

# Cost-Related Access Barriers, Medical Debt, and Dissatisfaction with Care Among Privately Insured Americans



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**BACKGROUND:** Understanding experiences with private insurance is important to improving the quality of health care coverage.

**OBJECTIVE:** To examine the association of health with cost-related access barriers, medical debt, and dissatisfaction with care among privately insured Americans.

**DESIGN:** We classified Americans with private insurance by self-reported health status into five groups (excellent, very good, good, fair, and poor health). We examined self-reported difficulty seeing a doctor due to costs, not taking medications due to costs, medical debt, and dissatisfaction with care among individuals with differing health status. We used logistic regression to examine the association of health status with individuals' experiences after accounting for baseline characteristics. The analysis was repeated among individuals with different forms of private insurance. Odds ratios were converted to risk ratios to improve ease of interpretation of the results.

**SETTING:** Behavioral Risk Factor Surveillance System of Americans in 17 states

**RESULTS:** The sample included 82,494 US adults with private insurance. Following adjustment, compared to individuals with excellent health those in very good health, good health, fair health, and poor health reported increasingly higher risks of difficulty seeing a doctor due to costs with risk ratios of 1.02 (95% CI 1.01, 1.03), 1.07 (95% CI 1.06, 1.08), 1.18 (95% CI 1.17, 1.20), and 1.29 (95% CI 1.27, 1.31), respectively. Compared to individuals with excellent health, those in very good health, good health, fair health, and poor health reported increasingly higher risks of not taking medication due to costs, outstanding medical debt, and dissatisfaction with care. Similar relationships were seen across individually purchased and employer-sponsored insurance.

**CONCLUSION:** Cost-related access barriers, medical debt, and dissatisfaction with care were common among individuals with private insurance and most pronounced among those with fair and poor health who likely need and use their health insurance the most.

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## INTRODUCTION

Approximately 177 million Americans are covered by private health insurance plans—either obtained through their employer or individually purchased through insurance markets.<sup>1</sup> The enactment of the Affordable Care Act (ACA) in 2010 made individually purchased private insurance coverage much more accessible for millions of Americans, with 11.4 million individuals purchasing private insurance on the ACA marketplace in 2019.<sup>1</sup> Given the expansion of private insurance in the USA, it is important to understand the experiences of Americans with private insurance. The purpose of health insurance is to ensure access to medical care and to protect against high medical costs—such access is especially needed for individuals with ongoing health care needs. Among the most vulnerable are individuals who suffer from chronic health conditions such as diabetes, cancer, and coronary artery disease. These individuals are more likely to use their health insurance, incur greater out-of-pocket costs, and have poor experiences with the health care system.<sup>2,3</sup> Multiple studies have found that individuals with cancer that are covered through private insurance experience high costs of care and medical debt.<sup>4–6</sup> However, outside of studies focused on specific diseases, there are few studies that have examined the association of health status with the experiences of US adults covered by private health insurance.

While private insurance has remained the main form of coverage in the USA, out-of-pocket costs have remained high for individuals who obtained private insurance from the ACA marketplace and for Americans with employer-sponsored coverage.<sup>7</sup> These costs may negatively impact the experiences of Americans with poor health status. Past research has demonstrated that private insurers deny care. Up to 18% of in-network claims were denied in 2020 likely increasing out-of-pocket costs and medical debt among Americans.<sup>8,9</sup> Delays in access to care and denials of claims may also in turn impact

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satisfaction with care. As private insurers have a profit motive to reduce costs, they may be incentivized to deny and delay care among the patients who have the most health care needs.<sup>10</sup> We hypothesized that health status would be associated with cost-related barriers to care, medical debt, and dissatisfaction with care.

We used 3 years of combined data from the 2016–2018 Behavioral Risk Factor Surveillance System (BRFSS) surveys to examine the association of health status cost-related barriers to care, medical debt, and dissatisfaction with care among individuals covered by private insurance (individually purchased and employer sponsored).

## METHODS

### Data Source

BRFSS is a large state-based telephone survey that annually collects data from a representative sample of noninstitutionalized US adults. Between 2016 and 2018, BRFSS included four questions related to the two domains of costs and satisfaction with care which were consistently administered all 3 years. A detailed description of the annual BRFSS survey design, questionnaires, and data collection can be found on the BRFSS website.<sup>11</sup> These questions are not available in the most recent versions of the BRFSS survey (2019, 2020). This study is based on publicly available data and was exempt from institutional review board review.

### Measures

**Sample.** To assess which individuals had private health insurance, we used the question “What is the primary source of your health care coverage?” All analyses were focused on individuals who reported having “a plan purchased through an employer” (employer-sponsored) or “a plan that you or another family member buys on your own” (individually purchased) that were available in the Health Care Access Module in BRFSS in the examined years.

**Health Status Categorization.** We stratified individuals based on the answer to the question “Would you say that in general your health is excellent, very good, good, fair, or poor?” Based upon their response, individuals were categorized into five groups: those who rated their health as excellent, very good, good, fair, or poor. This method of categorization was chosen as self-reported measures of health status have been shown to be good predictors of utilization and health care costs.<sup>12,13</sup>

**Covariates.** To describe differences in baseline sociodemographic characteristics, we extracted data on gender, marital status (married, unmarried), education level (less than high school, high school graduate, some college, completed college), employment status (employed, unemployed), and annual household income. We also extracted data on self-reported race/ethnicity (non-Hispanic

White, non-Hispanic Black, non-Hispanic Asian or Pacific Islander, Hispanic, others) as prior research has documented differences in satisfaction with health care by race/ethnicity.<sup>14</sup>

### Outcomes of Cost-Related Access Barriers, Medical Debt, and Dissatisfaction

We examined three domains of care among this privately insured sample: cost-related access barriers, medical debt, and dissatisfaction with care. Cost-related access barriers were assessed by the following two questions: (1) “Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?” and (2) “In the past 12 months was there a time when you did not take your prescription medications due to cost?” Medical debt was assessed with the following question: (3) “Do you currently have any health care bills that are being paid overtime?” Response options for these questions were “Yes/No.” Satisfaction with care was assessed with the question “In general, how satisfied you with the care are you received?” with response options including “very satisfied,” “somewhat satisfied,” and “not at all satisfied.” A variable representing “dissatisfaction with care” was created which categorized individuals into satisfied/not at all satisfied with care vs. very satisfied. For simplicity, we refer to the content of these 4 questions as follows: “difficulty seeing a doctor due to costs,” “not taking medications due to costs,” “medical debt,” and “dissatisfied with care.” For the variable “not taking medications due to costs,” only participants who took medications were included in the analysis. Few survey participants declined to respond to these questions with missing data ranging from 0.2 to 1.8%.

### Statistical Analysis

Weighted estimates of the cost-related access barriers, medical debt, and dissatisfaction measures were calculated by taking the survey stratum and sampling weights into account for the 3 years of data. We first calculated the percentage of respondents with the outcome in each category of self-reported health. Then, we conducted a logistic regression examining the association of self-reported health and each of the outcomes of interest after adjusting for age, sex, race/ethnicity, marital status, education level, employment status, and annual household income. In a secondary analysis, we examined whether adjusting for income impacted the findings as individuals with lower income may be more likely to have cost-related access barriers, medical debt, and dissatisfaction with care. Income was not included as a covariate in the main analysis because there was significant missing income data (12%). We also further examined whether income modified the relationship between self-reported health and the outcomes of interests by including an interaction term (self-reported health\*income) in the logistic regression model.

Using logistic regression, we examined the association of health status with the four outcomes among three groups (both forms of private insurance, employee-sponsored, or

individually purchased private health). We examined the two types of private insurance separately because individually purchased insurance has grown as a form of coverage after the Affordable Care Act and there may be differences across private insurance type. For the analysis that included both forms of insurance, a covariate indicating type of insurance (individually purchased or employer-sponsored insurance) was included in the regression model. As odds ratios are difficult to interpret and are inflated for common outcomes, we converted the odds ratio to a relative risk using previously accepted methods.<sup>15</sup> An alpha level of 0.05 was considered statistically significant. Statistical analyses were performed using SAS statistical software version 9.4 (SAS Institute, Cary, NC).

## RESULTS

### Baseline Characteristics

Among the 169,892 individuals who responded to the health insurance question in the Health Care Access Module, 82,598 had private insurance with 82,494 (99%) having complete data on self-reported health. The mean age of individuals with private insurance was 45.4 years. About half were female and the majority were White (Table 1).

Among individuals with private insurance, 21.8% reported excellent health, 37.5% reported very good health, 30.5% reported good health, 8.5% reported fair health, and 2.2% reported poor health. Overall, Americans who reported excellent health were younger, more likely White, employed, and married, and had higher income compared to Americans reporting good or fair or poor health. The prevalence of chronic conditions increased as health status declined from excellent health to poor health. For example, only 1.4% of individuals with excellent health reported diabetes, compared to 11.1% of those with good health, and 33.2% with poor health. Similarly, functional limitation increased as self-reported health status declined from excellent/very good to fair/poor health, suggesting the self-reported classifications were concordant with self-reported comorbidity and functional limitations (Table 1).

### Variations in Cost-Related Access Barriers, Medical Debt, and Dissatisfaction with Care by Health Status

There was a gradient in the outcomes observed across health status: lower self-reported health status was associated with a higher proportion of individuals reporting cost-related access barriers, medical debt, and dissatisfaction with care. The proportion of individuals reporting difficulty seeing a doctor due to costs increased with lower levels of health (excellent health 5.64%, very good health 7.06%, good health 11.72%, fair health 20.17%, and 26.80% among those with poor health). Similarly, reported difficulty taking medications due to cost increased with lower self-

reported health status (3.05% among those with excellent health, 4.96% among those with very good health, 8.82% among those with good health, 16.67% among those with fair health, and 22.51% among those with poor health). The proportion of individuals reporting medical debt increased as health status declined (15.55% among those with excellent health, 20.37% among those with very good health, 26.22% among those with good health, 36.35% among those with fair health, and 48.92% among those with poor health). Dissatisfaction with care was higher among those with poor health (26.67% among those with excellent health, 32.92% among those with very good health, 42.23% among those with good health, 50.43% among those with fair health, and 51.97% among those with poor health) (Fig. 1, [supplementary Table 1](#)).

### Association of Self-reported Health Status with Cost-Related Access Barriers, Medical Debt, and Dissatisfaction

**Private Insurance.** Following adjustment for baseline sociodemographic characteristics, compared to individuals with excellent health, those with lower rated health increasingly reported higher risks of all outcomes. Compared to individuals with excellent health, those in very good health, good health, fair health, and poor health reported increasingly higher risks of difficulty seeing a doctor due to costs with risk ratios of 1.02 (95% CI 1.01, 1.03), 1.07 (95% CI 1.06, 1.08), 1.18 (95% CI 1.17, 1.20), and 1.29 (95% CI 1.27, 1.31) respectively. Compared to individuals with excellent health, a similar gradient of risk was observed for not taking medications due to costs with risk ratios increasing from 1.02 (95% CI 1.01, 1.03) among individuals with very good health to 1.25 (95% CI 1.23, 1.26) among individuals with poor health. Compared to individuals with excellent health, those in very good health, good health, fair health, and poor health reported increasingly higher risks of outstanding medical debt with risk ratios of 1.06 (95% CI 1.05, 1.08), 1.15 (95% CI 1.13, 1.17), 1.34 (95% CI 1.31, 1.37), and 1.69 (95% CI 1.63, 1.74), respectively. A similar gradient of risk was observed with dissatisfaction with care. Compared to individuals with excellent health, those in very good health, good health, fair health, and poor health reported increasingly higher risks of dissatisfaction with care with risk ratios increasing from 1.23 (95% CI 1.16, 1.30) among individuals with very good health to 1.54 (95% CI 1.46, 1.60) among individuals with poor health (Table 2).

**Employer-Sponsored Private Insurance.** The same gradient of risk of negative experiences was observed among individuals with employer-sponsored insurance. Lower rated health was associated with increased risk of all outcomes. Compared to individuals with excellent health, those in very good health, good health, fair health, and poor health reported increasingly higher risks of difficulty seeing a doctor due to costs with risk ratios of 1.01 (95% CI 1.00, 1.02), 1.06 (95% CI 1.05, 1.08), 1.19 (95% CI 1.17, 1.20), and 1.32 (95% CI 1.29, 1.34),

Table 1 Clinical and Sociodemographic of Individuals with Private Health Insurance Stratified by Health Status

	Weighted % (95% confidence interval) <sup>*,†</sup>						p-value
	Individuals with private insurance						
N (respondents)	82,494	17,080	31,715	24,748	7132	1819	
Proportion of respondents (%)		21.18	37.50	30.58	8.50	2.24	
Median age ± SD	45.4 ± 0.2	41.3 ± 0.4	44.1 ± 0.3	46.9 ± 0.4	51.3 ± 0.5	55.3 ± 0.6	< .0001
Gender							
Female	50.8 (50.0–51.5)	51.24 (49.63, 52.84)	51.11 (49.99, 52.23)	50.1 (48.78, 51.42)	49.44 (47.06, 51.82)	54.11 (49.34, 58.88)	0.3126
Race/ethnicity							
White	73.1 (72.4–73.7)	71.82 (70.13, 73.5)	77.48 (76.4, 78.55)	69.84 (68.5, 71.19)	68.08 (65.58, 70.57)	73.73 (68.81, 78.64)	
Black	11.7 (11.2–12.1)	11.15 (10.03, 12.27)	10.25 (9.53, 10.97)	13.07 (12.15, 13.99)	13.26 (11.70, 14.82)	14.58 (10.41, 18.75)	
Hispanic	9.7 (9.1–10.2)	10.34 (8.86, 11.83)	7.42 (6.58, 8.25)	11.24 (10.02, 12.46)	12.80 (10.52, 15.08)	8.40 (5.07, 11.73)	
Other, non-Hispanic	5.6 (5.3–5.9)	6.69 (5.88, 7.50)	4.86 (4.31, 5.40)	5.85 (5.22, 6.48)	5.86 (4.64, 7.08)	3.30 (1.57, 5.03)	< .0001
Marital status							
Married	60.1 (59.4–60.8)	61.15 (59.54, 62.77)	62.01 (60.9, 63.11)	58.04 (56.71, 59.37)	56.01 (53.69, 58.33)	63.11 (58.52, 67.71)	< .0001
Education							
Less than high school	6.0 (5.6–6.4)	4.31 (3.4, 5.23)	3.29 (2.83, 3.75)	6.93 (6.15, 7.72)	14.43 (12.5, 16.36)	21.78 (17.28, 26.28)	
High-school graduate	27.7 (27.0–28.4)	23.22 (21.66, 24.79)	24.90 (23.9, 25.89)	32.06 (30.78, 33.35)	34.83 (32.59, 37.06)	30.92 (26.77, 35.07)	
Some college	31.9 (31.2–32.6)	28.21 (26.80, 29.62)	32.98 (31.9, 34.07)	33.08 (31.82, 34.34)	31.31 (29.09, 33.53)	34.04 (30.51, 39.58)	
Completed college	34.4 (33.8–35.0)	44.25 (42.71, 45.8)	38.83 (37.79, 39.87)	27.92 (26.86, 28.99)	19.44 (17.71, 21.17)	12.26 (9.49, 15.03)	< .0001
Employment status							
Unemployed	25.0 (24.4–25.6)	20.94 (19.62, 22.25)	21.78 (20.89, 22.68)	25.34 (24.23, 26.44)	38.18 (35.86, 40.5)	64.25 (59.5, 69)	< .0001
Annual household income							
< \$50, 000	35.37 (34.63, 36.12)	27.09 (25.39, 28.79)	28.93 (27.83, 30.04)	41.21 (39.77, 42.64)	57.35 (54.77, 59.92)	61.73 (56.55, 66.9)	
≥ \$50, 000	64.63 (63.88, 65.37)	72.91 (71.21, 74.61)	71.07 (69.96, 72.17)	58.79 (57.36, 60.23)	42.65 (40.08, 45.23)	38.27 (33.1, 43.45)	< .0001
Comorbid conditions <sup>‡</sup>							
Coronary artery disease	2.6 (2.4–2.8)	0.47 (0.25, 0.70)	1.07 (0.89, 1.26)	3.10 (2.73, 3.46)	8.61 (7.26, 9.97)	16.95 (13.66, 20.23)	< .0001
COPD	4.2 (3.9–4.5)	1.25 (0.92, 1.57)	2.01 (1.74, 2.29)	5.09 (4.37, 5.81)	11.06 (9.67, 12.46)	28.93 (24.7, 33.16)	< .0001
Stroke	1.7 (1.6–1.9)	0.47 (0.33, 0.62)	0.92 (0.74, 1.11)	1.87 (1.53, 2.21)	4.99 (4.17, 5.8)	12.69 (9.44, 15.94)	< .0001
Diabetes	7.9 (7.6–8.3)	1.42 (1.09, 1.74)	4.31 (3.93, 4.69)	11.09 (10.36, 11.81)	22.04 (20.24, 23.83)	33.17 (28.52, 37.82)	< .0001
Cancer	9.5 (9.1–9.9)	6.30 (5.66, 6.93)	7.97 (7.46, 8.48)	10.49 (9.76, 11.22)	16.74 (14.89, 18.58)	24.97 (21.41, 28.53)	< .0001
Smoking history	37.0 (36.3–37.7)	28.50 (26.97, 30.03)	34.54 (33.51, 35.56)	40.93 (39.62, 42.25)	48.12 (45.71, 50.53)	60.94 (56.19, 65.68)	< .0001
Functional impairments; difficulty with <sup>‡</sup>							
...concentrating or remembering	6.9 (6.5–7.2)	2.93 (2.35, 3.51)	3.59 (3.18, 3.99)	7.81 (7.14–8.49)	19.51 (17.52, 21.51)	37.39 (32.79, 41.99)	< .0001
...walking or climbing stairs	8.0 (7.6–8.4)	1.31 (0.97, 1.65)	2.80 (2.45, 3.16)	9.2 (8.34, 10.06)	29.32 (27.23, 31.41)	60.18 (55.22, 65.14)	< .0001
...dressing or bathing	1.8 (1.6–2.0)	0.29 (0.16, 0.42)	0.34 (0.22, 0.46)	1.49 (1.16, 1.81)	6.98 (5.86, 8.1)	25.08 (21.15, 29)	< .0001
...doing errands alone	3.4 (3.1–3.6)	0.78 (0.4, 1.17)	1.03 (0.82, 1.24)	3.12 (2.7–3.54)	12.66 (11.06, 14.25)	34.15 (29.72, 38.58)	< .0001

**Notes:**

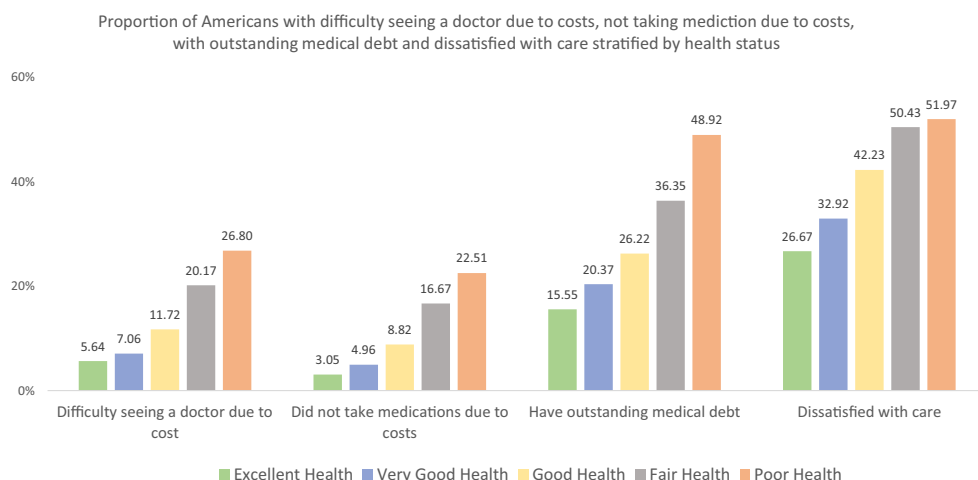
\*In 2016–2018, 17 states and DC (Delaware, Florida, New Jersey, Wisconsin, Georgia, Kentucky, Louisiana, Minnesota, New Mexico, Pennsylvania, Mississippi, Nebraska, New Hampshire, Oregon, Maine, Oklahoma, Tennessee, and the District of Columbia) participated in the optional Health Care Access module

†Weighted percentages were reported by taking the complex sampling design into account

‡% of individuals who answered “yes” to the respective question

Abbreviations: SD standard deviation





**Figure 1 Access, costs, and satisfaction with care among Americans with different self-reported health status. Data from the Behavioral Risk Factor Surveillance System (BRFSS) surveys, 2016–2018. \*Results dichotomized into “Somewhat satisfied/not at all satisfied” vs. “very satisfied.” Dissatisfied represents the somewhat satisfied/not at all satisfied group. Differences across health status across all four outcomes were statistically significant with a  $p$ -value < 0.05.**

respectively. Compared to individuals with excellent health, a similar gradient of risk was observed for not taking medications due to costs with risk ratios increasing from 1.01 (95% CI 1.0, 1.02) among those with very good health to 1.27 (95% CI 1.25, 1.28) among individuals with poor health. Compared to individuals with excellent health, those in very good health, good health, fair health, and poor health reported increasingly higher risks of outstanding medical debt with risk ratios of 1.07 (95% CI 1.05, 1.09), 1.15 (95% CI 1.13, 1.17), 1.39 (95% CI 1.36, 1.42), and 1.69 (95% CI 1.61, 1.75), respectively. A similar gradient of risk was observed with dissatisfaction with care. Compared to individuals with excellent health, those in very good health, good health, fair health, and poor health reported increasingly higher risks of dissatisfaction with care with risk ratios increasing from 1.26 (95% CI 1.19, 1.33) among individuals with very good health to 1.53 (95% CI 1.45, 1.59) among individuals with poor health (Table 3).

**Individually Purchased Private Insurance.** The same gradient of risk was observed among adults with individually purchased insurance: lower rating of self-reported health was associated with higher risk of all outcomes. The magnitude and direction of risk ratios were similar to employer-sponsored

insurance. Compared to individuals with excellent health, those in very good health, good health, fair health, and poor health reported increasingly higher risks of difficulty seeing a doctor due to costs with risk ratios of 1.04 (95% CI 1.01, 1.06), 1.08 (95% CI 1.06, 1.11), 1.18 (95% CI 1.14, 1.20), and 1.25 (95% CI 1.19, 1.28), respectively. Compared to individuals with excellent health, a similar gradient of risk was observed for not taking medications due to costs with risk ratios increasing from 1.05 (95% CI 1.03, 1.06) among those with very good health to 1.22 (95% CI 1.19, 1.24) among individuals with poor health. Compared to individuals with excellent health, those in very good health, good health, fair health, and poor health reported increasingly higher risks of outstanding medical debt with risk ratios of 1.04 (95% CI 0.99, 1.08), 1.13 (95% CI 1.07, 1.18), 1.24 (95% CI 1.17, 1.30), and 1.68 (95% CI 1.56, 1.77), respectively. A similar gradient of risk was observed with dissatisfaction with care. Compared to individuals with excellent health, those in very good health, good health, fair health, and poor health reported increasingly higher risks of dissatisfaction with care with risk ratios increasing from 1.13 (95% CI 0.98, 1.33) among individuals with very good health to 1.51 (95% CI 1.33, 1.66) among individuals with poor health (Table 3).

**Table 2 Association of Self-reported Health with Costs, Medical Debt, and Satisfaction with Care Among Adults with Private Insurance**

	Difficulty seeing a doctor due to cost	Did not take medications due to costs	Have outstanding medical debt	Dissatisfied with care*
N	82,393	75,772	82,038	80,869
Adjusted risk ratio <sup>†</sup>				
Excellent health	Reference			
Very good health	1.02 (1.01, 1.03)	1.02 (1.01, 1.03)	1.06 (1.05, 1.08)	1.23 (1.16, 1.3)
Good health	1.07 (1.06, 1.08)	1.06 (1.05, 1.07)	1.15 (1.13, 1.17)	1.44 (1.39, 1.49)
Fair health	1.18 (1.17, 1.20)	1.16 (1.15, 1.17)	1.34 (1.31, 1.37)	1.51 (1.46, 1.56)
Poor health	1.29 (1.27, 1.31)	1.25 (1.23, 1.26)	1.69 (1.63, 1.74)	1.54 (1.46, 1.6)

\*“Somewhat satisfied/not at all satisfied” vs. “very satisfied.” Dissatisfied represents the somewhat satisfied/not at all satisfied group

<sup>†</sup>Adjusted for age, sex, race/ethnicity, employment, education, marital status, and risk ratios derived from odds ratios

Table 3 Association of Self-reported Health with Costs, Medical Debt, and Satisfaction with Care Among Adults with Individually Purchased or Employer-Sponsored Private Insurance

	Difficulty seeing a doctor due to cost		Did not take medications due to costs		Have outstanding medical debt		Dissatisfied with care*	
	Individually purchased	Employer sponsored	Individually purchased	Employer sponsored	Individually purchased	Employer sponsored	Individually purchased	Employer sponsored
N	17,228	65,165	15,814	59,958	17,108	64,930	16,823	64,046
Adjusted risk ratio†	Reference							
Excellent health	1.04 (1.01, 1.06)	1.01 (1.00, 1.02)	1.05 (1.03, 1.06)	1.01 (1.00, 1.02)	1.04 (0.99, 1.08)	1.07 (1.05, 1.09)	1.13 (0.98, 1.28)	1.26 (1.19, 1.33)
Very good health	1.08 (1.06, 1.11)	1.06 (1.05, 1.08)	1.09 (1.07, 1.10)	1.05 (1.04, 1.06)	1.13 (1.07, 1.18)	1.15 (1.13, 1.17)	1.40 (1.28, 1.52)	1.46 (1.4, 1.51)
Good health	1.18 (1.14, 1.20)	1.19 (1.17, 1.20)	1.20 (1.18, 1.21)	1.15 (1.14, 1.16)	1.24 (1.17, 1.3)	1.39 (1.36, 1.42)	1.50 (1.38, 1.6)	1.51 (1.46, 1.56)
Fair health	1.25 (1.19, 1.28)	1.32 (1.29, 1.34)	1.22 (1.19, 1.24)	1.27 (1.25, 1.28)	1.68 (1.56, 1.77)	1.69 (1.61, 1.75)	1.51 (1.33, 1.66)	1.53 (1.45, 1.59)
Poor health								

\*“Somewhat satisfied/not at all satisfied” vs. “very satisfied.” Dissatisfied represents the somewhat satisfied/not at all satisfied group

†Adjusted for age, sex, race/ethnicity, employment, education, marital status, and risk ratios derived from odds ratios

## Sensitivity Analyses

Adding income as a covariate in the models did not impact the results (supplementary Table 2). The interaction between health status and all four outcomes of interest was non-significant ( $p$ -value > 0.05).

## DISCUSSION

In this cross-sectional population-based study of US adults' experiences with private insurance in 17 states and DC, we observed that cost-related access barriers, medical debt, and dissatisfaction with care were common. Private insurance is the most common form of coverage in the USA and negative experiences were common among individuals in poor health: approximately 1 out of 4 reported difficulty seeing a doctor due to costs, 1 out of 5 reported not taking medication due to costs, and 1 out of 2 reported medical debt and dissatisfaction with care. However, these negative experiences were not only common among those with poor health. They were common among individuals in fair and good health and some were common even among those with excellent health. One out of six individuals with excellent health reported medical debt. Lower self-reported health was associated with an increased risk of reported cost-related access barriers, medical debt, and dissatisfaction with care. These results were consistent in individually purchased or employer-sponsored insurance.

Our findings are in line with studies examining the association of health status with costs of care in public programs. Prior research has demonstrated that Americans with multiple chronic conditions covered by Medicare are especially vulnerable to high health care costs and can spend a fifth of their income on health care.<sup>16</sup> Medicare enrollees with poor health status and without supplemental coverage are also at high risk of financial hardship.<sup>17</sup> While prior research has noted gaps in access and quality of care for individuals with Medicaid coverage,<sup>18</sup> there are very few studies that have examined gaps in care among individuals with private insurance and poor health. Our study suggests that, similar to public insurance, patients with private insurance also experience cost-related access barriers, medical debt, and dissatisfaction with care.

Private insurance remains the most common form of coverage in the USA and these negative reported experiences are a cause of concern and require attention by policymakers. The inability to access needed care due to costs can worsen health and lead to increased morbidity and mortality.<sup>19–21</sup> In the past decade, federal subsidies have not kept up with insurance premium growth for individually purchased plans made available because of the Affordable Care Act. The American Rescue Plan of 2021 offers some relief to individuals who purchase private insurance (e.g., lower premiums, increased tax credits, and expanded enrollment), though this assistance is not yet permanent and will only be available for 2 years.<sup>22</sup> Making the temporary American Rescue Plan Act Marketplace subsidies permanent may be one policy lever to keep

individually purchased insurance affordable. Additionally, because high commercial provider prices are the primary driver of premiums and deductibles,<sup>23</sup> including a public plan may be another mechanism to help reduce growth in premium and out-of-pocket costs—as competition from a public plan has been one proposed strategy to help reduce the growth in commercial plan health care spending.

The finding that Americans with employer-sponsored insurance also report negative experiences is also not surprising. Current tax policy has encouraged employers to offer high-deductible insurance plans.<sup>24</sup> Such changes are likely to have impacted the experiences of even higher income individuals covered by employer-sponsored insurance as individuals in high deductible plans often forgo needed care.<sup>25,26</sup> Research has also shown that among people with employer-sponsored insurance, spending per person grew by 21.8% between 2015 and 2019.<sup>23</sup> Employers have shared these cost increases in the form of higher premiums and more out-of-pocket costs with consumers. For individuals with employer-sponsored insurance and significant health care needs, the American Rescue Plan offered no relief from out-of-pocket costs.<sup>22</sup> These data suggest that the differences in experiences of US adults covered by employer-sponsored insurance and those covered by individually purchased insurance may be narrowing. All told, our findings along with others' suggest that reform efforts directed at reducing out-of-pocket costs are needed to provide relief to Americans covered by private, employer-sponsored health insurance.<sup>27</sup>

Poor satisfaction with care may also be driven by factors other than costs. For instance, narrow provider networks which act to lower costs but only provide access to certain providers and disrupt continuity of care if the enrollee changes plans (or networks) can certainly impact satisfaction. Those with private insurance are also affected by potential decreased continuity of coverage—as many individuals may lose, leave, or change jobs—thus changing their coverage status or network. For example, in 2018, 61% of businesses offering health insurance shopped for a new health plan or carrier, with 25% ultimately changing plans or carriers.<sup>28</sup> Such disruptions to care would likely have a differential and greater impact on those with more medical needs. Additionally, surprise medical billing, which occurs when a patient receives care from hospitals or doctors they do not choose and are not in their network plan, is another factor associated with private insurance that likely impacts satisfaction with care. Individuals with poor health are more likely to experience surprise billings as they more commonly interface with the health system.<sup>29,30</sup> Fortunately, new bipartisan legislation passed in 2020 aims to curb the most egregious practices, such as billing for emergency services delivered by out-of-network providers, or non-emergency services provided by out-of-network providers in in-network facilities, and for care which patients did not consent to. Although implementation of this legislation is expected in 2022, future research will determine the effect this legislation will have on satisfaction of individuals with private insurance coverage.<sup>31</sup>

## Limitations

This study has several limitations that deserve comment. This is a cross-sectional study and causality cannot be inferred. Prospective studies are needed to examine how deterioration in health status impacts experiences with care. Second, health status was self-reported. However, self-reported health status has been shown to be a good predictor of higher health care utilization and health care costs.<sup>12</sup> In addition, the self-reported health status categorization corresponded well with comorbidities and functional limitations as noted in Table 1. Third, this study was limited to individuals in 17 states and DC who answered the Health Care Access module and all posed questions, thus, potentially limiting the overall generalizability of our findings. However, the examined states have wide geographic, political, and economic diversity and represent over 91 million Americans with private insurance. Fourth, we did not use the most recent versions of the BRFSS; however, questions on costs and satisfaction with care were unavailable in more recent released versions (2019, 2020).

## CONCLUSIONS

Difficulty seeing a doctor due to costs, not taking medication due to costs, medical debt, and dissatisfaction with care are common among individuals with private insurance and most pronounced among those with fair and poor self-reported health who likely need and use their health insurance the most. Private insurance coverage may not be adequately protecting individuals against medical debt and financial loss. Reform efforts directed at regulating out-of-pocket costs of private insurance may improve experience of many Americans with private coverage.

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### Declarations:

**Conflict of Interest:** The authors declare that they do not have a conflict of interest.

## REFERENCES

1. Health Insurance Exchanges 2019 Open Enrollment Report. In. Center for Medicare and Medicaid Services 2019.
2. **Buttorff C, Ruder T, Bauman M.** Multiple Chronic Conditions in the United States. Santa Monica, CA: RAND Corporation; 2017.

3. **Richard P, Walker R, Alexandre P.** The burden of out of pocket costs and medical debt faced by households with chronic health conditions in the United States. *PLoS One*. 2018;13(6):e0199598.
4. **Zheng Z, Jemal A, Han X, et al.** Medical financial hardship among cancer survivors in the United States. *Cancer*. 2019;125(10):1737-1747.
5. **Allaire BT, Ekwueme DU, Guy GP, Jr., et al.** Medical Care Costs of Breast Cancer in Privately Insured Women Aged 18-44 Years. *Am J Prev Med*. 2016;50(2):270-277.
6. **Banegas MP, Guy GP, Jr., de Moor JS, et al.** For Working-Age Cancer Survivors, Medical Debt And Bankruptcy Create Financial Hardships. *Health Aff (Millwood)*. 2016;35(1):54-61.
7. **Glied S, Zhu B.** *Catastrophic Out-of-Pocket Health Care Costs: A Problem Mainly for Middle-Income Americans with Employer Coverage*. The Commonwealth Fund 2020.
8. **Pollitz K RM, Mengistu S.** Claims Denials and Appeals in ACA Marketplace Plans in 2020. 2020.
9. **Chou S-C, Gondi S, Baker O, Venkatesh AK, Schuur JD.** Analysis of a Commercial Insurance Policy to Deny Coverage for Emergency Department Visits With Nonemergent Diagnoses. *JAMA Network Open*. 2018;1(6):e183731-e183731.
10. **Crowley R, Atiq O, Hilden D.** Financial Profit in Medicine: A Position Paper From the American College of Physicians. *Ann Intern Med*. 2021;174(10):1447-1449.
11. **Ayyad AE, Cole J, Syed A, et al.** Temporal trends in utilization of cardiac computed tomography. *J Cardiovasc Comput Tomogr*. 2009;3(1):16-21.
12. **Cunningham PJ.** Predicting high-cost privately insured patients based on self-reported health and utilization data. *Am J Manag Care*. 2017;23(7):e215-e222.
13. **DeSalvo KB, Fan VS, McDonnell MB, Fihn SD.** Predicting mortality and healthcare utilization with a single question. *Health Serv Res*. 2005;40(4):1234-1246.
14. **Hunt KA, Gaba A, Lavizzo-Mourey R.** Racial and ethnic disparities and perceptions of health care: does health plan type matter? *Health Serv Res*. 2005;40(2):551-576.
15. **Zhang J, Yu KF.** What's the relative risk? A method of correcting the odds ratio in cohort studies of common outcomes. *Jama*. 1998;280(19):1690-1691.
16. **Schoen C, Davis K, Willink A.** Medicare Beneficiaries' High Out-of-Pocket Costs: Cost Burdens by Income and Health Status. Issue Brief (Commonw Fund). 2017;11:1-14.
17. **Yabroff KR, Zhao J, Han X, Zheng Z.** Prevalence and Correlates of Medical Financial Hardship in the USA. *J Gen Intern Med*. 2019;34(8):1494-1502.
18. **Walker GV, Grant SR, Guadagnolo BA, et al.** Disparities in stage at diagnosis, treatment, and survival in nonelderly adult patients with cancer according to insurance status. *J Clin Oncol*. 2014;32(28):3118-3125.
19. **Prentice JC, Pizer SD.** Delayed access to health care and mortality. *Health Serv Res*. 2007;42(2):644-662.
20. **Smolderen KG, Spertus JA, Nallamothu BK, et al.** Health Care Insurance, Financial Concerns in Accessing Care, and Delays to Hospital Presentation in Acute Myocardial Infarction. *JAMA*. 2010;303(14):1392-1400.
21. **Wharam JF, Zhang F, Lu CY, et al.** Breast Cancer Diagnosis and Treatment After High-Deductible Insurance Enrollment. *J Clin Oncol*. 2018;36(11):1121-1127.
22. **Schneider EC, Leape LL, Weissman JS, Piana RN, Gatsonis C, Epstein AM.** Racial differences in cardiac revascularization rates: does "overuse" explain higher rates among white patients? *Ann Intern Med*. 2001;135(5):328-337.
23. 2019 HEALTH CARE COST AND UTILIZATION REPORT. Health Care Cost Institute. [https://healthcostinstitute.org/images/pdfs/HCCI\\_2019\\_Health\\_Care\\_Cost\\_and\\_Utilization\\_Report.pdf](https://healthcostinstitute.org/images/pdfs/HCCI_2019_Health_Care_Cost_and_Utilization_Report.pdf). Published 2019. Accessed October 28, 2021.
24. **Miller GE, Vistnes JP, Rohde F, Keenan PS.** High-Deductible Health Plan Enrollment Increased From 2006 To 2016, Employer-Funded Accounts Grew In Largest Firms. *Health Aff (Millwood)*. 2018;37(8):1231-1237.
25. **Agarwal R, Mazurenko O, Menachemi N.** High-Deductible Health Plans Reduce Health Care Cost And Utilization, Including Use Of Needed Preventive Services. *Health Aff (Millwood)*. 2017;36(10):1762-1768.
26. **Abdus S, Selden TM, Keenan P.** The Financial Burdens Of High-Deductible Plans. *Health Aff (Millwood)*. 2016;35(12):2297-2301.
27. Collins S. The Current Status of Employer Health Insurance Coverage in the United States. The Commonwealth Fund. [https://www.commonwealthfund.org/sites/default/files/2021-10/Collins\\_Senate\\_Finance\\_Comm\\_Testimony\\_10-20-2021\\_final.pdf](https://www.commonwealthfund.org/sites/default/files/2021-10/Collins_Senate_Finance_Comm_Testimony_10-20-2021_final.pdf). Published 2021. Accessed October 28, 2021.
28. **Pollitz K.** What's The Role of Private Health Insurance Today and Under Medicare-for-all and Other Public Option Proposals? Kaiser Family Foundation. <https://www.kff.org/health-reform/issue-brief/whats-the-role-of-private-health-insurance-today-and-under-medicare-for-all-and-other-public-option-proposals/>. Accessed October 28, 2021.
29. **Garmon C, Chartock B.** One In Five Inpatient Emergency Department Cases May Lead To Surprise Bills. *Health Aff (Millwood)*. 2017;36(1):177-181.
30. **Callaghan T, Haeder SF, Sylvester S.** Past experiences with surprise medical bills drive issue knowledge, concern and attitudes toward federal policy intervention. *Health Econ Policy Law*. 2021:1-34.
31. Surprise Billing Protections: Help Finally Arrives for Millions of American. The Commonwealth Fund. <https://www.commonwealthfund.org/blog/2020/surprise-billing-protections-cusp-becoming-law>. Published 2020. Accessed April 2, 2021.

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