Article Information

Moving Beyond Blind Men and Elephants: Providing Total Estimated Annual Costs Improves Health Insurance Decision-making

Health insurance is among the most important financial and health-related decisions that people make. Choosing a health insurance plan that offers sufficient risk protection is difficult, in part because total expected health care costs are not transparent. This study examines the effect of providing total costs estimates on health-insurance decisions using a series of hypothetical choice experiments given to 7,648 individuals responding to the fall 2015 Health Reform Monitoring Survey. Participants were given two health scenarios presented in random order asking which of three insurance plans would best meet their needs. Half received total estimated costs, which increased the probability of choosing a cost-minimizing plan by 3.0 to 10.6 percentage points, depending on the scenario (p<0.01). With many consumers choosing or failing to switch out of plans that offer insufficient coverage, incorporating insights on consumer decision-making with personalized information to estimate costs can improve the quality of health insurance choices.

Introduction

The Affordable Care Act (ACA) is transforming the American health insurance landscape. Yet, in both non-group- and employer-subsidized markets, choosing a health insurance plan that offers adequate risk protection given expected health care needs has proven to be difficult, in large part because real prices—one of the key factors in estimating total health care costs—are not transparent. The ACA mandates health care coverage for millions of Americans, with many enrolling in Medicaid plans or purchasing private insurance for the first time. The vast majority of the 12.7 million Americans who selected a marketplace plan during the 2016 open enrollment period, or were automatically re-enrolled, received federal tax subsidies to lower their premium costs (Office of the Assistant Secretary for Planning and Evaluation, 2015, U.S. Department of Health and Human Services, 2016). While subsidized insurance with coverage for essential health benefits presents an important opportunity, consumers face enormous challenges in navigating the enrollment and re-enrollment processes (PerryUndem, 2014a, 2014b). The stakes for users of these marketplaces are high, with one study estimating the potential costs of consumers choosing poorly in marketplaces at over $9 billion (Johnson et al. 2013).

More than half of consumers likely to enroll in marketplace plans report they are not confident that they understand basic insurance terminology (Blumberg et al., 2013). Research shows, furthermore, that even consumers with employer-sponsored health insurance often lack basic understanding of and knowledge about their coverage (Loewenstein et al, 2013). Evidence from employers offering a menu of plan options finds that many employees choose a dominated plan option (i.e., a plan that is inferior on all attributes when compared to alternative plan options available, Bhagarva, Loewenstein, & Sydnor, 2015; Sinaiko & Hirth, 2011). Older and lower wage workers were most likely to make these poor plan choices (Bhagarva, Loewenstein, &

Sydnor, 2015). This pattern has been replicated in hypothetical experiments where plan choices were simplified, further highlighting pervasive deficits consumers have in understanding and comparing plan options (Barnes, Hanoch, & Rice, 2015; Bhagarva, Loewenstein, & Sydnor, 2015; Johnson et al, 2013).

These health insurance decision errors arise from comparison frictions where consumers have difficulty obtaining, understanding and using information about how plan choices differ. These frictions can result in plan choices where stated preference (what consumers say they want) and revealed preferences (what they actually choose) do not align. When comparison frictions impede consumers' ability to use information to evaluate plan options, consumers may not make any choice (i.e., status quo bias) or may actively choose a dominated plan that places them at greater financial risk than an alternative plan in their choice set, all else equal.

Researchers have grappled with strategies to reduce comparison frictions, offering promising approaches to redesign decision environments, called "choice architecture," to improve consumers' choices (Thaler & Sunstein, 2008). The Centers for Medicaid and Medicare Services, consumers, and researchers have proposed providing cost calculators to tailor information to individual circumstances as a way to help consumers make better marketplace decisions, as well as using defaults to initially sort plans, and reducing the number of plan options to compare (American Institute for Research, 2015; Handel & Kolstad, 2015; Johnson et al., 2012; Madrian, 2014; Quincy, 2012). Indeed, in the federally-facilitated marketplace in the 2015-2016 open enrollment period, consumers were presented with total estimated costs for each plan choice in three potential health care utilization scenarios (i.e., low, medium, high) to increase the salience of comparing financial risk protection, rather than premiums, and to reduce the cognitive demands of choosing among multiple plans.[1] Similarly, in Covered California, a

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[1] For example, a medium user has 4 doctor visits, 1 lab test, 6 prescriptions, and $100 in other medical expenses.

state-run marketplace, the order of plan offerings can be tailored on the website so that they are presented based on estimated total costs that includes enrollees' self-reported expected health care needs (California Department of Health Care Services, 2015). However, whether these decision tools influence consumers' decision-making processes and alter their plan choices remain open questions. Timely evidence on the value of tailored information can inform the marketplace policy debate, where half of state-based marketplaces and many employers sponsoring insurance currently do not provide total estimated cost information to aid consumers when choosing plans (Barnes, 2016; Wong et al., 2015).

New Contribution

We know little about how choice architecture affects health plan choice within the ACA's new marketplaces. To inform designs to health insurance choice architecture, this study examines how increasing the salience of total estimated costs to consumers affects their choice of a plan that minimizes their financial risk, using a series of hypothetical choice experiments. The experimental evidence indicates that including information on total estimated costs substantially improves consumers' ability to choose the plan that minimizes expected health care costs, all else equal. The study also reveals that these changes may occur by increasing the salience of total financial risk to consumers when selecting from a menu of plan options. Specifically, consumers focus significantly more on differences across plans in out-of-pocket spending limits when provided information on total estimated costs. Further, providing information on total estimated costs increases the share of nonelderly adults selecting the cost-minimizing health plan by between 3.0 to 10.6 percentage points depending on the level of expected health care costs (Figure 1), with the greatest gains among more vulnerable populations. Policy makers and

program administrators can benefit from this kind of information to make meaningful changes to insurance marketplaces to improve consumer welfare and better leverage plan subsidies.

Study Data and Methods

Data were gathered from a random experiment conducted with 7,648 individuals ages 18-64 responding to the September 2015 Health Reform Monitoring Survey (HRMS), an internet-based survey tracking implementation of the ACA. The HRMS is based on GfK's KnowledgePanel, the same internet panel that underlies the National Science Foundation-funded Time-sharing Experiments for the Social Sciences (TSS) to support experiments similar to the one conducted here (Time-sharing Experiments for the Social Sciences, 2016). By relying on KnowledgePanel, TSS and the HRMS are able to support timely and innovative experiments that can inform the current policy debate. Additional information on the HRMS and KnowledgePanel are provided in the Technical Appendix.

For this experiment, all participants were given two health care utilization scenarios for the upcoming plan year presented in random order. The two scenarios asked them to decide which of three insurance plans would best meet their needs if they expected to use health care over the next year that would lead to either $1,000 in hospital bills in one scenario or to $25,000 in hospital bills in the second scenario (Figure 2). Half of participants were randomly assigned to a condition where total estimated annual costs were provided for each plan in addition to annual premiums, deductibles, out-of-pocket maximums, and hospital co-insurance rates. The other half of participants was assigned to a condition where total estimated cost information was not provided. After making an insurance choice, participants were asked which plan features were most important in their decision.

As would be expected with a random assignment experiment, the demographic and socioeconomic characteristics were equally distributed across assignment conditions (Technical Appendix). For simplicity, we estimated a linear probability model regression of plan choice controlling for the order in which the health scenarios were viewed (e.g., $25,000 first, then $1,000), age, race/ethnicity, gender, education, family income, self-reported health status, having a physical or mental condition, impairment or disability, whether insured at time of survey, and whether insured all of the past 12 months. To account for missing family size and family income data, multiple imputation was used. All analyses were conducted in Stata Version 12.

Study Results

<u>Consumers focus more on differences across plans in out-of-pocket spending when provided information on their total estimated costs</u>

We first examine whether making total estimated costs salient when choosing a health plan affected the plan attributes that consumers reported were most important in their plan choice. Among participants first choosing a plan in the $1,000 scenario, having total estimated costs information available was associated with an increased probability of reporting that expected out-of-pocket spending was most important factor in their plan selection (6.9 percentage points, $p<0.01$; Figure 3) and a decreased probability of reporting annual premiums were most important (-8.0 percentage points, $p<0.01$). Among participants first choosing plan in the $25,000 scenario, those provided with total estimated cost information were also more likely to report that expected out-of-pocket spending was most important (8.5 percentage points, $p<0.01$).

<u>Providing total estimated annual costs increases probability of choosing cost-minimizing plan</u>

Among those not receiving total estimated cost information, in the $1,000 hospital bill scenario, 34.3% of participants chose the cost-minimizing plan, whereas 41.9% chose the cost-minimizing plan in the $25,000 hospital bill scenario (Figure 4). In the $1,000 hospital bill scenario, individuals who received the total estimated cost information were 10.6 percentage points more likely to choose the cost-minimizing plan after adjustment for demographic and socioeconomic characteristics (p<0.01). Including total estimated cost information was associated with an adjusted increase of 3.0 percentage points in choosing the cost-minimizing plan in the $25,000 hospital bill scenario (p<0.01). When combining choices across the two scenarios, providing information on total estimated costs increased the probability that participants chose the cost-minimizing plan in both scenarios by 7.7 percentage points (p<0.01).

Vulnerable populations benefited the most from providing total estimated cost information

Importantly, our results show that vulnerable participants experienced larger gains in choosing the cost-minimizing plan when changing the choice architecture (Technical Appendix). Non-whites (p<0.01), less educated (p<0.05), and those with lower family income (p<0.05) were more likely to choose the cost-minimizing plan when total estimated costs were provided. Adults under age 50 were also more likely to choose the cost-minimizing plan when provided total estimated costs (p<0.05).

Further, participants reporting any unmet need for health care over the prior year due to affordability were more likely to choose the cost-minimizing plan when provided with total estimated cost information (p<0.01; Figure 5). Likewise, participants whose families had medical bills being paid off over time chose the cost-minimizing plan more often when provided with total estimated cost information (p<0.05). In fact, providing total estimated costs increased the

probability that participants reporting less confidence in understanding health insurance terms chose the cost-minimizing plan (p<0.01).

Limitations

It is important to acknowledge several limitations when evaluating the implications of our results. First, our study was hypothetical by nature, and as such may not capture the complexity of real life decisions. While we acknowledge this limitation, it is key that policy makers contemplating changes to the marketplace do so based on empirical evidence, which our study is among the first to provide. Second, the study did not include incentives, which could have led to smaller effects of providing total estimated cost information by rewarding consumers for more active plan comparison. However, recent experimental evidence from hypothetical insurance experiments suggests that incentives do little to improve decision-making (Johnson et al., 2013). Further, real plan choices from employer-sponsored markets suggest that one-third to one-half of employees choose plans that place them at greater financial risk compared to other plans available to them (Bhagarva, Loewenstein, & Sydnor, 2015; Sinaiko & Hirth, 2011). This suggests that decision errors due to consumer difficulties understanding and choosing insurance are common even with substantial "skin in the game." Finally, our study focuses on one important dimension of insurance choice, the amount of financial risk protection a plan confers. Other attributes of plan options, including provider networks, are important in consumer decision-making and our results are unable to account for the tradeoffs between risk protection and, for example, network preferences consumers may make when choosing plan.

Conclusions

Experimental evidence from a large national sample tracking implementation of the Affordable Care Act suggests that making a rather minor change to the choice architecture — including information on total estimated costs — substantially changed consumers' tendency to rate total estimated costs as important when comparing plans and their ability to choose the lowest cost plan offering them adequate risk protection, all else equal. When considering policies to improve the value of federal tax subsidies in marketplaces and employer-subsidized coverage, improvements in decision support that include providing consumers with more information on total estimated cost may reduce decision errors. Furthermore, vulnerable populations targeted by coverage expansion efforts, including those with lower levels of health insurance literacy, appear to benefit the most from having information on their total estimated costs.

Making accurate predictions of expected health spending when shopping for plans is challenging but fundamentally important to helping consumers compare insurance options that offer them sufficient risk protection at an affordable price. If cost calculators are not designed to provide tailored information on how total estimated costs would vary across future health states, networks, and plan choices for each consumer, they will be limited in their ability to help consumers in their plan choices and may do harm. Although the federally-facilitated marketplace, Covered California, and third party vendors (e.g. Stride, Clear Health Analytics) offer estimated total cost information, these critical decision aids are not employed by many employers and are absent from half of state-run marketplaces currently (Barnes, 2016; Wong et al., 2015). With many consumers in insurance markets choosing plans or failing to switch out of plans that offer them insufficient coverage given their expected health care needs, incorporating insights from state-of-the art research on consumer decision-making has the potential to improve the quality of health insurance choices, particularly among vulnerable populations.

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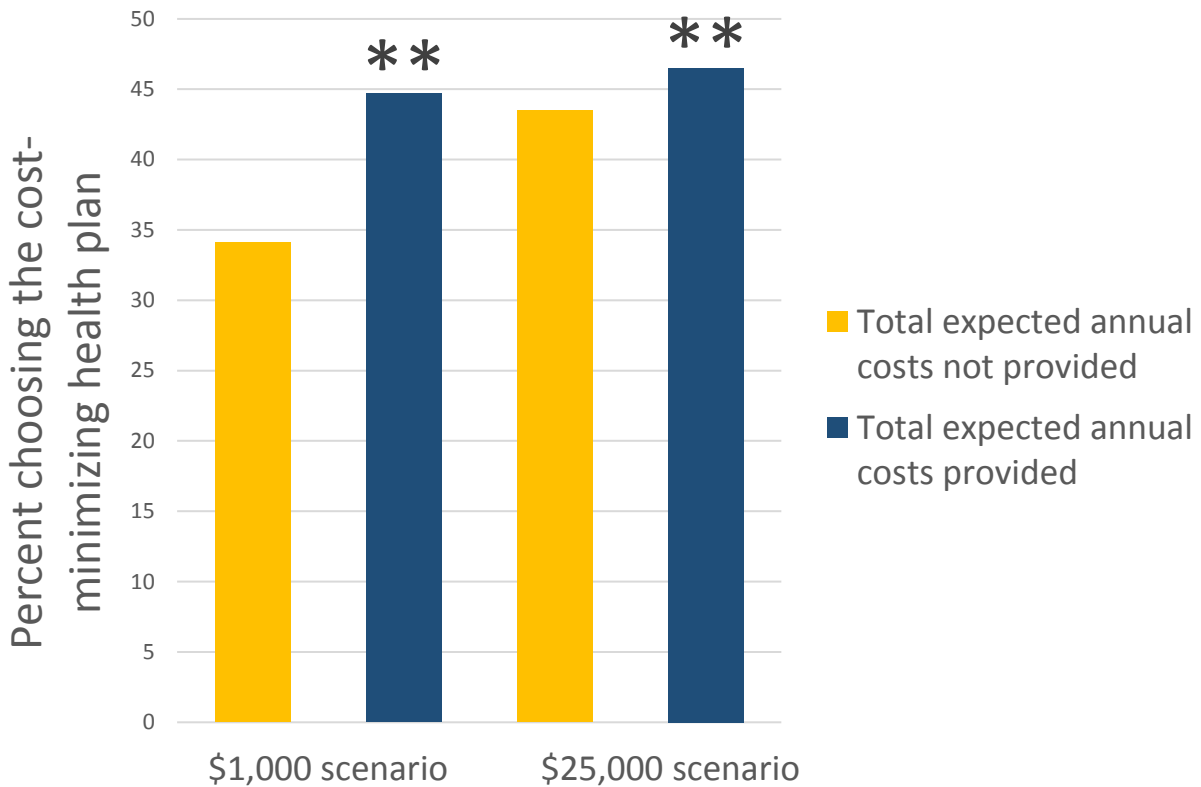Mar;30(2):450-457.

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Figure 1 Differences in Plan Choice Based on Whether Respondent Was Provided Information on Total Estimated Costs

Notes: */**Indicates significant difference (p<0.05/p<0.01, two-tailed test) in percentage of participants choosing cost minimizing plan after adjustment when total estimated costs were presented in addition to premiums, out-of-pocket costs, and hospital co-insurance, compared to when they were not presented. A table of regression results is included in the Technical Appendix.
Source: September 2015 Health Reform Monitoring Survey (HRMS).

Figure 2 Insurance decision task for the $1,000 hospital bill scenario

For this question, we would like you to consider a hypothetical situation. **Imagine** that you are buying health insurance coverage for yourself and your family for next year. **Imagine** that you have a choice of three health insurance plans that are all offered by the same company and that the doctors and other health care providers you and your family use are included in the networks for all three plans.
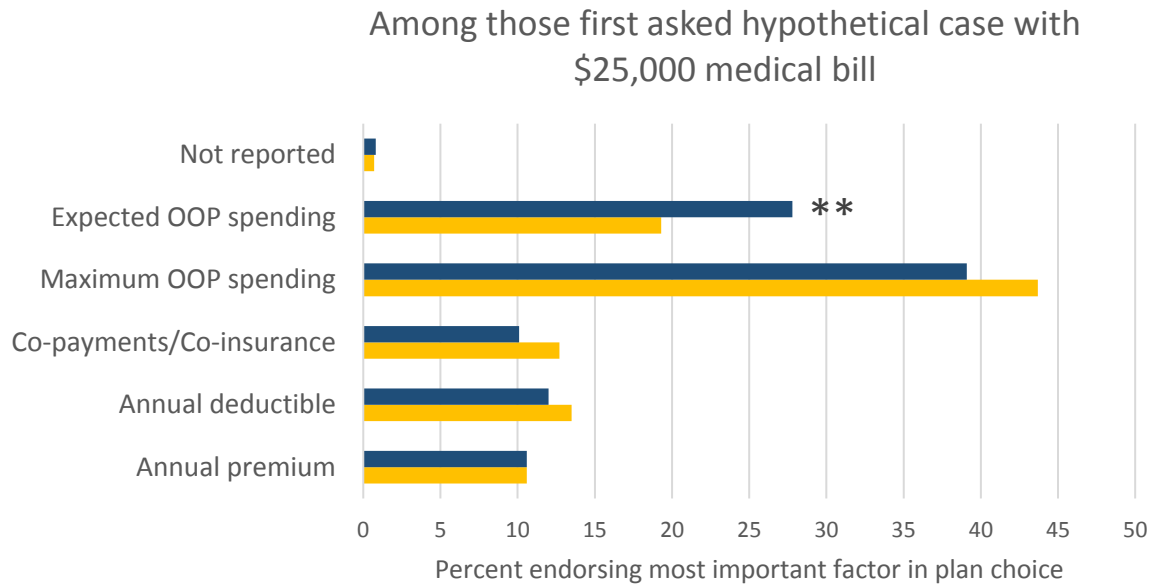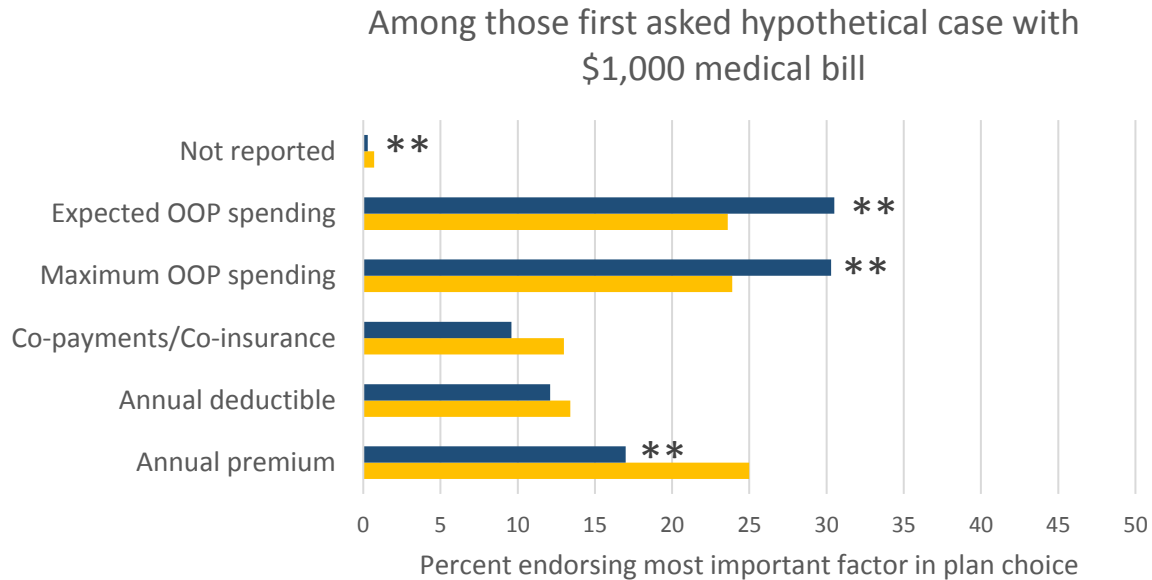
A1. **IF** you expected to need health care over the next year that would lead to total costs of $1,000 in hospital bills, which of the three health insurance plans shown in the table do you think would best meet your and your family's health insurance needs?

1. Plan A
2. Plan B
3. Plan C
4. Not sure

Characteristics of the health plan	Plan A	Plan B	Plan C
Annual premium	$1,000	$4,000	$6,000
Annual deductible	$5,000	$3,000	$1,000
Maximum annual out-of-pocket spending	$10,000	$5,000	$1,000
Doctor visit co-payments	$30	$25	$20
Hospital stay co-insurance	30%	25%	20%
Total amount you would pay out-of-pocket over the year with $1,000 in hospital bills, including the annual premium	$2,000	$5,000	$7,000

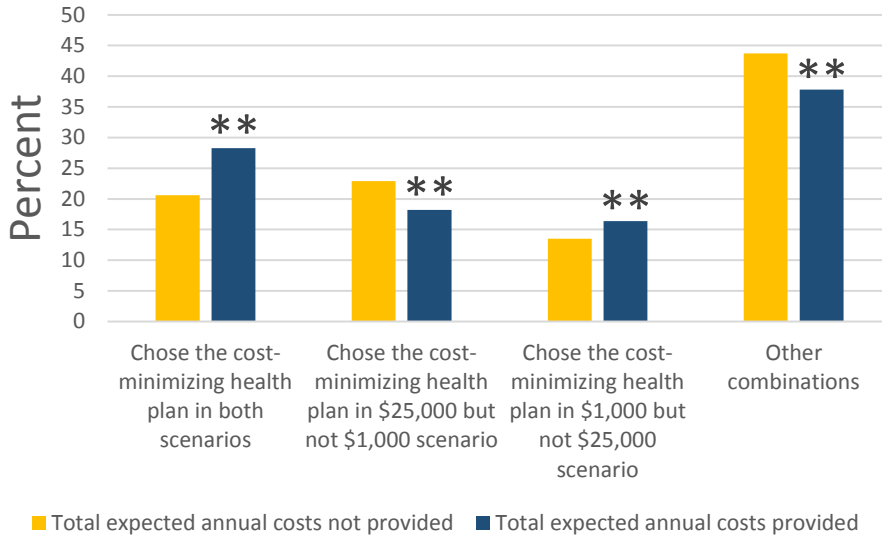IF YOU HAVE ANY QUESTIONS ABOUT THE HEALTH INSURANCE TERMS USED IN THE TABLE, PLEASE CLICK THIS LINK: HTTPS://WWW.CMS.GOV/CCII0/RESOURCES/FILES/DOWNLOADS/UNIFORM-GLOSSARY-FINAL.PDF

Figure 3 Among Those Who Selected a Health Plan Under Either Scenario, Most Important Factor in Plan Choice

Among those first asked hypothetical case with $1,000 medical bill

Among those first asked hypothetical case with $25,000 medical bill

Notes: */**Indicates significant difference (p<0.05/p<0.01, two-tailed test) in percentage of participants choosing cost minimizing plan after adjustment when total estimated costs were presented in addition to premiums, out-of-pocket costs, and hospital co-insurance, compared to when they were not presented. A table of regression results is included in the Technical Appendix.
Source: September 2015 Health Reform Monitoring Survey (HRMS).

Figure 4 Combined Differences in Plan Choice Based on Whether Respondent Was Provided
Information on Total Estimated Costs

Notes: */**Indicates significant difference (p<0.05/p<0.01, two-tailed test) in percentage of
participants choosing cost minimizing plan after adjustment when total estimated costs were
presented in addition to premiums, out-of-pocket costs, and hospital co-insurance, compared to
when they were not presented. A table of regression results is included in the Technical
Appendix.
Source: September 2015 Health Reform Monitoring Survey (HRMS).

Figure 5 Health Care Access and Affordability Among Respondents Who Chose the Cost-minimizing Health Plan for Either Scenario
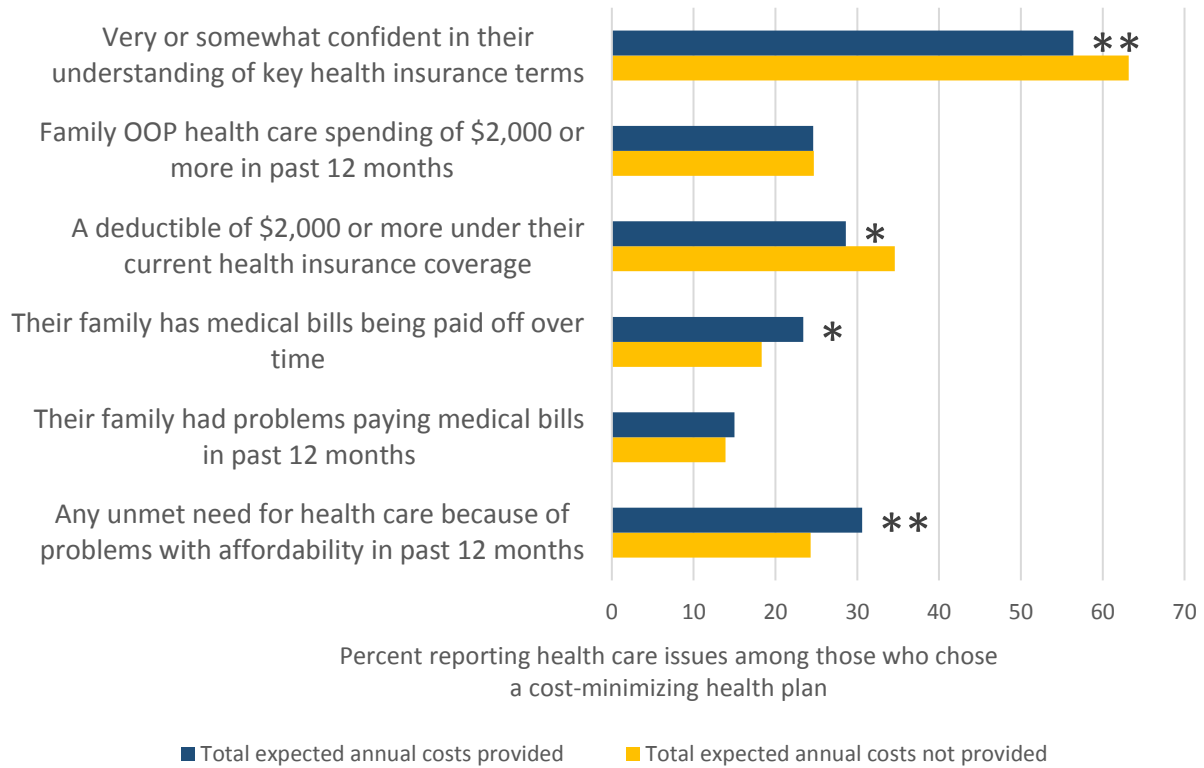
Notes: */**Indicates significant difference (p<0.05/p<0.01, two-tailed test) in percentage of participants choosing cost minimizing plan. Key health insurance terms include premium, deductible, copay, coinsurance, maximum annual out-of-pocket spending, provider network, and covered services. A table of regression results is included in the Technical Appendix.
Source: September 2015 Health Reform Monitoring Survey (HRMS).