# Variations in Health Insurance Coverage: Benefits vs. Premiums

# GAIL R. WILENSKY, PAMELA J. FARLEY, and AMY K. TAYLOR

Project Hope, formerly with the National Center for Health Services Research. Department of Health and Human Services; National Center for Health Services Research, Department of Health and Human Services

The 1980S HAVE BEEN MARKED BY A GREAT interest in competition and market forces to moderate the rate of increase in health care spending. This has occurred at a time when recent events have made clear that lowering the overall rate of inflation is likely to have only a modest effect on the growth of expenditures in the health care sector.

While there are many reasons for the continued increase—such as advances in expensive technology and the aging of the society—one of the most important is the widespread reliance on insurance as a way of financing and prepaying health expenditures. Recent estimates indicate, for example, that about half of consumer expenditures for physicians' services and about 80 percent of expenditures on hospital services were paid through private insurance (Gibson and Waldo 1982; see also Feldstein and Taylor 1977; Newhouse 1978; Pauly 1980). The interest in increased reliance on market forces has brought renewed interest in encouraging the purchase of less comprehensive health insurance benefits. This would better allow price signals and financial incentives to operate in the market for health care. The intention is

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to promote more efficient and cost-conscious behavior on the part of patients and providers, through insurance plans that utilize costsharing or enrollment in HMOs and capitation fees for providers to discourage excessive spending.

Thus, many of the current cost-containment strategies are aimed at influencing the structure of private health insurance benefits. Two features of these procompetitive legislative proposals are considered in this paper, where we examine the effects of offering employees more options in their choice of insurance plans and of taxing some portion of employer-paid health insurance. We are specifically concerned about the likely effect on health insurance benefits.

The most immediate effect of a ceiling on tax-free insurance premiums would be to increase revenues. The value of the exclusion of employerpaid health insurance premiums from the taxable income of employees was estimated to be \$31 billion in 1982 (Taylor and Wilensky 1983). The more important effect may be to make consumers more aware of the insurance they are purchasing. The effect of excluding employerpaid health benefits from employee taxable income is to reduce the price of insurance and introduce incentives for employees to purchase more insurance than if they were using taxable income. It is expected that a ceiling on tax-free employer contributions will lead to reductions in health insurance premiums that will be greater in the long run, after everyone has a chance to learn to adjust to the change. The Reagan administration's proposal, \$2,100 for family and \$840 for individual coverage, can be expected to result in a reduction of \$3 to \$6 billion in total employee premiums. Depending on the tax-free limit, we have estimated elsewhere that the reduction in premiums would range between \$1.8 billion and \$7.5 billion in the short run, and between \$3.6 billion and \$16.7 billion in the long run (Taylor and Wilensky 1983). To assess the effect of these policies on health care costs and the out-of-pocket medical expenses for which the population would be at risk, it is important to understand the changes in insurance benefits and employee health insurance expenses that are likely to result.

The introduction of more choices within insurance groups would also affect patterns of coverage and the health-related expenses of employees and their families. Most people with employment-related health insurance (82 percent in 1977) have no choice of insurance



plans (Farley and Wilensky 1983). One commonly expressed concern about offering more insurance options is that the availability of choices would cause a breakdown of risk-pooling across healthy and sick individuals that is the very purpose of insurance. If individuals at low risk in terms of their medical expenditures were able to form their own plan, leaving high risks to pool among themselves, the two groups would clearly pay different premiums.

Insurance, defined in the purest sense, is only intended to protect against unpredictable risks. The current system of pooling individuals who face predictably different risks raises an issue of distributional equity that goes beyond the gains from risk-pooling. Since most workers are offered only one insurance plan, some employees systematically subsidize the medical expenses of others by paying premiums for benefits that they have very little expectation of receiving. Yet, because they have the insurance, they have an incentive to make use of whatever benefits they can. This leads to a further distortion of health care spending. If people with *predictably* higher utilization (such as the chronically ill or the elderly) are not to bear the full cost of their continuing high expenses, one must ask whether single-option insurance groups are the best arrangement for compensating them.

Because it is necessary to have a clear picture of the present system in order to say how it might change, we first present information in this paper from the 1977 National Medical Care Expenditure Survey (NMCES) on the types of benefits now purchased through employer groups. Second, we examine the benefits held at different levels of total premiums or employer contributions as an indication of the type of insurance that employees who were encouraged to reduce their premium expenditures might purchase. Third, we analyze systematic differences in health insurance benefits that some high-risk families now receive in relation to their premium expenses. These families would presumably pay higher premiums under a system that offered low-risk families the chance to enroll in a separate plan within the group. Under the present single-option system, their predictably higher medical expenses are subsidized by those who expect to have lower expenses. The transfers of income that occur within this system will also be examined. In a final section, we consider the policy implications of our observations as they relate to the equity and efficiency of the proposed restructuring of employment-related health insurance.

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#### Benefits under the Present System

Table 1 provides a description of insurance benefits under the present system of employment-related group insurance, based on the 1977 NMCES data. The private health insurance held by people under 65 with any employment-related group coverage is summarized in terms of the types of benefits and breadth of coverage, the hospital and outpatient physician benefits, the depth of major medical coverage, and the protection that major medical coverage offered against high out-of-pocket expenses. Each person's semiprivate hospital and outpatient physician benefits are described in terms of the presence of deductibles, other cost-sharing provisions stated as a coinsurance rate, and (for complete semiprivate hospital coverage) the depth of the benefit. In a small number of cases, 4 percent of those under 65 with employmentrelated group coverage, these figures reflect coverage obtained through nongroup or nonwork plans as well as employer groups.

Virtually everyone was insured for hospital care. Eighty-eight percent of work-group enrollees were insured for physician office visits or outpatient prescription drugs. About 77 percent were insured for outpatient psychiatric visits, although their benefits were almost always different from their regular outpatient physician benefits. Coverage for dental care was much less common (28 percent), as was coverage for vision or hearing care, or routine physical exams.

A notable feature of the coverage held by employees and their families was their typically complete insurance for hospital care. Seventytwo percent faced no deductible and no cost-sharing for a semiprivate room. Another 6 percent faced only a deductible. Only 23 percent had a daily benefit that would not fully cover semiprivate accommodations. Among those with no deductibles or cost-sharing, 42 percent were covered for 365 days of hospital care or had at least \$250,000 of major medical benefits.

Physician benefits, by contrast, were much less comprehensive. Sixty percent of enrollees in employment-related groups had benefits with both a deductible and a coinsurance rate of 20 percent or more. These benefit provisions reflect the predominance of major medical plans as the source of most outpatient physician coverage. Just 8 percent of enrollees had complete outpatient physician coverage, with no deductible and no cost-sharing.



Characteristics of benefits	Number with benefit (in thousands)	Percent with benefit
Any amployment related group	· · · · · · · · · · · · · · · · · · ·	
Any employment-related group	137 700	100.0
Tube of constants	197,700	100.0
Apr HMO	5 000	12
Regic only	13,200	4.5
Major medical only	21,700	9.0
Resistant major medical	21,700	1).8
Dasic and major medical	1,200	09.4
	1,200	0.9
Breath of coverage	20.000	20.2
Coverage for dental care	39,000	28.3
Coverage for vision or hearing	16 100	
care	16,100	11./
Coverage for outpatient pre-	100 500	o <b>-</b> -
scription drugs	120,500	87.5
Coverage for routine physical	8,/00	6.3
Coverage for outpatient psy-		
chiatric care	106,400	77.3
Identical to other out-		
patient physician	_	
benefits	10,600	7.7
Different from other out-		
patient benefits	95,800	69.6
Hospital benefits <sup>a</sup>		
No deductible, semiprivate,		
generous limit	57,700	42.0
No deductible, semiprivate,		
less generous limit	41,000	29.9
No deductible, less than semi-		
private	20,900	15.3
Deductible, semiprivate, gen-		
erous limit	4,100	3.0
Deductible, semiprivate, less		
generous limit	3,600	2.6
Deductible, less than semi-	- /	
private	7.900	5.8
No hospital coverage	2,000	1.5

TABLE 1Characteristics of Benefits Held by Persons under Age 65 with Any<br/>Employment-Related Group Insurance

			• •
ТАВ	LE	lcon	itinued
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Physician office benefits <sup>b</sup>		
No deductible, less than 20%		
coinsurance	10,700	7.8
No deductible, 20% or more		
coinsurance	9,500	6.9
Deductible, less than 20%		
coinsurance	18,200	13.2
Deductible, 20% or more		
coinsurance	82,800	60.1
No physician office coverage	16,500	12.0
Maximum major medical benefit <sup>c</sup>	·	
Less than \$250,000	51,100	37.1
\$250,000 or more	55,000	39.9
Unlimited	13,800	10.1
No major medical coverage	17,800	12.9
Out-of-pocket maximum under major medical	1	
\$750 or less	30,800	22.3
\$751 or more	32,000	23.3
Unlimited	57,100	41.5
No major medical coverage	17,800	12.9
, 0	-	

<sup>a</sup> A "generous" limit is defined as 365 days or more of basic benefits, or \$250,000 of major medical coverage for those with no basic hospital benefits. See text for definition of coinsurance rate.

<sup>d</sup> Out-of-pocket maximum applicable to most of the services covered under the policy. *Source:* National Center for Health Services Research, National Medical Care Expenditure Survey, 1977.

Finally, most of those enrolled in employer groups enjoyed a reasonably high level of protection against catastrophic expenses under the present system. Eighty-five percent of insured employees and their families were covered under a major medical policy in 1977, mostly in combination with basic benefits. Among those with major medical coverage, over half were also protected by a limit on their out-of-pocket expenses. More recent estimates from the Health Insurance Association of America (1982) suggest that the percent of employees with an out-of-pocket limit has increased substantially since 1977, and that maximum benefits

<sup>&</sup>lt;sup>b</sup> See text for definition of coinsurance rate.

<sup>&</sup>lt;sup>c</sup> Maximum benefit for hospital room and board charges, miscellaneous hospital expenses, surgery, inpatient physician visits, outpatient physician visits, outpatient diagnostic and laboratory tests, and any other expenses included under the maximum benefit for those services.

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have also increased. Ignoring deductibles, 45 percent were fully insured for semiprivate hospital accommodations for up to 365 days of basic benefits or \$250,000 in major medical benefits.

## Incremental Expenditures on Health Insurance and Incremental Benefits

Most proposals to restructure employment-related health insurance are designed to neutralize the financial incentives which presently encourage overinsurance and to promote greater opportunities for choice. Then, they would rely on the decentralized decisions of employees and employers to determine where and how more cost-sharing would be appropriate. The ultimate effect of these proposals on the structure of employee health insurance benefits will consequently be determined by the benefits that employers and employees choose to sacrifice if they choose to spend less on health insurance under a restructured system.

Some insight on this issue may come from comparing the benefits of employees whose total health insurance premiums now differ, a comparison that is shown in table 2.

The last four columns of the table divide employees who were insured in 1977 into those with family coverage that cost \$1,000 or less (or individual coverage that cost \$400 or less) and those whose coverage cost more. The upper premium category is further divided between those with family premiums above and below \$1,400 or individual premiums above and below \$560. These categories divide employees at about the 60th and 85th percentiles in terms of total premiums for their employment-related health insurance.

Elsewhere, we have analyzed alternative ceilings set at the 60th and 85th percentiles on tax-free employer contributions (Wilensky and Taylor 1982; Taylor and Wilensky 1983). In terms of 1983 premiums, the 60th percentile corresponded to \$1,800 in employerpaid benefits for a family plan and \$720 for an individual plan. The 85th percentile corresponded to \$2,400 or \$960, respectively, of employer-paid benefits. When we grouped employees according to the corresponding categories of 1977 employer-paid premiums and compared their benefits, we found that such a comparison differed little from a comparison based on total premiums as in table 2. We consequently have chosen to show only the figures in table 2 here.

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	All subscribers		Over #1,00	o (ramiry) or \$400 (	(IBUDIVIDIII
Characteristics of henefits	All substitues under 65 in employment- related group plans	Less than \$1,000 (family) or \$400 (individual)	HA N	\$1,001-\$1,400 (family) \$401-560 (individual)	Over \$1,400 (family) \$560 (individual)
Number of subscribers (in rhousands)	58.300	34,400	23,900	14,900	9.000
Type of coverage		Perce	ent with bene	fit	
Any health maintenance organization	3.7	2.6	5.3	6.3	3.7
Basic only	10.6	11.7	9.0	6.2	13.6
Maior medical only	17.4	21.1	12.1	12.6	11.3
Basic and major medical	67.8	63.8	73.6	74.8	71.5
Other/unknown	0.6	0.9	(0.0)	(0.0)	(0.0)
Breadth of coverage					
Coverage for dental care	24.9	16.0	37.8	32.7	46.2
Coverage for vision or hearing care	9.8	6.8	14.1	11.0	19.4
Coverage for outpatient prescription					
drugs	86.4	83.4	90.8	90.2	91.9
Coverage for routine physical	5.8	4.4	7.8	7.5	8.3
Coverage for outpatient psychiatric care	75.6	73.3	78.9	78.4	79.6
Identical to other outpatient physician					
benefits	7.3	7.0	8.0	7.5	8.7
Different	68.2	66.3	70.9	70.9	70.9

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<i>Hospital benefits</i> <sup>a</sup> No deducrible, semiprivate, generous					
limit	38.4	28.7	52.4	53.3	50.9
No deductible, semiprivate, less gener-					
ous limit	29.3	31.9	25.6	23.6	28.9
No deductible, less than semiprivate	18.2	21.8	13.1	13.5	12.3
Deductible, semiprivate, generous limit	3.3	3.9	2.4	2.8	1.8
Deductible, semiprivate, less generous					
limit	2.8	3.3	2.1	2.3	2.0
Deductible, less than semiprivate	6.7	8.6	3.9	4.0	3.6
No hospital coverage	1.3	1.8	0.6	0.6	0.5
Physician office benefits <sup>b</sup>					
No deductible, less than 20%					
coinsurance	7.4	5.1	10.7	9.5	12.8
No deductible, 20% or more					
coinsurance	6.8	6.1	7.8	8.3	7.1
Deductible, less than 20% coinsurance	11.4	9.2	14.5	14.2	15.0
Deductible, 20% or more coinsurance	62.1	65.3	57.6	60.4	52.9
No physician office coverage	12.3	14.4	9.4	7.6	12.2
Maximum major medical benefit <sup>c</sup>					
Less than \$250,000	36.8	38.1	35.1	35.2	35.0
\$250,000 or more	39.6	38.4	41.3	43.4	37.8
Unlimited	9.5	8.9	10.5	10.0	11.1
No major medical coverage	14.0	14.6	13.2	11.5	16.1

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			Over \$1,0	00 (family) or \$400 (	(individual)
	All subscribers	•			
	under 65 in employment- relared proup	Less than \$1,000 (family) or \$400		\$1,001-\$1,400 (family) \$401-560	Over \$1,400 (family) \$560
Characteristics of benefits	plans	(individual)	All	(individual)	(individual)
Out-of-pocket maximum under major medical <sup>d</sup>					
\$750 or less	27.6	25.0	31.4	27.9	37.1
\$751 or more	21.9	22.0	21.8	25.2	16.2
Unlimited	36.4	38.4	33.6	11.5	16.1
No major medical coverage	14.0	14.6	13.2	11.5	16.1
<sup>4</sup> A "generous" limit is defined as 365 days or m benefits. See text for definition of coinsurance ra	ore of basic benefite.	ts, or \$250,000 of m	ijor medical co	verage for those with	no basic hospital
<ul> <li>Maximum benefit for hospital room and boar physician visits, outpatient diagnostic and labor.</li> </ul>	d charges, miscel itory tests, and an	laneous hospital expe iy other expenses incl-	nses, surgery, aded under the	inpatient physician maximum benefit fo	visits, outpatient or those services.
<sup>d</sup> Out-of-pocket maximum applicable to most of <i>Source:</i> National Center for Health Services Rese	the services cover trch. National Me	red under the policy. dical Care Expenditur	e Survev. 1977		

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Consider first the benefits held by the lower 60 percent of employees whose premiums were less than \$1,000, compared to those who spent more than \$1,000. One of the most significant differences between the 40 percent of employees whose premiums exceeded \$1,000 and the others was their coverage for less commonly insured services like dental care, vision or hearing care, prescription drugs, routine physicals, and outpatient psychiatric care. Thirty-eight percent of employees in the group with the higher total premiums had dental coverage, compared to 16 percent of those in the lower group. Fourteen percent were insured for vision or hearing services (compared to 7 percent), 91 percent for prescription drugs (compared to 83 percent), 8 percent for a routine physical exam (compared to 4 percent), and 79 percent for outpatient psychiatric care (compared to 73 percent).

Employees whose total premiums exceeded \$1,000 were also less likely to have hospital and physician benefits with cost-sharing requirements. Only 18 percent did not have daily benefits covering the full cost of a semiprivate hospital room, ignoring deductibles. Thirtytwo percent of employees with premiums below \$1,000 did not have semiprivate coverage, including 9 percent who also faced a hospital deductible and 2 percent who purchased no hospital coverage. In the higher premium group, 78 percent of employees faced no cost-sharing at all for hospital care, while the figure for the lower group was 61 percent.

A similar picture emerges for physician office visits. Eleven percent of those in the higher premium category were completely insured, with no deductibles and no coinsurance, compared to 5 percent in the lower premium group. Similarly, there was a difference of about 8 percentage points between the two groups in the proportion who faced both a deductible and a coinsurance rate of 20 percent or more, and a 5 percentage point difference in the proportion with no coverage.

The two groups did not differ very greatly in terms of their catastrophic benefits. Eighty-five percent of employees with premiums below \$1,000 had major medical coverage; 86 percent of those with premiums above \$1,000 had major medical coverage, although more often in combination with basic benefits. Nor did the two groups differ significantly in their maximum major medical benefits. Employees with major medical coverage in the lower premium group were somewhat less likely to have a major medical limit on their out-of-pocket expenses that was below \$750 (29 compared to 36 percent) and were also less likely to have an out-of-pocket limit (55 compared to 62 percent).

Comparison of the two groups with total premiums above \$1,000 leads to similar conclusions about the relationship between incremental premium expenditures and the extent of catastrophic coverage; additional expenditures bought a lower limit on out-of-pocket expenses but, among employees with major medical coverage, were not associated with significant differences in the existence of a limit on out-of-pocket expenses or the amount of the major medical maximum. Those in the category above \$1,400 were somewhat less likely to have major medical coverage. However, we believe that this was largely a reflection of very comprehensive basic benefits.

More generally, the essential differences between employees in the 60th to 85th percentile by total premiums and the highest 15 percent seem to be the dental and vision coverage of the top group, their tendency towards basic (but complete) benefits, and their lower limits on out-of-pocket expenses. The proportions with dental and vision benefits in the highest premium group were respectively about 50 percent and 70 percent greater than the proportions in the second highest group. Twice as many employees in the highest premium category had only basic benefits. There were no significant differences between the two highest groups with respect to their hospital benefits, nor with respect to coverage for prescription drugs, outpatient psychiatric services, or even routine physicals. The last appears to reflect the significantly higher percentage of health maintenance organization enrollees in the group with premiums between \$1,000 and \$1,400, not the very highest premium group. Differences in cost-sharing for physician office visits were not significant between the two groups. However, comparisons with respect to employer-paid premiums not shown have suggested that the top 15 percent of employees in terms of employer-paid benefits were almost twice as likely to have complete coverage for physician care as other employees above the 60th percentile (12 percent compared to 7 percent).

Other data collected in the NMCES survey concerning the actual medical expenses of the employees included in table 2 confirm the relation between health insurance premiums and increasingly comprehensive benefits that is suggested there. Overall, the average share of each person's total medical expense that was paid by private insurance was 31.6 percent. The average share for employees with premiums



less than \$1,000/\$400 was 25.4 percent, compared to 31.1 percent and 36.1 percent for employees in the increasingly higher premium categories.

In summary, it appears that incremental health insurance expenditures generally went towards coverage for typically smaller, somewhat more routine health expenses such as dental and vision care in contrast to the major and unpredictable expenses of hospital care, for example. Employees with more expensive coverage were also more likely to have complete benefits for hospital and physician expenses, although complete hospital benefits were equally common among employees with total premiums exceeding \$1,000 and those with premiums exceeding \$1,400. In general, additional expenditures on health insurance benefits were associated with a reduction in front-end out-of-pocket liabilities. What was least affected by differences in employees' health insurance premiums was their protection against very large, catastrophic expenses.

#### The Distribution of Medical and Health Insurance Expenses

To provide a better understanding of the likely distributional effects of proposed changes in employee health insurance benefits, the medical and health insurance expenses of different types of families under the present system are examined in table 3. Reducing the subsidy implicit in the tax treatment of employer-paid premiums or encouraging a greater choice of plans within employee groups would alter these patterns. In particular, as we noted earlier, the availability of choices would most likely result in different plans and premiums for highrisk and low-risk individuals. This change would reduce the transfers from the latter to the former that table 3 records as characteristic of the present system of predominantly no-choice groups.

The table is limited to families where at least one person was under 65 and covered by employment-related insurance. Part A describes the average medical expenses, insurance premiums and benefits, and tax benefits of these families. The second column of part A shows the average total medical expense that each incurred during 1977, including the cost of ambulatory services provided by physicians and other providers, hospital services, inpatient physician services, dental services, prescribed medicines, eyeglasses and contact lenses, and medical equipment and supplies. The costs of institutional care, including stays in nursing homes, are not included. The benefits paid by private insurance towards these expenses and the expenses paid directly by the family are shown in columns (3) and (4). These two figures add to somewhat less than total family expenses because of the payments made by public programs and other parties. The total cost of the health insurance held by anyone in the family who was under 65 and enrolled in an employee plan are shown in column (5), with the premiums paid by the family in column (6). Finally, column (7) shows the tax savings from the exclusion of employer-paid premiums from each family's taxable income. These figures attribute the full amount of the tax savings to the family and nothing to the employer. They consequently assume that in reality a family bears the cost of all premiums paid by an employer as a reduction in wages or other benefits.

The second part of the table provides an indication of the net flow of private insurance benefits and premiums to and from different families, and their implicit outlays on medical care and health insurance. As shown in the first column of part B, a family's health insurance premiums averaged about \$400 more than was returned in benefits reported in the NMCES survey. Part of this difference was attributable to the charges for administration, selling, profits, etc., that insurers add to expected claims in setting their premiums. Generally, these charges average about 10 to 15 percent of group premiums (Carroll and Arnett 1979). Also, the NMCES benefit data exclude institutional expenses and other medical expenses of institutionalized individuals that were reflected in the insurance premiums. The one-year time frame also excludes benefits that were paid by policies in force in 1977 for expenses incurred after that year. Although the actual difference between average premiums and average benefits is consequently overstated somewhat by the figures in the table, they do provide a relatively accurate picture of the expected payoff from insurance for families with no institutionalized members and all but the most unusual of medical expenses. Nor should the understatement of benefits systematically affect rough comparisons across families.

The second column of part B gives the effect of the tax subsidy in reducing a family's net outlays on insurance. The last two columns

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Private Health Insurance Premiums and Benefits, Medical Expenses, and Tax Benefits of Families with Nonelderly Members Enrolled in Employment-Related Groups 3A

	Number of families <sup>a</sup>	Total medical expenses	Health insurance benefits	Out-of- pocket medical expenses	Health insurance premiums	Health insurance premiums paid by family	Tax subsidy from employer contributions
Family characteristics <sup>a</sup>	(1)	(2)	(3)	(4)	(2)	(9)	6)
			Me	in per family			
All families	45,633	\$1,198	\$ 654	\$418	\$1,054	\$253	\$222
Age of oldest member							
<35	17,980	884	476	301	919	212	196
35-44	9,756	1,252	622	491	1,084	261	235
45-54	9,218	1,471	809	510	1,245	296	264
55-64	8,679	1,495	852	479	1,095	281	215
Family income							
<10,000	8,439	961	468	326	764	220	92
10,000-15,000	8,733	1,142	615	365	921	251	156
15,000-20,000	8,975	1,113	627	410	1,073	259	213
20,000-30,000	11,363	1,300	771	441	1,200	256	280
30,000-50,000	5,880	1,492	803	528	1,278	259	340
50,000 +	2,244	1,351	636	594	1,252	327	395
Family type							
One person							
Male	6,059	501	254	154	716	154	152
Female	8,053	657	327	250	529	132	91

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		-	(Continued)				
Family characteristics <sup>*</sup>	Number of families <sup>a</sup> (1)	Total medical expenses (2)	Health insurance benefits (3)	Out-of- pocket medical expenses (4)	Health insurance premiums (5)	Health insurance premiums paid by family (6)	Tax subsidy from employer contributions
			Mea	in per family			
More than one							
Without children	9,336	1,315	762	396	1,228	300	277
With children	22, 185	1,535	837	560	1,263	304	264
Family with member limited in activity							
No	40,220	1,048	556	394	1,037	248	221
Yes	5,413	2,312	1,389	593	1,178	292	228
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expenses, and insurance premiums exclude family members who were over 65 or had no employment-related group coverage. The benefits and premiums for private insurance purchased outside an employment group for anyone enrolled in one are included. Includes savings on federal income tax, employee's share of FICA, and state income tax. Families with at least one member under 65 who was covered by employment-related group insurance. Family characteristics, medical Source: National Center for Health Services Research, National Medical Care Expenditure Survey, 1977.

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**TABLE 3A** 

TABLE 3B offference between Premiums and Benefits, and Outlays for Medical Care and Health Insurance for Families w Members Enrolled in Employment-related Groups	TABLE 3B	ifference between Premiums and Benefits, and Outlays for Medical Care and Health Insurance for Families with Nonelderly	Members Enrolled in Employment-related Groups
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Family Characteristics <sup>5</sup>	Premiums less benefits (5) – (3)	Premiums less benefits and tax subsidy $(5) - (3) - (7)^{b}$	Family outlays for medical care and health insurance (4) + (5)	Family outlays for medical care and health insurance less tax subsidy $(4) + (5) - (7)^{b}$
All families	\$399	8178 #	ber family \$1.472	\$1,250
Age of oldest member				
<35	443	248	1,221	2,025
35-44	422	187	1,575	1,339
45-54	437	173	1,756	1,492
55-64	243	28	1,574	1,358
Family income				
<10,000	296	204	1,090	966
10,000-15,000	306	151	1,286	1,131
15,000-20,000	446	233	1,483	1,270
20,000 - 30,000	429	148	1,641	1,361
30,000-50,000	475	136	1,806	1,466
50,000+	616	221	1,847	1,452
Family type			,	
One person				
Male	462	310	870	718
Female	201	110	779	688

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TABLE	(Continu

Family Characteristics <sup>a</sup>	Premiums less benefits (5) - (3)	Premiums less benefits and tax subsidy $(5) - (3) - (7)^{b}$	Family outlays for medical care and health insurance (4) + (5)	Family outlays for medical care and health insurance less tax subsidy $(4) + (5) - (7)^h$
		Mean	per family	
More than one				
Without children	426	162	1,823	1,559
With children	465	188	1,624	1,347
Family with member limited in	activity			
No	481	261	1,431	1,211
Yes	-211	- 439	1,771	1,542

á b Includes savings on federal income tax, explored an employment group for anyone enrolled in one are included. <sup>b</sup> Includes savings on federal income tax, employee's share of FICA, and state income tax. *Source:* National Center for Health Services Research, National Medical Care Expenditure Survey, 1977.

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provide estimates of family outlays for medical care and health insurance, with and without the tax subsidy. In keeping with the assumption that the entire amount of the tax subsidy goes to the family, these figures attribute the full cost of the family's insurance (including employer-paid premiums) to the family as well.

The patterns that emerge from these figures are largely what one would expect to see with a tax subsidy structured as an income deduction, and a system of single-option groups with premiums that reflect the enrollment of approximately a cross-section of the working population and their families in each group. Part A of the table shows how a family's total medical expenses varied predictably with the age of its members, its income, its composition, and the presence of an individual with an activity limitation. Younger families incurred fewer expenses than older ones. Low-income families incurred fewer expenses than high-income families. Single women spent more than single men, and families spent more than single individuals. The expenses incurred by families where someone was limited in activity averaged \$1,000 more than other families. Average health insurance benefits per family largely followed the distribution of total expenses.

Mean out-of-pocket expenses, by contrast, varied more narrowly and within a range of about \$100 except for differences related to family size. Nor was there much difference among families enrolled in employment-related groups in terms of their direct, out-of-pocket expenditures on health insurance, except in relation to the number of people covered. Except for the wide variation with respect to income and the greater health insurance expenditures for single males compared to females, the differences in total premiums were also not very substantial. Among the types of families shown, the average tax subsidy differed within a limited range of about \$100. The exception, of course, was with respect to income where the high marginal tax rates of high-income families made the income exclusion more valuable.

In sum, despite the predictable variation across these different types of families in terms of their medical expenses and insurance claims, their health insurance premiums and out-of-pocket medical expenses tended to vary much less. Notice, too, that there was rather little connection between the amount of the tax subsidy and a family's average medical expenses. The most striking example of the equalization of medical and insurance expenses is shown by the comparison of families with and without a person having an activity limitation. On average, there was a \$1,260 difference between these families in their total expenses, an \$830 difference in their health insurance benefits, a \$200 difference in out-of-pocket medical expense, a \$40 difference in family-paid premiums, a \$140 difference in total premiums, and a \$7 difference in the tax subsidy.

The first two columns of table 3B summarize these patterns in terms of the average difference between a family's premiums and its insurance benefits. Families with members nearing retirement age paid out about \$200 less on their health insurance in relation to their benefits. The difference between families with a member limited in activity and other families was almost \$700 in the difference between premiums and benefits. Although the difference between premiums and benefits was less for single women than single men, this was mainly the result of the more expensive coverage held by men and not the added benefits received by women. Similarly, families with older members received slightly more benefits for significantly lower premiums, accounting for their lower net outlays.

The effects shown in part B of the tax subsidy on outlays for medical care and health insurance across family incomes are particularly worth noting. Family medical expenses, health insurance benefits, and health insurance premiums increased rapidly with respect to income at low levels, then leveled off somewhat, and eventually declined among families with incomes of \$50,000 or more (see table 3A). Yet, because premiums varied more than benefits, the difference between premiums and benefits increased with income. That is to say, richer families paid more for insurance relative to the benefits they received. However, when the regressive nature of the tax subsidy is taken into account, the difference between premiums and benefits was essentially horizontal across income levels. Families at all levels of income enjoyed essentially the same net benefits from the insurance system.

#### Discussion

The information just presented shows the type and breadth of insurance coverage for people with employment-related insurance, the incremental benefits associated with incremental expenditures on insurance, and the magnitude and direction of transfers between various subpopulations associated with our present system of employment-related insurance.



In this section, we consider the equity and efficiency implications of these findings for the types of changes proposed in cost-containment policies that would affect the structure of private health insurance.

One of the purposes of this legislation is to make consumers more aware of the insurance they are purchasing by having them use aftertax dollars rather than before-tax dollars for insurance above the taxfree ceiling. While elsewhere we have predicted the reductions in health insurance premiums that would be associated with different levels of the tax cap, the information discussed above allows us to translate those reductions into different patterns of insurance coverage that could be expected to occur.

Judging from the benefits now purchased by employees who spend the most on health insurance, compared to others, the reduction in premiums brought about by taxing employer-paid premiums is most likely to affect coverage for more discretionary health expenses such as dental and vision benefits than for hospital care. Such a change would probably not have much of an effect on major medical coverage for high expense, low probability illnesses (where the gains from insurance are greatest). Nor, unless the ceiling on tax-free employer premiums is fairly low or the response in terms of a reduction in premiums is great, would the comprehensiveness of hospital benefits be greatly affected, although it is expected that there might be some effects on hospital benefits. Employees with less expensive insurance policies were more likely to have had a deductible for hospital services, in addition to less generous reimbursement levels, than others. It appears, though, that the greatest effect of a reduction in premiums would be a reduction in coverage for dental services, vision and hearing care, routine physician visits, and other relatively less costly services. Without the tax subsidy, one would expect more employees to forgo these benefits, as employees who now buy less insurance apparently choose to do. These also appear to be services where expenditures are more discretionary (see, for example, the demand elasticities estimated by Newhouse and Phelps [1976] and Manning and Phelps [1979]). Because the probability of use is also high for these services, reduction of the tax subsidy would indeed target those areas where the benefits of insurance are least likely to outweigh its direct and indirect costs.

While the expected effects of a tax on employer-provided health insurance can be seen directly by examining the benefits individuals receive for their insurance dollars, the consequences of our present, predominantly single-choice insurance system are more complex. An analysis of the effects of mandating more health insurance options must consider the issue of adverse selection and the transfer of income across different groups of the population. We believe that the proposed changes in policies regarding employer-paid insurance coverage will result in purchases of insurance which more accurately reflect the costs and benefits of insurance, but will also have their distributional consequences. In order to fully evaluate these proposals, it is important to understand the features which characterize an efficient and equitable insurance system as identified in Pauly (1974, 1980), Arrow (1963, 1976), Feldstein (1973), Feldstein and Friedman (1977), and Rothschild and Stiglitz (1976).

The security provided by insurance is most valuable when the potential loss is great. Under such circumstances, the certain expense of the insurance premium is far preferable to the alternative risk of a disastrously large outlay of income (Friedman and Savage 1948). The gains from insurance also increase as the probability of a given loss declines, because a smaller premium is required to cover the anticipated losses of the insurance pool. Yet, no matter how small the risk or how likely the probability of the loss, risk-averse individuals will always benefit from complete insurance against all risks if it is available to them at a cost which averages their potential loss without insurance over the entire group (i.e., an actuarily fair price). For example, at a cost of \$16, the gain from insuring against an 80 percent chance without insurance of a \$20 physician visit might only amount to a few cents, compared to the security gained by paying \$10 for insurance against a 0.1 percent chance of a \$10,000 hospital admission. But the added security is still worth something.

Unfortunately, health insurance cannot be made available on such favorable terms. Offsetting these benefits of insurance are the costs of insurance. First, there are costs associated with collecting premiums, paying claims, and compensating firms for administering the insurance system, which average about 10 percent of total premiums for group policies (Carroll and Arnett 1979). Because of these transaction costs, small losses are not worth insuring. Since the potential loss is small, the gains in terms of security are outweighed by the costs of providing the insurance. If administrative costs are exacerbated by the number of claims, then it is also worthwhile to eliminate small, high-frequency claims which clutter up the system.



Second, and more significant than the transaction costs, insured individuals will not incur the same medical expenses as those without insurance (Pauly 1968). Because insurance lowers the cost to a patient of obtaining medical services, both patients and providers have less reason to refrain from marginally beneficial use of the health care system. They also have less reason to worry about the reasonableness of the charges. Restraint on the part of any one individual, given no assurance that other people in the insurance group will behave similarly, can have little or no effect on that person's premiums. The expenses of the insurance pool consequently include expenditures on services that its members would not purchase if they had to pay the full cost of these services directly.

The result of the administrative costs and the increased demand for health services associated with insurance is that individuals spend more for routine medical care if they pay for it with insurance. The current tax system which subsidizes the purchase of employer-provided insurance offsets some of these increased costs, at least for the individual family. This means that for many families it is cheaper to prepay for medical care through insurance than to pay for the medical care directly. However, this form of prepayment is not cheaper for society as a whole.

Thus, the changes associated with limiting the tax-free nature of employer-provided insurance are likely to result in a more efficient insurance system by discouraging the costly practice of purchasing routine health services through the insurance system, a practice that also distorts expenditures on less routine types of care because of the comprehensive benefit structure that results. In particular, it appears that a reduction in premiums will encourage consumers to buy health insurance policies with more cost-sharing to control the distortions caused by insurance and to eliminate coverage for some less expensive and more discretionary health services altogether.

While the resulting insurance system would be more efficient, the effect on total expenditures for health care is less certain. The direct, immediate effect may not be large. The data presented here suggest that changes in the tax treatment of employer-provided health insurance will have a significant impact on some characteristics of health insurance benefits, particularly those associated with less expensive, more routine services, but may not radically change the coverage for hospital care now bought by consumers. A limited increase in cost-sharing for hospital care is likely to result from the proposed policy, with resulting gains from more efficient use of hospitals in terms of short stays. But a significant increase in cost-sharing for major hospital expenses cannot be expected from likely changes in tax policy. Protection against catastrophic expenses is one of the major purposes of insurance, so it is appropriate that benefits to cover extraordinarily high medical expenses should be maintained or even extended as an important element of any health insurance plan. Yet, these benefits have important implications for total health care expenditures, since hospital costs are their largest single component and small increases in cost-sharing for hospitals cannot be expected to control the expenses associated with the increasingly sophisticated treatment of patients with major illnesses. Policy makers may consequently need to consider additional avenues of health care policy to deal more directly with hospital expenditures.

The secondary effects of a change in tax policy, however, could be much greater than the direct effects. The introduction of a tax cap could serve as a catalyst for a variety of structural changes in the health care market as well as increasing the general level of costconsciousness on the part of both physicians and patients. Furthermore, increased levels of cost-consciousness initiated by a change in tax policy might facilitate the adoption of some of the innovative financing and delivery mechanisms currently under discussion.

The second policy change associated with some of the procompetitive legislation, requiring employers to offer more choices to their employees regarding the amount of insurance they wish to purchase, will also have important consequences. Although this analysis considers only one aspect of the possible response to such a policy, some important insights into this issue can be gained from the comparison of health insurance premiums and benefits, medical expenses, and tax benefits for various individuals and families enrolled in employment-related groups. In particular, the data presented here show that there is a systematic transfer of income from certain types of families to others under the present system of insurance. Although it is in the very nature of health insurance that income is transferred between those whom unpredictable events determine to be healthy or sick, under the current system different groups who face predictably different risks are now locked into buying the same insurance at the same premium. As a result, better risks have more insurance than the costs and benefits warrant. Furthermore, given the insurance, they have every incentive then to make use of the benefits it offers.

Variations in Health Insurance Coverage

On the other hand, one of the advantages of the current system is that poorer risks do not have to bear the full cost of their higher expected expenses. Now, for example, older employees and those whose families include someone with an activity limitation systematically receive more benefits in relation to their premiums. If the availability of choices allows younger, healthier families to form their own separate insurance pool, families who expect to have higher medical expenses will either pay more for their coverage and/or settle for less insurance and the possibility of higher out-of-pocket expenses. Thus, although the introduction of multiple choices within employer groups would result in a more efficient health insurance system, some problems may arise as a result of such restructuring. The purpose of this analysis is not to recommend one system of insurance over another, but rather to make more explicit the transfers of income that are currently occurring. It is important to recognize that the current system results in systematic transfers between subgroups working for a given employer. This raises the question of whether this is the best way to compensate predictably higher risk individuals. Perhaps these types of transfers should be distinguished, at least conceptually, from the transfers between the unpredictably healthy and the unpredictably sick under any health insurance plan.

More generally, who should bear the burden of the *predictably* higher medical expenses of, say, the chronically ill or the elderly? And, is it best to redistribute these expenses by means of a single-option health insurance system? The costs of the single-option approach are the distorted expenditures of the low-risk population and the potential inequities of an implicit subsidy which is not specifically based on ability to pay. Nor are all differences in expected utilization or insurance choices a matter of difference in the risk of ill health. This may also be a matter of individual preference, reflecting different employees' willingness to bear risk, their decision to have children, their attitudes toward using health services, and their ability to pay.

Perhaps the question comes down to whether or not the same institutional arrangement should do double duty for two different kinds of risk: the risk of unpredictable medical expenses that vary from year to year in the general population, and the risk of becoming one of the high-risk individuals who can always expect to have unusually high medical expenses. Community rating, which has characteristics similar to a single-option system, has been described as insurance against the risk of being reclassified into a different risk category (Arrow 1963). Medicare and disability insurance programs already make special provisions for some of the most seriously disadvantaged individuals in the latter group. The remaining disparities may not be more serious than the costs of other differences in natural advantage that individuals are allowed to bear. However, if some employees are to be compensated for their health risks, then explicit compensation mechanisms like tax credits for excessive out-of-pocket expenses or actuarily based tax credits for health insurance premiums (Ginsburg 1981) are likely to be more efficient and equitable than continued reliance on single-option benefit plans.

#### Appendix: Technical Notes

The National Medical Care Expenditure Survey (NMCES) data on insurance are described in S. Cohen and P. Farley (1984). The data are derived from the policies of the 14,000 households who were interviewed in 1977. The collection of these policies from employees, insurance companies, and other sources of the households' private health insurance was undertaken as a follow-up to the main survey. With appropriate weights, NMCES provides detailed national estimates for the civilian noninstitutionalized population of the use of health services, health expenditures, and health insurance coverage. We analyze the data from the survey in terms of these national estimates, incorporating the adjustments for nonresponse and nonrandom sample design reflected in the weights.

Because the numbers in table 2 and others which we present are based on a survey, they are estimates of the true population parameters which are subject to a standard error. The underlying sample size for table 1 is 13,916, for table 2 is 5,994 and for table 3 is 5,792. All differences identified in the discussion are statistically significant at a 5 percent level of significance. Because NMCES is a complex rather than a simple random sample, the standard errors were not estimated by conventional means.

Basic benefits, which would have provided the person's first-dollar coverage, were considered for hospital or physician services if there were any. The deductible which is shown may have related specifically to expenses associated with the particular service, or to major medical coverage under which the service was insured. The deductible for



individuals with multiple policies was defined as the lowest deductible, including zero, among their different plans. Coinsurance rates were defined as the share of the next dollar of expense, after the deductible was satisfied, that an individual would pay for a semiprivate hospital room or a physician office visit. Where a policy actually specified some other type of benefit (e.g., an allowance per day or visit, or a copayment), a coinsurance rate was constructed by assuming a \$20 fee for an office visit or a \$90 semiprivate hospital room charge. The former figure is based on the NMCES national estimate of the mean charge for a visit without tests or diagnostic procedures; the latter comes from a 1977 survey conducted by the Health Insurance Association of America (1977). Days of basic coverage for hospital care were converted from dollars of coverage, where necessary, by assuming a \$90 expenditure per day and taking into account combined maximums for room and board and miscellaneous expenses as appropriate. Because different major medical maximums sometimes apply to different services, the major medical maximum was defined as the maximum benefit for hospital, physician, and outpatient ancillary services, and whatever other services were included under that maximum. The out-of-pocket limit was defined as the maximum liability specified for the majority of services under the plan.

Total medical expenses as described in table 3 include expenses for ambulatory services provided by physicians and other health care providers, hospital services, inpatient services, dental services, prescribed medicines, eyeglasses and contact lenses, and medical equipment and supplies. In interpreting the figures shown in table 3, note that a few families with extraordinarily high expenses have a great effect on insurance claims that is difficult to capture accurately with survey estimates. Although the NMCES sample is quite large for a survey of its kind, it is not large enough to estimate very precisely the extreme right-hand tail of the expenditure distribution or the claims actually paid in 1977.

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Address correspondence to: Amy K. Taylor, Ph.D., Senior Economist, National Center for Health Services Research/DHHS, Park Bldg.—Stop 3-50, 5600 Fishers Lane, Rockville, MD 20857.

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