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# Can health care financing policy be emulated? The Singaporean medical savings accounts model and its Shanghai replica

**Weizhen Dong**

Department of Sociology, University of Waterloo, 200 University Ave, W Waterloo, Ontario, Canada N2L 3G1
Address correspondence to Weizhen Dong, E-mail: weizhen@uwaterloo.ca



## ABSTRACT

**Background** Each nation's government is searching for a cost-effective health care system. Some nations are developing their health care financing methods through gradual evolution of the existing ones, and others are trying to adopt other nations' successful schemes as their own financing strategies.

**Results** The Singaporean government seems able to finance its nation's health care with a very low gross domestic product (GDP) input. Since the implementation of the medical savings accounts schemes (MSAs) in 1984, Singaporean government's share of the nation's total health care expenditure dropped from about 50% to 20%. Inspired by Singapore's success, the Chinese government adopted the Singaporean MSAs model as its health care financing schemes for urban areas. Shanghai was the first large urban centre to implement the MSAs in China. Through the study of the Singapore and Shanghai experiences, this article examines whether it is rational to borrow another nation's health care financing model, especially when the two societies have very different socioeconomic characteristics.

**Conclusion** However, the MSAs' success in Singapore did not guarantee its Shanghai success, because health care systems do not work alone. Through study of the MSAs' experiences in Singapore and Shanghai, this paper examines whether it is rational to borrow another nation's health care financing model, especially when the two societies have very different socioeconomic characteristics.

**Keywords** cost containment, health care access equity, health care financing model replication, medical savings accounts, Shanghai, Singapore

## Introduction

Cost containment is the most challenging health care issue to most governments around the globe. In response to the issue of growing health care expenditure, various strategies have been developed. The Singaporean government implemented the medical savings accounts scheme (MSAs) as its health care financing method since 1984. It helped the Singaporean government to keep its share of the national health care cost low.

The Chinese government adopted the Singaporean MSAs as its health care financing method in its urban areas. This policy change is both revolutionary and challenging to the society where health care was, for a long time, a guaranteed social welfare [through labour insurance scheme (LIS) and government insurance scheme (GIS)]. Shanghai was the first large urban centre to implement the MSAs.

Can Shanghai reproduce the Singapore's success? The Singaporean system has been operating for nearly two decades, whereas the Shanghai scheme was implemented in 2001. An analysis of the MSAs in the two settings can show whether copying another nation's health care financing model is a good strategy, especially when the nation being copied has a very different social and demographical make up.

## '3Ms' in Singapore

The Singaporean health care system is based on individual responsibility, coupled with government subsidies (Ministry of Health, Singapore, 2002). Patients are expected to pay their share of medical services, and to pay more when they demand a higher level of service. Individuals are encouraged to take responsibility for their own health by saving for medical care.

Medisave, MediShield and MediFund are the main health care insurance schemes in Singapore. They are referred to as the 3Ms.

**Weizhen Dong**, Professor

## Medisave: a MSAs

Medisave is a compulsory savings scheme introduced in April 1984. It is designed to help Singaporeans build up sufficient savings for their hospitalization expenses, especially during their old age. Every working person in Singapore is required by law to set aside 6–8% of his/her income into a personal Medisave account (or MSA), which can be used to pay for the hospitalization expenses of the enrollees and their immediate family members (Table 1).

The MSA pays in-patient and certain out-patient (Medisave can be claimed only if the patient stays in the hospital for at least 8 hours, or the patient is admitted for day surgery) expenses incurred at any hospital in Singapore. A fixed limit from S$150 (S$ = Singapore dollars) to S$5000 is set for different operations. A patient usually has to pay cash out of pocket for part of the bill, if it exceeds the withdrawal possible from Medisave. The Medisave withdrawal limits are said to be necessary to ensure that members' Medisave savings are conserved for future medical needs, especially during old age. Also, Medisave will not pay beyond a strict schedule of payments.

Those self-employed, who earn >S$6000 a year, will need to pay their contribution to Medisave. The amount they are required to contribute to Medisave is capped based on an annual income ceiling of S$72 000.[1] The rates of contribution, according to the age of self-employed persons, are identical to those of the employed (but they have to pay the employer part of the contribution as well), starting in January 1998.

## MediShield and MediShield Plus: a catastrophic medical insurance

MediShield is an insurance scheme for catastrophic illness. It was introduced in 1990 and is designed to help individuals meet the medical expenses from major or prolonged illnesses. It is a voluntary 'opt-out' scheme, and the premiums can be paid from the MSA. MediShield Plus is a scheme with much higher premiums but with substantial benefits, which is seen as a scheme for the rich.

**Table 1** Singapore's Medisave scheme

| *Age* | *Contribution rate (%)* | *Maximum contribution/month (S$)* |
|---|---|---|
| <35 | 6 | 360 |
| 35–44 | 7 | 420 |
| ≥45 | 8 | 480 |

Source: Ministry of Health, Singapore (2002) (http://www.cpf.gov.sg/cpf_info/Publication/medisave.asp).[1]

**Table 2** MediShield and MediShield Plus deductibles and co-insurance

| | | *MediShield Plus* | |
|---|---|---|---|
| | *MediShield* | *Plan B* | *Plan A* |
| Deductible* (per policy year) (S$) | 1000 (B2 class ward and above)<br>500 (C class ward) | 2500 | 4000 |
| Co-insurance (%) | 20 | 20 | 20 |

Source: Ministry of Health, Singapore (2002) (http://www.cpf.gov.sg/cpf_info/Publication/medishield).[1]

*If the claim is for out-patient treatment and stereotactic radiotherapy treatment for cancer, the patient need not pay any deductible amount. MediShield/MediShield Plus will pay 80% of the actual charge for that medical treatment up to the assured amount.

All citizens and permanent residents of Singapore who are ≤75 years can apply for MediShield or MediShield Plus, although acceptance is subject to health status. Each person can apply and be covered by only one plan— MediShield, MediShield Plus Plan A or MediShield Plus Plan B (Table 2). Each plan has set limits on what it pays, and the remainder must be paid out of pocket by the beneficiary. It is a voluntary opt-out scheme, which helps the beneficiary and his/her dependants to meet the costs of treatment for serious illnesses or prolonged hospitalization.

MediShield and MediShield Plus have deductible and co-insurance features. The beneficiary pays the deductible once in a policy year. Thereafter, he/she pays 20% of the claimable amount and the remaining 80% will be paid by the MediShield/MediShield Plus. This is the so-called co-insurance. Although the premiums for MediShield Plus are higher, its benefits are much greater too. (Source of this section is from the Singaporean Government's handbook, which is available at http://www.cpf.gov.sg)

## MediFund: a safety net

MediFund acts as a last resort for those who are truly indigent. MediFund started in April 1993 with an initial endowment of S$200 million from the Government. Each year, S$100 million has been injected into the MediFund by the Singapore Government as charity-style relief. It is an endowment fund set up specially to help the poor and needy Singaporeans pay for their medical care.

Every public hospital has a Hospital MediFund Committee appointed by the government to consider the applications and allocate the funds. Patients who are unable to pay their hospital bills can apply for help from the respective Hospital MediFund Committees. The poor can apply on site, although not all applications would be approved.

Besides the MediFund, Voluntary Welfare Organizations (VWOs), government aid and charity organizations also play a role in assisting the poor for health care.[1]

## The success of the 3Ms

Singapore is a wealthy small nation. The Singaporean health care financing model works in a nation where its citizens have high levels of education and income, high saving rate and a relatively young population. The MSAs help Singaporeans pay their share of medical cost.[2] Moreover, Singaporeans have a strong sense of self-responsibility. They have been contributing about one-fifth of their income each month to the government-managed Central Provident Fund (CPF), saving for paying their own housing, retirement, health care etc. Singapore's health care finance is based on 'individual responsibility', coupled with 'government subsidies', which absorbs only 3–4% of gross domestic product (GDP) and 8% of government expenditure.[1]

Although the government's capital input in health is low, everyone in Singapore has the 'freedom of choices' when seeking care, and no one is ever being denied care for the lack of money.[3] The government-sponsored safety net at public hospitals is a last resort for the true indigent to seek care.

Singapore's health care financing success can also be seen from its government's share of total health care expenditure: government subsidies 25%; patients' out of pocket 25%; employer benefits 35%; private insurance 5%; MediShield 2% and Medisave 8%. The public and private share of the national health care expenditure is 21 and 79%, respectively.[4] Phua argues that the Singaporean model is an attempt to avoid welfare model's moral hazard, as well as the market failure (Phua, 1997).

Supporters of the Singaporean model believe that it frees government funding from those able to pay and make resources available for the poor and most vulnerable.[3] Consumers have total free choice of providers, which promotes price competition. Government's high level of control over health care financing and health care service pricing is effective. In short, the Singaporean model works along with its nation's class system to meet different social groups' health care needs. Everyone in the country has the freedom of choice when seeking care based on his/her ability and willingness to pay.

## The MSAs in Shanghai

Shanghai's cost-sharing health care financing system combines two funds: the Unified Plan (UP) and the MSAs. The UP is a citywide risk pooling, which is designed to share part of the MSAs enrollees' health care expenses on in-patient, emergency room care, catastrophic diseases' treatment costs and expenditures between the deductible and the ceiling. The usable amount differs according to the individual's age (i.e. old, middle aged and young, which is almost identical to the Singapore's Medisave scheme, see Table 3), personal income and employment status (i.e. employed or retired). Among the insured, older and retired people receive the highest percentage of coverage.[5] Under the new health care financing system, the medical insurance funds are made up of payments by employers of an amount equal to 10% of their employees' annual salaries and by employees through 2% of annual salary contributions paid through payroll deductions.[6]

In Shanghai, the MSAs applies mostly to employees who are formally employed in Shanghai's formal sectors or state- and collective-owned economy. Because only the employees of the work units that have joined the city's 'Unified Plan' are entitled to the new cost-sharing insurance, this so-called employees' health care insurance does not simultaneously include the entire working population in the city. In most of the cases, work units in the formal economy would join the UP, but not necessarily those informal sector units, including those in the private economy.

Moreover, the new health care insurance scheme provides reduced benefits compared with the previous LISs and GISs, and the risk-pooling fund is far from sufficient. The major factor that makes the MSAs in Shanghai unfit is the socioeconomic reality. There is a large proportion of Shanghai population living near or under the poverty line. These people need financial assistance from the social supporting system for their daily living; paying for health care is an extra heavy burden, even if they only need to pay for deductibles. Vulnerable groups in terms of health care insurance entitlement are laid-offs and unemployed, low-income workers, informal sector employees, rural migrants and low-pension retirees. These are marginalized social groups as well as the high-health-risk populations.

The Shanghai government urges informal work units to join the city's UP, which opens the door for the employees of

**Table 3** Employee medical savings account

| *Age* | *Percent of LYSAW* | *Percent of LYPW* |
|---|---|---|
| ≥75 | 4.5 | Not applicable |
| Retirees 74 and under | 4 | Not applicable |
| 45 to retirement | 1.5 | 2 |
| 35–44 | 1 | 2 |
| ≥34 | 0.5 | 2 |

LYPW, last year's personal wage; LYSAW, last year's Shanghai average annual wage.

Source: Dong (2003).[4]

these units to be able to join the public health care insurance scheme. The participation of these informal work units is essential to increase the size of the risk pool and assure the viability of the system. However, a key viability factor is that the retirees do not pay monthly contributions but utilize more medical funds. Because about one-third of the MSAs enrollees are retirees, the working population's risk pool is rather too small. The large proportion of retirees in the enrollee's pool is caused by the eligibility criteria—almost all retirees had worked in the public sector and they are automatically eligible to be enrolled in the MSAs. Because the retirees do not need to contribute their personal income to the scheme (Table 3), it in fact takes three working peoples' health care insurance fund payments to cover one retiree's health care costs. Therefore, employers do not have the incentive to join the city's UP, which causes employees in these units to be excluded from the MSAs.[5] Also excluded by the public health care insurance schemes are rural migrant workers, because they do not have Shanghai permanent resident status. Migrants are also likely to be working in informal arrangements, if they are lucky enough to have a job. At present, there are 4.3 million migrants in Shanghai.[7]

The MSAs in Shanghai is aimed at limiting demand side's consumption. Patients are now in a vulnerable position, especially when they have to pay imposed high health care costs with their limited incomes. Some people simply do not seek care when they are ill or delay until it becomes absolutely necessary.[5] When the financial means becomes crucial in health care access, under-privileged groups tend to be at higher risk as far as their health is concerned.

## The MSAs in Singapore and Shanghai: a comparison

Singapore's health care financing model works in a nation where its citizens have high levels of education and income, high savings rate and a relatively young population, if health care access inequality and cost containment are not a concern. The MSAs in Singapore works because of the strong government stewardship, which includes supply-side control and parallel insurance for catastrophic illness and safety net programme.[8] However, the operation of the MSAs in Shanghai is not smooth. The Shanghai Health Care Insurance Bureau is not able to generate enough funds to operate. In fact, it started to owe a large amount of money to local hospitals since the first year of its operation. This is affecting the health care access for the MSAs enrollees. Many hospitals have started to take measures to avoid admitting insured patients for in-patient care as their own survival strategy.[9] The low government input in Shanghai health care system caused hospitals to seek for profits from their patients' pockets. When both money and trust are in deficit, many people forgo medical care when ill or leave hospitals earlier than they should.[510] A recent study done by the State Council's Development Research Centre shows that as many as half of the Chinese people in urban China do not seek necessary care.[10]

Table 4 summarizes the major differences between Shanghai and Singapore. Singapore has a much smaller area with much smaller size of population than Shanghai. Shanghai has a clear sign of an ageing society with 13% of its population being ≥65 years,[7] which is a challenge to its health care system. Shanghai's high unemployment rate also possesses a big challenge when its health care system is based on employment.

Another difference between Shanghai and Singapore is the culture of self-responsibility. Singaporeans are used to saving for all the major courses in their lives, such as housing, retirement and health care, but Shanghainese are used to relying on the government or employers for housing, retirement and health care. Most of them were especially dependent on the previous LISs, which included unlimited health care coverage. It is only recently that individuals started to pay for their own housing, education and health care. It takes time for them to adopt the culture of self-responsibility.

Table 5 is a comparison of the MSAs designs in the two settings.

The Singapore model, the employment-based cost-sharing system, may work better under certain conditions: first, where the society has a low unemployment rate, or majority of the population are working; second, where the population is relatively young (most of the population is active in the labour market); third, where most people in the society are earning a middle income and able to pay for their MSAs and

**Table 4** Main statistics of Shanghai and Singapore (2001)

| *Index* | *Shanghai* | *Singapore* |
|---|---|---|
| Land ($km^2$) | 6340.5 | 682.3 |
| Population (million) | 16.74 | 3.1 |
| Life expectancy at birth (years) | 79.66 (77.46 M/81.83 F) | 78.4 (76.4 M/80.4 F) |
| Infant mortality (%) | 5.71 | 2.9 |
| Maternal mortality (1/100 000) | 8.95 | 1.2 |
| ≥65 years (%) | 13 | 7.5 |
| Agricultural population | 24.7% | 0 |
| Unemployment (%) | 4.8 (registered) | 1.5 |

Sources: Shanghai Municipal Statistics Bureau (2001);[11] Ministry of Health, Singapore (2001).[12]

**Table 5** The medical savings accounts scheme (MSAs) in Shanghai and Singapore

| | *Shanghai* | *Singapore*[*] |
|---|---|---|
| Objective of the scheme | Increase risk pooling and cost containment | Resource mobilization and to increase individual responsibility |
| Covered population | Employees and retirees | All Singaporeans |
| Enrolment principle | Compulsory | Compulsory |
| Holder of the MSA fund | Health Care Insurance Bureau | Government |
| MSA fund contributor | Employer and employee | Employer and employee |
| MSA fund contributions | Fixed proportion of wages | Fixed proportion of income with minimum/maximum limits |
| MSAs spending | For enrollee's health care only | For enrollee and family but restricted mainly to in-patient care |
| Health care financing tiers | MSAs | Out of pocket |
| | Out-of-pocket deductibles | Medisave |
| | Unified Plan (risk pooling) | MediShield/MediShield Plus |
| | | MediFund |
| Enrollees' age limit | No | Up to 80 years old[†] |
| Safety net | Compulsory, social security system | Voluntary, government or privately provided |

*Sources: Hanvoravongchai (2002);[8] Ministry of Health, Singapore (2001).[12]

†The plans' latest entry age is 75, "enrollees who are older than 75 and younger than 80 are only allowed to renew their plans."

other opt-out schemes. And last, a very good safety net available for the disadvantaged few. The Singapore system allows the MSAs' enrollees to share their health care fund with family members, which could cover almost all the Singaporean population, but the Shanghai system does not allow anyone else but the enrollee to utilize the fund, which limited any possibility of risk pooling.

Singapore and Shanghai share some common features. The absolute majority of Singaporeans are ethnic Chinese. Confucian ideology promotes the concept that family members should take care of one another and is a social norm in both societies. The obvious differences between the two societies are their socioeconomic conditions: (i) Singapore is a small city-state, and Shanghai is a large urban centre; (ii) compared with Shanghai, Singapore has a much smaller population and a relatively younger population; (iii) Singapore is a wealthier society (Singapore's per capita GDP is 4.6 times higher than that of Shanghai's); (iv) there is no rural area in Singapore, and migration in Singapore is also very limited, whereas there is about 4.4 million migrants in Shanghai; and (v) Shanghai has a mass unemployment problem, whereas the unemployment rate in Singapore is very low (1.5%).

Singapore's per capita income is among the highest in the world.[13] Because of its wealth, Singapore is able to build up a safety net for its disadvantaged citizens with the government's fund for health care (MediFund). MediFund covers the poorest in Singapore who need hospital care, whereas in Shanghai, there are not enough government funds to support the poor (and near poor) and the catastrophically ill who need medical care. MediShield in Singapore also serves as an alternative to commercial health care insurance. Although there is a health care insurance scheme for catastrophic disease care UP in Shanghai, the fund provided is far from sufficient.

Singapore's relatively young population means there is less old-age-care burden. The low unemployment rate means that an employment-based health finance system would be more likely to work in Singapore. Many employers also provide additional health insurance for their employees. By granting MSAs enrollees the privilege to share their Medisave fund with their family members, the Singaporean government is able to cover beyond its working population. Whereas in Shanghai, the MSAs enrollees can only use their account for themselves. With no sufficient safety net and no alternative health care coverage, a large proportion of Shanghai residents are facing uncertainty. One person's major illness can cause his/her family a disastrous financial burden.

Despite government subsidies, low-income and the retired Singaporeans still find the costs of health care problematic. WHO also ranked Singapore as the 101st of 191 countries on 'fair financing'.[13] The Shanghai MSAs model has apparently inherited the shortcomings from its origin, especially health care access inequality.[5] The MSAs unequal nature will be discussed in another article.

## Main finding of this study

The main findings of this study is that, no matter how successful a health care financial model is, it is hard to replicate it in another society. Consequently, it is not rational merely to borrow a health care financing model from another nation,

especially when they share few socioeconomic and cultural characteristics in common. It is especially problematic when the borrowing government wishes to use the new system to fulfil other social agendas, e.g. making the new system, the only public health insurance scheme, carry additional responsibilities for various groups of society who are not paying premiums, e.g. veterans, particular illness groups and elderly people who used to be part of the public sector and deemed to deserve inclusion.

### What is already known on this topic

The MSAs health care financing model does not contain expenditure.[3,14–16] Shanghai's MSAs is an ineffective system since it was implemented, because it does not address social reality.[59]

### What this study adds

This article compared the 'original' Singapore health care financing model and its 'replicate'—Shanghai MSAs to analyse whether it is rational for a society to copy another society's health care financing model. The article also discussed why the MSAs can be relatively more effective in Singapore. It proves that health care systems never work alone.

### Limitations of this study

Health care policy is a moving target for study and analysis. Governments are modifying policies over time. It is possible that some of the issues discussed might have been a non-issue when this article is published.

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