

Patients' Views on Price Shopping and Price Transparency

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Growing interest in healthcare consumerism is built on the premise that individuals should make healthcare decisions by using a combination of quality data, price information, and personal preference, just as they would when making other purchases.^{1,2} Prior work has studied how individuals (ie, consumers) use quality data to inform their healthcare decisions,³⁻⁶ but little qualitative research has examined how people do or do not use price data. This lack of evidence is notable in light of the recent proliferation of price transparency initiatives. Over 60 publically accessible websites hosted by state-based agencies and hospital associations are now available.^{7,8}

Numerous employers have introduced price transparency tools to their employees,⁹⁻¹¹ which aim to engage individuals with easily accessible price data so they can shop for low-cost providers. Estimates suggest that increased competition from such a shift in demand would drive down overall healthcare spending¹²⁻¹⁴ by up to \$36 billion.¹⁵

Despite the prevalence of healthcare price transparency tools and their potential associated savings, few appear to use such tools or price shop for care.^{8,10,16-19} Recent research on healthcare decision making by those in high-deductible health plans (HDHPs) found that enrollees do not use price information despite the fact that their choice of lower-cost providers could reduce their out-of-pocket costs.²⁰⁻²³ When they do shop for care, it is often by calling their insurer or provider directly,²⁴ which can make it difficult to compare across providers.²⁵ In theory, online price transparency tools facilitate comparative shopping, but they have had mixed effects in practice. Some study results have shown either a modest reduction in price per service or enrollees switching to lower-cost providers, but many others have shown no effects on the prices of services that patients receive and on outpatient spending.^{9,10,26} One key finding throughout prior research is that individuals have not used price transparency tools as much as anticipated.^{9,10,26,27}

The reasons for the lack of price shopping remain unclear. It is possible that individuals view healthcare decisions differently than other consumer decisions and, correspondingly, do not seek

ABSTRACT

OBJECTIVES: Driven by the growth of high deductibles and price transparency initiatives, patients are being encouraged to search for prices before seeking care, yet few do so. To understand why this is the case, we interviewed individuals who were offered access to a widely used price transparency website through their employer.

STUDY DESIGN: Qualitative interviews.

METHODS: We interviewed individuals enrolled in a preferred provider organization product through their health plan about their experience using the price transparency tool (if they had done so), their past medical experiences, and their opinions on shopping for care. All interviews were transcribed and manually coded using a thematic coding guide.

RESULTS: In general, respondents expressed frustration with healthcare costs and had a positive opinion of the idea of price shopping in theory, but 2 sets of barriers limited their ability to do so in reality. The first was the salience of searching for price information. For example, respondents recognized that due to their health plan benefits design, they would not save money by switching to a lower-cost provider. Second, other factors were more important than price for respondents when choosing a provider, including quality and loyalty to current providers.

CONCLUSIONS: We found a disconnect between respondents' enthusiasm for price shopping and their reported use of a price transparency tool to shop for care. However, many did find the tool useful for other purposes, including checking their claims history. Addressing the barriers to price shopping identified by respondents can help inform ongoing and future price transparency initiatives.

Am J Manag Care. 2017;23(6):e186-e192

out price information. Conversely, they might be interested in using price transparency tools but face barriers to their use. To fill this gap in knowledge, we conducted a series of qualitative interviews with individuals who were offered a popular price transparency tool by their employer. Our goal was to understand respondents' general views on price shopping and motivations for shopping, experiences with the price transparency tool, and potential barriers to price shopping for healthcare.

TAKEAWAY POINTS

Our findings provide insight on why patients are not price shopping for care despite numerous efforts to promote price transparency. These findings suggest that key barriers must be addressed in order to promote ongoing and future price transparency initiatives:

- ▶ The idea of price shopping is not familiar to most patients. Price transparency initiatives should remind patients, at relevant times, to shop for care and services.
- ▶ The structure of current health plan benefits inhibits price shopping. Other forms of health plan benefits, such as tiered networks or reference-based pricing, may be more conducive to shopping for care.
- ▶ Price transparency initiatives may provide value to patients beyond price shopping, including tracking claims and deductibles status. Encouraging this type of usage may increase patient engagement with price data.

METHODS

Study Population

The California Public Employees' Retirement System (CalPERS) manages the health benefits of over 1.4 million members, including teachers, state employees, retirees, and their dependents. Of these members, roughly 200,000 are enrolled in one of its preferred provider organization (PPO) products. Those enrolled in a PPO product were given the option to enroll in an online price transparency tool starting July 1, 2014. In 2015, we interviewed a sample of the PPO members; these members had a \$500 individual or \$1000 family deductible, a \$20 co-payment for office visits, and 20% coinsurance for outpatient facilities and surgery services for in-network providers.²⁸ Members also faced cost sharing through a reference-based pricing benefits program that began in 2011. Under this program, the health plan paid a fixed contribution toward hip or knee replacement surgeries and select outpatient services (eg, colonoscopy) and members did not pay additional costs above their normal cost sharing if they elected to have their procedure at a preferred facility.^{29,30}

Price Transparency Tool

CalPERS' PPO members were offered Castlight, an online price transparency tool that provides users with information about their out-of-pocket costs for healthcare services, including office visits, procedures, imaging, and labs, at different local providers.³¹ All prices are specific to the user's benefits design and provide real-time estimates that account for their deductible and out-of-pocket spending during the year. Members can also use the price transparency tool to review their claims history. For some searches, Castlight displays quality data on each provider.

CalPERS launched a consumer engagement campaign to encourage Castlight usage. Members were sent an e-mail from Castlight that invited them to open an online account and to invite other covered family members to access the tool as well. Other promotional efforts included home mailers, a 30-day lottery of iPad giveaways for employee members who created an account, live demonstrations, and additional incentives leading up to open enrollment in

2014. Continued communication with tool users included e-mail alerts when new claims information became available and monthly product updates. Four months after the introduction of the tool, 23% of eligible households had registered for the tool.

Interview Protocol

Of the roughly 200,000 PPO members who had access to the price transparency tool, CalPERS sent introductory letters to a sample of 200. We chose 200 based on an anticipated response rate with the plan to recruit more respondents if we did not saturate themes. Individuals were invited to participate in a 20-minute phone interview to discuss how they choose where to get healthcare and how price affects these decisions. If they were interested, they were asked to call or e-mail to set up an interview. We provided a \$50 gift card on completion of the interview.

We were interested in talking to 3 groups of respondents: 1) those who had never used the price transparency tool, 2) those who had used it infrequently, and 3) those who had used it frequently for a sustained amount of time (defined as more than 5 log-ins over a 6-month period, with each log-in separated by at least 1 month) since the tool was introduced. CalPERS had access to administrative data on who had used the tool and how frequently, but for privacy reasons, these data were not available to the Harvard research team. In order to compensate for low rates of tool usage, CalPERS preferentially sampled and sent letters to those individuals who had used it frequently for a sustained amount of time. Interviews were conducted by 4 study team members (HS, RG, AS, AM) between May and October 2015. All interviews were transcribed.

Interview Content

Phone interviews used a semistructured interview guide that focused on 4 areas: the respondent's use of the price transparency tool (if any), previous use of healthcare and how he or she selects a provider, opinions about healthcare consumerism, and demographic information. Consistent with qualitative research methods, interviewers had the flexibility to engage respondents in relevant discussion outside of the structured questions.³²

TABLE 1. Characteristics of Interview Respondents

Characteristic	N (%)
Sex	
Female	26 (67)
Male	13 (33)
Age, years	
20-29	1 (3)
30-39	6 (15)
40-49	7 (18)
50-59	12 (31)
60-69	12 (31)
≥70	1 (3)
Education level completed	
High school	2 (5)
Some college	9 (23)
Associate's or bachelor's degree	17 (44)
Master's or professional degree	10 (26)
Unknown	1 (3)
Covered by CalPERS member's insurance policy	
CalPERS member only	14 (36)
CalPERS member and other family member(s)	25 (64)
Reported Castlight usage	
Never	9 (23)
Rare (1-3 log-ins)	13 (33)
Moderate (≥4 log-ins)	17 (44)

CalPERS indicates California Public Employees' Retirement System.

Analyses

Interviews were coded using Dedoose (SocioCultural Research Consultants, LLC, Los Angeles, CA), an online platform for analyzing qualitative research. Research team members developed a thematic coding guide around use of the price transparency tool, opinions on shopping for care, and general views of the cost of healthcare. Using Dedoose, a study team member (HS) analyzed the transcribed interviews in conjunction with respondents' descriptive information using the coded themes. Other study team members (RG, AS, AM) also coded a random sample of interviews to confirm consistency of coding and themes.

This study and its materials were approved by the Harvard University Institutional Review Board.

RESULTS

We contacted 200 CalPERS members who were enrolled in a PPO product and given access to the Castlight price transparency tool through their employer. We interviewed 39 members (20% response rate); 67% were female, 65% were older than 50 years,

and 73% had completed an associate's degree or higher (Table 1). Among respondents, 17 reported using the price transparency tool frequently (defined as 4 or more reported log-ins), 13 reported using it infrequently (defined as 1-3 reported log-ins), and 9 reported never having used it. Our findings did not vary substantively across users versus nonusers or by frequency of use of the tool. Thus, we present our results by themes and highlight the few circumstances where there are notable differences.

Views on the Cost of Healthcare and Price Shopping

Most respondents expressed frustration with the high cost of their healthcare, price variations across providers, and receiving an unexpected, costly bill after receiving care. Many felt like they did not have control over their or their family's healthcare spending beyond taking the initial step to seek medical care. One respondent said, "Control, I mean you can decide not to go and get the care, so in that respect, you have control. But at the same time, if you want to be healthy, you really do need to [get needed care], and sometimes that means you have to go do something that's going to cost you money. And you don't have any control over what they're going to charge you."

Despite this general frustration with costs and a lack of control, a number of respondents were very conscious of their healthcare spending and carefully monitored their family's spending and deductible status. This tracking of spending was reported both by respondents who had used the price transparency tool and those who had not.

Although relatively few had done so, most respondents had a positive opinion of the idea of price shopping and believed it could improve the value of the care they receive. One respondent said, "I don't think that it hurts to get an idea [of price] if you're going to get...comparable quality care at a location that's gonna cost you a little bit less; then I think it is helpful information." Some respondents drew parallels between healthcare and other types of purchases: "It's just like going to get a car: [if] people are out looking around, trying to get the best price, [dealers] are going to drop the price for you because they want your business. I don't think health care will be any different." However, this sentiment was not universal. Several respondents did not support shopping for care based on price because they felt that money does not matter when it comes to taking care of their health.

Among those who reported prior price shopping, most attributed it to having gone through a major health event themselves or with a family member. One respondent commented, "I have a very good idea [of how much I spend on medical care]...because a couple of years ago I had a big surprise, and suddenly I started keeping track."

Perceived and Actual Barriers to Shopping for Care

Despite frustration with the cost of care and optimism about price transparency among most respondents, many cited multiple barriers to shopping for care and using the price transparency tool (Table 2).

TABLE 2. Reported Barriers to Shopping for Care, by Theme

Theme	Representative Quote from a Respondent
Salience of searching for price information	
Going against the provider's referral is a foreign concept	"[My imaging is] always ordered through whatever doctor's ordering it, I've never had an option of where I had it [done]. They usually order it and then I get a call from the place. It's rarely where I call the place and set up an appointment...I really love this 'talking about choices,' but a lot of times in my personal opinion less and less patients really feel like they have much of a choice and it's more dictated to them where they're gonna go."
Forgot to use price transparency tool	"Now that we're talking about it, I did have problems with my knee in January, and I wished I'd remembered to look at [Castlight] then! The problem with my knee required an ultrasound and then an MRI. And I had absolutely no idea how much that was going to cost until I got the bill."
Unnecessary because of benefits design	"[On Castlight, I was looking for] what an MRI would cost, uh, and also...arthroscopic surgery for my knee, I was just kind of looking into that. And okay, there were a couple places, but it didn't matter because I had already exceeded my deductible for the year, so it wasn't really out-of-pocket at that point."
Limited by provider choices	"I am on the central coast and it is pretty small here. There is not a lot to choose from [for MRIs]. You can't just pick and choose and shop around. You know, you aren't in a big town [where] you can go anywhere."
Limited by provider network	"So I found out the name of... an imaging place that does take appointments and...I looked up to see if this place was on any of my networks. And they were not covered on any of them. And...I thought to myself well [I am going to have to go back to] the one where...I have to wait [to be seen]."
Skeptical about the usefulness of a price quote	"There's no way to determine bills until after they come in...It's like, for a tonsillectomy, I can't just go online and see what it's gonna cost me because the doctors are going to order a lab, somebody [else] might order 2 labs, somebody might want 1 x-ray, somebody [else] might want 3; so, there's no way to determine."
Factors that are more important for provider choice than price	
Loyalty to current provider	"For 2 of my doctors, I would, I would pay no matter what. Whether or not my insurance paid less, I would still continue to see them...For either my gynecologist or my dermatologist, the price doesn't matter to me because I have an established rapport with them and I trust them, and we have a good connection so I'm gonna see them no matter what and just hope it's gonna be within the same [price] range."
Trust placed on current provider's referral	"My primary health care provider is actually the same for my entire family. It's our family doctor, and we've known her forever, so, she's golden. She's never steered us wrong, and she usually gives us the referrals, like, I'll say, 'do you know anyone that does this or does that?' And even though I don't have to do that, I like to get her opinion on who the doctor would be to see."
Importance of quality care	"When I look for a doctor, the last thing I do is check the price. I'm looking to see if that doctor has a track record of providing good health care, doing things that are good for [their] patients, how much [time] they spend with patients, that's the things that matter to me...I'm looking at, has anybody died in this, you know, outpatient surgical center, has it got a good track record. I'm more concerned about performance than I am the price."
Idea that money doesn't matter when it comes to health	"Our health is the most valuable thing we have, so you know, we pay what has to be paid."

Salience of searching for price information. The first set of barriers related to when and for what reason respondents reported they should search for price information. As previously noted, most supported the idea in theory; however, many respondents described price shopping as a foreign concept, as they had never considered using price to choose a doctor or going against a referral from their provider. Among those who had not used the tool, several respondents mentioned they simply forgot to use the price transparency tool when they were searching for a new provider. In particular, it was common for respondents to express disappointment during the interview if they had forgotten to use the tool after being reminded of it. Among those who had used the tool, it was common to have logged on to the tool once or twice out of curiosity but to not have returned to the website since then.

Another theme in the interviews was the belief that proactively searching for price would not impact what respondents would pay out-of-pocket for their care. For example, several respondents noted that it was unimportant to shop for care because they were already beyond their deductible or because their co-payment for an office visit was always the same. Many—in particular, those in rural areas—felt it was not useful to shop for care because there was a limited set of providers they could see within their health plan's provider network. Others were skeptical of the usefulness of the price information on the website because it did not account for the tests or referrals the physician might order during a visit.

Perception that other factors are more important for provider choice than price. The second set of barriers consisted of factors that respondents judged as more important than their out-of-pocket

costs when selecting a provider. Overwhelmingly, respondents did not want to shop for care because of loyalty to their current providers. This was true of those who used the tool and those who had not. Many respondents commented that differences in price were relatively unimportant when it came to their primary care physicians (PCPs) and specialists with whom they had an established relationship. Respondents also judged referrals and input from their own physicians as key reasons for making a given provider decision.

Most respondents believed that seeking quality care was more important than the location of the facility and far more important than their out-of-pocket costs. However, there was disagreement among respondents on how to choose care based on quality. Some respondents took the provider's location or the cost of their care to indicate quality: "[For] the more quality [care you receive], you should expect to pay a little bit higher cost as opposed to those [providers] that are discounted and may not have the attention to detail to find out exactly what you're going in for, what's wrong with [you]...I don't have a problem with that." Yet, many respondents reported that price had little to do with quality.

Of the notion that higher-priced providers offer higher-quality care, one respondent said, "I don't agree with that. I've had doctors that...provide incredible care and I've had other doctors that, you know, they charge huge amounts and you get 5 minutes of their time, and you're out of there. No, I don't see a correlation at all [between price and quality]." Respondents also reported overlooking price when it ultimately came to making a medical decision to improve their health and well-being.

Among those who used the price transparency tool, few made a decision based solely on the tool and instead used it as a supplement to other resources to make provider choices, such as online reviews and referrals from friends and family. One respondent described, "I spend quite a long time because what I do is I take the info from Castlight, and...[I try to] find the right match between what Yelp says about the office that Castlight is saying has quality."

Situations amenable (or not) to shopping for care. Respondents reported that shopping for care, using either the price transparency tool or other resources, was reasonable for nonemergent services. Of the respondents who had shopped for care, particularly those who had used the price transparency tool, they most frequently reported doing so for imaging and labs. One respondent described, "I routinely have [an] MRI because...of the [BRCA] gene...and I was concerned about how much it was going to cost...That's why I went to Castlight." A few respondents also described using the price transparency tool to find cheaper labs than they were currently using: "I have a condition that requires I have lab work 3 or 4 times a year...The blood work through the particular laboratory [I found on Castlight] was like 15%-16% of what I was paying for the last 5 years at the hospital labs...It's a huge difference for me."

Respondents also described situations in which they would not use the price transparency tool. They rarely reported using

the price transparency tool to search for a new PCP. A few searched for their own PCP out of curiosity rather than with the intention of making a switch.

Other Uses for the Price Transparency Tool Beyond Price Shopping for Upcoming Care

A number of respondents described using the price transparency tool for purposes beyond shopping for upcoming care. Some searched for their provider after booking an appointment to plan for the costs or even after the appointment in order to make sense of a bill. Using the tool to check their deductible status or view previous claims was also popular: "I wanted to keep track of my past visits and past spending...so I logged on [to Castlight], and they are pretty good at keeping [track] of visits and where you are actively in...spending."

The tool was also used for determining whether providers were in respondents' health plan network. Others also searched for their existing providers on the price transparency tool to check that they were still in-network or find a new provider who was. Lastly, some respondents reported using the price transparency tool to browse for prices for services they vaguely anticipated needing in the future, either for themselves or their family members, but were not immediately seeking: "I looked up knee surgery, you know, just looking around on the website, what it does. Because I'm thinking of potential future health issues."

DISCUSSION

Multiple initiatives have been introduced to make it easier for individuals to obtain healthcare cost information; however, despite the wider availability of this data, few are price shopping or using such tools to choose their providers. Our study begins to shed light on why, and we found a notable disconnect. Whether they price shopped for care or not, many respondents described frustration with lack of control over spending and enthusiasm for price transparency and price shopping. Yet, few respondents were able to effectively price shop for care due to a set of common barriers.

The first set of barriers related to salience. Respondents were unfamiliar with the idea of shopping for care and often forgot to use the tool. This might change over time as people become more familiar with the availability of price transparency tools and the concept. However, we also heard that the current structure of health plan benefits inhibits price shopping. In some cases, respondents stated that there was limited choice of providers in their network, particularly in rural geographic areas in which there are simply not enough healthcare providers in-network to offer a real choice.^{15,33} In other cases, respondents accurately reported that shopping was useless, as their out-of-pocket costs would be the same. Echoing the concerns of others,^{13,26,34} many services that might otherwise be "shop-able" only require a co-payment or

immediately exceed an individual's deductible. Greater reliance on tiered networks based on price, reference-based pricing, or coinsurance in health plan benefits may increase the salience of price shopping.

The second set of barriers included other factors that were more important than price, such as quality. Research on HDHPs and quality reporting has also highlighted that patients value provider quality over out-of-pocket costs.^{12,21,34}

Finally, and potentially most importantly, provider loyalty and trust in their providers' referrals typically trumped willingness to switch providers and out-of-pocket price data.^{35,36} These findings highlight that solely giving people price data will have a limited impact in terms of where they choose care. Also, engaging providers—PCPs in particular—in price data will be critical.³⁷ For example, a PCP may refer his or her patient to a different imaging center if this will result in lower out-of-pocket costs for the patient.

For price transparency tools to be used more effectively, the public needs education and reminders about how, when, and why they should price shop. There was some uncertainty on what is considered shop-able. Echoing prior work,^{10,19,24,26,38} our respondents focused on imaging and labs as areas where they would feel most comfortable using price data. In contrast, they reported being least likely to use price data to switch to a different physician. Given our findings about the salience of searching for price information, passively hoping for patients to use a price website is unlikely to be successful. They need reminders about the availability of price data and ideally to be provided with the data at the time of decision making, especially for services that could be defined as shop-able.

Although price transparency tools have been introduced largely to encourage price shopping, it was notable that respondents found the tool helpful for many other purposes, including checking their previous claims history and deductible status, and planning ahead for the costs of an upcoming visit or procedure. Encouraging the use of the tools for these purposes might increase engagement with price data and help patients feel they have more control over healthcare spending. It was also notable that many of the provider searches were for educational purposes and not with the intention of switching. This might explain why prior research has found that office visits are a commonly searched type of care.^{8,19,24}

Limitations

We relied on information reported by the respondents about their price transparency tool usage, as our research team was not allowed access to usage data. As such, respondents could have under- or overrepresented their utilization. Also, a self-selected group responded to the introductory letter, and our sample was made up of beneficiaries of a public employee organization and overrepresented by older adults and females; the opinions on price shopping may be unique to this population. Lastly, because the focus of this study was price shopping and a price transparency

tool, we did not focus on how individuals use quality information when making their healthcare decisions and what they thought of how both price and quality information was presented to them. Our study was exploratory in nature, and further research is required to inform recommendations to promote price shopping efforts.

CONCLUSIONS

We found a disconnect between respondents' general enthusiasm for price shopping and their reported use of a price transparency tool. Respondents cited many barriers to using price information when choosing care, including the salience of the idea of price shopping for care and other factors, such as provider loyalty, that were more important than price. A better understanding of how individuals view their role as healthcare consumers and use price information to shop for care can be used to tailor ongoing and future price transparency initiatives. ■

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Source of Funding: This study was funded by the California Public Employees' Retirement System (CalPERS).

Author Disclosures: The authors report no relationship or financial interest with any entity that would pose a conflict of interest with the subject matter of this article.

Authorship Information: Concept and design (DC, RG, AM, ADS, HLS); acquisition of data (DC, RG, AM, ADS, HLS); analysis and interpretation of data (RG, AM, ADS, HLS); drafting of the manuscript (HLS); critical revision of the manuscript for important intellectual content (DC, RG, AM, ADS, HLS); provision of patients or study materials (HLS); obtaining funding (AM); administrative, technical, or logistic support (DC, RG, HLS).

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REFERENCES

- Huckman RS, Kelley MA. Public reporting, consumerism, and patient empowerment. *N Engl J Med*. 2013;369(20):1875-1877. doi: 10.1056/NEJMp1310419.
- Robinson JC. Managed consumerism in health care. *Health Aff (Millwood)*. 2005;24(6):1478-1489.
- Shaller D, Sofaer S, Findlay SD, Hibbard JH, Lansky D, Delbanco S. Consumers and quality-driven health care: a call to action. *Health Aff (Millwood)*. 2003;22(2):95-101.
- Hibbard JH, Greene J, Daniel D. What is quality anyway? performance reports that clearly communicate to consumers the meaning of quality of care. *Med Care Res Rev*. 2010;67(3):275-293. doi: 10.1177/1077558709356300.
- Peters E, Dieckmann N, Dixon A, Hibbard JH, Mertz CK. Less is more in presenting quality information to consumers. *Med Care Res Rev*. 2007;64(2):169-190.
- Hibbard JH, Jewett JJ. What type of quality information do consumers want in a health care report card? *Med Care Res Rev*. 1996;53(1):28-47.
- Kullgren JT, Ducey KA, Werner RM. A census of state health care price transparency websites. *JAMA*. 2013;309(23):2437-2438. doi: 10.1001/jama.2013.6557.
- Mehrotra A, Brannen T, Sinaiko AD. Use patterns of a state health care price transparency website: what do patients shop for? *Inquiry*. 2014;51. doi: 10.1177/0046958014561496.
- Desai S, Hatfield LA, Hicks AL, Cherner ME, Mehrotra A. Association between availability of a price transparency tool and outpatient spending. *JAMA*. 2016;315(17):1874-1881. doi: 10.1001/jama.2016.4288.
- Whaley C, Schneider Chafen J, Pinkard S, et al. Association between availability of health service prices and payments for these services. *JAMA*. 2014;312(16):1670-1676. doi: 10.1001/jama.2014.13373.
- 19th annual Towers Watson/National Business Group on Health employer survey on purchasing value in health care. Towers Watson website. <https://www.towerswatson.com/en/Insights/IC-Types/Survey-Research-Results/2014/05/full-report-towers-watson-nbgh-2013-2014-employer-survey-on-purchasing-value-in-health-care>. Published May 2014. Accessed April 2016.

12. Hibbard JH, Greene J, Sofaer S, Firminger K, Hirsh J. An experiment shows that a well-designed report on costs and quality can help consumers choose high-value health care. *Health Aff (Millwood)*. 2012;31(3):560-568. doi: 10.1377/hlthaff.2011.1168.
13. Mehrotra A, Hussey PS, Milstein A, Hibbard JH. Consumers' and providers' responses to public cost reports, and how to raise the likelihood of achieving desired results. *Health Aff (Millwood)*. 2012;31(4):843-851. doi: 10.1377/hlthaff.2011.1181.
14. Sood N, Wagner Z, Huckfeldt P, Haviland A. Price-shopping in consumer-directed health plans. *Forum Health Econ Policy*. 2013;16(1):1-19.
15. Christensen HB, Floyd E, Maffett MG. The effects of price transparency regulation on prices in the health-care industry. SSRN website. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2343367. Published October 22, 2013. Accessed April 2016.
16. Higgins A, Brainard N, Veselovskiy G. Characterizing health plan price estimator tools: findings from a national survey. *Am J Manag Care*. 2016;22(2):126-131.
17. Brot-Goldberg ZC, Chandra A, Handel BR, Kolstad JT. What does a deductible do? the impact of cost-sharing on health care prices, quantities, and spending dynamics. National Bureau of Economic Research website. <http://www.nber.org/papers/w21632/>. Published October 2015. Accessed April 2016.
18. National scorecard on payment reform. Catalyst for Payment Reform website. <http://www.catalyzepaymentreform.org/images/documents/NationalScorecard.pdf>. Published March 2013. Accessed April 4, 2016.
19. Sinaiko AD, Rosenthal MB. Examining a health care price transparency tool: who uses it, and how they shop for care. *Health Aff (Millwood)*. 2016;35(4):662-670. doi: 10.1377/hlthaff.2015.0746.
20. Dixon A, Greene J, Hibbard J. Do consumer-directed health plans drive change in enrollees' health care behavior? *Health Aff (Millwood)*. 2008;27(4):1120-1131. doi: 10.1377/hlthaff.27.4.1120.
21. Lieu TA, Solomon JL, Sabin JE, Kullgren JT, Hinrichsen VL, Galbraith AA. Consumer awareness and strategies among families with high-deductible health plans. *J Gen Intern Med*. 2010;25(3):249-254. doi: 10.1007/s11606-009-1184-5.
22. Kullgren JT, Galbraith AA, Hinrichsen VL, et al. Health care use and decision making among lower-income families in high-deductible health plans. *Arch Intern Med*. 2010;170(21):1918-1925. doi: 10.1001/archinternmed.2010.428.
23. Penfold RB, Kullgren JT, Miroshnik I, Galbraith AA, Hinrichsen VL, Lieu TA. Reliability of a patient survey assessing cost-related changes in health care use among high deductible health plan enrollees. *BMC Health Serv Res*. 2011;11:133. doi: 10.1186/1472-6963-11-133.
24. How much will it cost? how Americans use prices in health care. Public Agenda website. https://www.publicagenda.org/files/HowMuchWillItCost_PublicAgenda_2015.pdf. Published March 2015. Accessed April 2016.
25. Sinaiko AD, Chien AT, Rosenthal MB. The role of states in improving price transparency in health care. *JAMA Intern Med*. 2015;175(6):886-887. doi: 10.1001/jamainternmed.2015.0628.
26. Wu SJ, Sylwestrzak G, Shah C, DeVries A. Price transparency for MRIs increased use of less costly providers and triggered provider competition. *Health Aff (Millwood)*. 2014;33(8):1391-1398. doi: 10.1377/hlthaff.2014.0168.
27. Kamrudin S, Shah M. A comparison of myHealthcare Cost Estimator users and nonusers: effect on provider choices. UnitedHealthcare website. <http://www.unitedhealthgroup.com/newsroom/articles/feed/unitedhealthcare/2014/0916studyhealthcarecostestimator.aspx>. Published September 2014. Accessed April 2016.
28. California Public Employees' Retirement System. 2015 health benefit summary: helping you make an informed choice about your health plan. CalPERS website. <http://college.lattc.edu/payroll/files/2009/05/2015-health-benefit-summary.pdf>. Published September 2014. Accessed April 2016.
29. Robinson JC, Brown T, Whaley C. Reference-based benefit design changes consumers' choices and employers' payments for ambulatory surgery. *Health Aff (Millwood)*. 2015;34(3):415-422. doi: 10.1377/hlthaff.2014.1198.
30. Robinson JC, Brown TT. Increases in consumer cost sharing redirect patient volumes and reduce hospital prices for orthopedic surgery. *Health Aff (Millwood)*. 2013;32(8):1392-1397. doi: 10.1377/hlthaff.2013.0188.
31. Castlight Health website. www.castlighthealth.com. Accessed April 4, 2016.
32. Diccio-Bloom B, Crabtree BF. The qualitative research interview. *Med Educ*. 2006;40(4):314-321.
33. Ginsburg PB. Shopping for price in medical care. *Health Aff (Millwood)*. 2007;26(2):w208-216.
34. Sinaiko AD, Rosenthal MB. Increased price transparency in health care--challenges and potential effects. *N Engl J Med*. 2011;364(10):891-894. doi: 10.1056/NEJMp1100041.
35. The public's views on medical error in Massachusetts. Harvard School of Public Health website. <https://cdn1.sph.harvard.edu/wp-content/uploads/sites/94/2014/12/MA-Patient-Safety-Report-HORP.pdf>. Published December 2014. Accessed April 2016.
36. Harris KM. How do patients choose physicians? evidence from a national survey of enrollees in employment-related health plans. *Health Serv Res*. 2003;38(2):711-732.
37. Horn DM, Koplan KE, Senese MD, Orav EJ, Sequist TD. The impact of cost displays on primary care physician laboratory test ordering. *J Gen Intern Med*. 2014;29(5):708-714. doi: 10.1007/s11606-013-2672-1.
38. Sinaiko AD, Mehrotra A, Sood N. Cost-sharing obligations, high-deductible health plan growth, and shopping for health care: enrollees with skin in the game. *JAMA Intern Med*. 2016;176(3):395-397. doi: 10.1001/jamainternmed.2015.7554.

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