Intergenerational Transfers and Insurance Policy Design

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Abstract

Group health insurance policies offering an identical benefit package to every member of the group result in lower expected health benefits for younger cohorts than older cohorts. The dispersion in insurance benefits across age groups differs among insurance policies. Simulation results presented in this paper demonstrate that a shift from comprehensive health insurance to high-deductible health insurance decreases the share of expected benefits going to younger cohorts. An estimated 81.5% of the 23-to-32-year-old cohort is expected to receive less than $500 in health benefits during a year for one prototypical high-deductible health plan. Low expected benefits for younger relatively healthy cohorts could increase the number of younger individuals who eschew health coverage. Age-rated premiums are probably the most straightforward way to stimulate demand for high-deductible health plans among younger healthier individuals.

1. Introduction

Significant concern exists about declining health insurance coverage rates. Several recent research papers, including Farber and Levy (1998) and Cutler (2002), find that recent reductions in health coverage are more closely related to decreased take-up rates than to changes in offer rates by employers.[1] Chernew, Cutler, and Keenan (2005) estimate that more than half of the decline in health insurance coverage rates during the 1990s can be attributed to an increase in health insurance premiums. The simultaneous increase in health insurance costs and the decline in insurance coverage have stimulated interest in health savings accounts and higher-deductible health plans with premiums that are often 30% lower than premiums on comprehensive health plans. However, benefits as well as premiums play a role in determining the affordability of health insurance for different households. A health insurance policy that provides low payouts for particular cohorts may cause members of the cohort to go without health insurance.

Younger individuals are more likely to go without health insurance than older individuals. One reason for the lower health insurance coverage rate among younger households is difference in employment circumstances. Older individuals are more likely to work at establishments that offer subsidized comprehensive health insurance policies. The lower health insurance coverage rates for younger cohorts can be attributed to other differences in circumstances and attitudes across age groups. The young tend to have more credit card debt, lower incomes, better health, and greater belief in their own invincibility than the middle aged or the old. These differences may cause the young to eschew health insurance offers that are too expensive or result in the young receiving an extremely small share of expected benefits.

A decision by young households to refuse health insurance coverage can have a dire impact on the young household and impose costs on so-

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[1] Cutler (2002) finds that about 20% of workers who are uninsured are offered insurance but turn it down. Three other empirical studies, Chernew, Frick, and McLaughlin (1997), Blumberg, Nichols, and Banthin (2002), and Hadley and Reschovsky (2002), found the elasticity of the take-up for health insurance coverage with respect to employee costs was relatively small. The small size of the take-up elasticity for health insurance is not necessarily inconsistent with a large impact on health coverage because the difference in premiums paid by the employee at a firm who entirely subsidies health insurance compared to premium paid by the employee at a firm that requires large employee contributions can be considerable.

Table 1
Health Insurance Coverage Rates by Age Group

Age Group	1996	2004	Difference (2004–1996)
23–32	71.5%	68.6%	−2.8%
33–42	78.7	75.2	−3.5
43–52	82.5	78.8	−3.7
53–62	79.7	79.9	0.2
Overall	77.9	75.5	−2.4

Source: Tabulations based on data from the 1996 and 2004 MEPS 2004.

ciety. Medicaid and charity pays for some medical care for the uninsured, but a decision to go without insurance can be fatal for the uninsured individual or household and is detrimental for society. Doyle (2005) documents the potentially tragic ramification of going without health insurance. His analysis of treatment and outcomes for automobile accident victims found that the medically uninsured receive 20% less care and have a substantially higher mortality rate than the insured. The departure of younger healthier individuals from the health insurance market will also increase average risk of covered individuals and their premiums.

One way to fix the problem of unaffordable health insurance is to provide health insurance with higher deductibles and higher out-of-pocket limits. A potential problem with this solution is that it reduces benefit payments to younger healthier cohorts that are less likely to experience major medical expenses but still need to pay for routine medical care. This problem could be mitigated by adopting age-rated premiums, deductibles or out-of-pocket expense limits.

This paper considers the impact of a shift toward high-deductible, high out-of-pocket health plans in benefits for cohorts of different age. The simulation results indicate that when a single health plan is offered to all members of the group, a shift toward high-deductible health plans reduces the share of benefits received by younger cohorts. Policies that mitigate this problem deserve close scrutiny.

2. DESCRIPTIVE STATISTICS

The descriptive statistics presented here document two facts pertinent to policy debates on health coverage expansions: (1) younger cohorts are less likely to have health insurance coverage than older cohorts and (2) younger cohorts are healthier and less likely to experience a catastrophic health expense than older cohorts. Both of these facts can be illustrated with data from the Medical Expenditures Panel Survey (MEPS).

The impact of age on health coverage is illustrated with tabulations based on MEPS 1996 and 2004 data presented in Table 1. In both years the coverage percentage increases sharply with age. Between 1996 and 2004 the coverage rate declined for adults between the age of 23 and 52 and remained flat for adults in the 53-to-62-year-old group. These differences in coverage rates across age groups occur for many reasons. First, younger individuals are less likely to be employed at a business providing health insurance to their employees. Second, the younger worker may not be able to afford premiums. Third, the younger worker may perceive that expected benefits from the offered health plan are low.

The impact of age on health expenditures data is illustrated with statistics in Table 2. The tabulations presented in this table for four different age groups are based on nine cross sections of

Table 2
Health Expenditures by Age Group

Expenditure	Age Group				Total
	23–32	33–42	43–52	53–62	
>$50,000	0.11%	0.23%	0.39%	0.97%	0.39%
>$30,000	0.33%	0.57%	0.96%	2.20%	0.94%
>$10,000	3.11%	4.30%	5.34%	9.52%	5.32%
Mean	$1,752	$2,231	$2,836	$4,609	$2,747
Median	$487	$630	$1,031	$1,705	$833
N	22,456	28,377	26,889	18,602	96,324

Source: Tabulations based on data for adults in the 23-to-62-year-old age range from the 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, and 2004 MEPS databases. All health expenditure data were inflated to 2004 dollars based on the medical care CPI.

Table 3
Expected Insurance Company Expenditures across Health Plans

Age Group by Head of Household	Percentage of Population	Insurance Company Benefits per Household			Share of Insurance Company Benefits		
		Comprehensive Plan	High-Deductible Plan	Percentage Change from Comprehensive Plan	Comprehensive Plan	High-Deductible Plan	Percentage Change from Comprehensive Plan
23–32	24.3%	$2,332	$1,436	−38.4%	11.8%	11.0%	*−7.3%*
33–42	25.8	4,234	2,625	−38.0	22.7	21.2	*−6.7*
43–52	27.1	5,515	3,602	−34.7	31.1	30.6	*−1.7*
53–62	22.8	7,210	5,201	−27.9	34.3	37.2	*8.5*
Total	*100.0*	*4,797*	*3,188*	*−33.5*	*100.0*	*100.0*	*NA*

Source: Simulations based on MEPS total household health expenditures and assumed insurance policy parameters.

MEPS spanning 1996–2004. The expenditure data were deflated to 2004 dollars based on the health care component of the consumer price index.

The results in Table 2 indicate that major health expenditures are substantially more likely for older cohorts than younger cohorts. The difference in high-expenditure event probability is much larger than the difference in expenditures for a typical household.

The probability of a health care expenditure greater than $50,000 is almost nine times higher for individuals in the 53-to-62-year-old cohort compared to individuals in the 23-to-32-year-old age group. By contrast, the median expenditure and mean expenditure are 3.5 times higher and 2.6 times higher for the 53-to-62-year-old group than for the 23-to-32-year-old age group, respectively.

These statistics confirm that individuals in younger healthier households are less likely to experience an expensive sickness or event that would lead to a large payout under a high-deductible health plan. Differences in mean and median health expenditures across age groups are relatively small and reflect smaller differences in expenditures on routine health care than in expenditures on high-cost procedures.

The larger difference in high-end health care expenditures across age groups will have different impacts on insurance company benefit share for different health insurance policies. The share of benefits going to young cohorts will be higher for a health insurance policy that pays a greater share of expenses for routine procedures. The potential impact of insurance policy features on differences in health insurance benefit payments and out-of-pocket expenditures across age groups can be estimated with a simulation model.

3. THE SIMULATION

A simulation is conducted to assess the potential impact of a shift from a comprehensive health plan to a high-deductible health plan. The initial analysis is based on a comparison of two health plans. The comprehensive health plan has a $400/$800 individual/family deductible, a $3,000/$4,000 individual/family out-of-pocket limit, and a 25% coinsurance rate. The high-deductible health plan has a $2,500/$5,000 deductible, a $5,000/$10,000 out-of-pocket limit, and a 25% coinsurance rate.

The simulation model estimates insurance benefits and out-of-pocket expenditures for both insurance policies. The simulation applies insurance policy parameters to estimates of household health expenditures from the 1999–2004 MEPS. A smaller number of years were used in the simulation analysis than for the descriptive statistics because the simulation analysis relies on a household insurance identification variable not available on the 1996–98 MEPS database. All MEPS total health expenditure variables are deflated to 2004 dollars. The health expenditures data were increased by 27% to adjust for a potential undercount. A discussion of the undercount can be found in Selden et al. (2001), and a discussion of the adjustment can be found in Blumberg and Holahan (2004). The details of the calculation of expected benefits are described in Appendix A.

Table 3 contains information on projected household insurance company benefits for the two insurance plans across age groups based on

the age of the oldest person in the household. These statistics reveal that a shift from a comprehensive health plan to a high-deductible health plan reduces expected benefits for all age groups, and the expected percentage reduction in benefits is larger for younger households than for older households, but the expected dollar reduction is larger for older households than younger households. Key findings include the following:

- The overall reduction in projected insurance company benefits attributable to a shift from the comprehensive policy to the high-deductible policy is 33.5%. This reduction in insurance company benefits ranges from 38.4% or $896 for the 23-to-32-year-old age group to 27.9% or $2,009 for the 53-to-62-year-old age group.
- A shift from a comprehensive health plan to a high-deductible health plan decreases projected insurance company benefits for the 23-to-32, 33-to-42, and 43-to-52-year-old age groups. The only age group realizing an increase in the share of insurance company benefits is the 53-to-62-year-old age group.

Additional information on differences in the financial impacts of a shift from a comprehensive health plan to a high-deductible health plan across age groups is presented in Tables 4 and 5. Table 4 contains information on the projected ratio of out-of-pocket to total health insurance expenditures. Table 5 provides information on the percentage of households projected to receive health insurance benefits of $500 or less under the two health plans.

The ratio of projected out-of-pocket to total health insurance expenditures ranges from 20.3% (53-to-62-year-old group) to 28.3% (the 23-to-32-year-old age group) for the comprehensive health plan. By contrast, this ratio ranges from 42.5% (53-to-62-year-old group) to 55.9% (23-to-32-year-old group) for the high-deductible health plan.

Table 4
Out-of-Pocket Expenditures to Total Expenditures

Age Group	Comprehensive Health Plans	High-Deductible Health Plans
23–32	28.3%	55.9%
33–42	26.1	54.2
43–52	23.9	50.3
53–62	20.3	42.5
Total	23.8	49.4

Source: Simulations based on MEPS total household health expenditures and assumed insurance policy parameters.

Table 5
Proportion of Households with Insurance Benefits $500 or Less

Age Group	Comprehensive Health Plans	High-Deductible Health Plans
23–32	56.0%	*81.5%*
33–42	35.6	*67.8*
43–52	26.3	*59.6*
53–62	20.5	*51.7*
Total	*34.6*	*65.2*

Source: Simulations based on MEPS total household health expenditures and assumed insurance policy parameters.

The percentage of households projected to receive benefits $500 or less ranged from 20.5% (53-to-62-year-old group) to 56.0% (23-to-32-year-old group) for the comprehensive health plan. The corresponding percentages were 51.7% (53-to-62-year-old group) and 81.5% (23-to-32-year-old group) for the high-deductible health plan.

Both insurance polices result in a transfer of benefits from young cohorts to old cohorts. This intergenerational transfer and the potential financial impacts are more pronounced for the high-deductible policy than for the comprehensive policy.

4. Policy Implications

A shift toward high-deductible health plans will lower the share of benefits going toward younger households. As a result, if premiums and benefit packages are identical across all age groups, some younger households who might have chosen to purchase a comprehensive health plan may choose to not purchase a high-deductible health plan.

Several different means are available to mitigate the adverse impact of a shift toward high-deductible health plans on younger cohorts. An upfront savings in the form of younger premiums is probably the most straightforward way to persuade younger, generally cash-strapped households to remain insured under a high-deductible health plan. Senator Richard Durbin of Illinois

and Senator Blanche Lincoln of Arkansas have introduced a health care bill that includes age-rated premiums. The combination of high-deductible health plans, age-rated premiums, other inducements to increase health coverage, and some financial support for lower-income unhealthy households could attract strong bipartisan support.

A second, more complicated approach involves having the deductible vary with age. Practical limits exist, however, on the extent to which deductibles can and should be raised for older households. This paper does not consider potential legal issues limiting variations in insurance policy design across age groups.

It may be possible to link benefits to household income. Gruber and Feldstein (1994) consider a centrally administered government catastrophic health insurance plan with a 50% coinsurance rate and an out-of-pocket limit set at 10% of income. A system linking out-of-pocket costs to income would be attractive to younger individuals, who tend to have lower salaries. Plans that linked out-of-pocket costs to income would almost certainly have to be mandatory to prevent higher-income healthier individuals from opting out.

Contributions to health savings accounts and additional insurance payments for preventive services under some circumstances can partially mitigate the financial impacts of a shift toward high-deductible health plans. Current law allows, but does not require, employers or employees with a high-deductible health plan to contribute to a health savings account. However, many individuals, especially younger ones, either cannot afford to contribute to health savings accounts or can fund accounts only through reductions in contributions to other fringe benefits such as 401(k) plans. The existence of a health savings account by itself does not reduce financial impacts and disparities stemming from increased cost sharing.

Current rules governing qualified high-deductible health plans linked to health savings accounts allow but do not require the insurance company to make payments for preventive services even if the plan deductible or copayments have not been satisfied. These exemptions for preventive services are generally narrowly defined and do not pertain to preexisting conditions. An increase in payments for preventive services may conceivably increase the share of payments going to younger cohorts, depending on the definition of covered preventive procedures.

The most straightforward way to encourage younger cohorts to purchase a high-deductible policy appears to involve age-rated premiums. Obvious concern exists about the potential impact of a shift toward high-deductible health plans on lower-income unhealthy households. Future research might examine the interaction between age and income impacts associated with a shift toward higher deductibles and higher out-of-pocket obligations.

5. Conclusions

Expected benefit payouts are smaller for younger healthier cohorts whenever the entire population receives an identical health insurance package and pays an identical premium. The disparity in expected benefits across age groups is larger for high-deductible health plans than under comprehensive health insurance. An increase in the disparity of benefits attributable to a shift from comprehensive to high-deductible health insurance may increase the number of younger households eschewing health insurance.

The decision to not purchase health insurance can be fatal to the individual and is detrimental to society. The departure of younger healthy individuals from the health insurance market will also increase health insurance premiums. A need exists to consider ways to make high-deductible health plans more attractive for younger cohorts. The most straightforward way to achieve this without unduly impacting older cohorts may involve age-rated premiums.

Appendix

Description of Simulation for Expected Benefits

The simulations of expected benefits across age cohorts use household health expenditure data from the MEPS database. Information on household health expenditures are merged with separate insurance policy parameters for family-plan and individual-plan households. Insurance policy payouts and out-of-pocket expenses are assumed to be defined by three insurance parameters: the deductible, the out-of-pocket expense limit, and

Table 6
Insurance Policy Parameters

Plan Type	Deductible	Maximum Allowable Out-of-Pocket Expense Limit	Insurance Company Reimbursement Rate (Proportion)	Expenditure Threshold Triggering Maximum Allowable Out-of-Pocket Expenditure	Insurance Benefit at Expenditure Threshold
Comprehensive Health Plans					
Single	$400	$3,000	0.75	$10,800	$7,800
Family	800	4,000	0.75	13,600	9,600
High-Deductible Health Plans					
Single	2,500	5,000	0.75	12,500	7,500
Family	5,000	10,000	0.75	25,000	15,000

the coinsurance rate and total household health expenditures.

Details of the insurance benefit and out-of-pocket expense limit calculation are outlined in this appendix.

Step 1: Create an individual-level database. Read in health expenditure data for individuals 62 years old or younger with private health insurance from the MEPS files for 1999–2004. (The sample was limited to these six years because previous years did not have a particular household health insurance ID variable.) Convert all health expenditure data to 2004 dollars and adjust upwards by 27% to reflect the potential undercount in MEPS data. Households with a head of household 22 years old or younger were deleted from sample. (These households are likely to frequently leave and enter the workforce, thereby further reducing insurance benefits for younger cohorts.) Many of these households have private health insurance for only part of the year or have lower-cost student heath insurance. The final individual-level database covering six years has 99,826 observations for variable TOTEXP, total person level health expenditures.

Step 2: Create a household-level database. The household level database has three key variables: STOTEXP, sum of health expenditures for everyone in the household, FAM_NUM, the number of people in the household, and HAGE_GR, the age interval variable based on the age of the oldest person in the household. The household-level database has 45,876 observations.

Step 3: Create insurance plan parameters. The key assumptions of the model are the parameters of the insurance plan: DEDUC, the deductible, MOUTP, the maximum allowable out-of-pocket expense level, and REIM_RATE, the insurance company reimbursement rate for expenses over the deductible and under the health expenditure level triggering the maximum allowable out-of-pocket expenditure. These insurance policy parameters are input for the calculation of two other values: THRES, the expenditure level triggering the maximum allowable out-of-pocket expenditure level, and INS_COST_THRES, insurance company benefits at the health expenditure level triggering the maximum allowable out-of-expense limit.

The threshold expenditure limit triggering the maximum allowable out-of-pocket expenditures is given by

$$THRES = DEDUC + (MOUTP - DEDUC)/(1 - REIM\_RATE),$$

and the insurance company cost at the threshold is defined by

$$INS\_COST\_THRES = (THRES - DEDUC) * REIM\_RATE.$$

The insurance policy parameters for both the comprehensive and high-deductible health plans are presented in Table 6.

Step 4: Merge the household health expenditure information with insurance policy information. Both databases are sorted by a variable called INS_ST, which is ''single'' if the household has only one insured member and ''family'' if the household has more than one insured member.

Step 5: Create out-of-pocket expenditure estimates and insurance benefit cost estimates for all households. The code for out-of-pocket expenditures is

If STOTEXP<=DEDUC THEN OUTP=STOTEXP;
ELSE IF DEDUC<STOTEXP THEN OUTP=MIN (OUTP_P1,MOUTP),

where

OUTP_P1=DEDUC+(1-REIM_RATE)* (STOTEXP-DEDUC).

The code for insurance company costs is the following:

If STOTEXP<=DEDUC THEN INS_COST=0;
ELSE IF DEDUC<STOTEXP<=THRES THEN INS_COST= (STOTEXP-DEDUC)*REIM_RATE;
ELSE IF THRES<STOTEXP THEN INS_COST=INS_COST_THRES+(STOTEXP-THRES);

These values of out-of-pocket expenditures and insurance company benefits are input to the SAS statistical procedures used to create Tables 3–5.

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