issue brief

Price Transparency Tool Attracts Users But Does Not Lead to Use of Lower-Priced Services

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Introduction

Many analysts and policymakers contend that price transparency, coupled with quality information, will enable consumers to shop for the best value care by transforming the market for medical services into one where providers compete by offering higher value care. "Shoppable" services are viewed as nonemergency services such as hip and knee replacements that are scheduled in advance and provided by competing clinicians and facilities.

The price transparency movement has its followers in policy circles across the ideological divide. States, not-for-profit organizations, insurers, and start-ups now offer tools that allow users to look up prices charged for specific services by different providers in local markets. Conviction, not peer-reviewed research, however, is the source of optimism about the transforming power of price transparency.

This issue brief summarizes findings from an evaluation of a large Midwestern health information technology firm that used a sophisticated transparency tool created by a start-up. We examine the effect on purchasing behavior and found that the tool, while used by many, did not appear to lead to increased use of lower-priced services. The evaluation is of particular interest since the health IT firm's employees are likely to be comfortable with and interested in transparency.

The transparency tool relies on a digital platform with virtually all of the ideal elements as identified by the PRICE taxonomy, including up-to-date cost data, quality comparisons, guidance on connecting with higher value providers and services, and ease of use.[1] The health information technology firm offers a high-deductible health plan (HDHP) with a savings option as its sole source of health care coverage. Beginning in July 2012, the firm we studied implemented this innovative transparency tool that offers ready access to actual cost information and quality data, along with support on changing to high value health care options.

Study Population

Ninety-two percent of firm employees had at least a bachelor's degree. Thirty-six percent had family incomes of $100,000 or higher per year, while only 20 percent had family incomes less than $50,000 per year. The median age of employees is 37, of whom 60 percent were males. Six percent of employees described their health as "poor or fair," 31 percent as "good," and 63 percent as "very good" or "excellent."

Health Plan Design

The studied firm adopted an HDHP with a savings option in 2010 and has not altered the plan since then. The deductible for individual employees is $1,400 and the out-of-pocket expense limit is $2,400. For a family of four or more, the deductible is $2,800 and the out-of-pocket limit is $4,800. The contribution for the health reimbursement account is $400 per year.

Transparency Platform

At the request of the company that developed the tool, we are unable to show screen shots. The tool relies on a claims-based algorithm to identify employees and dependents using comparatively costly providers and prescription drugs. The tool then sends these members monthly customized e-mail messages about potential savings opportunities, prompting employees and/or spouses to log in. Once logged in, users can see all opportunities to save

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Changes in Health Care Financing and Organization is a national program of the Robert Wood Johnson Foundation administered by AcademyHealth.

money by switching to lower-cost providers. The tool will then guide them through a three-step process of making a switch.

Step 1: Selecting a New Provider. Users are first presented with the total cost of their current providers, and are then shown a series of providers within the geographic area that cost less and provide comparable services. Users can tailor savings alerts to ensure that, for example, alerts only pop up if the new provider is within 20 miles of their homes or if savings amount to more than $25.

Step 2: Creating a Plan for Switching. Users must make the actual switch, but the tool supports the process by providing phone numbers for new providers and a brief script for making appointments.

Step 3: Summary of the Switch. Finally, the tool presents total savings from making the switch and the contact information for the new provider. Savings include separate figures for the employee and the health plan. The user is also presented an option to "See More Savings," which allows the user to return to the home screen and see more opportunities to save, at which point the process can begin again.

Quasi-Experimental Design

Based on the July 2012 implementation date, the quasi-experimental design had pre- and post-18-month observation periods (January 2011 – June 2012 and July 2012 – December 2013). The study sample was limited to continuously enrolled employees (N=11,169) and their dependents (N=9,343).

Employees' households were assigned to treatment and comparison groups based on use of the transparency tool during the post period. In our sensitivity analysis we tested different thresholds for the number of logins, but results did not differ if we used one, two, or three logins as the criterion. Households for which the number of logins was less than the threshold amount were assigned to the comparison group.

Study Data

The primary database was medical claims data for persons continuously enrolled from January 2011 to December 2013. Medical claims provide data on charges, diagnoses, procedure code, amount paid by insurer, employee responsibility, and other standard information found on medical claims. We relied on the records of the health information technology vendor to calculate how many times users logged onto the website, how many steps users proceeded through, the date, and the service viewed.

We used enrollment data to model who used the transparency tool. These data include age, sex, and county of residence for each employee and dependent as well as coverage unit (e.g., single, single plus one, etc.).

The observation unit in our analysis was the household. We assumed that in most households one adult was likely to make most of the decisions related to use of the transparency tool and choice of providers.[2]

Price Indexes

We wanted to measure overall changes in prices, but recognized that different households consumed different mixes of medical services and prescription drugs. To address this, two price indexes were constructed: one for medical services and one for prescription drugs, each quarter for each household. We then compared each household's price for its quarterly mix of services for a household to the quarterly average for all persons for these same mixes of services. Most analyses used the resulting price indexes as the dependent variables.

Multivariate Analysis

To determine if use of the transparency tool lowered average prices of medical services compared to non-tool use, we conducted a multivariate analysis using a difference-in-differences model. Dependent variables were the price index for medical services and prescription drugs.

Because of skewness of the dependent variable, we transformed dependent variables into its logarithmic value. Our primary independent variable of interest was a dummy variable indicating whether the household belonged to the treatment or control group. Other covariates were: (1) the sum of the risk score for the household using the Hierarchical Condition Categories (HCC) during the pre-experimental period; (2) the composition of the household (single coverage, employee + dependent, employee + spouse, employee + spouse + dependent(s)); (3) age; (4) gender; (5) dollars from reaching the deductible at the beginning of the quarter; (6) quarter during the study period; (7) number of persons in the household; (8) pre- or post-period; and (9) employee residence inside or outside the metropolitan area where the firm is located.

Findings

Sixty-two percent of the households logged on to the transparency tool at least once (Exhibit 1). About 37 percent logged on once, 15 percent twice, six percent three times, and four percent logged on more than three times.

To create matched samples, we constructed propensity scores and the model weakly predicted whether a household would fall into the treatment or comparison group. Three variables significantly predict households likely to use the tool. First, the higher household risk score during the pre-treatment period, the more likely the household is to use the tool. In other words, the higher the expected medical expenses, the more likely the household will use the tool. Second, the older the age of the employee, the more likely the household is to use the tool. Third, households with a spouse and two children are more likely to use the tool than other households.

Exhibits Two and Three show the average price index calculated every three months for the treatment and comparison groups for medical services and prescription drugs. The average price was lower for the treat-

Exhibit 1: Distribution of Times Households Logged onto Transparency Tool in 18 Month Experimental Period, in Percentages

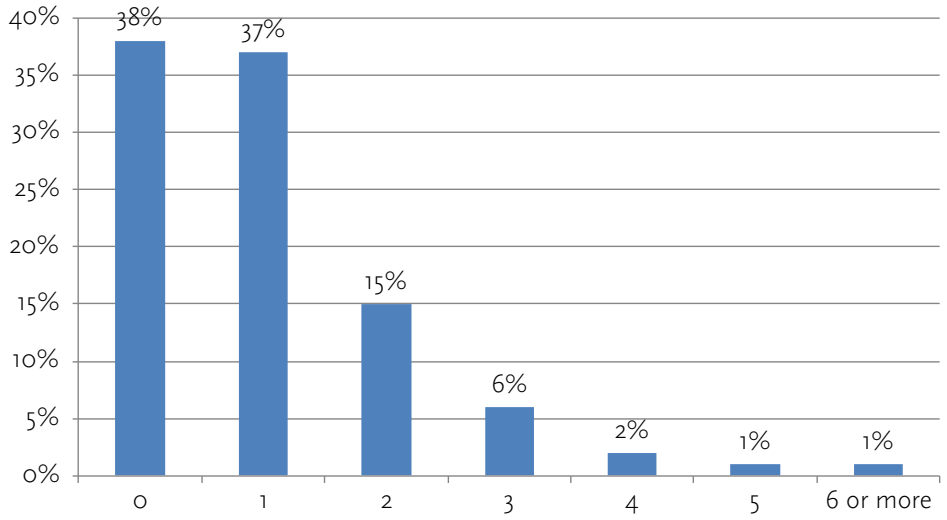


Exhibit 2: Trends in Medical Price Index for Treatment and Control Groups over 12 Quarters

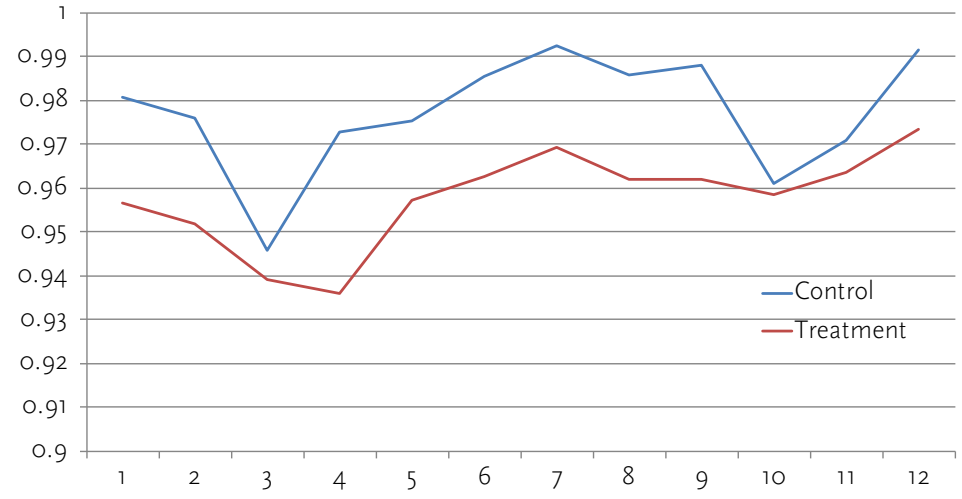
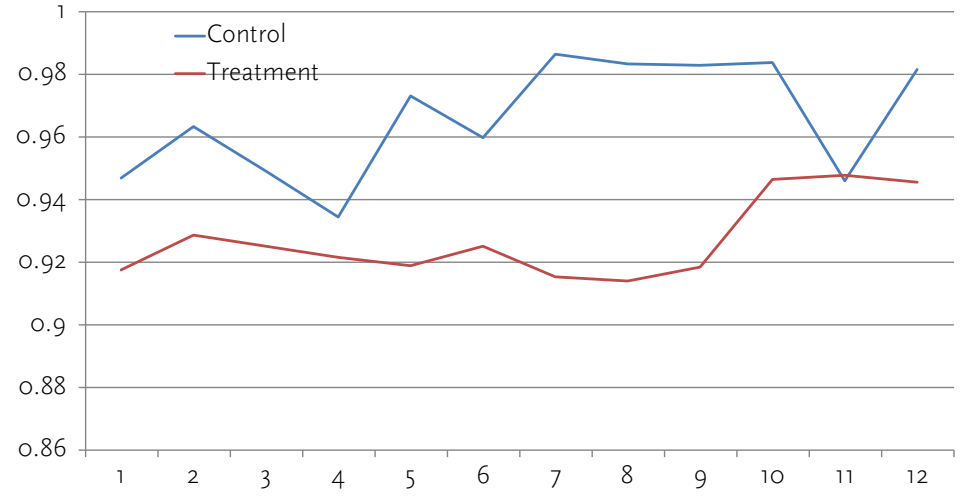


Exhibit 3: Trends in Prescription Drug Index for Treatment and Control Groups Over 12 Quarters



ment group compared to the comparison group before and after the introduction of the price transparency tool. We did not find a trend showing a widening of the gap between comparison and treatment groups after the introduction of the transparency tool for both medical services and prescription drugs.

The difference-in-differences model yielded statistically insignificant results as to the impact of the tool on purchased prices.

Discussion

The good news is that 62 percent of households used the price transparency tool, a figure far exceeding rates in other studies of insurer-based transparency tools. However, only ten percent of households used the tool three times or more. Households that had higher risk scores in the pre-experimental period, and that were larger and older and presumably more hard-pressed financially were more likely to use the tool. Most importantly, compared to non-users of the tool, difference-in-differences analysis found that tool users did not increase their purchasing of lower-priced services relative to non-users.

Why did more households not use the transparency tool more extensively? It may be that the studied employer was not ideal, and that highly paid younger male workers are less concerned about saving money on health care costs. It is also possible that the message on the "Ways to Save" e-mail turned off many households. While the emails did highlight opportunities to save a specific amount of money, a vast majority of the savings were for the employer and a much smaller amount of savings applied to the employee. It is possible that many employees viewed the transparency initiative as simply a means for the employer to save money.

Our findings are consistent with other recent studies that evaluated the use and savings from price transparency tools. In fact, a study of a large commercial insurer found that less than five percent

of employees used the tool and that there was no measurable impact for tool users relative to non-users.[3] In a study of another large national insurer, researchers again found low use.[4]

Conclusion

It could very well be that we are asking too much of a single tool, no matter how well-designed. Consumer information for other goods and services on price and quality are seldom dependent upon information gained mainly, if not solely, through a digital tool. Rather, information on relative value is spread far and wide through advertising and other kinds of promotion using conventional, digital, and social media communication channels.

About the Authors

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Endnotes

1. PRICE refers to Price transparency (out-of-pocket costs; timely cost data; clear description of costs); Real comparisons (shoppable conditions; market comparisons; customizable searches); Information on value (high value providers; quality comparators; patient ratings/reviews); Connect to care (Address/Contact information; acceptance of new patients; logistics); and Ease of use (simple interface; understandable; user support).
2. According to the Kaiser Family Foundation, women make more than 80 percent of health care decisions for their children. See Kaiser Family Foundation, Women's Health Care Chartbook, May 2011, p. 36, https://kaiserfamilyfoundation.files.wordpress.com/2013/01/8164.pdf
3. A. Sinaiko and M. Rosenthal, "Examining a Health Care Price Transparency Tool: Who Uses It, And How They Shop for Care," doi: 10.1377/hlthaff.2015.0746Health Aff April 2016 vol. 35 no. 4662-670
4. A. Cuellar, "The Impact of a Customized Price Transparency Tool on Customer Behavior," Presentation at HCFO/RWJF Conference on Price Transparency, Washington D.C., May 12, 2016.