

## USE AND COST EFFECTIVENESS OF SMOKING-CESSATION SERVICES UNDER FOUR INSURANCE PLANS IN A HEALTH MAINTENANCE ORGANIZATION

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**ABSTRACT**

**Background** Lack of information about the effect of insurance coverage on the demand for and use of smoking-cessation services has prevented widescale adoption of coverage for such services.

**Methods** In a longitudinal, natural experiment, we compared the use and cost effectiveness of three forms of coverage with those of a standard form of coverage for smoking-cessation services that included a behavioral program and nicotine-replacement therapy. The study involved seven employers and a total of 90,005 adult enrollees. The standard plan offered 50 percent coverage of the behavioral program and full coverage of nicotine-replacement therapy. The other plans offered 50 percent coverage of both the behavioral program and nicotine-replacement therapy (reduced coverage), full coverage of the behavioral program and 50 percent coverage of nicotine-replacement therapy (flipped coverage), or full coverage of both the behavioral program and nicotine-replacement therapy.

**Results** Estimated annual rates of use of smoking-cessation services ranged from 2.4 percent (among smokers with reduced coverage) to 10 percent (among those with full coverage). Smoking-cessation rates ranged from 28 percent (among users with full coverage) to 38 percent (among those with standard coverage). The estimated percentage of all smokers who would quit smoking per year as a result of using the services ranged from 0.7 percent (with reduced coverage) to 2.8 percent (with full coverage). The average cost to the health plan per user who quit smoking ranged from \$797 (with standard coverage) to \$1,171 (with full coverage). The annual cost per smoker ranged from \$6 (with reduced coverage) to \$33 (with full coverage). The annual cost per enrollee ranged from \$0.89 (with reduced coverage) to \$4.92 (with full coverage).

**Conclusions** Use of smoking-cessation services varies according to the extent of coverage, with the highest rates of use among smokers with full coverage. Although the rate of smoking cessation among the benefit users with full coverage was lower than the rates among users with plans requiring copayments, the effect on the overall prevalence of smoking was greater with full coverage than with the cost-sharing plans. (N Engl J Med 1998;339:673-9.)

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**A**LTHOUGH cigarette smoking is a leading cause of premature morbidity and mortality in the United States, insurance coverage for smoking-cessation services is uncommon.<sup>1</sup> Lack of information about the effect of insurance coverage on the demand for and use of effective smoking-cessation services has prevented widescale adoption of coverage for such services.<sup>2</sup> The cost effectiveness of smoking-cessation interventions as compared with other medical services is well documented.<sup>3-5</sup> The few studies of the effects of out-of-pocket cost on the use of nicotine-replacement therapy have focused on nicotine gum, and the results suggest that offering it at a reduced cost or at no cost increases the number of prescriptions for the gum that are filled, the amount of gum that is used, and the rate of smoking cessation.<sup>6-8</sup> To our knowledge, no studies have examined the effects of various cost-sharing plans for coverage of behavioral modification and nicotine-replacement therapy combined.

There is a substantial literature on the effects of cost sharing on the use of health care services in general. A number of studies have shown that the use of medical services is reduced when copayments are required.<sup>9-11</sup> Understanding the reductions in use that are associated with cost sharing is an important consideration in making decisions about coverage of smoking-cessation services. Although the provision of free services to all smokers may be attractive, it is possible that they attract less motivated smokers than services for which copayments are required, thus diluting their effectiveness. We studied the use and cost effectiveness of various forms of coverage for smoking-cessation services.

**METHODS**

The study was conducted at Group Health Cooperative of Puget Sound (GHC), a consumer-owned health maintenance organization that provides health care to over 450,000 residents of western Washington.

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## Study Design

We used a natural experiment to compare the use and cost effectiveness of three forms of insurance coverage with those of a standard form of coverage. The plans were provided to specific groups of employees. The employees did not select their coverage.

The smoking-cessation services for all the plans included a behavioral program and nicotine-replacement therapy. GHC's behavioral program, called Free and Clear, was developed and evaluated in a randomized trial funded by the National Cancer Institute.<sup>12</sup> The program is administered by GHC's Center for Health Promotion. Coverage for nicotine-replacement therapy was contingent on enrollment in the behavioral program. The four plans differed according to the user's out-of-pocket costs. The standard plan required a 50 percent copayment for the behavioral program, with no additional charge for nicotine-replacement therapy other than the usual copayment of \$5 per prescription. The three other plans offered alternative benefits: one plan provided reduced coverage (a 50 percent copayment for both the behavioral program and nicotine-replacement therapy), another plan required no copayment for the behavioral program but required a 50 percent copayment for nicotine-replacement therapy (flipped coverage), and the third provided full coverage for both the behavioral program and nicotine-replacement therapy. Copayments for the behavioral program were made at the time of registration; copayments for nicotine-replacement therapy were made at the pharmacy when the prescription was filled.

The natural experiment dictated that we use two different study designs. For the employee groups with full or flipped coverage, standard coverage was provided for one year, followed by the alternative form of coverage. We compared standard, full, and flipped coverage with a three-group, "pre-post" design. The group with the reduced-coverage plan received no coverage for smoking-cessation services before the plan was introduced. The study design for the analysis of the standard and reduced plans was therefore a simple comparison during the same period.

The costs to the benefit users were \$42.50 for the behavioral program under 50 percent coverage, \$85 for nicotine-replacement therapy under 50 percent coverage (including the cost of one prescription and one refill for nicotine gum or a transdermal patch), and \$10 for nicotine-replacement therapy under full coverage (reflecting the \$5 copayment required for one prescription and one refill).

Use of smoking-cessation services was tracked for two years in all groups except for the reduced-coverage group, which could be tracked for only one year. Users of the services were contacted six months after use to determine smoking-cessation rates.

## Employee Groups and Time Line

In January 1993, GHC began offering standard coverage for smoking-cessation services to most enrollees. No enrollees had coverage before that time. We selected one large group of employees for the analysis of use of services under the standard benefit. The GHC marketing department designed and rated the three alternative coverage plans and selected employers with large groups of employees with which to negotiate them. The group studied for the standard form of coverage consisted of employees of the federal government. The reduced-coverage plan was negotiated with the state of Washington employee group. The state group was chosen for this comparison because its sociodemographic characteristics were known to be similar to those of the federal group. The reduced benefit went into effect in July 1993; state employees received no coverage of smoking-cessation services before that date.

The plans offering flipped and full coverage were introduced to selected groups in January 1994. The flipped coverage was offered to employees of the Boeing Company. Full coverage was offered to four groups: GHC employees, employees of the city of Seattle, and employees of King County and Pierce County in Washington. In 1993 all these groups, as well as employees of the federal government, had the standard benefit. In 1994, the federal group

continued to receive standard coverage, and the other groups received alternative coverage.

## Study Population

The study population for the analysis of use of services consisted of all adults, 18 to 64 years old, who were enrolled in GHC during all of 1993 and 1994 through one of the employers listed above. Sample sizes were as follows: standard coverage, 26,983; reduced coverage, 34,455; flipped coverage, 10,068; and full coverage, 18,499.

## Automated Data Collection

Data on use of the behavioral program were obtained from automated files maintained by the Center for Health Promotion. Data on use of nicotine-replacement therapy (nicotine gum or transdermal patches) were obtained from GHC's automated pharmacy system.<sup>13</sup>

## Survey Data Collection

Two telephone surveys were conducted. For both surveys, potential respondents received a letter in advance informing them of the survey and providing a number to call if they did not want to participate. Calls were made a week after the letter was mailed, and the interviewers obtained oral consent to complete the survey.

A survey was performed at the start of the study to compare the characteristics of GHC enrollees in the four coverage groups, including demographic characteristics, tobacco use, alcohol use, exercise, diet, seat-belt use, perceived health status, and perceived stress. To obtain completed data from at least 200 enrollees in each coverage group, four random samples of roughly 300 enrollees who were insured through the relevant employer contracts were selected. A total of 863 enrollees provided complete data at base line: 217 receiving standard coverage, 215 receiving reduced coverage, 204 receiving flipped coverage, and 227 receiving full coverage; the response rates were 74 percent, 74 percent, 70 percent, and 66 percent, respectively.

The survey of benefit users included members of the four study groups who used smoking-cessation services during a six-month period beginning with the sixth month that the benefit was offered. A benefit user was defined as a person who registered for the behavioral program (and paid for it if a copayment was required). Benefit users were contacted by telephone six months after the initial use of the benefit. Data were obtained on demographic characteristics, previous and current status with respect to smoking, and satisfaction with the services. To encourage accurate reporting of smoking status, survey participants were told in advance that a saliva sample might be collected to verify smoking status.<sup>14</sup>

The numbers of benefit users identified in the four groups during the six-month period were as follows: standard coverage, 158; reduced coverage, 113; flipped coverage, 27; and full coverage, 130. The total number of benefit users surveyed was 345, and the overall response rate was 81 percent. The numbers of respondents and response rates for the four groups were as follows: standard coverage, 130 (82 percent); reduced coverage, 94 (83 percent); flipped coverage, 23 (85 percent); and full coverage, 98 (75 percent).

## Estimates of the Prevalence of Smoking

In 1991, a survey of a random sample of 5903 GHC enrollees (age range, 18 to 64 years) was conducted as part of a population-based study of smoking-cessation interventions.<sup>15</sup> A total of 2564 participants in this survey were enrolled in the current study. We used the data from these respondents, pooled with data from the survey of enrollees in the current study, to estimate the prevalence of smoking in the four benefit groups (Table 1).

## Cost-Effectiveness Analysis

Cost effectiveness was calculated as the average cost per benefit user who stopped smoking. For each of the four coverage plans,

**TABLE 1. DEMOGRAPHIC CHARACTERISTICS AND PREVALENCE OF SMOKING AMONG ENROLLEES IN THE FOUR COVERAGE GROUPS.**

CHARACTERISTIC	STANDARD COVERAGE	REDUCED COVERAGE	FLIPPED COVERAGE	FULL COVERAGE*	TOTAL
No. of enrollees	26,983	34,455	10,068	18,499	90,005
No. completing base-line survey	217	215	204	227	863
Mean age (yr)	41	41	43	41	42
Female sex (%)	51	49	51	60	53
White race (%)	83	83	90	76	83
Employed full or part time (%)	82	89	74	87	83
Married (%)	72	70	75	69	71
College graduate (%)	33	54	30	49	42
Current smoker (%)†	23	18	18	15	19
Smoking ban at work site (%)‡	97	96	100	94	96
Smoking ban strictly enforced (%)‡	91	85	88	83	87

\*Estimates for the full-coverage group are weighted to account for oversampling in some employee groups.

†Smoking rates were estimated from base-line surveys and a 1991 population-based survey.<sup>15</sup> The estimates were based on data from 968 patients in the standard-coverage group, 1110 in the reduced-coverage group, 646 in the flipped-coverage group, and 703 in the full-coverage group.

‡Data are from the survey of benefit users at six months.

we computed the total cost of the benefit and divided it by the estimated number of benefit users who quit. The cost per user who quit was assessed in three ways: total cost, cost to the user, and cost to the health plan after cost sharing.

Cessation of smoking was defined as abstinence from smoking for seven days as of six months after enrollment in the behavioral program. The cost of nicotine-replacement therapy was based on data provided by GHC's pharmacy services and includes drug, personnel, and overhead costs. The cost of the behavioral program was based on data provided by the Center for Health Promotion, which administers the program. We computed the cost per user as the total costs in 1993 and 1994 divided by the total number of benefit users in those years. The cost of developing the behavioral program and the cost of marketing, rating, and implementing the coverage plans were not included.

**Statistical Analysis**

Differences in demographic characteristics among the study groups were assessed with chi-square tests for binary variables and t-tests and analysis of variance for continuous variables. Differences in the percentages of smokers using the benefit were analyzed by logistic regression. Using data on all enrollees in the groups, we constructed models for analyses of a group effect, a period effect (year 1 vs. year 2), and an effect of an interaction between group and period. A significant interaction effect indicated that changing the coverage had a significant effect on the rate of use. Separate analyses were performed to compare standard coverage with flipped coverage and standard coverage with full coverage, with the use of models adjusted for age and sex.

For the analysis of rates of use in the standard-coverage and reduced-coverage groups, there was no precoverage period, so the analysis had to account for differences in the groups' smoking rates. We used an analysis similar to that used in case-control studies; for each group, we computed the ratio of the number of benefit users (cases) to the number of smokers identified in the population-based surveys (controls).<sup>16</sup> After adjusting for the different survey sampling rates in the standard- and reduced-coverage groups, we determined whether the ratio of these two ratios (which is an odds ratio) was significantly different from 1.0, using logistic regression.

All comparisons of the percentages of enrollees who received

**TABLE 2. RATES OF USE OF SMOKING-CESSATION SERVICES UNDER STANDARD- AND REDUCED-COVERAGE PLANS.**

USE OF SERVICE*	RATE OF USE†				DIFFERENCE	P VALUE
	STANDARD COVERAGE		REDUCED COVERAGE			
	no.	%	no.	%		
Total use	323	5.3	264	4.2	-1.1	0.09
Use without NRT	67	1.1	82	1.3	0.2	0.33
Use with NRT	256	4.2	182	2.9	-1.3	0.01
Behavioral-program users receiving NRT		79.0		69.0	-10.0	0.004

\*NRT denotes nicotine-replacement therapy (patch or gum).

†Use was assessed during the initial 12-month period in which either coverage was available. The rates are based on an estimated 6133 smokers in the standard-coverage group and 6253 in the reduced-coverage group.

nicotine-replacement therapy were performed with standard chi-square tests.

**RESULTS**

**Characteristics of Enrollees**

Fifty-three percent of the enrollees were women, and the average age was 42 years. Nearly three quarters of the enrollees were married, over 40 percent were college graduates, and over 80 percent were white. As indicated in Table 1, there were some demographic differences among the four coverage groups. The overall proportion of smokers, as estimated from the two surveys of enrollees, ranged from 15 percent to 23 percent (Table 1).

**Use of the Smoking-Cessation Benefit**

**Reduced versus Standard Benefit**

The analysis of the reduced versus the standard benefit examined the effect of adding a 50 percent copayment for nicotine-replacement therapy to the standard coverage. As indicated in Table 2, the proportion of smokers who used the benefit differed in the two plans, with 20 percent fewer smokers with reduced coverage using the benefit (P=0.09). Among the smokers who used the benefit, the proportion who filled prescriptions for nicotine gum or transdermal patches was lower in the reduced-coverage group.

**Flipped versus Standard Benefit**

The analysis of the flipped versus the standard benefit examined the effect of requiring a copayment for nicotine-replacement therapy rather than for the behavioral program. Reversing the copayment require-

ment resulted in an increase of 1.8 percentage points in the use of smoking-cessation services (P=0.007), with most of the increase due to greater use of the behavioral program without nicotine-replacement therapy (P=0.02). The rate of use for both services combined did not differ significantly from the rate in the standard-coverage group (Table 3).

**Full versus Standard Benefit**

The analysis of the full versus the standard benefit examined the effect of providing services without any copayments except those required for prescriptions. Removing the copayments resulted in a tripling of the overall rate of use of smoking-cessation services (P=0.001). This overall increase resulted from greater use of the behavioral program alone (P=0.001), as well as from greater use of the behavioral program plus nicotine-replacement therapy (P=0.001) (Table 3).

**TABLE 3. RATES OF USE OF SMOKING-CESSATION SERVICES UNDER STANDARD-, FLIPPED-, AND FULL-COVERAGE PLANS.\***

USE OF SERVICES AND COVERAGE	RATE OF USE					P VALUE†
	YEAR 1 (1993)		YEAR 2 (1994)		CHANGE FROM YEAR 1 TO YEAR 2	
	no.	%	no.	%		
Total use						
Standard	323	5.3	212	3.5	-1.8	
Flipped	65	3.7	65	3.7	0	
Full	192	6.9	321	11.6	4.7	
Flipped vs. standard					1.8	0.007
Full vs. standard					6.5	0.001
Use without NRT						
Standard	67	1.1	62	1.0	-0.1	
Flipped	9	0.5	23	1.3	0.8	
Full	48	1.7	129	4.7	3.0	
Flipped vs. standard					0.9	0.02
Full vs. standard					3.1	0.001
Use with NRT						
Standard	256	4.2	150	2.4	-1.8	
Flipped	56	3.2	42	2.4	-0.8	
Full	144	5.2	192	6.9	1.7	
Flipped vs. standard					1.0	0.12
Full vs. standard					3.5	0.001
Behavioral-program users receiving NRT						
Standard		79.0		71.0	-8.0	
Flipped		86.0		65.0	-21.0	
Full		75.0		60.0	-15.0	
Flipped vs. standard					-13.0	0.11
Full vs. standard					-7.0	0.40

\*In year 1 (the base-line year), the three groups had identical coverage (i.e., standard coverage) for smoking-cessation services. In year 2, the standard-coverage group continued to have standard coverage, whereas in the flipped-coverage group the copayment was flipped from the behavioral program to nicotine-replacement therapy (NRT), and in the full-coverage group, the copayment for the behavioral program was removed, leaving only a nominal prescription copayment for NRT (\$5). The rates are based on an estimated 6133 smokers in the standard-coverage group, 1769 in the flipped-coverage group, and 2767 in the full-coverage group.

†The P values are for the comparison of the change in rates of use from year 1 to year 2 in the flipped-coverage or full-coverage group with the change in the standard-coverage group (from a logistic-regression analysis adjusted for age and sex).

**Rates of Smoking Cessation among Benefit Users**

Smoking-cessation rates ranged from 28 percent to 38 percent in the four benefit groups (Table 4). Adjustment for age, sex, marital status, employment status, education, and race had little effect on the rates. The rate was highest in the standard group and lowest in the full-coverage group, a difference that approached statistical significance (P=0.09). The rates in the other two benefit groups did not differ significantly from that in the standard-coverage group.

**Cost Effectiveness**

The average total cost per benefit user who stopped smoking ranged from \$928 for the standard benefit to \$1,192 for the full benefit, a difference of 28 percent (Table 4). This difference was almost entirely due to differences in the estimated rates of smoking cessation among the four groups. From the point of view of a health care insurer, the cost to the health plan per user who stops smoking may be of most interest. This cost was almost identical under standard, reduced, and flipped coverage (because of higher average levels of cost sharing by benefit users under flipped and reduced coverage). The cost to the plan per user who quit smoking was about 50 percent greater with full coverage than with the other plans (Table 4).

**Summary**

After adjusting for differences in rates of use during the first year of coverage, we estimated that 10 percent of smokers per year would use smoking-cessation services under full coverage, as compared with 2.4 percent under reduced coverage (Table 5). Even with a slightly lower smoking-cessation rate under full coverage, we estimated that at least one and a half times as many smokers would quit per year under full coverage as under any of the other three coverage plans. This increase would cost a health plan about \$2.64 to \$4.03 more per enrollee per year (or \$0.22 to \$0.34 per enrollee per month).

**DISCUSSION**

The Agency for Health Care Policy and Research recommends that health care insurers “include [effective] smoking cessation treatments (both pharmacotherapy and counseling) . . . as paid services for all subscribers.”<sup>17</sup> Our study addressed important issues related to the demand for smoking-cessation services and their cost effectiveness.

Certain features of the managed care organization in which this study was performed must be considered in interpreting the results of the study. First, GHC had an effective, centralized behavioral program for cessation of smoking that was well established when coverage of smoking-cessation services went into effect. It is unclear what the study’s results might have been if smokers had been free to choose

**TABLE 4. SMOKING-CESSATION RATES AND COST PER BENEFIT USER WHO STOPPED SMOKING.\***

COVERAGE	CESSATION RATE AMONG BENEFIT USERS %	P VALUE†	AVERAGE COST PER BENEFIT USER WHO QUIT‡		
			TOTAL	COST TO USER	COST TO HEALTH PLAN\$
Standard	38		928	130	797
Reduced	31	0.23	1,127	326	801
Flipped	33	0.68	1,036	166	870
Full	28	0.09	1,192	21	1,171

\*The respective numbers of benefit users and respondents to the survey of users in the four coverage groups were as follows: standard, 158 and 130; reduced, 113 and 94; flipped, 27 and 23; and full, 130 and 98.

†The P values are for the comparison with the standard-coverage group and are based on a chi-square test with 1 df. Nonrespondents were classified as smokers.

‡The average cost was calculated as the average cost per benefit user divided by the cessation rate among benefit users.

\$If one assumes that 5 percent of benefit users would have quit smoking on their own (the background cessation rate), then the cost to the health plan per user who quit would be higher: standard coverage, \$918; reduced coverage, \$955; flipped coverage, \$1,025; and full coverage, \$1,425.

among programs in the community at large. Second, when this study was implemented, smoking was the first priority for prevention efforts at GHC, and considerable care was taken to alert health care providers about the availability of the benefit and provide a streamlined method of referring smokers to the services. Finally, GHC’s decision to make coverage of nicotine-replacement therapy contingent on participation in a behavioral program made us unable to address the demand for and cost effectiveness of nicotine-replacement therapy alone.

There were also some limitations in the design of the study. It was not a randomized trial. Although the employers (and employees) did not choose the coverage plans, there may be factors that differed among the employers (or employees) that influenced the use of services. Fortunately, for the comparisons of flipped and full coverage to standard coverage, each employee group served as its own control, so such differences were unlikely to alter the conclusions. The third comparison involved similar groups of government employees; these groups have been used in other studies of the effects of different coverage plans on use of health care services.<sup>9,18,19</sup>

The rates of use of smoking-cessation services in our study are similar to population-based rates of use in other settings, such as work sites, but have not, to our knowledge, been achieved previously in a large population of health plan members. If we assume that at any given time approximately 20 per-

TABLE 5. SUMMARY OF ESTIMATED EFFECTS OF THE FOUR COVERAGE PLANS.

COVERAGE	SMOKERS WHO USED BENEFIT IN YEAR 2*	BENEFIT USERS WHO QUIT	SMOKERS WHO WOULD QUIT PER YEART	COST TO PLAN PER BENEFIT USER	ANNUAL COST PER SMOKER†	ANNUAL COST PER ENROLLEE§
		percent			dollars	
Standard	3.5	38	1.3	302	11	1.59
Reduced	2.4	31	0.7	248	6	0.89
Flipped	5.3	33	1.7	287	15	2.28
Full	10.0	28	2.8	328	33	4.92

\*Except for the reduced-coverage group, the estimated percentage of smokers using the benefit in year 2 equals the observed rate of use in year 2, with an adjustment for any differences in rates of use in year 1 (when the standard-, flipped-, and full-coverage groups all had the same coverage). Year 2 rates were adjusted as follows: estimated year 2 rate for flipped or full coverage = observed year 2 rate for flipped or full coverage + (year 1 rate for standard coverage – year 1 rate for flipped or full coverage). For the reduced-coverage group, the year 2 rate was adjusted as follows: estimated year 2 rate = observed year 1 rate for reduced coverage + (year 1 rate for standard coverage – year 2 rate for standard coverage).

†The percentage of smokers who would quit per year as a result of the benefit was estimated as the percentage of smokers using the benefit times the percentage of benefit users who quit.

‡The annual cost per smoker was calculated as the cost to the health plan per benefit user times the percentage of smokers using the benefit in year 2.

§The cost per enrollee was computed on the assumption of a 15 percent smoking rate for enrollees of all ages, including those under 18 years (which corresponds to roughly a 20 percent smoking rate for adults).

cent of smokers are actually ready to take action (e.g., they plan to quit smoking within the next 30 days<sup>20</sup>), then the estimated 10 percent rate of use under full coverage represents half the smokers who seriously intend to quit smoking.

The cessation rates in our study are also at the high end of the range reported in the literature on cessation of smoking.<sup>17</sup> Although only marginally significant, the difference of 10 percentage points between the cessation rates in the full-coverage group and the standard-coverage group is noteworthy. One possible explanation is that there were differences in the characteristics of the smokers who used the services under different coverage plans (e.g., users who did not have to pay for the services were less motivated than those who had to make copayments).

As integrated systems of health care delivery committed to evidence-based treatment and prevention of disease, managed-care organizations are in a unique position to reduce the burden of disease associated with tobacco use in their patient populations. From the standpoint of disease management,<sup>21</sup> this effort requires a commitment of organizational resources to make smoking-cessation services available. The results of our study provide compelling evidence to support provision of full coverage for smoking-cessation programs. First, with full coverage, an estimated 2.8 percent of smokers stopped smoking per year, as compared with 1.3 percent with standard coverage, 1.7 percent with flipped coverage, and 0.7 percent with reduced coverage. This increase in the annual rate of cessation among smokers with full

coverage can be achieved at a cost of \$328 per benefit user, which is clearly a bargain as compared with the average annual cost of medical treatment for hypertension (\$5,921) or heart disease (\$6,941), which is usually incurred for the life of the patient.<sup>22</sup> Furthermore, on the basis of estimates by Oster et al.<sup>23</sup> and with a 3 percent discount rate, the fully covered smoking-cessation program costs \$883 per year of life saved, which also compares favorably with the cost of treatment for moderate hypertension (\$11,300) or hypercholesterolemia (\$65,511 to \$108,189).<sup>23,24</sup>

Policy decisions regarding coverage for smoking cessation must also take into account the undeniable social benefits of investing resources in coverage of smoking-cessation services. Cessation of smoking reduces exposure to secondhand smoke and associated illnesses. With fewer adult smokers as role models and decreased access to tobacco in the home, another benefit could be a reduction in the rates of smoking among teenagers. Cessation of smoking among young women of childbearing age will result in decreased rates of infant morbidity and mortality.

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