

MARKET WATCH

Health Savings Accounts: Early Estimates Of National Take-Up

Various subsidies to help people open health savings accounts could greatly reduce the number of uninsured Americans.

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ABSTRACT: The 2003 Medicare Prescription Drug, Improvement, and Modernization Act (MMA) approved tax-advantaged health savings accounts (HSAs) for certain high-deductible health insurance plans. We predict that MMA could lead to approximately 3.2 million HSA contracts among Americans ages 19–64 who are not students, not enrolled in public health insurance plans, and not eligible for group coverage as a dependent. We simulate the effect of several additional tax subsidies for HSAs. We predict that the Bush administration’s refundable tax-credit proposal would double HSA take-up and reduce the number of uninsured people by 2.9 million, at an annual cost of \$8.1 billion.

CONSUMER-DIRECTED health plans are attracting attention from consumers, employers, and policymakers. These are high-deductible health insurance plans coupled with a tax-advantaged account that can be used to pay for eligible medical expenses. Enrollees who spend all of their health spending accounts in a given year then spend their own money until they meet the deductible requirement. The benefit design can be tailored to cover all or part of spending amounts that exceed the deductible. To facilitate informed decision making, enrollees are given information about health care providers, prices, and quality ratings.¹

Until recently, these plans typically were offered to employees of large, self-insured employers, often as an option alongside tradi-

tional health insurance products.² Early indications are that they are a viable alternative to existing plan designs.³ They also were available to employees of small businesses and the self-employed through a 1997 federal demonstration project. That demonstration never caught on, because either the employer or employee, but not both, could contribute to the account and because the number of policies that could be sold under the demonstration was limited to 750,000, which dampened suppliers’ interest in selling such products.

Recently, however, consumer-directed plans received a boost from the Medicare Prescription Drug, Improvement, and Modernization Act (MMA) of 2003. Section 1201 of MMA (and subsequent guidance by the Treasury Department) approved a new form of

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plan known as a health savings account (HSA). Beginning 1 January 2004, anyone could purchase a health plan with an annual deductible of at least \$1,000 for an individual and \$2,000 for a family, coupled with a tax-advantaged account to which both the employer and enrollee may contribute. Total annual contributions can be as large as the plan's deductible (up to \$5,000 for an individual and \$10,000 for a family). Unlike previous designs, the HSA is fully portable, so a person may use it without being dependent on the provisions of a particular employer.

Mainstream insurers such as Blue Cross Blue Shield plans and UnitedHealth Group are selling these tax-advantaged HSAs.⁴ To facilitate its entry into this market, in November 2004 UnitedHealth Group purchased Definity Health of Minneapolis, an early leader in marketing consumer-directed plans. UnitedHealth had previously purchased Golden Rule Insurance Company of Indianapolis, which sold health plans with non-tax-preferred savings accounts to individuals and employers.

HSAs might receive another boost if Congress enacts a Bush administration proposal to create a refundable tax credit for people under age sixty-five to purchase health insurance plans with HSAs. In one form of this proposal, the credit would provide a subsidy of up to 90 percent of the insurance premium.⁵ The maximum credit for low-income taxpayers would be \$1,000 per adult and \$500 per child (up to two children). The subsidy would phase out as income increases.

Policy analysts have sharply conflicting opinions about the wisdom of this tax credit. Some critics are concerned that a further tax subsidy for individual coverage might lead to the "hollowing out" of the market for group coverage as low-risk enrollees leave group insurance pools.⁶ Others, however, believe that more favorable tax treatment would spur the development of a mass market for individual coverage that would make it more broadly attractive.⁷

The purpose of our research is to examine the potential of individual HSAs for increasing the number of insured Americans, especially

those with low incomes. In particular, how much HSA take-up is expected from MMA? What is the additional impact of the administration's proposed tax credit and other possible subsidies? By how much will these proposals reduce the number of uninsured people? And how much will the subsidies cost?

Data And Analytic Approach

We addressed these questions by estimating a health plan choice model for employees of three large companies that offer consumer-directed plans. Results were then used to simulate how many people in a nationally representative survey would choose HSAs. For each simulation, we predicted the number of people taking up HSAs and the cost of the proposal.

■ **Data sources.** We used three data sources for our analysis: the Medical Expenditure Panel Survey (MEPS); health plan choice data from three large employers; and data for individual HSA policies from the eHealth insurance.com Web site.

MEPS is an annual survey of the U.S. non-institutionalized, civilian population. We used two files from the 2001 MEPS (the latest data available). The first is the Household Component (MEPS-HC), which contains detailed demographic, employment, and insurance information on a nationally representative sample of individuals. We restricted our attention to people ages 19–64 who were not enrolled in public insurance programs and not full-time students. For reasons explained later, we also excluded adults who were not offered insurance by their employer but who could be covered by someone else's group insurance plan. When weighted to produce population estimates, the sample used in this study corresponds to 121,535,688 nonelderly Americans.

The second file is the MEPS-HC-Insurance Component (IC), in which a random sample of people who reported being employed and offered health insurance in Round 1 of MEPS-HC were asked to provide contact information for their place of employment. Their employers were surveyed regarding the number and types of plans offered to eligible workers.

We had access to data on the 2002 health

plan choices of employees, representing about 80,000 covered lives (including dependents), of three large employers.⁸ Each employer offered a consumer-directed plan that received a first-year take-up rate of 4–15 percent. The type of plan offered by these employers was a health reimbursement account (HRA) in which the employer places tax-free credits (not real dollars) in an account that the employee can use to pay for eligible medical expenses. The account rolls over from year to year, but, unlike for an HSA, the employee does not own it, and it is not portable.

Our data for individual policies came from two surveys conducted by the Health Insurance Association of America (HIAA) in 2002 and 2003, plus current information on individual HSA policies from eHealthinsurance.com, which provides an estimated monthly premium cost based on county, enrollee's age, family size, and health history.⁹

These data sources were used for three major analysis steps: model estimation; choice set assignment/prediction; and policy simulation.

■ **Model estimation.** In the first step, using pooled data from the three employers that offer consumer-directed plans, we estimated a conditional logistic plan choice model, similar to our earlier work.¹⁰ This step produced coefficient estimates that represent the utility of each plan attribute to the employee.¹¹

■ **Prediction of plan choices.** In the second step we used the estimated choice-model coefficients to predict health plan choices for individuals in MEPS-HC. To complete this step, it was necessary to assign the number and types of health insurance choices that are available to each respondent in MEPS-HC. For this purpose, we turned to the smaller but more detailed MEPS-HC-IC file, which contained the needed information. We summarize the details of this process and direct interested readers to a longer version of the paper on our Web site, www.ehealthplan.org.

The process can be described as a “crosswalk” between the two MEPS files. To use a specific example, government employees in the linked MEPS file are offered more plans by their employers than are other workers, on av-

erage. Suppose the average government employee had three offers. We “walked” back to MEPS-HC and assigned three plans to each government employee in that data set. The actual crosswalk was done by multivariate regression models.

Next, in the linked MEPS file, we identified the types of plans that had the maximum probability among the options that were offered. For example, those who were offered three plans were most likely to have a choice of high- and low-coverage preferred provider organizations (PPOs) and one health maintenance organization (HMO). We assigned these choices to government employees in MEPS-HC.

To predict the premiums associated with these choices, we estimated “hedonic” premium equations from the linked MEPS file as a function of hospital and physician coinsurance (or copayment) rates and the plan's annual deductible. We used the estimated coefficients and the characteristics of the two PPOs and one HMO to predict premiums for the plans that were offered to our typical government worker.

To obtain employees' out-of-pocket premiums, we multiplied total premiums by the average proportion paid by employees for single or family coverage from the linked MEPS data. Out-of-pocket premiums were adjusted by 1 minus the employee's estimated federal tax rate for employees who paid their share of the premium with pretax income.¹²

Consumer-directed plans were not available in 2001, and tax-advantaged HSAs were not available until 2004, so we had to use a different strategy to assign consumer-directed plans to some workers in MEPS-HC. Because large employers have shown the most interest in consumer-directed plans, we assumed that all workers in firms with more than 500 employees will be offered two consumer-directed plans.¹³ One of these was modeled on the HRAs offered by the three employers for which we had data in 2002. Another was a less-generous HRA with cost-sharing characteristics typical of an HSA. We did not assign a consumer-directed plan to employees in estab-

lishments with fewer than 500 workers.

Our approach has three potential shortcomings. First, because our employer data were collected before 2004, they did not include HSA offers. We assumed that employees' preferences for an HSA could be simulated by their preferences for the less generous HRA. This assumption no doubt affects the accuracy of our simulations but seems the most reasonable strategy available.¹⁴ Second, the simulations could be affected if consumer-directed plans prove to be less popular among large employers than we assumed. Thus, our estimates may be an "upper bound" of consumer-directed plan enrollment in employer-sponsored health benefit programs. Third, the "crosswalk" we used can be applied only to people in MEPS-HC with an offer of employer coverage. Those who were not offered such coverage but who could be covered as dependents by someone else's (usually a spouse's) group insurance plan had to be excluded.

We used a different algorithm to assign plans to individuals in MEPS-HC who did not have an employer's coverage offer and were not eligible for coverage as a dependent. Before 2004, we assumed that such people had four choices: high-, medium-, and low-coverage PPOs and no insurance. The plan characteristics used to define these options were taken from the 2003 HIAA survey of plans purchased in the individual market. We used the 25th, 50th, and 75th percentiles of the distribution of plan attributes to define the coverage levels.

Because health insurance premiums in the individual market vary by a person's age, we created an index using information from the 2002 HIAA survey. The index was set equal to 1.0 for the age group corresponding to the median age of adults in MEPS-HC. Older people, who had higher premiums, had index values greater than 1.0. Younger people had index values less than 1.0. After developing these indices and applying them to 2002 data, we scaled all premiums to 2005 prices.

Starting in 2004, we assumed that all people in the nongroup market would have access to an HSA. We relied on eHealthinsurance.com for current information on two HSA poli-

cies offered in the largest two cities in every state. Next, we estimated a hedonic premium equation to predict the premium for different HSA designs. For all of the simulations except one (described below), we used an HSA with a \$1,000 spending account and \$3,500 deductible for single coverage and \$2,000/\$7,000 for families.¹⁵ The average monthly premium for our prototype HSA for a forty-year-old, non-smoking, single male was \$102.78 per month; the same person with a spouse and two children under age ten would pay \$226.97 per month. The total cost of the prototype HSA is equal to the premium plus the enrollee's contribution to the tax-advantaged account.

Finally, our health insurance choice model did not include alternatives for turning down the employer's offer or for being uninsured in the individual market. To account for these possibilities, we added a "turndown" choice to the model for workers with an offer and scaled the utility of that choice so that a nationally representative 15 percent of employees with an offer would refuse it.¹⁶ For people without an offer, we added an "uninsurance" option that would be chosen by a nationally representative 57 percent of this group. Because uninsurance and turndown rates vary greatly by income and we wanted to determine whether HSAs would appeal to the low-income uninsured, we performed these estimates separately by income quartile.

■ **Simulations.** The third step in our analysis was to specify and perform the simulations. All of the simulations were conducted in relation to the MMA "baseline." The first simulation is the administration's proposal to provide a refundable tax credit of up to 90 percent of the insurance premium, with a maximum credit of \$1,000 per adult for single taxpayers with no dependents and annual adjusted gross income (AGI) less than \$15,000.¹⁷ The subsidy would be phased down to 50 percent at \$20,000 and zero at \$30,000. These parameters were used to develop a sliding scale of tax credits with kinks at \$15,000 and \$20,000. We also modeled the tax credit applying to dependents, starting at \$500 per dependent (limit of two children) for families with annual

incomes less than \$25,000 and declining according to the higher income kinks (\$40,000 and \$60,000) associated with families.

Given that one of the objectives of the tax-credit proposal is to reduce the number of uninsured people, we simulated an even more generous policy that subsidizes part or all of the insurance premium for lower-income individuals and families. Specifically, we set the HSA premium at zero for taxpayers with incomes of \$15,000 or less, 50 percent of the premium for those with incomes of \$15,000–\$40,000, and 75 percent of the premium for those with incomes of \$40,000–\$60,000.¹⁸

In the third simulation, we simply set the total price of an HSA (premium and savings account) at zero. In effect, this proposal is a complete subsidy for the prototype HSA. As a final policy targeted at people without jobs, we created a simulation in which anyone not employed received a full subsidy for the premium and HSA, regardless of income.

Study Results

Each simulation begins with a comparison to the 2005 baseline situation. In Exhibit 1, for example, we see a take-up of 9 percent for HSAs in the nonoffered market without any additional change in policy. We attribute this impact to the relatively lower premium of the HSA in our simulations, compared with a PPO, and the high price elasticity associated with coinsurance. However, the market for employer-sponsored HSAs remains small as long as the employee can select a PPO or HMO with an employer premium contribution.

■ **Simulation 1: administration's tax-credit proposal.** We predict that the tax credit will reduce the number of uninsured people in the nonoffered market by 10.7 percent to 24,348,069, at an annual cost of approximately \$6.9 billion (Exhibit 1). The subsidy also will increase the number of people who turn down an employer's offer in favor of an individual HSA by 159.3 percent to 861,387, at a cost of \$1.2 billion. However, this is only 1 percent of the employer-offered market.

EXHIBIT 1
Effects Of Various Health Plan Options, Baseline And Administration's Proposal (Simulation 1)

Plan choice	Baseline population		Administration's proposal population (simulation 1)		
	Number	Percent	Number	Percent	Subsidy cost
Individual					
HSA, full price	3,155,982	9	6,971,694	19	\$6,900,791,439
PPO					
High coverage	4,651,023	13	4,017,191	11	
Low coverage	310,041	1	263,278	1	
Medium coverage	1,426,040	4	1,215,872	3	
Uninsured	27,273,018	74	24,348,069	66	
Offered by employer					
HMO	26,295,237	31	26,232,550	31	
HRA	1,811,281	2	1,803,079	2	
HSA, shared premium	530,882	1	528,590	1	
HSA, full price	332,249	0	861,387	1	\$1,174,289,915
PPO					
High coverage	5,930,246	7	5,921,970	7	
Low coverage	1,571,384	2	1,569,135	2	
Medium coverage	34,949,195	41	34,627,195	-0.9	
Turned down	13,298,512	16	13,175,679	-0.9	

SOURCE: Authors' computations. Interpretation of the administration's proposal as presented in *U.S. Treasury Blue Book* (February 2004).

NOTES: HSA is health savings account. PPO is preferred provider organization. HMO is health maintenance organization. HRA is health reimbursement arrangement.

EXHIBIT 2
Low-Income Buy-In Subsidy For Health Coverage (Simulation 2)

Plan choice	Simulation population	Percent change from baseline	Subsidy cost
Individual			
HSA, full price	8,814,552	179.3	\$10,832,553,072
PPO			
High coverage	3,840,600	-17.4	
Low coverage	240,992	-22.3	
Medium coverage	1,142,829	-19.9	
Uninsured	22,777,131	-16.5	
Offered by employer			
HMO	26,210,822	-0.3	
HRA	1,798,914	-0.7	
HSA, shared premium	528,097	-0.5	
HSA, full price	1,036,512	212.0	\$1,387,115,890
PPO			
High coverage	5,920,098	-0.2	
Low coverage	1,568,187	-0.2	
Medium coverage	34,506,258	-1.3	
Turned down	13,150,696	-1.1	

SOURCE: Authors' computations.

NOTES: If income is less than \$15,000 for a single taxpayer (\$25,000 for a family), coverage is free. The subsidy is phased down to 50 percent at \$20,000 income (\$40,000 for a family) and zero at \$30,000 (\$60,000 for a family). HSA is health savings account. PPO is preferred provider organization. HMO is health maintenance organization. HRA is health reimbursement arrangement.

■ **Simulation 2: low-income buy-in subsidy.** Under this proposal, a greater share of the previously uninsured population would take up coverage (Exhibit 2). However, the cost is much higher: \$10.8 billion per year for the non-offered population and \$1.4 billion for the offered population, in which slightly more than one million people turn down their employer's offer in favor of an individual HSA.

■ **Simulation 3: full subsidy for the prototype HSA.** This proposal achieves a 47 percent reduction in the number of uninsured people (Exhibit 3). However, the annual cost in the nonoffered market is \$52.3 billion. In addition, this proposal begins to erode the employer-sponsored health insurance market by attracting almost 5.7 million people from that market to individual HSAs, at an annual cost of approximately \$16.9 billion.

Given that we are simulating a complete subsidy for the health insurance premium and also are contributing \$1,000 per year to an individual's HSA (\$2,000 for a family), it is sur-

prising that the simulated take-up is not larger. One possible explanation is that the HSA in our simulations has a \$2,500 “doughnut hole” for single coverage (and \$5,000 for a family). Thus, individuals still face large financial risk under this plan. Medicaid could be a more attractive option for many low-income, uninsured people. It is also possible that our simulations, being based on a model of health insurance choice within a fairly limited range of plan designs, could be less accurate when the design is pushed to the extreme—for example, with “free” coverage.

When we changed the design of the HSA to a \$2,500 deductible for single coverage and \$5,000 for families (with doughnut holes of \$1,500 and \$3,000, respectively), the premiums are higher, but the take-up rate for a “free” HSA of this type is much greater, with only 3.8 million people remaining uninsured (Exhibit 3). In other words, a generous “free” HSA could nearly eliminate uninsurance among the population considered in our simulations. However,

EXHIBIT 3
Full Subsidy For Two Health Savings Account (HSA) Designs (Simulation 3)

Plan choice	Full subsidy for “prototype” HSA			Full subsidy for “generous” HSA		
	Simulation population	Percent change from baseline	Subsidy cost	Simulation population	Percent change from baseline	Subsidy cost
Individual						
HSA, full price	19,464,040	516.7	\$52,302,405,014	32,413,500	927.0	\$98,708,233,232
PPO						
High coverage	2,165,844	-53.4		458,476	-90.1	
Low coverage	119,097	-61.6		29,904	-90.4	
Medium coverage	613,960	-56.9		148,745	-89.6	
Uninsured	14,453,162	-47.0		3,765,478	-86.2	
Offered by employer						
HMO	25,480,910	-3.1		20,117,174	-23.5	
HRA	1,697,603	-6.3		1,165,656	-35.6	
HSA, shared premium	505,483	-4.8		327,143	-38.4	
HSA, full price	5,694,864	1,614.0	\$16,911,914,862	31,603,493	9,412.0	\$112,410,660,595
PPO						
High coverage	5,804,413	-2.1		4,722,256	-20.4	
Low coverage	1,534,310	-2.4		1,281,803	-18.4	
Medium coverage	31,684,081	-9.3		18,528,647	-47.0	
Turned down	12,317,920	-7.4		6,973,413	-47.6	

SOURCE: Authors' computations.

NOTES: PPO is preferred provider organization. HMO is health maintenance organization. HRA is health reimbursement arrangement.

the annual cost of the subsidy would be approximately \$211 billion, much of it incurred in a “buy-out” of the employer health insurance sector.¹⁹

This example points to a trade-off between HSA generosity and the cost of the subsidy. More generous designs (for example, with smaller doughnut holes) will increase the take-up rate but also increase the cost of the subsidy. Also, as some have feared, a full subsidy for a generous HSA would have a strong impact on the group market.

■ **Simulation 4: full subsidy for non-workers.** One possible approach to prevent the erosion of employer coverage would be to exclude the working population from the HSA subsidy. To explore the consequences of this approach, our final simulation was a full subsidy targeted at people without jobs, regardless of income. The result is more take-up than with the administration’s proposal, but the subsidy cost, at \$11.2 billion, is higher (Exhibit 4).

■ **Comparative “efficiency” in reducing**

the number of uninsured people. We next compared the simulations in terms of their overall “efficiency” in reducing the number of uninsured Americans, which we measured by the cost per additional person covered.²⁰ The administration’s proposal and the low-income buy-in subsidy are almost equally efficient, with per capita costs of \$2,761 and \$2,718, respectively (Exhibit 5).

A full subsidy for the nonworking population, at a higher per capita cost of \$3,574, appears to be less efficient than either the administration’s proposal or the low-income buy-in. The free HSA also was less efficient than the other two proposals. However, it did accomplish larger reductions in the uninsured population: almost thirteen million with the prototype design and more than twenty-three million with the more generous design.

■ **Comparative attractiveness to the low-income uninsured.** Another standard for comparing the subsidy proposals is to assess their attractiveness to the low-income uninsured, a group that might have the most diffi-

EXHIBIT 4
Full Subsidy For Health Coverage Buy-In For Nonworking Adults (Simulation 4)

Plan choice	Simulation population	Percent change from baseline	Subsidy cost
Individual			
HSA, full price	6,858,372	117.3	\$11,234,374,712
PPO			
High coverage	4,266,913	-8.3	
Low coverage	279,884	-9.7	
Medium coverage	1,281,403	-10.1	
Uninsured	24,129,531	-11.5	
Offered by employer			
HMO	26,295,237	0.0	
HRA	1,811,281	0.0	
HSA, shared premium	530,882	0.0	
HSA, full price	332,249	0.0	
PPO			
High coverage	5,930,246	0.0	
Low coverage	1,571,384	0.0	
Medium coverage	34,949,793	0.0	
Turned down	13,298,512	0.0	

SOURCE: Authors' computations.

NOTES: HSA is health savings account. PPO is preferred provider organization. HMO is health maintenance organization. HRA is health reimbursement arrangement.

culty finding affordable health insurance. Approximately 42 percent of those taking up insurance under the administration's proposal would come from the lowest quartile of the income distribution, and 75 percent would come from the lower half (Exhibit 6). However, the take-up rate among the upper half of the income distribution would be somewhat higher. The free HSA is the most attractive policy for the low-income uninsured, with 95 percent of the take-up coming from the lower half of the income distribution. This subsidy works

better for low-income people because of the strong association between low income and not working.

Conclusions

■ **HSA take-up rates.** Using a combination of public and private data, we find that widespread national adoption of individual HSA plans is possible. Untouched, MMA could lead to approximately 3.2 million individual HSA contracts among U.S. adults ages 18-64 who are not students, not enrolled in

EXHIBIT 5
Efficiency Of Simulated Subsidies For Health Coverage

Simulation	Estimated reduction in number of uninsured	Total cost (\$)	Per capita cost (\$)
Administration's proposal	2,924,949	8,075,081,354	2,761
Low-income buy-in	4,495,887	12,219,668,960	2,718
Full subsidy for prototype HSA	12,819,856	69,214,319,880	5,399
Full subsidy for generous HSA	23,507,540	211,118,893,800	8,981
Free HSA for nonworking adults	3,143,487	11,234,374,714	3,574

SOURCE: Authors' computations.

NOTE: HSA is health savings account.

EXHIBIT 6
Take-Up Of Health Coverage Among Low-Income People, Under Various Simulations

Percentile of income distribution	Baseline number/percent of uninsured	Take-up under				
		Administration's proposal	Low-income buy-in	Full subsidy of prototype HSA	Full subsidy of generous HSA	Free HSA for nonworking adults
0-25%	15,127,288	1,231,485	2,093,439	5,633,439	12,408,567	2,715,253
26-50%	7,106,918	952,335	1,081,301	3,451,260	6,247,978	273,803
51-75%	2,877,585	492,181	941,634	2,027,674	2,737,325	105,559
76-100%	2,161,227	248,948	379,513	1,707,484	2,113,671	48,872
Total	27,273,018	2,924,949	4,495,887	12,819,857	23,507,540	3,143,487
Percentage						
0-25% share	55.47%	42.10%	46.56%	43.94%	52.79%	86.38%
0-50% share	81.52	74.66	70.61	70.86	79.36	95.09
0-75% share	92.08	91.49	91.56	86.68	91.01	98.45

SOURCE: Authors' computations.

NOTE: HSA is health savings account.

public health insurance programs, and not eligible for group coverage as a dependent. On the other hand, we predict that HSAs will not be popular among employees with an employer's health insurance offer, primarily because the employer's premium subsidy reduces the attractiveness of HSAs. It is possible that HSAs will remain a "niche product" unless employers reduce their premium contributions—in which case the lower total premiums of HSAs could make them more attractive to covered workers. The take-up of employer-based HSAs also could increase if small and medium-size employers begin to offer them, but this aspect of employer adoption of HSAs is beyond the scope of our study. The popularity of individual HSAs will increase further under the simulations considered here.

■ **Impact of subsidies on coverage and costs.** The Bush administration's proposed tax-credit plan would double individual HSA take-up and reduce the number of uninsured people by 2.9 million, at an annual tax cost of \$8.1 billion—an average of \$2,761 per person. A low-income buy-in subsidy would reduce the number of uninsured people by 16.5 percent (about 4.5 million people) at a cost of \$12.2 billion annually, or an average of \$2,718 per person. Offering "free" individual HSAs could, in theory, almost eliminate uninsurance but at a much higher per capita cost.

In addition to higher costs, "free" individual HSAs could greatly erode the market for employer-sponsored health insurance, with reductions of almost 5.7 million covered employees for the prototype HSA and 31.6 million for the more generous design.

Offering a free HSA to the nonworking, non-publicly insured population would not erode the employer coverage market. This simulation reduces the number of uninsured people, but less efficiently than a combination of other subsidies.

At least 70 percent of the take-up for the subsidies considered here would come from the lower half of the U.S. income distribution. The "free" HSA for nonworkers is the most attractive policy for the low-income uninsured.

■ **Further HSA design considerations.** Our work shows that people are sensitive to the size of the doughnut hole, with much larger take-up of the more generous HSA compared with the prototype design. Further variation of the doughnut hole, as well as simulating the effect of various coinsurance rates for coverage above it, would be warranted. Risk-adjusted subsidies tied to health status might also be considered if health-related selection were found to be a problem.

ALTHOUGH OUR STUDY does not consider possible behavioral responses, such as workers moving from jobs with insurance offers to those without offers as a consequence of the subsidy, it does indicate that a subsidy for HSAs can be simulated and that the effects of a subsidy might be important for expanding health insurance coverage in the United States.

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7. M. Pauly, A. Percy, and B. Herring, "Individual versus Job-based Health Insurance: Weighing the Pros and Cons," *Health Affairs* 18, no. 6 (1999): 28–44.
8. One employer is located primarily in Minneapolis; the other employers' establishments are dispersed widely throughout the United States.
9. T.D. Musco and T.F. Wildsmith, "Individual Health Insurance: Access and Affordability," Brief Analysis (Washington: Health Insurance Association of America, October 2002); and T.F. Wildsmith, *Individual Health Insurance: Wide Choice*

of Benefits Available (Washington: America's Health Insurance Plans, 2004).

10. S.T. Parente, R. Feldman, and J.B. Christianson, "Employee Choice of Consumer-Driven Health Insurance in a Multiplan, Multiproduct Setting," *Health Services Research* 39, no. 4, Part 2 (2004): 1091–1112.
11. We wanted to include employee (or family) health status in the choice model, but, unfortunately, we did not have these data. However, in our previous work (see Note 10), we found that health status was not a significant predictor of enrollment in a consumer-directed plan. Therefore, we do not believe that this is a serious omission.
12. Because state identification codes are not available in the MEPS-HC data, we could not adjust the out-of-pocket premium by the employee's state income tax rate if applicable.
13. Mercer, "U.S. Health Benefit Cost."
14. The most likely bias from this approach is that we will underestimate the attractiveness of an HSA, which features employee "ownership" of the account.
15. Additional details about the HSA policies used in the simulations are available from the authors. Contact Roger Feldman, feldm002@umn.edu.
16. We do not attempt to predict the ultimate insurance choices of workers who turn down an employer offer but do not buy an individual HSA. Some will obtain insurance through a spouse's policy, but others will remain uninsured.
17. Under the administration's proposal, the tax credit would apply only to the insurance premium, not to the HSA account. However, MMA lets consumers fund their accounts with pretax dollars, and this subsidy would stay in place.
18. These subsidies applied both to single people with no dependents and to families. We did not attempt to "spline" the subsidies as in the administration's proposal.
19. The \$211 billion for the full subsidy of a generous HSA was derived by adding the subsidy in the individual market (\$98.7 billion) to the subsidy for those who turn down employer coverage (\$122.4 billion).
20. The subsidy claimed by those already insured could be viewed as a reward for "doing the right thing."