in Singapore"; and Deborah Chollet, "Why the Pauly/Goodman Proposal Won't Work," *Health Affairs*, Summer 1995, pp. 260-74.
- ⁴⁰ For example, the economy of Singapore has grown at a phenomenal rate, averaging 10 percent annual growth over the first 10 years of the Medisave program. Medical expenses have grown at roughly the same rate as the economy, but because of account expenditures, caps on contributions and conservative rates of return on the money in the accounts, Medisave balances have not grown as rapidly. Between 1984 and 1989, the CPI rose 1 percent annually, medical inflation was at 3.5 percent and total health care expenditures rose at an annual rate of 11 percent.

Appendix

Components of the CPF System

Singapore finances its social security and medical care systems through a publicly managed mandatory program of private saving. The vehicle for these programs is the Central Provident Fund (CPF). Singapore has added components to the CPF over the years.

Purpose	Program	Year Introduced
Home ownership	Approved Housing Scheme	1968
	Approved Residential Property Scheme	1981
Investment	Singapore Bus Services (1978) Ltd Share Scheme	1978
	Approved Investment Scheme	1986^a
	Approved Nonresidential Properties Scheme (ANRPS)	1986
	Share-Ownership Top-Up Scheme (SOTUS)	1993
Insurance	Home Protection Insurance Scheme	1982
	Dependents' Protection Insurance Scheme	1989
	Medishield Scheme	1990
Others	Company Welfarism through Employers' Contribution (COWEC) Scheme^b	1984
	Medisave Scheme	1984^c
	Minimum Sum Scheme	1987
	Topping-Up of the Minimum Sum Scheme	1987
	Financing of Tertiary Education in Singapore	1989
	Edusave Scheme	1992
	CPF Top-Up Scheme	1995

^a From October 1, 1993, divided into the Basic and Enhanced investment schemes.

^b Present status of the scheme is unclear.

^c From 1993, self-employed persons must contribute to the Medisave scheme.

Source: Mukul G. Asher, "Compulsory Savings in Singapore: An Alternative to the Welfare State," National Center for Policy Analysis, NCPA Policy Report No. 198, September 1995.

Acknowledgments

The authors gratefully acknowledge grant support to one of us (YNW) from the Ellen Bayard Weedon East Asia Travel Fund of the University of Virginia and deeply appreciate those professionals in various Singapore organizations who gave of their time and insight. Portions of this manuscript have appeared previously in *Health Affairs*.

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The National Center for Policy Analysis is a nonprofit, nonpartisan research institute, funded exclusively by private contributions. The NCPA developed the concept of Medical Savings Accounts, the health care reform that has wide bipartisan support in Congress and in a growing number of states. Many credit NCPA studies of the Medicare surtax as the main factor leading to the 1989 repeal of the Medicare Catastrophic Coverage Act.

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The NCPA is the source of numerous discoveries that have been reported in the national news. According to NCPA reports:

- Blacks and other minorities are severely disadvantaged under Social Security, Medicare and other age-based entitlement programs;
- Special taxes on the elderly have destroyed the value of tax-deferred savings (IRAs, employee pensions, etc.) for a large portion of young workers; and
- Man-made food additives, pesticides and airborne pollutants are much less of a health risk than carcinogens that exist naturally in our environment.

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