

Evolution and early evidence of the impact of consumer-driven health plans: from e-commerce venture to health savings accounts

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Using results from peer-reviewed empirical analyses we describe the development and impact of the consumer-driven health plan market over the last 5 years. The results of these analyses show that consumers are responding to the financial incentives of these new health insurance benefits. Although the results may not always be what the consumer-driven health plan developers intended, there is clear evidence of 'consumerism', where individuals act in a way that generally increases their access to healthcare or investments, if the opportunity is present. Just as Medicare Part D enrollment demonstrated consumers could identify differences in prescription drug plans and make rational choices, so too are prospective patients able to function as consumers in the medical marketplace when given the opportunity.

KEYWORDS: adverse selection • consumer-driven health plan • consumer response • health economics • health insurance • health savings account

Since 2000, consumer-driven health insurance has grown from a simply conceptual model to a health insurance plan aimed at several million Americans. The name connotes that the consumer will have choice among providers and be able to shop for the best care that meets his or her needs with available information on price and quality of care. More specifically, these consumer-driven health plans (CDHPs) represent a health insurance design that frequently pairs a cash account with a high-deductible insurance plan, as well as preventive benefits with no cost sharing [1].

Congress enacted and the President signed into law the Medicare Prescription Drug Improvement and Modernization Act of 2003 (MMA). The MMA establishes Health Savings Accounts (HSAs), which are tax-advantaged savings vehicles that can be used to pay for medical expenses incurred by individuals and their dependents. Unused balances in HSAs can accumulate over a lifetime and, at retirement age, can be used to pay Medicare premiums. Early withdrawals for non-healthcare uses have penalties similar to early withdrawals from tax-advantaged retirement accounts.

HSAs are being sold by financial services companies as part of a health/wealth savings package. For example, Fidelity Investments sells a combination of a HSA and personal retirement saving account (see [101] for more information on Fidelity's 'health/wealth' retirement product). The HSA account is coupled with a high-deductible health plan. Fidelity and other firms have also calculated the amount of a one-time investor-age-dependent contribution to cover future medical expenses as well as provide additional financial assets from long-term investments using the HSA asset as the starting investment.

In this paper, we summarize the development to date of the CDHP marketplace, including HSAs. Empirical results are discussed in the context of the policy development.

Early market development

The HSAs resulting from the MMA were the product of two separate evolutionary paths. The first was the development of the Medical Savings Account (MSA) in the early 1990s. Advocated

by economists, policy makers and insurance executives, the MSA was to be an alternative healthcare reimbursement mechanism to traditional fee-for-service plans typified by Blue Cross Blue Shield offerings from the 1940s through 1980s. The concern was that low thresholds for 'first-dollar' coverage invited moral hazard and created an upward pressure on medical care insurance premiums over time. As managed care plans evolved in the 1980s, low copayments at the point of purchase divorced from the consumers' knowledge any representation of the actual price of medical care, leading some to argue that managed care simply compounded the problems presented by first-dollar coverage [2]. An alternative form of insurance called the MSA was developed in the mid 1990s. MSAs were introduced as tax-advantaged health plans in the 1996 Health Insurance Portability and Accountability Act but were only available to a limited set of the population, most notably senior citizens, self-employed individuals and employees in small firms (<50 workers).

On a parallel and later development track, new health insurance ventures were inspired by the surge of e-commerce in the late 1990s. Several new plans, funded with venture capital, were developed within months of each other. Definity Health, which started in 2000, represented the 'defined contribution' approach to health benefits. The name of the firm referred to the concept of a 401K retirement model applied to healthcare. Definity Health and another firm, Lumenos, managed to generate substantial growth in membership by capitalizing on the Employer Retirement and Income Security Act (ERISA) policy vehicle (employers could use the ERISA exemption from state mandates to create highly customized self-insured benefit designs). The early defined contribution health plans were almost identical to MSAs, except that they required no federal guidelines for operation and were largely exempt from state insurance commission oversight and approval [3-5]. By the eve of the MMA in 2003, defined contribution health plans had gained several hundred thousand members over a period of just 2 years.

The last piece of development was the CDHP. In the spring of 2001, leaders of the insurance ventures held a public conference in Chicago where they agreed to use the term 'CDHP' to distinguish their products as an innovation designed to engage consumers with information on price and quality to enable better health plan choices. Most of the leaders knew that sufficient data on price and quality of medical care were not yet available, but their intent was to build CDHPs first. If consumers had incentives to use the data currently available, they thought that more data of higher quality would be created as the business model evolved.

Recent developments

At the federal level, a new health plan design called 'Health Reimbursement Arrangements' (HRAs) was approved by the Internal Revenue Service in 2002. As long as the reimbursement account was funded solely by the employer, employees could

use tax-free employer contributions to pay for approved medical expenses. The accounts could be carried over to later years, allowing employees and former employees, including retirees, continued access to unused reimbursements. However, the accounts were not owned by the employee and employers were not obligated to extend coverage to former employees and retirees. Hence, the accounts remained an asset of the employer, not the individual.

HSAs were the product of prior, but limited, development of MSAs and the substantial success of CDHPs in a relatively short span of time. The 2003 legislation made HSAs available to anyone under the age of 65 years. Unlike an HRA, the HSA account is owned by the employee as an asset with the same withdrawal penalties as early withdrawal from a retirement account, unless the money is used for medical care. Today, there are an estimated 5 million HSA subscribers and 3 million HRA holders [102]. While still a minority of health plan enrollment, CDHP growth has been rapid, particularly for HSAs in the individual and small group markets.

National appeal

We have found the appeal of HSAs to be national. In one large firm that we analyzed, with employees in over 40 states, the adoption of HSAs in 2006 was not isolated to any one geographic location. National appeal has also been documented in a national survey of health benefit offers [6]. As seen in FIGURE 1, adoption has been greatest in the west and south Atlantic states. This is somewhat surprising given the dominance of managed care plans in California but, in the case of this employer and others, a previously offered HRA plan was quite popular too, suggesting a preference for CDHP plans over managed care plans.

One of the major attributes of HSAs is consumer ownership of the tax-advantaged spending account. Beyond consumer ownership there are five other key features. First, the unused assets in the HSA roll over at year-end to the next year. This is in contrast to currently tax-advantaged flexible spending accounts (FSAs), which do not roll over. These are often associated as 'use or lose it' benefits. Second, the HSA must be purchased along with a high-deductible health insurance policy. However, the account does not need to be funded at all. In fact, well over half the accounts are unfunded, or minimally so, suggesting that the plans are merely a more complicated form of high-deductible health insurance with an 'option to invest' for later. Third, these plans can be purchased by consumers in state-regulated individual and small group markets. The early CDHPs, HRAs, were usually offered by ERISA-exempt self-insured employers and were outside the jurisdiction of state insurance regulation. Fourth, to limit the tax-deductible exposure of HSA assets, the annual investment is generally limited to the lesser of the insurance deductible or a maximum amount fixed by the Treasury Department. Legislation in 2006 eliminated the insurance deductible cap for contributions.

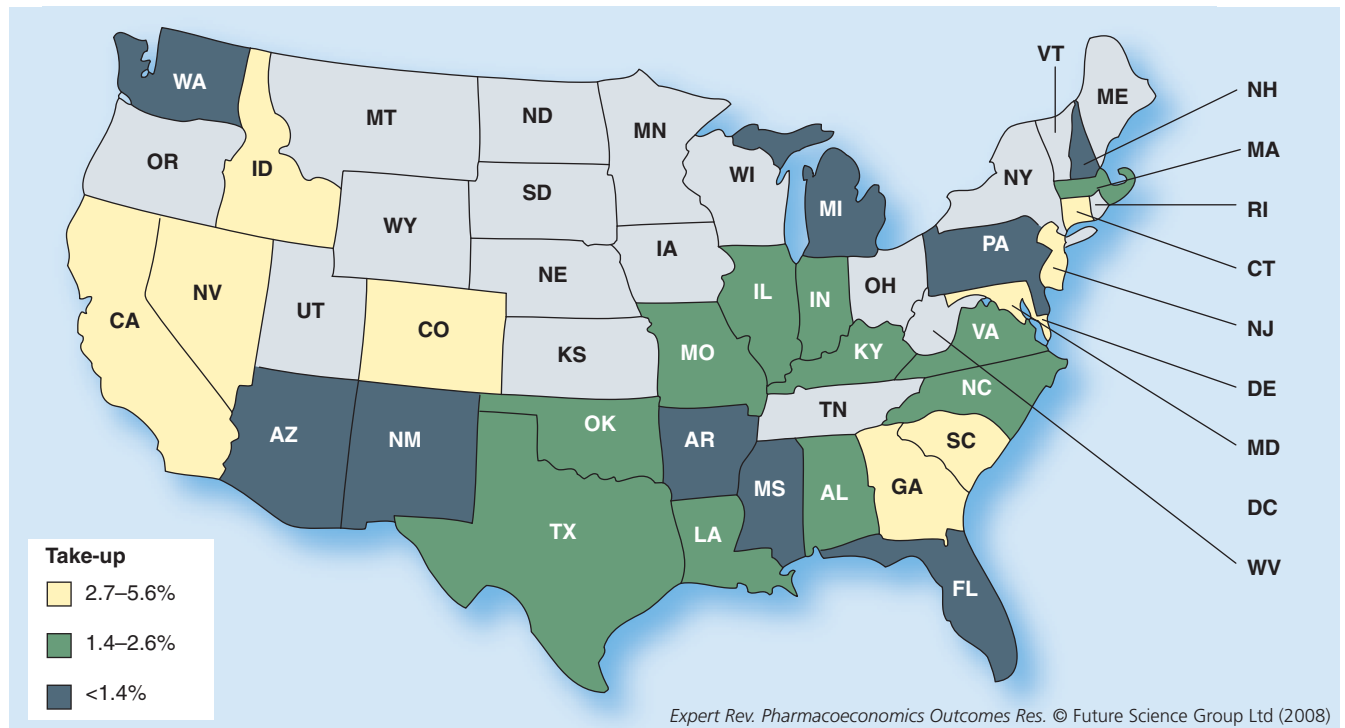


Figure 1. Health Savings Account take-up in one large employer. Data based on one large employer representing over 130,000 covered lives with Health Savings Account initial year offering in 2006.

This has given Treasury a much greater role in the regulation of a health insurance product. Fifth, individuals over the age of 65 years may withdraw money from their HSA to pay Medicare Part A cost sharing, as well as Part B or Medicare Advantage premiums. Money withdrawn early for premiums or non-medical expenses will be considered taxable income and will be subject to a 10% penalty, similar to early withdrawals from tax-advantaged retirement accounts. This 10% penalty only attaches for withdrawals for nonmedical purposes before the age of 65 years.

Who chooses a CDHP & what is its impact on cost & utilization?

Our prior research has examined the impact of CDHPs on health plan choice and healthcare cost and utilization. The first question we addressed was, “Who chooses a CDHP?” We worked with human resources personnel to obtain 2 years of survey data and health plan claims data from the University of Minnesota to identify a set of demographic factors affecting plan choice. We found that CDHP enrollees had significantly higher incomes than those who chose traditional health insurance plans. There was no statistically significant difference in the health status of employees who chose the CDHP and those who chose other health plan designs. If anything, we found the most favorable selection was in the University’s health maintenance organization plan [7].

A concurrent analysis of the effects of a CDHP on medical care expenditures and utilization focused on another large employer in the manufacturing sector. Here, we found that a cohort of enrollees in the CDHP had lower healthcare costs than those in a preferred provider organization (PPO) in the second year of enrollment, but higher costs than a Point of Service (POS) plan [8]. A follow-up analysis looking at an additional year of data found that the CDHP had become the most expensive plan by the end of the third year [9]. All of these results were based on tracking a cohort of employees for up to 4 years.

For this employer, we found initial favorable selection into the CDHP, but that quickly changed in subsequent periods as the group became more intense in their service use. One of the explanations for the significant upward trend in CDHP expenditures was the very generous health benefit design offered. For example, the dominant CDHP plan for families provided a US\$2000 account associated with a US\$3000 deductible and 0% co-insurance rate after reaching the deductible, leaving only US\$1000 of out-of-pocket expenses for a benefit that typically has an insurance premium of US\$9000. Furthermore, the employee could opt to pay the US\$1000 gap with a FSA, which would reduce the financial cost by the employee’s marginal tax rate times the spending from the FSA. Subsequent to our analysis, the employer changed the benefit design and offered a less generous CDHP with a larger deductible and 15% co-insurance.

Our most recent work on health plan choice focused on a third large employer with over 130,000 covered lives and employees operating in over 40 states [10]. This employer offered a HRA and a HSA as well as at least four other insurance products as concurrent choices. We recently examined data on 2006 choices and found little evidence of adverse selection, if we consider both the HRA and HSA as a combined CDHP 'nest' comprising similar plans. However, when we examined all types of plan choice we found substantial unfavorable selection to the HRA and very favorable selection to the HSA. The addition of both types of CDHPs split the risk of the employee population. We also found very similar results to our earlier work with respect to higher income employees choosing CDHPs of both types. This is the first economic analysis of HSA choice in an employer and it suggests the incentives of these plans are sensitive enough to create a significant change in behavior. It should be noted that the HSA and HRA offered by the sample employer used the same account and deductible design. The only difference was whether the account was owned by the employee or was a notional account held by the employer on the employee's behalf.

In a new study, focused on the effect of pharmaceutical expenditure, we compared pharmaceutical spending and utilization in a CDHP with a three-tier pharmacy benefit design and examined whether the CDHP creates incentives to reduce pharmaceutical spending and utilization for chronically ill patients, generic or brand-name drugs and mail-order drugs [11]. Our study design was a retrospective insurance claims analysis from a large employer that introduced a CDHP in 2001 in addition to a POS plan and a PPO, both of which used a three-tier pharmacy benefit. Difference-in-differences regression models were estimated for drug spending and utilization. Control variables included the employee's income, age and gender, number of covered lives per contract, election of FSA, health status, concurrent health shock, cohort and time trend. In this study, we found CDHP pharmaceutical expenditures were lower than those in the POS cohort in 1 year without differences in the use of brand-name drugs. We also found limited evidence of less drug consumption by CDHP enrollees with chronic illnesses and some evidence of less generic drug use and more mail-order drug use among CDHP members. While lower consumption of drugs by CDHP enrollees with chronic illness could result in serious problems, our data do not permit us to further examine the adverse consequence of this behavior. Depending on the chronic illness, less drug use could have immediate consequences but the adverse consequences could take years to manifest. From this study, we concluded that the CDHP design is cost neutral or cost saving to both the employer and the employee compared with three-tier benefits with no differences in brand-name drug use.

Are health & wealth decisions related?

Recently, we developed a conceptual model to examine the relationship between HSA choice and retirement investments. Based on our previous findings that consumers are

aware of and act on changes in health benefit design, it is especially interesting to examine their joint health and wealth decisions. The model focuses on consumers' decisions to take risk. The model applies best to a person who has 'maxed out' his or her tax-sheltered retirement contribution and is offered the options of investing in a tax-sheltered HSA and a taxable market asset. Unfortunately, we cannot fully test the model with our data because we lack information on the types of assets that employees choose for their HSA and retirement investments. The scenario we attempted to test is the HSA and retirement participation choices of employees from a large employer.

Applying the model to HSA and supplemental retirement decisions, we focused on employees working in firms providing education, healthcare and the arts, who are eligible to contribute to a 403(b) supplemental retirement savings plan. Furthermore, since 1978, employees are also able to contribute to Section 457 retirement savings plans. Both of these are tax-deferred retirement savings programs. Unused HSAs are yet another form of tax-deferred retirement savings program (to the extent that almost everyone will be able to use them to pay their Medicare premiums).

We assumed there is a subset of employees who are 'maximum savers'. They wish to take full or significant advantage of all tax-deferred savings opportunities. Assume an employee of this type has already 'maxed out' his or her 403(b) contribution. When a HSA option becomes available, they choose it, while maintaining their 403(b). Addition of the HSA option allows the person to increase their tax-free savings without reducing their 403(b) contributions. Presumably, this person can also add to their total savings by 'maxing out' both their 403(b) and 457 opportunities.

Using data from a large employer whose employees had the option choosing a HSA in 2006, we found HSA takers were more likely to opt into supplemental retirement programs and placed greater investments in the programs. HSA takers were also more likely to be maximum savers than those who chose other health plans. With respect to employee attributes, there were significant differences in chronic illness (less for HSA population), age (older for HSA), gender (fewer females chose HSAs), income (higher salaried workers chose HSAs), family size (larger families chose HSAs) and professional job class (more chose HSAs).

These results are fairly consistent with our earlier analysis of CDHPs of this employer using 2002 and 2003 data [7,11,12]. The most striking finding still remains that those with higher incomes prefer the HSA. Interestingly, older employees prefer the HSA. However, those with more chronic illness burden do not select the HSA.

In our conceptual model, we predicted that HSA and investment decisions would probably be related. However, the model does not inform us on the direction of variables such as chronic illness, gender and family size. One might assume that chronic illness would have a negative effect if the employee presumed

he or she might not live long enough to fully appreciate their retirement savings. It makes sense for females to invest more than males if the employee recognizes that, on average, she will need more retirement resources since women live longer than men in the USA.

There are three main findings from examining the health and wealth decisions of HSA takers. First, we find a positive relationship between individuals choosing HSAs and choosing to increase their retirement investment assets. Our second finding is that the level of investment savings may have been positively influenced by the introduction of HSAs. Finally, we observe very low HSA take-up. One explanation for the low take-up of the HSA plan, from a purely investment standpoint, is that the employer has already provided very generous retirement benefits to all its employees with a contribution of 13% of annual wage income for faculty and a defined benefit plan for nonfaculty. A second explanation is that health plan premiums at this employer are heavily subsidized (on average over 85%) and the difference between the HSA premium and the very generous PPO premium is relatively small compared with commercially available insurance. The percentage difference at this employer is less than half that of commercial insurance carriers. To be competitive, the HSA premium should be approximately 55% less than its current amount, given the deductible, co-insurance and out-of-pocket maximum.

Our findings contribute to a broader and substantially advanced literature on individual incentives for retirement. They appear to be in line with recent research in this area. For example, we found a large positive effect of salary on the decision to invest and the level of supplemental retirement investment. Dyan, Skinner and Zeldes used three sources of data to model whether the rich invest more [13]. They also found a positive relationship between savings and income (although they examined lifetime income) and a weaker positive relationship between the propensity to save (propensity to save refers to probabilistic likelihood of savings, rather than the actual amount saved/invested from an empirical observation) and income. If HSAs are seen as another investment vehicle – a *de facto* private individual retirement account – it is not surprising that we see the same positive propensity to enroll in HSAs as we do with the election of supplemental retirement associated with wage income. We were unable to observe the effect of lifetime income due to limitations in our data.

Goldman and Maestas investigated a related question: whether increases in risks of higher medical expenses lead to a reduction in exposure to other risks among Medicare beneficiaries choosing among different supplemental insurance policies [14]. While not explicitly examining multiyear changes in financial investment decisions compared with health plan decisions, the authors did find evidence that consumers' decisions reflect an active assessment of the trade-offs between different types of risky assets and medical risk.

Recommendations regarding the pharmaceutical marketplace

To summarize the empirical literature, we find evidence that consumers are responding to financial incentives of these new health insurance benefits. Although the results may not always be what the CDHP developers intended, there is clearly evidence of consumerism, where individuals act in a way that generally increases their access to healthcare or investments if the opportunity is present. Just as Medicare Part D enrollment demonstrated that consumers could identify differences in prescription drug plans and make rational choices [15], so too are prospective patients able to function as consumers in the medical marketplace when given the opportunity.

We have three recommendations for the pharmaceutical marketplace based on the empirical studies. First, there is strong evidence that the underlying premise of consumerism is supported in the prescription drug market. The industry should make efforts through providers and insurers to deliver comprehensive information on personal pharmaceutical utilization and alternates based on a consumer's current consumption patterns. Second, the reduction in pharmaceutical utilization by the chronically ill could signal suboptimal care management or show a consumer choosing more carefully what drugs have the greatest impact on enhancing his or her health. More thorough and comprehensive evaluation of this area to understand price sensitivity for drugs that are vital to maintaining and improving the livelihood of the chronically ill should be considered for funding and result dissemination by policy makers and industry. Third, more investigation is urgently required to know the cost of including certain classes of drugs as 'preventive and maintenance'. A recent study by Rowe *et al.* showed that a continuously enrolled cohort of Aetna patients were associated with less cost and high quality of care [16]. One of the design features of the Aetna CDHP plans was the coverage of prescription drugs as part of the insurance benefit design. Identifying an optimal list of drugs for such a policy and an estimate of its actuarial cost would be helpful to assess the value of increasing the scope of a CDHP to include prevention for medical and pharmaceutical care.

Five-year view

CDHPs have been operating in the USA for 8 years and have enjoyed commercial success within the last 6 years. The future of CDHPs will likely be dependent on the outcome of the 2008 presidential election. Both parties are proposing comprehensive health reform that will likely take until at least 2011 to fully implement. If the time between the passage of MMA and the implementation of Part D is any guide, new directions could easily exceed 5 years. Most Republican proposals favor opening the health insurance market across state lines to permit more competition and reducing the price of insurance in a bid to reduce the number of uninsured. Democrat proposals are

favoring individual mandates for insurance, which could include CDHPs. HSAs were originally suggested by Republicans, and so they may become politically polarizing to Democrats who feel the CDHP experiment has run its course. While HSAs are associated with lower priced high-deductible health plans compared with most traditional health plan premiums, they are also seen as tax cut for the higher income American. Our health and wealth study results suggest this interpretation is viable. Assuming a Democratic congress in 2008, a Democratic president would likely diminish the incentives enjoyed by HSAs and CDHPs under the Bush administration. A Republican president would likely support CDHPs and perhaps use the accounts as a collection point for tax refunds for health insurance, if a tax

credit proposal to expand coverage to the uninsured gets through Congress. Our findings suggest mixed success and underscore the need for more peer-reviewed research to inform the value of this new direction in insurance design.

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