

Singapore's healthcare financing: Some challenges

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Abstract

Based on the principle of individual responsibility and affordability Singapore has developed a unique healthcare model that has produced outstanding health outcomes per dollar spent. Data analysis shows that healthcare financing in Singapore is nevertheless highly dependent on individual income levels despite the presence of substantial government subsidies. Moreover, the key medical care instruments, Medisave, MediShield and government subsidies, are heavily biased towards inpatient treatment and there is little cover for expensive outpatient treatments. With the dual objective of improving equity in healthcare financing and providing a more comprehensive cover we propose fine-tuning the MediShield insurance scheme by making it compulsory with an income-dependent premium structure implemented through a MediShield tax.

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1. Introduction

Within a short span of time since independence in 1965, Singapore not only produced high GDP growth rates, but also succeeded in translating high growth into remarkable health achievements. Singapore's healthcare indicators are among the best in the world today. The infant mortality rate,¹ which stood above 35 per 1000 live births in 1960, had fallen to 2.1 by 2007. Such very low rates (below 3) in 2007 were recorded only for Luxembourg (1.8), Iceland (2.0), Sweden (2.5), Japan (2.6) and Finland (2.6) (OECD Health Data, 2009, online). What is even more remarkable is that Singapore made this achievement by spending relatively less on healthcare compared to almost every other developed country. Singapore has been consistently spending less than 4% of its GDP on healthcare while in 2007 Luxembourg spent 7.3%, Iceland 9.3%, Sweden 9.1%, Japan 8.1% and Finland 8.2%. Channeling high growth into better housing, clean water, improved sanitation, and good education combined with better nutrition and preventive healthcare made it possible for Singapore to improve the health status of its population while spending a small portion of GDP on direct healthcare.

The World Health Organization (WHO) ranked Singapore sixth out of 191 countries in terms of overall performance in healthcare (WHO, 2000). The WHO assessment was based on the criteria of health status (both level and distribution), responsiveness (both level and distribution), equity, and efficiency (achievement per dollar spent). We gain more insight into the performance of a country by paying attention to these components. Some data extracted from the WHO report are reproduced in Table 1. The table presents the top 10 countries based on the overall ranking plus the UK, Australia, and the USA for comparison. As a cautionary note, it is worth noting first the ranking for Oman which is 8th in terms of overall performance but the lowest in the table in terms of health status, responsiveness and per capita health expenditure and the second lowest in terms of equity (fairness in financial contribution). Therefore, the overall ranking which measures the overall attainment relative to per dollar spent (efficiency) is quite misleading in this case. As for Singapore what is immediately noticeable in the table is that in terms of equity Singapore gets a very distant rank of 101-102 despite its overall ranking in the sixth place. Again caution has to be exercised in interpreting this ranking. The lower ranking is a result of Singapore's larger out-of-pocket expenditure share in healthcare financing (see footnote 4). However,

¹ The infant mortality rate is the most readily available comprehensive indicator of healthcare achievements. It represents the health standing of both the care-taker (mother) and the care-givers.

the actual dollar amount for the same treatment in Singapore could be much lower than that, for example, in the US. Nevertheless, these results in general suggest that Singapore scores very highly on the count of efficiency but not so well on the equity of financing health expenditures.

As Table 1 highlights, two extreme healthcare financing systems are the UK and the USA. The tax-based single payer universal healthcare system in the UK scores highly on equity grounds but the problems of long waiting lists, rationing and the intergenerational transfer of tax burden have made the UK system less attractive. The problems of the insurance-based less equitable US system are well known and took the center stage in President Obama's policy reform agenda. In the midst of these discussions Singapore's well-functioning healthcare system attracted a lot of attention worldwide.²

Given this background, the key question is: "Should Singapore be concerned about the equity issue at all?" The objective of this essay is to address this question. After a brief review of Singapore's healthcare financing system in Section 2 with a review of literature that tries to critically evaluate Singapore's medical savings accounts system, we present in Section 3 summary results of a data analysis based on hospital expenditure of a large pool of elderly Singaporeans. In Section 4 we highlight the general observations that emerge from this analysis with regard to equity and adequacy. With increasing political voice of Singaporeans the equity in healthcare financing will become an important issue and in Section 5 we make some suggestions with the objective of achieving more equitable results under a more comprehensive insurance cover without unduly burdening the tax base.

² See the Singapore Ministry of Health website (www.moh.gov.sg) for a long list of accolades that the Singapore healthcare system has received.

Table 1. An extract of WHO ranking of 191 countries

Member state	ATTAINMENT OF GOALS						Health expenditure percap	PERFORMANCE	
	Health status		Responsiveness		Fairness in financial contribution	Overall attainment		On level of health	Overall performance
	Level	Dist.	Level	Dist.					
France	3	12	16 – 17	3 – 38	26 – 29	6	4	4	1
Italy	6	14	22 – 23	3 – 38	45 – 47	11	11	3	2
San Marino	11	9	32	3 – 38	30 – 32	21	21	5	3
Andorra	10	25	28	39 – 42	33 – 34	17	23	7	4
Malta	21	38	43 – 44	3 – 38	42 – 44	31	37	2	5
Singapore	30	29	20 – 21	3 – 38	101 – 102	27	38	14	6
Spain	5	11	34	3 – 38	26 – 29	19	24	6	7
Oman	72	59	83	49	56 – 57	59	62	1	8
Austria	17	8	12 – 13	3 – 38	12 – 15	10	6	15	9
Japan	1	3	6	3 – 38	8 – 11	1	13	9	10
UK	14	2	26 – 27	3 – 38	8 – 11	9	26	24	18
Australia	2	17	12 – 13	3 – 38	26 – 29	12	17	39	32
USA	24	32	1	3 – 38	54 – 55	15	1	72	37

Dist. = distribution. Source: World Health Report, WHO (2000)

2. Singapore's healthcare financing system

Singapore's healthcare is provided by both public and private sectors; a detailed account of the healthcare system is available at the Ministry of Health website. The National Health Plan (NHP) of 1983 and the White Paper on affordable healthcare of 1993 are identified as the two key health policy documents in Singapore (Phua, 1991; Reisman, 2006; Asher and Nandy, 2006). Both these documents emphasize individual responsibility as the corner-stone of the country's healthcare financing philosophy. Besides the individual, the family is adjudged to have a "primary" responsibility in caring for the aged. While promoting individual responsibility through a co-payment system, providing affordable healthcare to all Singaporeans is an essential ingredient of the public healthcare financing scheme.

To help Singaporeans pay their medical expenses, the government introduced compulsory medical savings known as Medisave in 1984. The rationale behind the savings approach adopted by the government is that the current generation of wage-earners should save for their healthcare needs in old age instead of relying on uncertain tax revenues from the future generations for support. Thus, the system would not place an unduly heavy burden on the declining number of the young and productive. Moreover, it was believed to generate efficiency gains by restraining overconsumption of health services common in any third-party financing system (Lim, 2004).

Two complementary schemes, MediShield and Medifund, were implemented later. MediShield is a low cost, relatively high deductible catastrophic health insurance scheme introduced by the government in 1990 to help patients cope with unusually high hospital bills. The premiums can be paid using Medisave balances. The government has been continuously reforming MediShield to expand its coverage and benefits. Medisave and MediShield operate within a broader government-regulated compulsory savings scheme called the Central Provident Fund. Medifund was established in 1993 to ensure that essential medical treatment is not denied to Singaporeans who face financial hardships as judged by means testing. Thus, it acts as a safety net for Singaporeans who are unable to pay their hospital expenses despite Medisave, MediShield and the government subsidies. In addition to the “3M” system (Medisave, MediShield, Medifund), a special insurance scheme for the elderly, ElderShield, was launched in September 2002. It covers long-term care associated with severe disabilities in old age. As with MediShield, it is an opt-out scheme and premiums can be deducted from Medisave. In addition to these schemes, government subsidies (financed through general taxation) play a crucial role in financing hospital costs. The government’s policy of price discrimination, based on different ward classes in public hospitals ranging in ascending order of comfort from class C, through B2 and B1 to A, allows subsidies to be targeted to poorer users based on individual choice of amenities. In January 2009 the government introduced a means testing scheme for class C and B2 ward admissions to ensure that the government subsidies go to the most financially deserving. A summary of the healthcare financing system is presented in Fig. 1 and the government subsidy scheme through the ward-class system is given in Table 2 (for further details refer to the Ministry of Health website).

Fig. 1. The structure of Singapore’s healthcare financing system

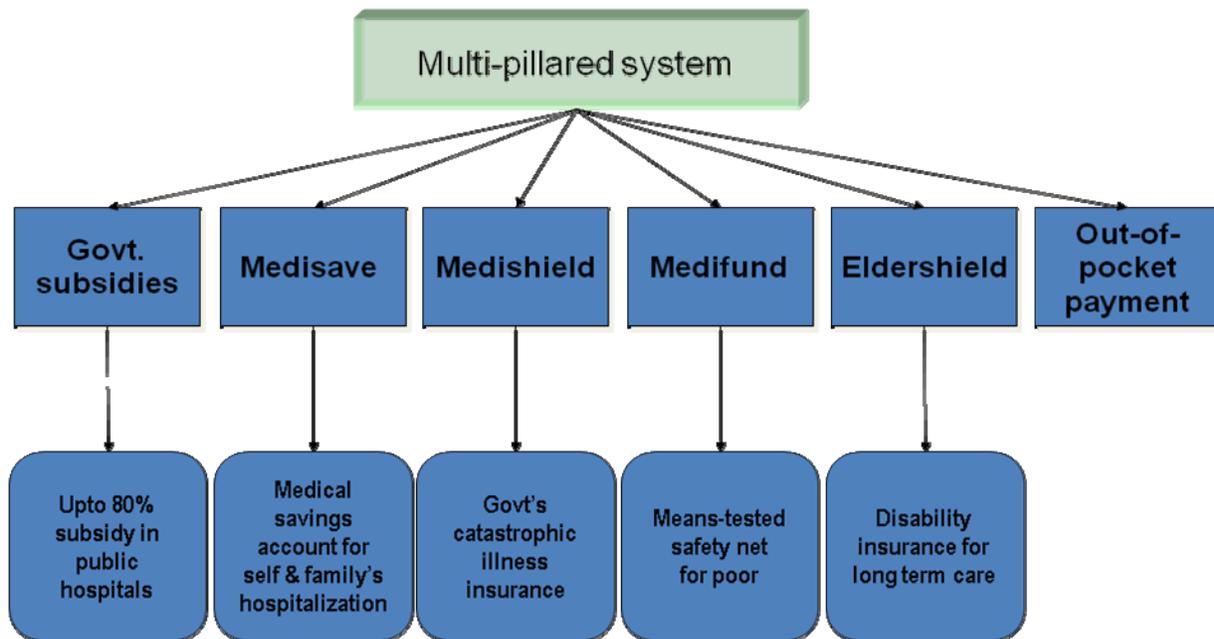


Table 2. Government subsidies and ward-class system

Ward Type	Subsidy	Beds per room	Attached Toilet & Shower	Air-con	T.V. & Phone
A	0	1	Yes	Yes	Yes
B1	20%	4	Yes	Yes	Yes
B2+	50%	5	Yes	Yes	No
B2	50 – 65%	6	No	No	No
C	65 - 80%	>6 (open ward)	No	No	No

The medical savings accounts (MSA) scheme of Singapore has attracted both praise and concern on the grounds of cost containment, equity and adequacy. Proponents of the MSA scheme argue that it checks overutilization of health services by creating cost-conscious consumers. Thus, it eliminates efficiency losses arising from moral hazard associated with a third-party pre-paid system and is a vehicle to contain

rising health costs that has become a major problem in the developed world (Massaro and Wong, 1995; Pauly, 2001; Eiff et al., 2002). Others have argued that the main policy objective of the MSA scheme is not cost-containment but to mobilize non-budgetary resources to help pay for the increasing medical expenditure expected from a rapidly aging population. This resolves the problem of intergenerational transfers that a rapidly ageing society poses in a tax-financed system. With this shift in public cost-sharing, government tax revenue can be freed to address other concerns (Prescott and Nichols, 1997; Phua and Yap, 1998).

There are others who doubt the scheme's ability to curtail costs. Hsiao (1995) argues that the MSA scheme could not contain healthcare costs in Singapore which led the government to consider supply side measures, for example, regulating the supply of hospital beds and physicians, to reduce provider-induced demand. Barr (2001) attributes Singapore's low healthcare spending to strict government control of inputs and outputs, rationing based on wealth and to social and demographic features peculiar to Singapore. He asserts that the MSA plays a minor role in the Singapore healthcare system. Shortt (2002) argues that the demand-side approach contained in MSA is not effective in controlling healthcare costs without the supply side regulations.

These writers also criticized the MSA system for promoting inequities in the society. Barr (2001) claims that, "for most of the population, the cost of moving outside the parameters set by the 3Ms in Singapore is prohibitive. Chronically sick, the working poor and the elderly, particularly old women, are seriously disadvantaged". Shortt (2002) notes that Medisave, especially when coupled with tax advantages, benefits the healthy and wealthy while leaving the sick either to seek higher cost comprehensive insurance or to bear increased out-of-pocket expenses. Shortt (2002) claims that "health care costs in Singapore often cannot be met by elderly people, especially elderly widows who were never employed outside the home, and poor people". In the same vein, Asher and Nandy (2006) argued that the tax treatment of the Medisave exacerbates the regressive nature of the health financing system in Singapore. The income tax exemption of contributions, interest income and withdrawals from Medisave does not benefit two-thirds of the labor force that does not pay income tax.

The claims by Barr (2001) and Shortt (2002) are made in absence of any real data. Chia and Tsui (2005) use survey data of a longitudinal study of transition in health and wealth of the elderly Singaporeans to assess the adequacy of medical savings of the elderly to finance their medical expenses over the post retirement period. They estimate the present value of lifetime healthcare expenses of Singaporeans upon retirement. Their results show that the minimum Medisave sum would be adequate for both the

less well off male and female elderly at 4% increase in medical costs and at a discount rate 4% or higher. It is also adequate for better off male elderly but not so for female elderly. The shortfall is in the range of 34-75% of the minimum sum and becomes more severe when medical expenses grow at higher rates. Note that the findings of the Chia-Tsui study are based on the respondents' account of their health expenses in the previous year. In the next section we present some results based on actual hospital bills of a large pool of elderly Singaporeans to address some issues pertaining to equity and adequacy.

3. Healthcare expenditure of elderly Singaporeans³

The data for the analysis were extracted from hospital bills of the elderly (65 years and above) admitted to a tertiary public hospital throughout 2007. The information gathered include itemized inpatient expenses and modes of financing, inpatient's characteristics such as age, gender, length of stay, diagnoses (primary and secondary) and outcome of hospitalization. The sample size used for the analysis consists of 30,192 hospitalization episodes of 18,935 elderly patients.

There is a huge variation in expenditure across ward classes due to government subsidies. Table 3 shows the distribution of bill size by ward class. The expenditure distribution is highly skewed with a long right tail. The data show that the patients in different wards received an average government subsidy amounting to 72.4% in C ward, 64.3% in B2 ward, 53.6% in B2+ ward, 13.6% in B1 ward and 0.3% in A ward. The large jump in the bill size for wards A and B over C is immediately noticeable in Table 3. These two wards were 5.5 and 4.5 times more expensive than ward C. Ward B2+ was 1.6 times more expensive and B2 was only 1.2 times more expensive than C. This explains the popularity of B2 ward as reflected by the largest sample size for B2 in the table. Just as with the expenditure distribution, the distribution of the length of stay in hospital is skewed to the right (Table 4). The table also shows that the length of stay in C ward is systematically longer than in other wards across the entire distribution. This reflects a combination of factors: 1. Greater subsidies incentivize longer stay, 2. The general health of this low-income stratum of the society is poor, 3. More retired elderly patients choose C ward while economically active young choose other wards, 4. Long-staying patients with large bills opt to downgrade to C ward, 5. Short-staying elective surgical patients choose B2 and higher wards. Maternity wards are also factored into B2 and higher wards, hence shorter stay.

³ The data analysis was carried out by the second author as part of her PhD thesis.

Table 3: Distribution of bill Size (\$\$) by ward class.

Ward Class	Sample size	Mean	Median	90 th Percentile	95 th Percentile	99 th Percentile
A	1,395	8,108	4,180	18,326	23,266	48,793
B1	2,324	6,560	3,574	14,819	18,404	33,646
B2+	822	2,305	1,804	4,074	5,681	10,851
B2	15,260	1,727	986	3,989	5,257	10,083
C	10,391	1,466	842	3,257	4,431	9,004
Total	30,192	2,320	1,087	4,778	8,133	19,126

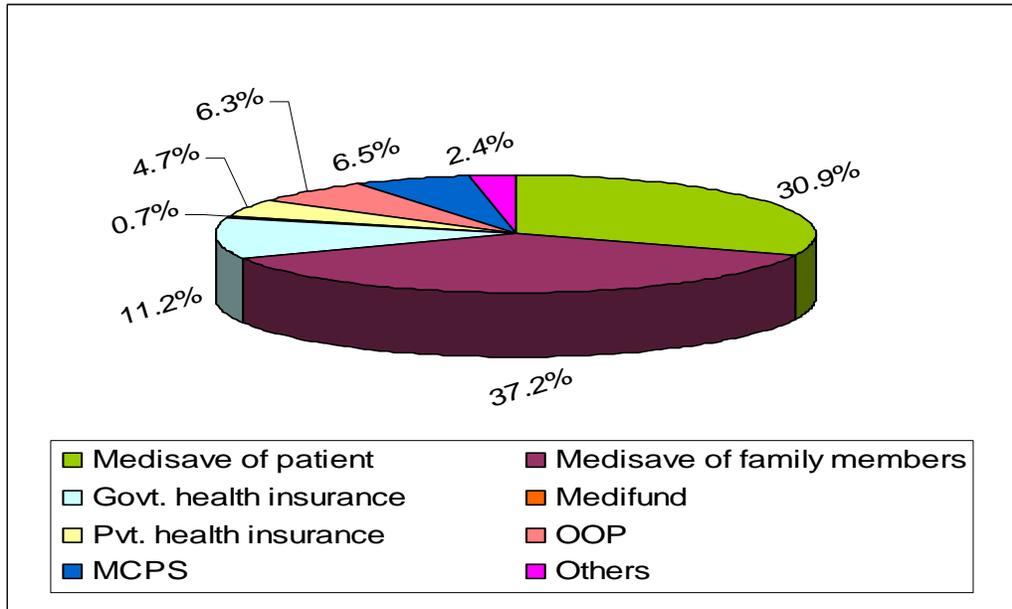
Table 4: Distribution of length of stay (days) by ward class.

Ward Class	Mean	Median	90 th Percentile	95 th Percentile	99 th Percentile
A	6.9	4	15	25	53
B1	6.4	4	13	20	39
B2+	5.4	3	11	18	36
B2	6.7	4	15	22	44
C	8.6	5	19	28	57
Total	7.3	4	16	24	49

With this background information on the distribution of inpatient expenditure and length of stay, we now move on to examine how inpatient expenditure is financed. The pie chart in Fig. 2 shows the shares of different modes of financing hospitalization episodes. Medisave of the patient and family members and out-of-pocket expenditure account for about 75% of hospital bills.⁴ This means a B2 ward patient with the average bill of \$ 1,727 (Table 3) paid \$ 1,295 from personal and family savings. The contribution of insurance (both the government and private) is fairly small, covering only 15% of the bill.

⁴ In WHO studies out-of-pocket expenditure refers to what is directly paid out of personal income to settle a hospital bill. By this definition the entire 75% should be counted as out-of-pocket expenditure.

Fig. 2: Payment shares by mode of financing



MCPS=Medical Claims Pro-ration & Processing System, OOP=out-of-pocket

Medisave

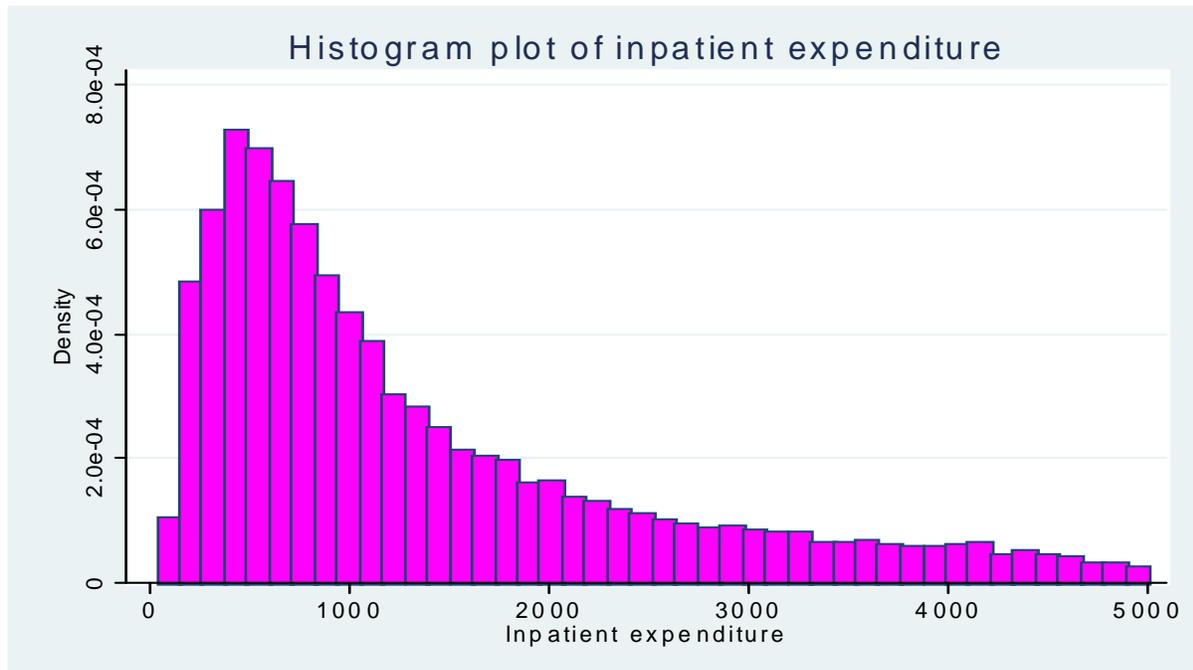
In our sample, 55% of the elderly used Medisave to pay for hospitalization. In general, the role of Medisave towards financing inpatient expenses of the elderly has been rather modest. This stems partially from the fact that the present cohort of the elderly did not have enough working years left to build up sufficient Medisave balances after the scheme was launched in 1984. As a result, Medisave balances of a large majority of the elderly fall short of the minimum sum stipulated by the government. For example, in 2005, average Medisave balance of 65 years and older was S\$5,300 while the minimum sum required was S\$27,500 (Ministry of Health). Furthermore, due to higher medical needs of the elderly, there has been greater draw-down of their Medisave balances but without matching replenishment. Those who used Medisave paid 71% of C ward, 73% of B2 ward, 76% of B2+ ward, 37% of B1 ward and 22% of A ward expenses out of Medisave. More males than females (66% versus 46%) used Medisave to offset their medical bills. The gender difference in Medisave utilization can be explained by the fact that women, due to low paying jobs in informal sector or unpaid labor such as care-giving and domestic work during their productive years, could accumulate less Medisave balances compared to their male counterpart.

Government health insurance (MediShield) and catastrophic expenditure

Only 22% of the elderly were covered by MediShield. Older elderly (≥ 80 years) have very poor insurance coverage (4.4%) while younger elderly (64-74) fare a bit better (28.9%). The negligible coverage of the older elderly could be due to the following reasons: First, the last entry age for MediShield is 75 years though the coverage is up to 85 years. Second, relatively high premiums and deductibles for older elderly (≥ 80 years) compared to younger elderly (< 80 years) may work as a disincentive to stay in MediShield. The premium jumps from S\$524 for 76-78 years and S\$615 for 79-80 years to S\$1087 for 81-83 years and S\$1123 for 84-85 years (CPF website). The deductible is higher for older elderly. For class C ward, the deductible is S\$1,000 for 80 years and below while it is S\$2,000 for 81-85 years. For the insured elderly, MediShield covered 52% of the bill of a hospitalization episode with vast differences across wards (C 59%, B2 55%, B2+ 33%, B1 15%, and A 11%).

It should be noted that the motivation behind the introduction of MediShield is to protect individuals against catastrophic health expenses. The question remains, nevertheless, how well these insurance alternatives protect the elderly against high (and perhaps catastrophic) expenses, which is a story about the tail of the expenditure distribution. Fig. 5 presents the inpatient expenditure distribution cut off at S\$5000. The actual tail extends much longer with few episodes running beyond \$100,000 with a maximum running above \$200,000. For the most expensive 10% of episodes, MediShield covered 40% of expenses for the insured elderly with sharp variations across wards. Nearly 68% of the bill was covered in class C ward as against 11% in class A ward. Worth noting that private health insurance offsets a higher fraction (61%) of hospitalization cost in the top decile than MediShield. Moreover, for private insurance the variation across wards is not as marked as for MediShield- 78% of bill was covered in class C ward and 53% in class A ward. We further examined the tail probabilities of predicting catastrophic expenditures by fitting conditional log-normal and Pareto distributions; the key findings will be discussed in Section 4.

Fig. 5: Elderly inpatient expenditure distribution 2007



Private health insurance

The private health insurance is even less popular among the elderly- just 8% of them are covered. Older elderly have almost no private insurance. Latest entry age between 65 and 75 years, high premiums, high deductible and pre-existing conditions are the possible reasons behind the poor take-up of private insurance. For the insured elderly, the private insurance finances about 62% of the expenses of a hospitalization episode.

Medifund

Medifund assistance is only for admissions in ward classes B2 and C. A very small percentage of episodes receive Medifund assistance- only 0.19% in B2 ward and 2.5% in C ward. In fact, less than 1% of the elderly in our sample were helped by Medifund. This low proportion is a consequence of the government policy to restrict Medifund's role as the last-resort safety net. For those who obtained aid, about three-quarters of expenses of a hospitalization episode were paid from the fund with 51% for B2 ward and 78% for C ward.

Medisave of Family Members

Despite relatively small contributions of Medisave and insurance in financing hospitalization expenses, out-of-pocket payment for the elderly was considerably small. (Average out-of-pocket payment was about 6%, and about 4.5% for C, B2 and B2+ wards and 18% for B1 and 20% for A wards.) The answer to this puzzle lies in this unique feature of Singapore's healthcare financing system wherein Medisave can be used to pay for hospitalization of immediate family members. This is in accord with the government's initiative to promote the primacy of family in caregiving for the elderly. In fact, medical savings of children have become an important source of financing for their elderly parents' healthcare. In the present case, 51% of the elderly have their hospital bills paid from their family members' Medisave. More females (64%) than males (38%) tap on family members' medical savings as they have lower Medisave balances and lower insurance coverage than males. For the same reasons, older elderly (56%) are more dependent on family than younger elderly (49%). For the dependent elderly, 73% of cost of an inpatient episode is paid from a family member's Medisave.

To provide a comparative perspective Fig. 3 presents the payment shares of hospital bills for the insured (both MediShield and private insurance) versus the uninsured elderly by mode of financing and Fig. 4 the payment shares of the elderly with and without family support by mode of financing. As expected, Fig. 3 shows that the uninsured elderly are far more dependent on their family than the insured elderly (45.4% vs 17.7%). Furthermore, out-of-pocket component of the payment is almost double for the uninsured compared to the insured. The uninsured elderly have a larger fraction of their bill paid from their Medisave than the insured ones. Fig. 4 indicates that the elderly who are supported by their children have very little of their own medical savings. Family support itself may be an inducement for the elderly not to have much left in medical savings. For the independent elderly, 59% of expenses are paid from their own Medisave account compared to only 4% for the dependent elderly. Moreover, out-of-pocket payment is higher for the elderly without family support than the elderly with family support (8.9% vs 3.8%).

Fig. 3: Insured vs uninsured elderly by mode of financing (% of bill paid)

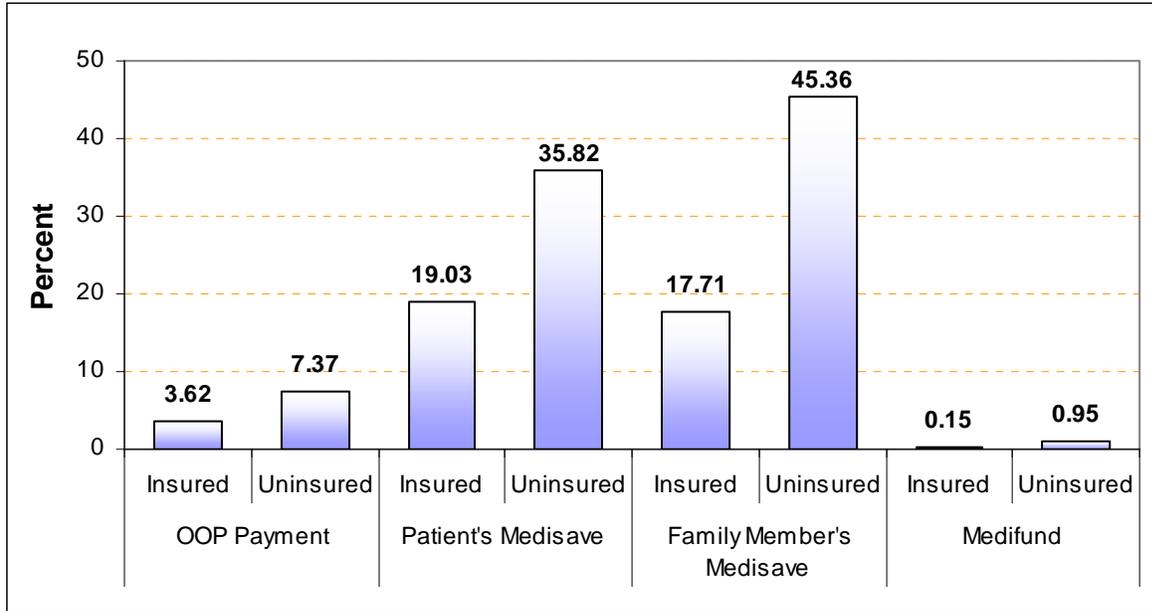
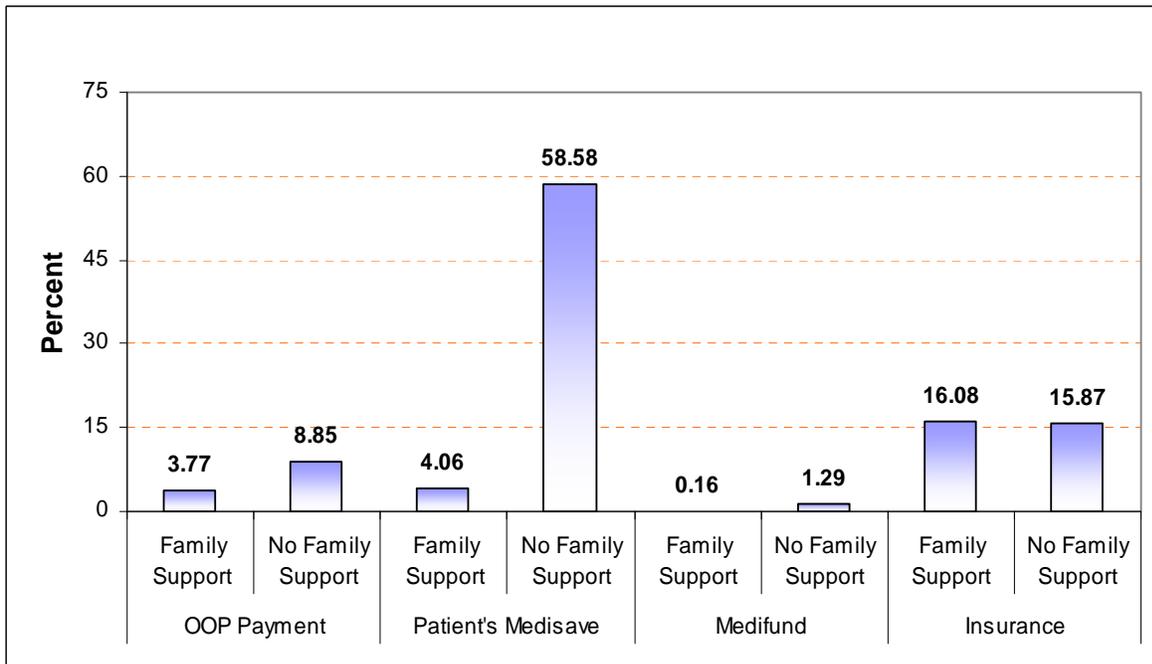


Fig. 4: Elderly with and without family support by mode of financing (% of bill paid)



4. Equity and adequacy: General observations

The data analysis of the previous section leads to the following observations.

- Government subsidies remain vital to affordability of basic medical care in Singapore. A majority of admissions are in subsidized wards B2 and C where the average cost is about 20% of the cost in the unsubsidized ward A.
- The present cohort of elderly does not have sufficient balances in Medisave because Medisave was enacted too late for them. The problem of insufficient balances is compounded by greater draw-down without any replenishment of balances by the elderly.
- The ability to tap on family members' medical savings is very important in paying for healthcare of the elderly. This is an indication of the successful pursuit of the nation's philosophy where family is believed to be responsible for the health of the aged besides the individual.
- Government insurance (MediShield) has a limited value to the elderly as only a small percentage of them are insured. This could be due to several reasons- last entry age of 75 years, relatively high premiums and high deductible for the elderly.
- Private insurance plays even minor role in financing of hospital expenses of the current elderly. Nevertheless, private insurance fares better than MediShield in covering catastrophic expenditure.
- Insurance cover (both MediShield and private) predicts larger bills. For MediShield this is to be expected because it is meant for large bills. Further analysis indicates the presence of a self-selection bias in the government insurance. Less healthy go for insurance. Healthy go without insurance and face the risk of catastrophic expenditure. This problem becomes less important as the MediShield cover increases. In the case of private health insurance moral hazard seems to be the main problem.
- Ward class type shows a systematic pattern of predicting catastrophic expenditure with patients going to A wards facing the highest risk.
- Given most of the expenditure falls upon the individual and family members, the healthcare financing system is highly income dependent. In the absence of the corresponding income data we cannot say much about the progressivity or regressivity of the healthcare financing system. However, if we take the average monthly household income by dwelling type from the 2007/08

household expenditure survey (HDB 1-3 rooms S\$ 3,091, 4 rooms S\$ 5,114, 5 rooms & executive S\$ 8, 177, private flats S\$ 16, 311, landed property S\$ 20,427) (Department of Statistics, 2009) and relate them in that order to the mean expenditure in Table 3 of the five ward types from C to A we get the following hospital expenditure shares of income by ward type: C 47%, B2 34%, B2+ 28%, B1 40%, and A 40%. If these numbers are representative of the actual payment structure, we can observe some regressivity in the payment system despite the presence of subsidies.

5. Some recommendations

As noted in Introduction, Singaporeans spend on average only a small proportion of their income on direct healthcare because of the bigger role that indirect healthcare management plays. However, for those who need medical care, Singapore's healthcare financing system is closely linked to individual income levels despite the presence of substantial government subsidies. In an ideal system one could argue that just as the way universal education is provided regardless of income levels, public medical care at the point of delivery should not differentiate individuals by income levels. However, we have to be realistic with regard to the constraints the policy makers face. On the one hand, with the increasing elderly population the government would be strained to finance ever-increasing health subsidies from a shrinking tax base. On the other hand, financing of healthcare of the current elderly out of children's Medisave has created a rollover effect on future generations and the burden on children's Medisave especially for low earners will not disappear soon. Moreover, although many are well covered by employer-paid private insurances, at the moment there is no comprehensive insurance coverage after retirement, the time when good cover is most needed. Portable Medical Benefit Scheme (PMBS) and Transferable Medical Insurance Scheme (TMIS) are voluntary employer-based and do not apply to retirement. Furthermore, at present Medisave, MediShield and government subsidies are all heavily biased towards inpatient treatment and some cover becomes necessary for expensive outpatient treatments, for example the newer cancer biologics and cardiology drugs.

Some fine tuning of the current financing system is likely to produce more equitable results with a wider cover without unduly burdening either the government or the patients and their families. One way to do this is to move in the direction of a more comprehensive insurance system without deviating much from the principle of individual responsibility. The government has been fine tuning MediShield over the years and this exercise can go few steps further. We recommend that MediShield be made compulsory

and replace the age-dependent premium structure with an income-dependent premium structure by imposing a MediShield tax, a small fixed percentage of income, with some caps and provisions. Although about 84% of Singapore resident population was covered by MediShield in 2009, making it compulsory eliminates the adverse selection problem altogether and is needed to implement the MediShield tax. The underlying principle of the tax is cross subsidization from rich to poor, active to inactive, and well to sick. Such cross subsidization, as in education, is essential to provide more equitable healthcare. As MediShield funds build up, increase the coverage and eventually make it a more comprehensive package. Co-payment and deductible should be retained to curb over-use (moral hazard) and encourage healthy living. Obviously how to allocate medical expenses among Medisave, employer sponsored insurance and MediShield needs to be worked out. Constant review is needed as the model of healthcare delivery is changing and will continue to change to emphasize more preventive health and more community-based, outpatient healthcare.

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