

Are Medical Savings Accounts a Viable Option for Funding Health Care?

Anna Dixon

European Observatory on Health Care Systems and LSE Health and Social Care, London School of Economics and Political Science, London, UK

Aim. To summarize the international experience of medical savings accounts (MSAs), make a preliminary evaluation of the impact of MSAs, and assess their feasibility in other countries, particularly Central and Eastern Europe.

Method. A review of published literature in academic journals, books, Internet sources, and other "gray" literature.

Results. Most published studies were theoretical. Advocates argued that MSAs improved the efficiency of insurance, increased consumer choice, and reduced health care expenditures. Critics argued that MSAs led to adverse selection, reduced equity, resulted in cost inflation, and deterred necessary utilization. MSAs have been implemented in China, Singapore, the United States of America, and South Africa. The organization of MSAs varied between countries. MSAs were combined with either a public or private insurance element to cover catastrophic expenses. Few empirical studies of MSAs have been conducted and, therefore, the evidence on their impact is limited.

Conclusion. More empirical evaluations are needed on the impact of MSAs. Results of empirical evaluations cannot be easily generalized but depend on the complementary systems of financing and the extent of state regulation. MSAs are not likely to be feasible in countries where the unemployment rate is high, savings rates and average earnings low, and the state weak.

Key words: *China; financing, organized; insurance, health; medical savings accounts; Singapore; South Africa; United States*

Most health care systems around the world are financed from a variety of sources: taxes, social health insurance contributions, private health insurance premia, and user charges (1). In the past decade, medical savings accounts have been introduced as a method of funding health care in a number of countries. Medical savings accounts are similar to bank accounts: the money belongs to the account holder, but its purpose is to pay for medical expenses of an individual (or family). Although the implementation of medical savings accounts has been limited thus far, it has raised widespread international interest. However, published work on medical savings accounts has been mostly theoretical.

The purpose of this paper is to summarize the international experience of medical savings accounts. After setting out a typology of health care funding showing how medical savings accounts compare to other established methods of funding and the possible variations in the way that medical savings account schemes are designed, a brief review of the theoretical literature is presented, highlighting the potential advantages and disadvantages of medical savings accounts. Four country case studies are presented – China, the USA, South Africa, and Singapore (Hong Kong is introducing a Health Protection Account. Proposals were published in a White Paper in March 2001, refs. 2,3) – which describe the medical savings

account schemes in each country and present any available evidence of their impact. A preliminary evaluation of medical savings accounts' impact is made and the feasibility assessed of implementing medical savings accounts in other countries, particularly in Central and Eastern Europe.

Selection of Source Literature

The paper is a review of secondary sources. It mainly draws on published literature in academic journals, books, and other "gray" literature, such as government and research institute reports. Keyword searches of PubMed/MEDLINE and International Bibliography of the Social Sciences (IBSS – a part of Bath Information & Data Services [BIDS]) elicited 93 references. Of those, 10 were eliminated due to the lack of relevance to the topic. The keywords used to search the two electronic databases were "medical savings accounts", "flexible savings accounts", and "individual savings accounts and health". Finally, only 20 references were included in the review, because they appeared in leading peer-reviewed journals and contained information related to the four countries mentioned above. References were sorted according to whether the articles were theoretical (including commentaries and reviews) or empirical (including primary data analysis and micro simulations). Further references and materials were identified through bibliographies, library catalogues, and Internet searches.

As Nichols et al (4) noted in their review of the literature up to and including 1997, "practically all the literature on medical savings accounts outside Singapore has been theoretical". Much of the literature published subsequently has continued in this vein. Due to the lack of empirical articles, the case studies also make reference to the "gray" literature, including a number of papers published on the Internet. Most of these are from reputable sources, e.g., Ministries of Health or government departments, established research institutions, or by authors who have also published on the subject in peer-reviewed journals. The Department of Medical Insurance at the Ministry of Labor and Social Security of the People's Republic of China provided additional information on China.

Typology of Funding Methods

Most methods of health care funding can be classified according to whether they are forms of prepayment or point-of-service payments (5). The defining characteristic of pre-payment systems is the *voluntary or compulsory contribution of payments by individuals, households or firms to a third party that serves to spread the financial risks of poor health for the common advantage of participants* (5). This contrasts with systems in which patients are required to pay for services at the point of use. In middle- and lower-income countries, where systems of prepayment do not generate sufficient revenue (or have collapsed), point-of-service payments or user charges are viewed as an essential component of health care revenues (6). Most systems of pre-payment, such as taxation, social health insurance, and voluntary health insurance, pool risks among participants, whereas point-of-service payments do not.

Medical savings accounts are a hybrid of point-of-service and pre-payment: although money is put into a savings (prepaid) account, the accounts are personalized and there is no pooling of funds (or of risks). Medical savings accounts can, therefore, be defined as the *voluntary or compulsory contribution of payments by individuals, households or firms into a personalized savings account that serves to spread the financial risk of poor health over time*.

Variations in the Design of Medical Savings Accounts

In practice, medical savings accounts are usually combined with some form of health insurance against catastrophic costs. Sometimes, the term "medical savings accounts" refers to the specific arrangements in the country under discussion (including insurance arrangements). The organization of both the savings accounts and insurance element varies enormously.

The "back-up" financing mechanism, for example, can be wholly or partly public or private (4). There may be a state-financed back-up mechanism in the form of a safety net for the poor (Singapore Medifund) or tax-financed services (Hong Kong proposals). The back-up financing mechanism may be compulsory (USA, South Africa) or voluntary (Singapore MediShield). Contributions to medical savings accounts

may be compulsory for all or part of the population (Singapore Medisave, China) or may be voluntary (USA, South Africa). A simple matrix (Table 1) representing the two main dimensions – compulsory contribution and the nature of back-up financing – illustrates how the four case studies, discussed below, differ.

Table 1. Dimensions of medical savings accounts plans

Back-up financing	Medical savings account contributions	
	compulsory	voluntary
None	Singapore (before 1990)	— ^a
Voluntary	Singapore MediShield (after 1990)	— ^a
Compulsory	China (urban workers)	USA (federal); South Africa

^aThe combination of voluntary contributions to medical savings accounts with either no back-up or voluntary back-up financing is theoretically possible. However, it is not found in practice.

Other possible variations in the design of a medical savings account scheme depend in part on the extent of regulation. For example, the contribution rate may either be set by the government or left to individual citizens to freely contribute any amount they wish. Contribution rates may be set at a flat rate amount or may vary depending on the age or income of the contributor. There are usually some limits placed on the maximum monthly or annual contribution and on the maximum accumulated balance. This is especially the case when the medical savings accounts benefit from tax relief, which can be applied to the savings, interest, and/or expenditures. The individual, the employer or the state (e.g., a tax credit) may contribute to the account.

The management of the funds can also vary. In Singapore, the scheme is state-run and accumulated savings are invested, for example, in government bonds. In contrast, in the USA, where medical savings accounts are offered as part of private health insurance plans, the insurer or a bank usually manages the funds. In the USA, employers manage some of the funds, so-called flexible spending accounts, designed to encourage employees to opt for high deductible insurance plans (7).

To ensure that the accounts are used for health care and not simply as a means of sheltering income from taxation, there are limits placed on what counts as eligible spending. For example, in South Africa spending is allowed on "relevant services" although these remain poorly defined (8). In Singapore both the types of service and the fees are specified. There are often penalties, such as loss of tax benefits, if savings are spent on non-medical expenses. The beneficiaries of the account may also be defined: the contributor or his or her dependants, spouse or other family members (e.g., elderly parents). It is also possible to allow any unspent balance to be bequeathed to relatives.

Medical savings accounts do not fit neatly into the dichotomy of funding systems but combine elements of systems of prepayment with point-of-service payments. There are many different ways to combine medical savings accounts with other funding elements and regulate them. Here is a summary of some

of the main theoretical arguments put forward in favor and against medical savings accounts.

Theoretical Arguments

Medical savings accounts have received attention as an alternative to predominant systems of funding that provide full insurance coverage because of their potential to address the problem of moral hazard. According to economic theory, moral hazard occurs when the act of insurance increases the likelihood of the occurrence of the event being insured against. Consumer moral hazard may result in the subscriber using excessive services and provider moral hazard in the provider prescribing excessive treatment. Consumer and provider moral hazard occur under both public and private insurance. Advocates argue that medical savings accounts will reduce moral hazard, increase choice, improve the efficiency of insurance, and result in lower costs of and expenditure on health care (9). The argument goes that under medical savings accounts individuals are made to purchase routine health care at full price so there will be no incentive to participate in risky behavior and thus over-consume services. Increased consumer awareness of the cost will deter unnecessary consumption (10). However, critics cite evidence on the effects of cost sharing, which show that high out-of-pocket payments deter patients from using necessary services, particularly preventive ones (11,12).

Underlying the support for medical savings accounts is a belief in individual responsibility and self-reliance. Advocates argue that medical savings accounts give patients greater choice of providers and incentives to shop around to obtain lower prices, which will reduce overall costs (13). Critics argue that due to information asymmetries there can be no price competition. Instead, the competition will be based on hotel amenities and high technology ("quality" competition) resulting in inflated costs (14). Also fee-for-service payments will generate strong incentives for overutilization of expensive specialist services and overtreatment by those services (12).

Another source of cost savings predicted by advocates of medical savings accounts is the lower administrative costs. Because patients pay directly for the frequent low-cost services, there is less billing or checking by the insurer (13). On the other hand, consumers may be faced with higher transaction costs arising from the increased choice of plan and providers. Costs are likely to inflate, because the market power of providers will increase *vis a vis* poorly informed consumers, and the incentives of fee-for-service payment will be to over-supply.

In theory, insurance is most efficient for low-probability high-cost events. Thus, by limiting insurance claims to catastrophic episodes, medical savings account plans will be more efficient than traditional first-dollar cover insurance. Theory would also suggest that, where there is a choice between medical savings account plans and traditional first-dollar cover plans, medical savings accounts will segment the insurance market, reducing its efficiency. High-rate taxpayers, people with surplus income to save,

those with a low risk of ill health, and the well-informed will be more likely to opt for a medical savings account plan (15). Thus the introduction of medical savings accounts may concentrate the higher risks in the traditional fee-for-service and managed care plans, creating a "death spiral" (16), which ultimately may increase the number of uninsured people (17).

Advocates argue that medical savings accounts enable pre-funding (accumulation of resources in advance to pay for future health care needs) and inter-temporal redistribution (spread the risk of ill health over a lifetime from periods of health to illness and periods of wealth to poverty). However, critics argue that due to the skewed distribution of ill health (ie, a minority of the population accounts for the majority of health care expenditures), a system with no inter-personal redistribution means that the burden of costs will fall on a small proportion of the population, which is likely to be the least well-off due to the relationship between income and health (18).

Apart from micro-simulations using US data, little empirical work has been carried out to date to test these theoretical assumptions. In the following section, the medical savings account schemes that have been implemented are presented together with the limited empirical work available on their impact.

Case Studies

This section reviews and analyzes the experience with medical savings accounts in Singapore, China, the USA, and South Africa.

Singapore

Personalized savings schemes for medical expenses were first implemented in Singapore in 1984 (Medisave) as part of a major national reform of the health care system. The main pressures for reform were rapid health expenditure growth and low productivity of public hospitals and health care services, which were unresponsive to patients (19). The compulsory scheme was not initially combined with back-up financing (Table 1). However, in 1990, a catastrophic insurance scheme run by the government (MediShield) was introduced. However, it was not made compulsory (Table 1). The final element of the scheme (Medifund), which provides financial protection for the poor, was introduced in 1993.

Medisave is part of the Central Provident Fund to which all working Singaporeans (including the self-employed) are required to deposit 20% of their income and the employer 12% (reduced from 20% in 1999; 8% reduction did not affect the contribution to the Medisave Account). The equivalent of 6-8% of income is directed into Medisave depending on age up to a maximum contribution per month (Table 2). There is also a total contribution ceiling currently set at SGD22,000 (around 13,600) (20). The savings can be used to cover hospitalization expenses incurred by the account holder or his/her immediate family members. Any account balance can be bequeathed upon death to the relatives.

All Medisave account holders who are citizens or permanent residents of Singapore and under the

Table 2. Contribution rates at different ages and maximum monthly contributions to Medisave, Singapore, in 2000

Age (years)	Contribution rate (% salary)	Maximum contribution per month (SGD,) ^a
<35	6	360 (223)
35-44	7	420 (260)
≥45	8	480 (297)

^a1 SGD (Singapore Dollar) = 0.611 (May 2002).

age of 75 are eligible for MediShield unless they opt-out. MediShield premia increase with age. The lowest rate for MediShield Basic for those under 30 years of age is SGD12/year, and the highest premium is for those between 66 and 70 years of age who pay SGD132/year. There are high deductibles and co-insurance as well as annual and lifetime limits to reduce moral hazard. MediShield will pay 80% of the amount in excess of the deductibles, and the insured person will pay the remaining 20% co-insurance. The maximum amount claimable from MediShield is SGD20,000 for a policy year and SGD80,000 for a lifetime. MediShield Plus is an enhanced insurance scheme for those who wish to use private hospitals or private wards in public hospitals, and offers a choice of two plans with different claim limits and deductibles. The premia for these are threefold and fivefold higher rates than for the standard MediShield policy (21). Those who opt out of MediShield may use Medisave funds to purchase Medisave-approved insurance schemes available in the private sector.

Medifund is financed from an endowment fund created in 1993. The interest is used to pay the hospital bills for those otherwise unable to afford hospital care.

Medisave has received the most attention in the international literature, in part because it was the first scheme to be implemented. Evaluations have focused on whether medical savings accounts have reduced or controlled health care expenditure growth by reducing moral hazard without adversely affecting equity. In evaluating medical savings accounts, Hsiao (19) concluded that Singapore managed to "assure everyone reasonable access to basic medical services". There are several problems with this conclusion. Access for the poor is enabled through Medifund, not facilitated through Medisave. Due to the lack of data, it is difficult to evaluate whether all groups access services regardless of their ability to pay. Finally, medical savings accounts were introduced at the same time as hospital restructuring. It is, therefore, not possible to isolate factors that might have accounted for improvements in medical service responsiveness.

As far as cost containment is concerned, the evaluation of Medisave is critical. Singapore's health care system has no price competition. Instead, hospitals compete on "quality", as reflected in the level of high technology care offered and the reputations of senior doctors. This has resulted in inflated costs. In addition, when consumers need to decide which health care service to purchase, they tend to choose "the best money can buy". Thus, the mix of health care inputs is further skewed toward high-cost care. Even if medical savings accounts reduce utilization, they do

not seem to reduce costs associated with the intensity of services.

The problem of inflation in the Singapore health system was also recognized in a government white paper, as follows :

"Market forces alone will not suffice to hold down medical costs to the minimum. The health care system is an example of market failure. The government has to intervene directly to structure and regulate the health care system."

Medical savings accounts are demand-side financing method and thus do not constrain provider moral hazard. The experience of Singapore suggests that supply side measures are needed to control expenditure growth. Massaro and Wong (22) offer a more positive evaluation of the Singapore system, but also recognize the importance of regulation:

"This willingness [of the state] to intervene aggressively in the market... may be as important to its success as the individual savings mechanisms".

Pauly and Goodman (23) maintained that expenditure growth in Singapore simply reflects rising income. They suggested that the few withdrawals from Medisave made each year reflect prudent consumers and prove there is no supplier-induced demand. In practice, withdrawals from Medisave can only be done for approved services, in approved hospitals and at approved prices. The consumer must pay the difference between the approved price and the actual price out of pocket. Thus Medisave does, in some respects, mirror more aggressive forms of managed care.

More recent research has highlighted a number of systematic faults, including that to provide adequate care for the chronically sick and those requiring long term institutionalized care. Old women, the working poor, and certain ethnic groups are particularly vulnerable (24).

China

China introduced medical savings accounts combined with citywide social insurance in two cities in 1995, as part of an experimental program. The reform attempted to address some financially problematic insurance schemes, which in effect left their workers uninsured. A decision to extend the program to other cities was taken in 1996 and appropriate legislation passed in 1998 (25). This state-run scheme is compulsory for urban workers and combines medical savings accounts with social health insurance (Table 1).

Since January 1, 1995, two Chinese cities (Zhenjiang and Jiujang) have been pilot sites for health financing reforms, adopting a combination of medical savings accounts, called individual savings accounts, and social insurance for catastrophic expenses (with city-wide risk pooling). In early 1996, the State Council decided to extend the reforms to 56 other cities across China. This scheme replaced the two previous tier urban medical insurance schemes – Government Insurance Scheme and Labor Insurance Scheme – which pooled risk at the level of the enterprise or local government (26). The framework for China's current medical insurance system reform was established in 1998. Employers and employees contribute

6% and 2% of wages respectively to the scheme. All of the employer's contribution and about 30% of the employee's contribution is deposited in the individual savings account; the remainder goes to social insurance funds (X. Xiong, personal communication, November 16, 2001). The social insurance funds are responsible for medical expenditures above a defined deductible up to a ceiling set at four times the local average annual salary. Expenditures between the deductible and the ceiling are still subject to patient co-payments. Patients can use the individual savings accounts to pay the deductible. By June 2001, nearly 60 million citizens were covered by the new system. The government plans to include all urban citizens into the system within the next 3 years.

An evaluation of the pilot schemes found that the likelihood of seeking health care has increased by 12%. However, use has shifted from inpatient care to outpatient care, contributing to a decline in total health expenditure (-8% among the general population and -18% among users). The substitution effect was supported by data that revealed the decline in inpatient admissions and average length of hospital stay. The incidence of using expensive technologies did not decline but the frequency of use per user did. This suggests that the extension of insurance protection to all urban workers for high cost inpatient care has increased access for general population. However, the deductible (5% of annual salary) limits the frequency of care per user (27). It seems that, compared with the previous system of insurance under which many of the population were in effect uninsured, the new scheme enables better cost control and also a more equitable distribution of health care utilization. The data used for this survey only relate to a sample of urban employees. Some 453,600 individuals were enrolled in the pilot scheme from a total population of 2.6 million in Jiangsu province (27). Other studies showed that access to health care services in China deteriorated between 1993 and 1998. The urban poor, the unemployed, and non-working dependants who were not covered by Government Insurance Scheme or Labor Insurance Scheme faced significant financial barriers to access health services (28). Whether these trends will continue and whether the financing reforms will have a positive impact on access to health services for all urban residents remains to be seen.

USA

In the USA, medical savings accounts can only be obtained in conjunction with private health insurance (Table 1). The Health Insurance Portability and Availability Act (1996), also known as the Kennedy-Kassenbaum legislation, made provision for a limited number of medical savings account plans to be offered during an experimental period, which has since been extended twice. A number of objectives were identified, including reducing the numbers of uninsured and health care expenditure growth.

Before the legislation, many large employers had already offered flexible spending accounts to shelter out-of-pocket medical expenses from taxes to encourage employees to opt for high-deductible plans. An

observational study of 15 firms offering flexible spending accounts found that few employees made use of these accounts. The main explanatory variable for take-up was education. Thus, the use of tax relief to promote flexible spending accounts resulted in inequities (7). These results were consistent with previously carried out single firm studies. Other research has highlighted the inefficiency of flexible spending accounts, including reduced tax revenues (29,30) and their use as an interest-free loan (31). Some of the effects of flexible spending accounts are likely to be similar to those that may arise with medical savings accounts.

The published work on medical savings accounts in the USA before the introduction of federal legislation predominantly consisted of advocacy pieces. As early as 1994, Goodman and Musgrave (32) had suggested extending tax subsidies to medical savings accounts and out-of-pocket expenditure. These ideas found political resonance among the American right as reflected in the views of Republican senator Gramm, who wrote a commentary in favor of medical savings accounts, claiming they would "promote cost-consciousness", drive down medical inflation, and increase price competition (33). However, critics disagreed with extending tax subsidies because they distort incentives (34). A controversial proposal was put forward by previous adversaries Pauly and Goodman, in which they recommended offering a tax credit for catastrophic plans combined with medical savings accounts (10). Their proposals were extensively debated and highly influential in the final content of the legislation. Economists Massaro and Wong (22) supported the proposals as a remedy for cost inflation and inefficiency in the USA. Others were more skeptical, claiming that medical savings accounts would be unlikely to reduce health care expenditure in the US context (19), that they would weaken purchaser market power, and deter consumers from seeking necessary care (35). Finally, medical savings accounts would lead to greater risk segmentation in the private health insurance market (36).

Medical savings accounts legislation was implemented at the federal level on January 1, 1997. Eligibility for a medical savings account has been limited to the self-employed and those working for small firms (less than 50 employees), providing they have health insurance with a deductible of at least US\$1,500. As an incentive for people to save, deposits, interest, and medical expenditures are tax-free but there is a limit on deposits set by law. Any remaining balance in the account can be rolled over from year to year. Medicare medical savings accounts were permitted under the Balance Budget Act 1997. However, although the law was implemented on January 1, 1999, no insurers were offering plans to Medicare beneficiaries in 2000 (37). In a MedPac report to Congress, two main reasons were identified why the private sector would not offer Medicare medical savings accounts. First, there was little demand from Medicare beneficiaries who tended to be risk averse, and second, marketing a complex product to a fragmented and scarce group of consumers was both difficult and expensive for the insurers (38).

An evaluation of medical savings accounts was due to be presented to Congress by the US General Accounting Office by January 1, 1999, to inform their decision on whether to extend the program. However, according to the Internal Revenue Service, the numbers of enrollees in the scheme had only reached 50,000 in 1999, well below the limit set at 750,000. Therefore, the current pilot scheme has been extended to the end of 2002. The Patients' Rights Bill or Bipartisan Patient Protection Act of 2001, Part II, will extend the medical savings account demonstration to 2004. The interim surveys of insurers, published by General Accounting Office, focused on market features, such as level of demand for the product, numbers of insurers who were offered medical savings account products, and the level of benefit offered. An explanation for the lower than expected demand was the complexity of information both for the consumer and the agent (39,40). In another survey of health benefit specialists, less than a half of respondents said they would recommend medical savings account plans to medium and large employers (41,42). However, these reports did not attempt to evaluate medical savings accounts from the consumer perspective, in terms of who was purchasing medical savings account products, the impact on health care consumption, and the effect on the costs of existing health insurance products. In fact, there is still no empirical research at this level in the US (43).

Much of the debate centers around the findings of micro-simulation exercises, a number of which have been carried out to try to measure the potential effect of medical savings accounts in the USA. However, the assumptions used are problematic. The most important assumptions in the simulations concern selectivity (the extent to which the low risk opt for medical savings accounts) and induction (the extent to which out-of-pocket payments create an incentive to reduce utilization). The lack of certainty about the induction effect means that simulations tend to rely on the results of cost-sharing studies, such as the RAND (research and development) health insurance experiment (<http://www.rand.org/health/hiedescription.html>). Keeler et al (44) simulated the impact on health care expenditures if all the non-elderly population shifted from fee-for-service and health maintenance organization plans to medical savings account plans. Relative to expenditures under fee-for-service plans, medical savings account plans with high deductibles and/or those funded by employers would result in a 6-13% decline in health care expenditure. However, due to selectivity, reductions might be as low as 2% or less. Indeed, most of the assumptions used overstate the cost savings.

Unlike cost sharing, medical savings accounts only target non-catastrophic costs. Data show that most health care spending goes on non-discretionary, inpatient services that are likely to be covered by insurance and not to be paid by the patient from the medical savings account. In fact, 60% of health care expenditures are above US\$2,000 and are associated with inpatient services that are less price-responsive. Thus, the predicted cost savings due to reduced utili-

zation under medical savings accounts are unlikely to be fully realized (17).

An expected benefit from the introduction of medical savings account plans in the USA was that it would increase insurance cover among employees of small businesses (13). A simulation of the effect of medical savings accounts concluded that, although medical savings accounts might be attractive to those already offering insurance, they provided limited impetus to those firms that did not provide insurance for their employees (45). Models that measure the inefficiencies associated with adverse selection have shown the effects to be small when medical savings account plans are offered alongside traditional plans (46). Finally, various simulations demonstrate that equity might be impaired by the expansion of medical savings account plans (16,47).

Debate continues about the role of medical savings accounts in the US, including proposals to roll them into a universal medical savings account scheme (48).

South Africa

The emergence of medical savings accounts in South Africa was the result of deregulation of private health insurance in 1994. Today, medical savings accounts are offered as part of voluntary private health insurance plans. In 1996, 20% of the population had private health insurance and, according to industry estimates, 51% were medical savings account plans (49). Tax incentives associated with employer-sponsored insurance were extended to employer deposits to medical savings accounts. The design of medical savings account plans differs from the American plans in that deductibles are applied differentially according to whether costs are seen as controllable (ie, discretionary). Further regulations are being developed following the new Medical Schemes Act 1998, which made provision for "a personal medical savings account, within the limit and in a manner prescribed from time to time, to be used for the payment of relevant services" (8). An analysis of individuals with traditional plans and those with medical savings account plans found the following: (a) medical savings account plans induced people to cut discretionary spending (ie, outpatient and drug expenditure) by more than half; (b) reductions in spending on discretionary spending did not represent cost shifting to the inpatient sector; and (c) medical savings accounts were attractive to both the healthy and the sick (49). However, there are no actual data to support the last assertion. Due to risk selection and income effects, it is likely that those at high risk do not have any private health insurance in South Africa (50).

Many of the criticisms and concerns raised are similar to those in the American debate – cost inflation is mainly a consequence of the intensity of service provision rather than utilization rates and risk segmentation will adversely affect risk pooling. There is concern within the government that tax expenditure subsidies are being used to finance services that would otherwise not have been paid for by public insurance (51).

A survey of seven large medical schemes and their administrators revealed that the covered benefits varied (ie, no clear definition of "relevant health services") and appealed primarily to the young and healthy. To prevent inequities in access, the Department of Health recommends that medical savings accounts should not be allowed to finance services covered by the minimum benefits package. Furthermore, medical savings accounts must be combined with an insurance product that covers the minimum benefits package and additional services (8). Other regulations are proposed to limit annual contributions, define a maximum cumulative balance, and make transfers outside the medical savings account subject to taxation.

Empirical evidence with medical savings accounts in South Africa is limited. The private health insurance market is much smaller than in the USA and operates in parallel to a universal publicly financed service, thus market failures due to adverse selection between traditional plans and medical savings account plans are less significant from a social perspective. Adverse selection occurs when people with below-average risk choose to forego insurance (or, in this case, forego full-cover insurance), leaving insurers to cover high-risk individuals and causing premiums to escalate.

Discussion

Theoretical arguments in the literature center around whether medical savings accounts reduce moral hazard, improve the efficiency of insurance, and result in lower costs and expenditure on health care. It is not possible to generalize on the basis of empirical evidence from the four countries reviewed here because in each case medical savings accounts were implemented alongside other reforms or were only partially implemented. Furthermore, due to the relatively recent introduction of medical savings accounts the empirical data remain scarce.

From the limited evidence and experience reviewed, it is difficult to conclude whether medical savings accounts reduce moral hazard and health care expenditure. In Singapore, health care expenditure has continued to grow because of quality competition rather than price competition. The finding that expenditure on discretionary services was lower among those insured under medical savings account plans in South Africa may be explained by selectivity rather than the success of medical savings accounts in addressing moral hazard. In China, expenditure fell, but utilization increased due to a shift in the mix of inpatient and outpatient services consumed. In all cases, medical savings accounts are combined with catastrophic health insurance, thus any effect of cost sharing on moral hazard and utilization will be of limited scope.

Some evidence suggest that medical savings accounts result in greater inequities. Risk segmentation occurs in the USA and South Africa because medical savings account plans appeal more to the better educated, the young, and the healthy. In Singapore, certain groups of the population are disadvantaged un-

der medical savings accounts, and in China the scheme perpetuates inequalities between urban and rural populations.

Despite the limited conclusions that can be drawn from empirical evidence, the fundamental characteristics of medical savings accounts give some indication of their likely impact. Evidence from a wider assessment of funding options would indicate that a system with no risk pooling, weak controls over allocation of resources, fee-for-service payment, and financial barriers to access will be inequitable and inefficient (52).

Importance of Context

Medical savings accounts have attracted interest internationally. Whether medical savings accounts are a viable option for funding health care will largely depend on the context in which they are to be implemented. Due to space limitations, the focus of this section is Singapore, where the implementation of medical savings accounts has been assessed as relatively successful (around 2.68 million Medisave accounts, or approximately 80% of the population, and a total balance of around US\$20.8 billion by December 1999), but for reasons that are quite unique to that country.

Singapore is a small country of just over 3 million Chinese emigrants. It has experienced rapid economic growth in recent decades (53). The state is highly centralized and powerful (characterized as social authoritarian) requiring an extraordinarily high savings rate (32% of income). In addition, there is a cultural propensity to save. When medical savings accounts were implemented in Singapore, the country was not undergoing rapid population ageing as many other developed countries did. Singapore had a low level of expenditure on health care in relation to national income and still spent only 3% of GDP – equivalent to SGD4.3 billion or SGD1,347 per capita – on health care in 1999.

According to Barr (24), the "success" of medical savings accounts in Singapore heavily depends on the fact that majority of the population is working and is paid enough to participate in Medisave and MediShield. Ramesh and Holliday (54) identified the strength of the state, in particular its role in the direct provision of inpatient services, as the key factor in the success of Singaporean health care system.

These factors led other commentators to conclude that the medical savings accounts are not appropriate in the European context. Saltman (12) offered a swinging critique of medical savings accounts by calling them the "single worst policy proposal in many years", and explaining how "every dimension of analysis indicates that medical savings accounts are not a feasible policy option for developed countries that wish to maintain an economically efficient or socially responsible health care system". Ham (55,56) considered the applicability of the Singapore model in the United Kingdom. He concluded that a "stakeholder welfare system must grow out of a stakeholder economy rather than vice versa", or, in other words, that a thriving economy and high employment

rates are both prerequisites to the successful implementation of medical savings accounts.

Nichols et al (4) discussed the potential of medical savings accounts in developing countries. They identified the following five key issues: 1) medical savings accounts must be combined with other policy tools; 2) resource mobilization will take time; 3) medical savings accounts need to be designed to enhance efficiency; 4) they pose equity risks; and 5) there are major institutional prerequisites, including the level of per capita income, high formal labor force participation, information systems, and systems for the collection and management of funds.

Certain factors suggest that medical savings accounts might not be feasible in Central and Eastern European countries, even they seem desirable. For example, economic factors, such as relatively instable economy, low average incomes, large income inequalities, and low savings rates, mean that deposits in medical savings accounts would probably not be sufficient to cover health care costs. The savings culture that exists in Singapore does not exist in this region. Few of the institutional prerequisites identified by Nichols et al (4) exist in the low-income countries of the former Soviet Union, where both the economy and systems of pre-payment for health care are weak. In these countries, informal payments are widespread, tax evasion is considerable, unemployment rate high (particularly in the formal sector), the state weak, and part of a large rural and agricultural population subsistent or operate in a non-cash economy. The promotion of market-oriented financing reforms in this context would appear to be neither appropriate nor feasible at this time. Many specific factors that may account for the relative success of medical savings accounts in Singapore are not present in these countries.

Much of the literature on medical savings accounts is theoretical, drawing on economic theory and micro-simulation exercises. There are few empirical studies that actually measure the impact of medical savings accounts. The theoretical and micro-simulation exercises published to date indicate that medical savings accounts should be "approached with caution" (12). More empirical evidence will be needed before the debate is settled.

Acknowledgments

The author is grateful for comments received from delegates at the 4th Dubrovnik International Conference "Health Insurance in Transition" and to the comments of three anonymous reviewers. Also thanks are due to Sun Jing and Xianjun Xiong for information on China and to Chai Kang for insights into the Singaporean health system. This work was carried out on behalf of the European Observatory on Health Care Systems. The views expressed in the paper are the author's and do not reflect the views of the Observatory or its partners.

References

- Mossialos E, Dixon A, Figueras J, Kutzin J, editors. *Funding health care: options for Europe*. Buckingham: Open University Press; 2002.
- Health and Welfare Bureau, Government of the Hong Kong Special Administrative Region. *Lifelong investment in health: consultation document on health care reform*. Hong Kong: Health and Welfare Bureau; 2000.
- Parry J. Hong Kong wants adults to save for their health care in old age. *BMJ* 2001;322:816.
- Nichols LM, Prescott N, Phua KH. Medical savings accounts for developing countries. In: Schieber GJ, editor. *Innovations in health care financing. Proceedings of a World Bank conference; 1997 March 10-11; Washington (DC), USA*. Washington (DC): The International Bank for Reconstruction & Development/The World Bank; 1997. p. vii, 255.
- World Health Organization. *The world health report 2000. Health systems: improving performance*. Geneva: WHO; 2000.
- Kutzin J. The appropriate role for patient cost sharing. In: Saltman RB, Figueras J, Sakellarides C, editors. *Critical challenges for health care reform in Europe (state of health series)*. Buckingham: Open University Press; 1998. p 78-112.
- Feldman R, Schultz J. Who uses flexible spending accounts: effects of employee characteristics and employer strategies. *Med Care* 2001;39:661-9.
- Botha C, Hensher M, Masobe P, Van der Heever A. Medical savings accounts and the new medical schemes act (act 131 of act: regulatory issues). *Health Financing, Department of Health*; 2001. Available from: http://actuary.uct.ac.za/students/reading_list.htm. Accessed: November 26, 2001.
- Stano M. Individual health accounts: an alternative health care financing approach. *Health Care Financ Rev* 1981;3:117-25.
- Pauly MV, Goodman JC. Tax credits for health insurance and medical savings accounts. *Health Aff (Millwood)* 1995;14:126-38.
- Rice T, Morrison KR. Patient cost sharing for medical services: a review of the literature and implications for health care reform. *Med Care Rev* 1994;51:235-87.
- Saltman RB. Medical savings accounts: a notably uninteresting policy idea. *Eur J Public Health* 1998;8:276-8.
- Scheffler R, Yu W. Medical savings accounts: a worthy experiment. *Eur J Public Health* 1998;8:274-6.
- Hsiao WC. Behind the ideology and theory: what is the empirical evidence for medical savings accounts? *J Health Polit Policy Law* 2001;26:733-7.
- Jefferson RT. Medical savings accounts: windfalls for the healthy, wealthy and wise. *Catholic University Law Review* 1999;48:685-723.
- Zabinski D, Selden TM, Moeller JF, Banthin JS. Medical savings accounts: microsimulation results from a model with adverse selection. *J Health Econ* 1999;18:195-218.
- Moon M, Nichols LM, Wall S. Medical savings accounts: a policy analysis. *The Urban Institute* 1996. Available from: www.urban.org/pubs/HINSURE/medical_savings_account.htm. Accessed: June 11, 2000.
- Hurley J. Medical savings accounts: approach with caution. *J Health Serv Res Policy* 2000;5:130-2.
- Hsiao WC. Medical savings accounts: lessons from Singapore. *Health Aff (Millwood)* 1995;14:260-6, discussion 277-9.
- Finance Policy and Planning Department, Ministry of Health. *Annex A: Medisave scheme*. Singapore: Ministry of Health; 2000. Available from: [http://www.gov.sg/moh/mohinfo/mohinfo_b\(A\).html](http://www.gov.sg/moh/mohinfo/mohinfo_b(A).html). Accessed: January 12, 2001.
- Ministry of Health. *Affordable health care*. Singapore: Ministry of Health; 2000. Available from: <http://www.gov.sg/moh/mohiss/hlthfin.html>. Accessed: April 23, 2002.

- 22 Massaro TA, Wong YN. Positive experience with medical savings accounts in Singapore. *Health Aff (Millwood)* 1995;14:267-72; discussion 277-9.
- 23 Pauly MV, Goodman JC. Medical savings accounts: the authors respond. *Health Aff* 1995;14:277-9.
- 24 Barr MD. Medical savings accounts in Singapore: a critical inquiry. *J Health Polit Policy Law* 2001;26:709-26.
- 25 Hindle D. China in transition: the new health insurance scheme for the urban employed. *Aust Health Rev* 2000;23:122-31.
- 26 Chinese Medical Association. Healthcare in China. Available from: <http://www.chinamed.org.cn/healthcare.htm>. Accessed: November 26, 2001.
- 27 Liu GG, Cai R, Zhao Z, Yuen P, Xiong X, Chao S, et al. Urban health care reform initiative in China: findings from its pilot experiment in Zhengjiang City. *International Journal of Economic Development* 1999;1:504-25.
- 28 Gao J, Tang S, Tolhurst R, Rao K. Changing access to health services in urban China: implications for equity. *Health Policy Plan* 2001;16:302-12.
- 29 Schweitzer M, Hershey JC, Asch DA. Individual choice in spending accounts. Can we rely on employees to choose well? *Med Care* 1996;34:583-93.
- 30 Schweitzer M, Asch DA. The role of employee flexible spending accounts in health care financing. *Am J Public Health* 1996;86:1079-81.
- 31 Cardon JH, Showalter MH. An examination of flexible spending accounts. *J Health Econ* 2001;20:935-54.
- 32 Goodman JC, Musgrave GL. Patient power: saving America's health care crisis. Washington (DC): Cato Institute; 1992.
- 33 Gramm P. Why we need medical savings accounts. *N Engl J Med* 1994;330:1752-3.
- 34 Pauly M. An analysis of medical savings accounts: do two wrongs make a right? Washington (DC): American Enterprise Institute; 1994.
- 35 Chollet D. Why the Pauly/Goodman proposal won't work. *Health Aff (Millwood)* 1995;14:273-4; discussion 277-9.
- 36 Nichols LM. Medical savings accounts and risk segmentation. *Health Aff (Millwood)* 1995;14:275-6; discussion 277-9.
- 37 Decker WF. Medical savings accounts. Washington (DC): Public Policy Institute, AARP; 2000. Available from: http://research.aarp.org/health/fs80_medsavings.html. Accessed: August 14, 2001.
- 38 MedPac (US). Report to the Congress: medical savings accounts and the medicare program. Washington (DC): Medicare Payment Advisory Commission; 2000.
- 39 General Accounting Office (US). Report to Congressional committees: medical savings accounts – results from surveys of insurers. Washington (DC): The United States General Accounting Office; 1998. Report No.: HEHS-99-34.
- 40 General Accounting Office (US). Report to Congressional committees: medical savings accounts – findings from insurer survey. Washington (DC): The United States General Accounting Office; 1997. Report No.: HEHS-98-57.
- 41 Pauly M, Percy A, Rosenbloom JS, Shih D. What benefit specialists think about medical savings account options for large firms. *Benefits Q* 2000;16:39-46.
- 42 Pauly M, Percy A, Herring B, Rosenbloom J. What would happen if large firms offered medical savings accounts? *Health Aff (Millwood)* 2000;19:165-72.
- 43 Lav IJ, Park E. Likely medical savings account amendment to Patients' Bill of Rights could drive up the price of health insurance premiums and increase the number of uninsured – amendment would create new tax shelter for healthy, affluent individuals. Center on Budget and Policy Priorities; 2001. Available from: <http://www.cbpp.org>. Accessed: December 4, 2001.
- 44 Keeler EB, Malkin JD, Goldman DP, Buchanan JL. Can medical savings accounts for the nonelderly reduce health care costs? *JAMA* 1996;275:1666-71.
- 45 Goldman DP, Buchanan JL, Keeler EB. Simulating the impact of medical savings accounts on small business. *Health Serv Res* 2000;35:53-75.
- 46 Pauly MV, Herring BJ. An efficient employer strategy for dealing with adverse selection in multiple-plan offerings: an medical savings account example. *J Health Econ* 2000;19:513-28.
- 47 Nichols LM, Moon M, Wall S. Tax-preferred Medical Savings Accounts and catastrophic health insurance plans: a numerical analysis of winners and losers. The Urban Institute; 1996. Available from: <http://www.urban.org/pubs/HINSURE/WINLOSE.HTM>. Accessed: November 6, 2000.
- 48 Laditka JN. Providing behavioral incentives for improved health in aging and Medicare cost control: a policy proposal for universal medical savings accounts. *J Health Soc Policy* 2001;13:75-90.
- 49 Matisonn S. Medical savings accounts in South Africa. National Center for Policy Analysis; 2000. Available from: <http://www.ncpa.org/studies/s234/s234.html>. Accessed: November 26, 2001.
- 50 Soderlund N, Hansl B. Health insurance in South Africa: an empirical analysis of trends in risk-pooling and efficiency following deregulation. *Health Policy Plan* 2000;15:378-85.
- 51 Roux A. Medical savings accounts. *S Afr Med J* 1998;88:1549-50.
- 52 Mossialos E, Dixon A. Funding health care in Europe: weighing up the options. In: Mossialos E, Dixon A, Figueras J, Kutzin J, editors. *Funding health care: options for Europe*. Buckingham: Open University Press; 2002. p. 272-300.
- 53 Maynard A, Dixon A. Voluntary health insurance and medical savings account: theory and experience. In: Mossialos E, Dixon A, Figueras J, Kutzin J, editors. *Funding health care: options for Europe*. Buckingham: Open University Press; 2002. p. 109-27.
- 54 Ramesh M, Holliday I. The health care miracle in east and southeast Asia: activist state provision in Hong Kong, Malaysia and Singapore. *J Soc Policy* 2001;30:637-51.
- 55 Ham C. Learning from the tigers: stakeholder health care. *Lancet* 1996;347:951-3.
- 56 Ham C. Values and health policy: the case of Singapore. *J Health Polit Policy Law* 2001;26:739-45.

Received: December 13, 2001

Accepted: January 23, 2002

Correspondence to:

Anna Dixon
LSE Health and Social Care
London School of Economics and Political Science
Houghton St
London WC2A 2AE UK
a.Dixon@lse.ac.uk