Will Uninsured People Volunteer for Voluntary Health Insurance? Experience from Washington State

ABSTRACT

Objectives. In national and local discussions of health care reform, there is disagreement about whether a national health insurance plan should be mandatory or voluntary. This study describes characteristics of low-income people who were more likely or less likely to be covered by a voluntary plan.

Methods. Survey data were available from an evaluation of Washington State's Basic Health Plan, which offered subsidized health insurance to low-income residents. For those subjects who were eligible and uninsured at baseline, those who joined were compared with those who did not join on a variety of demographic and health-related characteristics.

Results. There were substantial differences between those who did and did not join the Basic Health Plan. Those who did not enroll were generally less well-off, with less education, lower income, and worse health. Many had never had health insurance.

Conclusions. If health care reform results in a voluntary plan, additional measures may be needed to ensure that less advantaged citizens have adequate access to health care. (*Am J Public Health.* 1996;86: 529–532)

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Introduction

One major issue in the debate on health care reform is whether a national health insurance program should be mandatory or voluntary. Little information is available about the characteristics of people who join voluntary plans and, more important, about people who remain uninsured even when health insurance is available. A voluntary health insurance plan must attract those most in need of health services if it is to improve access to care. Our goal in this paper is to provide information about the characteristics of people most and least likely to join a subsidized health insurance plan.

Washington State's Basic Health Plan was started in 1989 as a pilot project to provide subsidized health insurance for low-income people by contracting with managed health care systems. (The plan is described in more detail elsewhere.[1–3]) In 1989, when the first wave of evaluation data on the plan was collected, the benefit package included medical and hospital care while excluding coverage for prescription drugs, mental health care, and vision services. Services for preexisting conditions (except pregnancy) were not covered during the first year of enrollment.

Families were eligible for the program if they lived in a participating managed care plan's service area, had at least one member under age 65 (family members age 65 or older were not eligible), were not eligible for Medicare, and earned less than twice the federal poverty level. (In 1990, the eligibility level was $12 560 for a single person and $25 400 for a family of four.) Participants paid a portion of the monthly premium based on their age, family composition, and income. The average family contribution to the monthly premium was $34.

There is, to our knowledge, no comparative literature about enrollees in programs that provide health insurance for the low-income uninsured. An evaluation of Washington State's Basic Health Plan[1] compared people who were eligible and enrolled with those who were eligible and did not enroll; however, most of those who did not enroll were already insured elsewhere. To address the issue of people who remained uninsured even though subsidized health insurance was available, we used the health plan data to compare *uninsured* people who did and did not enroll in the Basic Health Plan.

This paper examines the program in three counties in which it was first implemented.[1] The plan has since been expanded to all Washington counties as a component of the state's health care reform. It has approximately 48 000 enrollees.

Methods

Evaluation data were collected in 1989 and 1991 from Basic Health Plan enrollees in three counties, and from people in the same counties who were eligible for the plan but did not join. Data on enrollees were obtained in part from information they provided to the plan

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Editor's Note. See related editorial by Link and Phelan (p 471) in this issue.

TABLE 1—Age and Sex of Eligible Uninsured Who Did and Did Not Enroll in Voluntary Health Insurance, Washington State

Age Group, y	Male, % Eligible (n = 613)	Male, % Enrolled (n = 610)	Female, % Eligible (n = 726)	Female, % Enrolled (n = 736)	Combined[a] Odds Ratio	95% Confidence Interval
0–3[b]	9.8	15.7	8.1	14.0	1.29	0.86, 1.93
4–6[b]	7.5	9.7	5.8	8.8	1.08	0.70, 1.67
7–11	13.5	12.3	11.4	8.3	0.63	0.42, 0.95
12–17	11.1	10.5	9.9	7.6	0.66	0.44, 0.99
18–24[b]	16.2	6.2	12.9	8.7	0.41	0.27, 0.61
25–34	16.3	18.9	23.6	21.3	0.77	0.53, 1.12
35–44	14.2	13.8	16.9	17.1	0.77	0.52, 1.13
45–54	7.0	7.5	6.7	8.0	0.88	0.57, 1.36
55–64	4.4	5.4	4.5	6.1	1.00	. . .

Note. "Eligibles" were eligible for the plan but did not enroll.
[a]The combined odds ratio is the odds of enrolling, for subjects in this age group, divided by the odds for those aged 55 to 64 (the reference category). Males and females were combined for these calculations since there were no significant sex effects or interactions between age and sex.
[b]The percentage of subjects in this age category, compared with all other age categories combined, is significantly different for eligibles and enrollees ($P < .05$). Males and females were combined for these significance tests since there were no significant sex effects or interactions between age and sex.

TABLE 2—Distribution of Individuals, by Family Type and Enrollment Status

Type of Family	Eligible, %	Enrolled, %	Odds Ratio	95% Confidence Interval
Male, no dependents[a]	10.6	3.8	0.29	0.20, 0.40
Male + dependents	1.4	1.7	0.97	0.52, 1.81
Female, no dependents	9.2	9.5	0.82	0.63, 1.08
Female + dependents[a]	25.1	20.0	0.64	0.53, 0.77
Couple, no dependents	7.1	6.8	0.76	0.56, 1.04
Couple + dependents[a]	46.6	58.2	1.00	. . .

Note. "Eligibles" were eligible for the plan but did not enroll.
[a]The percentage of subjects in this type of family, compared with all other family types combined, is significantly different for eligibles and enrollees ($P < .05$).

when they enrolled. Since that information was limited, telephone interviews with people who had enrolled approximately 12 months earlier were also conducted in those years. The overall response rate was 76%.

Data about people who were eligible for the plan but did not enroll were obtained at the same time from random-digit dialing surveys in the same three counties, described elsewhere.[4,5] The overall response rate was 84%.

The eligibles were previously compared with the enrollees by using the wave 1 data.[1] Notably, 60% to 69% of the eligibles were already insured, compared with only 18% to 27% of the enrollees. The current paper examines only people who were not insured at baseline. Subjects enrolled in Medicaid were considered to have insurance. Those who did not join the plan thus remained uninsured.

Limiting the analysis to those without insurance reduced the available sample considerably. To improve power, data were combined from all three counties and both survey waves. To remove the "main" effect of county and wave, all eligibles were retained, and the enrollees were then sampled to obtain approximately the same number of enrollees as eligibles for each wave and county combination. In the resulting analytic sample, each county and wave thus had approximately equal influence, and the proportion of the sample enrolling was about 50% for each county and wave. This process left for analysis 2685 subjects, approximately equally distributed by county, wave, and enrollment group.

To compare the previously uninsured enrollees with the uninsured eligibles with respect to sociodemographic factors, access to care, health status, and use of health services, enrollees were compared with eligibles for each variable using *t* tests or chi-square tests as appropriate. Because the number of variables is large and the tables are complex, all that is noted is whether each variable is statistically significant ($P < .05$, 2-tailed). The tables contain sufficient information for interested readers to calculate the actual *P* values. Odds ratios (ORs) are also presented; confidence intervals are shown except for age and family type, where the reference category is arbitrary. A forward selection multiple regression was also performed to see which variables were most predictive of being enrolled, and an analysis of variance was performed to identify first-order interactions between county or wave and the other variables. Results of the multiple regression and the analysis of variance are noted in the discussion section. The comparison of the enrollees with the eligibles has a case–control structure because there are data from a sample of all eligibles and from a different sample of enrollees.

Results

The uninsured enrollees and eligibles did not differ significantly in mean age or in percentage of those who were female. However, there was a highly significant nonlinear relationship between enrollment and age as detected by a chi-square analysis, shown in Table 1. Although there are some apparent differences between males and females, there was not a significant overall interaction between age category and sex, and odds ratios and significance tests are reported for both sexes combined. The enrollee group had a higher prevalence of children aged newborn to 3 years and 4 to 6 years, and fewer young adults aged 18 to 24 years, relative to all other age groups combined. Taking the oldest age group (55 to 64 years) as the reference category, the youngest children had the highest odds ratio (1.29) of joining and the young adults aged 18 to 24 had the lowest (0.41).

Subjects were classified into six family types by the number and sex of adults in the family and the presence or absence of children. Family type was significantly related to being enrolled, based on a chi-square test. Table 2 shows that married couples with dependents were most likely to enroll, whereas single males with

no dependents and members of families consisting of a female head and dependents were significantly less likely to enroll.

Table 3 shows additional demographic characteristics of the enrollees and eligibles. There was not a significant difference in mean age, percentage who were female, or percentage who were White, but most other variables differed significantly between the two groups. Enrollees had significantly larger families, and their family income was more likely to exceed $10 000 per year (OR = 1.41). Enrollees were also more likely to be college educated (OR = 1.98). Adults who enrolled were significantly *less* likely to be employed 20 or more hours per week (OR = 0.44); only 17% of uninsured adults who enrolled were employed full time, as opposed to 33% of uninsured adults who did not enroll. Employers of enrollees were less likely to offer insurance than employers of eligibles. Those who had previously been insured were more likely to enroll, while those who had never had health insurance (33% of eligibles vs 19% of enrollees) were least likely to enroll. This information was available in wave 1 only.

Table 3 also shows the relationship of health status to enrollment in the health plan. People in fair or poor health were significantly less likely to enroll (OR = 0.57). Although the mean number of health conditions (from a list of 21[1]) was not significantly different between the two groups, enrollees had significantly more high blood pressure, ear problems, and pregnant family members but significantly fewer back or spine problems, chronic stomach problems, and mental health problems.

Table 3 also shows the use of health services. People in families who had lower previous use were more likely to join; 64% of enrollees were in families where someone used services in the 3 months prior to baseline versus 71% of eligibles (OR = 0.75). This information also was available for wave 1 only. Once they were enrolled in the plan ("later"), enrollees had fewer outpatient visits and hospital admissions than those who did not enroll, even though they had become insured. This difference in later use of services for visits was marginally significant ($P = .09$, 2-tailed).

Analysis of variance was used to test for first-order interactions between wave (or county) and the other variables. Some significant interactions were detected, but they did not change the overall direction of the effects. It is beyond the scope of this paper to identify all higher-order interactions. The most statistically significant correlates of not being enrolled were being a single male and never having had health insurance.

TABLE 3—Sociodemographic and Health-Related Characteristics of Individuals, by Enrollment Status

	Eligible (n = 1334)	Enrolled (n = 136)	Odds Ratio	95% Confidence Interval
Mean age, y (SD)	24.14 (15.89)	23.77 (17.53)		
% adult[a]	59.67	56.09	0.86	0.74, 1.00
% female	54.22	54.68	1.02	0.88, 1.19
% White	89.66	91.42	1.22	0.95, 1.59
Mean family size[a] (SD)	3.25 (1.70)	3.66 (1.72)		
% family income > $10 000[a]	56.09	64.23	1.41	1.20, 1.64
% any college (adults)[a]	37.63	54.38	1.98	1.61, 2.42
% employed at least 20+ hours/week (adults)[a]	51.81	31.92	0.44	0.35, 0.54
% employer insurance available: employed adults only, W1 (n)	30.73 (207)	21.34 (120)	0.61	0.36, 1.04
% uninsured < 1 year (W1)[a]	21.91	30.53	2.45	1.82, 3.32
% uninsured > 1 year (W1)[a]	44.98	50.69	1.99	1.52, 2.59
% never insured (W1)[a]	33.11	18.78	1.00	
% fair or poor health[a]	11.89	7.17	0.57	0.44, 0.75
Mean no. health problems (SD)	1.13 (1.58)	1.12 (1.51)		
% family used services in prior 3 months (W1),[a] baseline	70.54	64.35	0.75	0.60, 0.94
Mean visits/3 months, later (SD)	1.15 (2.56)	1.00 (1.42)		
Mean admissions/ year, later (SD)	0.14 (0.50)	0.11 (0.48)		

Note. "Eligibles" were eligible for the plan but did not enroll. W1 = data available for wave 1 only, based on a total of 689 eligibles and 681 enrollees.
[a]Eligibles and enrollees are significantly different ($P < .05$).

Discussion

Uninsured people in Washington State who enrolled in the Basic Health Plan differed on a number of characteristics from those who did not enroll. Those who enrolled were relatively more likely to be couples with children, children under age 7, and persons who were unemployed, previously insured, and healthy; as a group, enrollees also tended to have larger families and higher levels of family income and education but less previous use of health services. In contrast, those who remained uninsured were more likely to be aged 18 to 24 years, single males, single females with children, persons who were employed but uninsured, and persons who were never insured; as a group, they also tended to have lower levels of family income and education, worse health status, and more previous use of health services.

Study Limitations

Before discussing the implications of these findings, we should note some limitations. First, the telephone surveys had high response rates but probably underrepresented those individuals without access to telephones. Since telephone surveys were used for both enrollees and eligibles, however, the samples of both groups should be comparable. Moreover, survey data for enrollees were collected after 1 year of enrollment and may not have represented enrollees' status at enrollment. This issue is discussed in more detail elsewhere.[1] We feel, however, that the surveys are reasonably comparable and representative.

Second, because we wished to describe the characteristics of individuals

who were and were not enrolled in the plan, we considered the person to be the unit of analysis. Since families rather than individuals made the decision to enroll, these results do not mean that, for example, young children "chose" to enroll at a higher rate. For simplicity, intrafamily correlation was ignored; adjusting for this would tend to decrease the number of statistically significant findings.

Third, the data were from a pilot plan and may not represent other types of plans or even the Basic Health Plan as it is today. The existence of enrollment caps suggests that only the most eager were able to become enrolled. Two of the counties, however, did not reach their enrollment caps in wave 1, and results for those counties were not very different from results for the third county. Results from wave 2, when the plan was 2 years old, were generally similar to those of wave 1. However, higher-order interactions were not examined systematically. It is possible that people who enrolled in the pilot study were not typical of people who would eventually enroll in a less restrictive program. In this paper, later enrollees were given approximately equal weight with the very first enrollees.

Fourth, the plan's exclusion of coverage for preexisting conditions may explain why sicker people were less likely to enroll. The number of health problems was similar in the two groups, which suggests that this was not a large problem but some important health conditions may have been missed. The fact that mental health problems, which were not covered, were lower in the enrollee group supports this interpretation. Thus, some findings may not apply to voluntary plans without such exclusions.

Fifth, the definition of a family used by the plan may make the results less generalizable. Adults were required to be legally married to be in the same family, and adults over age 18 were usually required to enroll as a separate family. Thus, an unmarried couple living with their 19-year-old child would have been counted as three separate families, with three different family incomes. The requirement that young adults be insured separately from their families may partly explain the low enrollment for that age group.

Sixth, this program is different from some other proposed programs in that everyone paid at least some part of the premium. The minimum contribution was $7.50 per month per family and averaged only $34, but the requirement to pay a premium may have caused some very poor families not to enroll. The premium structure included a charge for each adult, plus a flat fee if there were any children. Families with one child were in some sense subsidizing families with more children. This may be related to the tendency of people in larger families to join.

Finally, the restriction of eligibility based on the percentage of the poverty level may have induced some relationships that do not hold in a more general population. The poverty level is determined by family size and income. A family with high income *must* be a large family to be eligible, and a small eligible family *must* have low income. A positive correlation was thus induced between family income and family size. Variables correlated with income or family size may similarly have distorted relationships in this data set.

Two related analyses of health plan data[1,6] found that those who joined had *lower* income whereas the current study found that those who joined had *higher* income. One analysis[1] was person based but used only wave 1 data and included the large number of subjects who were already insured. The other analysis[6] used wave 1 data and took the unit of analysis as the family. The income effect reported here was strongest in wave 2. These differences in the choice of study subjects and the unit of analysis are important to remember.

Study Implications

It is encouraging that young children were relatively likely to be enrolled in the plan. On the whole, however, the analysis strongly suggests that if national health insurance is voluntary rather than universal, citizens who have lower income and education and have never had health insurance and citizens with worse health status and a recent need for health care will be less likely to obtain coverage.

If these findings hold true in other situations, a voluntary national health insurance plan will need to be marketed more aggressively to reach those most in need. Only 25% of the eligibles in wave 1 and 54% of those in wave 2 said they had heard of the plan, and 26% of those who had heard of the plan but did not apply said they lacked information about it. Those who had never had health insurance, at least not in their own right, may need to be educated on the desirability of having such insurance. Different approaches and perhaps heavier subsidies may be needed to reach these subgroups.

Washington State's health care reform plan included an employer mandate, which is now being reconsidered in view of the rejection of the Employment Retirement Income Security Act waiver and the Republican victories in the recent election. We should note, however, that 57% of the adults who did not join the plan were at least partially employed. An employer mandate would have covered this substantial group as well as their dependents. An employment-based approach should not be ruled out as a way to cover more of these hard-core uninsured.

The major implication of this study may be summarized thus: when insurance is voluntary, only volunteers will have insurance. "Volunteer bias" refers to the common research finding that people who volunteer for or join a particular program tend to be different from those who do not on a wide variety of characteristics.[7,8] A similar bias appears to apply to decisions about voluntary health insurance. The Basic Health Plan approach has successfully provided subsidized health insurance to a large number of low-income citizens in Washington State. However, providing access to health insurance for the less-advantaged hard-core uninsured may require a different approach if we are to achieve universal access to health care. □

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