A Consumer-based Evaluation of Healthcare Price and Quality Transparency

F. Lee Revere, PhD[1]
Alissa Ratanatawan, MD[1]
Elifnur Yay Donderici, MS[1]
J. David Miller, MBA[1]
Robert Morgan, PhD[1]

[1]The University of Texas Health Science Center at Houston, School of Public Health

ABSTRACT

Growing trends in private and public healthcare spending has created a sense of urgency around better understanding and publicizing healthcare costs and quality. The quantity and usability of consumer-based websites providing healthcare price and quality transparency is steadily growing. These websites are well-positioned to provide comparative information which may influence consumer purchasing decisions. This research evaluates the growing trend in publicly available transparency data and the influence this information may have on healthcare leaders, providers, policy-makers and consumers.

INTRODUCTION

Many stakeholders including health plans, consumer groups, and state governments are increasingly reporting healthcare price information[1,2]. A large number of state-funded all-payer claims databases (APCD), not-for-profit transparency websites and for-profit online portals have been developed to provide healthcare price data to the general public[3]. The costs to develop and maintain these APCDs and websites vary from state to state. For example, Vermont spends approximately $750,000 per year on its APCD, while Colorado spends $2.4 million per year[4]. In 2013, the US Department of Health and Human Services awarded $87 million in grant money to states "to enhance their rate review programs and further healthcare pricing transparency"[4]. In addition, in 24 states, private organizations, such as hospital associations, provide price transparency and quality data to consumers via the internet. Despite these efforts, there are relatively few initiatives underway to evaluate the usefulness of providing healthcare information to consumers.

Most tout healthcare price and quality transparency as increasingly important to allow consumers to make well-informed decisions about their healthcare. Media attention reflects the growing awareness in the contribution of pricing to the growth of healthcare expenditure[5]. Price transparency is essential to help patients and consumers understand their financial obligation for an episode of care[6] and in choosing a provider. According to the Journal of General Internal Medicine, 25 percent of senior citizens declare bankruptcy due to healthcare costs that might be avoided by providing consumers with accurate information[7]. However, price transparency alone is not sufficient. Price and quality should be reported together so that consumers can make informed decisions regarding provider differences. Unfortunately, many consumers believe that more care is better and that higher-cost providers are higher-quality providers. Thus providing information about low cost providers may have the perverse effect of deterring consumers from accessing these providers. Consumers might interpret "lower cost" as evidence of scrimping on care and therefore low quality[8]. Therefore, presenting healthcare quality information alongside price information will allow consumers to make balanced decisions about healthcare services they purchase.

Consumers seek information before and after their healthcare purchasing decisions. One of the most common ways for consumers to obtain price and quality information is by searching the internet. Because consumer behavior changes based on the information available, stakeholders spend millions of dollars on developing and maintaining websites. These websites affect the patients' use of, and experience with, care in both direct and indirect ways. For example, consumer satisfaction is often impacted by the consumers' website experience. Analysis of 1,952 U.S. hospitals shows that the quality of hospitals' public websites is significantly and positively related to patient's overall rating of the hospital and their intention to recommend the facility to others[9]. Price and quality transparency are shown to promote effective choice from the patients' side and promote competition from the providers' side[10]. With publicly available information, providers have to compete in the market in terms of both acceptable quality and competitive prices to attract consumers.

This paper expands the current body of knowledge by evaluating the availability and usability of consumer-based websites with healthcare price and quality information. Understanding the growing trend in consumer-based transparency websites is important for healthcare leaders, providers, policy-makers and consumers.

LITERATURE REVIEW
The existing literature on healthcare price and quality transparency websites falls into three broad categories: examination of consumer groups that benefit from transparency websites, identification of sources of price and quality information, and evaluation of website design and features.

<u>Consumers</u>
A variety of consumer groups benefit from well-designed healthcare price transparency websites. Self-pay, uninsured or underinsured patients, individuals with high deductibles, and insured with significant coinsurance levels are most likely to use price transparency websites, because it allows them to shop for the lowest healthcare prices in their area. Uninsured individuals represent the preponderance of self-pay patients in most hospitals[11] and few are able to pay the full charge for hospital care. Given these patients must (legally) pay the full chargemaster price themselves, there is a strong incentive to use transparency websites to compare, and potentially negotiate, provider prices. Although underinsured individuals and those with high deductibles or coinsurance levels have the benefit of paying their insurance company's contracted rate (allowed amount); the patient responsibility level can be extremely high. Thus, these individuals are apt to price shop for lower cost contracted providers.

In 2014, 15 percent of the nonelderly adult population with employer-sponsored private health insurance were reported to have a consumer-driven plan while another 11 percent had a high deductible plan without a health savings account[12]. And, individuals covered under a silver health exchange plan had an average

deductible of $2,275[13]. Like the high coinsurance individuals, these consumers' health plans require them to pay a higher share of their medical expenses; consequently they have more at stake in their utilization decisions and should be more cost-conscious shoppers[1]. Thus, high deductible and/or exchange beneficiaries have a strong incentive to use price transparency websites for all of their healthcare services. Research suggests hospital price information is not as valuable as information for less expensive services, such as physician visits, outpatient tests and procedures, and prescription drugs[1]. Clearly, these individuals will, and are, demanding greater (and more useful) healthcare price transparency[14].

A final group of consumers who benefit from price transparency tools are Medicare beneficiaries. Under Medicare, the program pays 80 percent of the cost of approved ambulatory services and the patient pays 20 percent. Even though many Medicare beneficiaries have supplemental insurance that cover all or part of these expenses, those that don't tend to be lower income and more vulnerable to high healthcare costs. These beneficiaries have a financial incentive to use price transparency tools to make wise, low cost, healthcare decisions.

Sources of Information
Price transparency educates patients and consumers on the expected financial obligation for an episode of care. The internet is a primary source of consumer information, with more than 80 percent of adults using it as a resource for researching and making healthcare decisions[15,16,17]. However, consumers do not use information if they cannot understand it. Terry Rappuhn, the project leader of the Patient Friendly Billing project, notes,"... to be meaningful, pricing information must be relevant to the patient who needs it"[18]. If the information provided requires too much adjustment, interpretation, or a high level of healthcare pricing knowledge, it may be relevant but not useful. As such, the most useful information to the patient is the out-of-pocket estimate[19,20]. Although individual payer websites may be able to provide exact information, they are only available to plan members. That being said, it is impossible for non-payer websites to have knowledge on deductibles and cost-sharing; however, providing a cost tool driven by consumer input is possible. In fact an interactive poll in 2012 showed 62 percent of people think an online healthcare cost calculator is either important or very important[21]. Perhaps the biggest challenge for websites is the complexity of the healthcare pricing system where most prices are associated with individual services. This creates potentially long lists of services from which consumers must select without knowing exactly which services are included in an episode of care. In fact, efforts to publicize hospital charge lists have often been ridiculed on the basis of the challenge for consumers to identify which of the 25,000 services are relevant to them[1].

Over the last few years, nonprofit organizations, health plans, independent vendors and some states have made significant strides in developing "tools" to help consumers shop for healthcare. These tools mainly focus on cost and/or quality comparisons and contain information on hospitals and physicians, price and quality, and sometimes the consumer's share of costs. Catalyst for Payment Reform (CPR)'s

review of the current price transparency "tools" found that these tools provide varying levels of price transparency for select services. The Pacific Business Group on Health recently performed a "secret shopper" website study reviewing major health plans such as Aetna, Anthem, Cigna, Kaiser Permanente, and United Healthcare. They found wide variation in the functionality and cost comparison capabilities between the payer websites. In particular, the study identified differences in variation in the number of services for which price information is available and the ability to compare prices across care settings.

Website Design
Guidelines describing the necessary features and dimensions of "good" websites are emerging. In November 2013, Catalyst for Payment Reform developed an extensive list of features that make transparency tools useful to both employer-purchasers and consumers[22]. Other researchers also discuss website evaluation using comparable dimensions including content, technology, marketing, and accessibility[9]. Similarly, the Agency for Healthcare Research and Quality (AHRQ) recently evaluated public reporting of healthcare costs using five dimensions[10]. A comparative summary of the existing research on transparency website evaluation using the key dimensions described in the literature is shown in Table 1.

Table 1: A comparative summary of website designs across the key dimensions

	Useful Features of Price Transparency Tools[22]	Website Evaluation[9]	Public Reporting of Healthcare Costs[10]
Scope and Comprehensiveness	- Consumer share of cost and total cost - Consumer spending and utilization to date - Relevant quality measures - Side-by-side price and quality comparisons - Information to identify and understand value - Pharmacy and ancillary services - Unneeded care avoidance - Less expensive care options	- Content	- Price transparency - Real comparisons - Information on value - Connect to care
Interface Utility	- Ease of use - Customized design - Integrated with other platforms and products	- Technology	- Ease of use
Presentation Utility	- Involves employers in continuous quality improvement activities	- Technology - Marketing	
Consumer Experience/User-friendly Tools	- Ease of use - Designed to assist the elderly and chronically-ill - Employer-based reports on utilization and savings	- Technology - Accessibility - Marketing	- Ease of use

In addition to necessary features, the usability and understandability are important considerations. CPR asserts the best websites have easy to read graphics, highlight important information and use simple language. Indeed, Peters et al. found the way information is presented matters more in guiding comprehension and choice for populations with lower levels of literacy[23]. Similarly, Diviani et al. found definite gaps in the ability to evaluate online health information among those with different educational attainment, suggesting website design is important for understandability[24]. Reporting data in tables without clear explanations to describe provider performance is not as valuable to consumers as the use of evaluative comments such as "better than," "average" or "worse than"[25]. Information such as consumer's share of cost and the total cost of care may encourage consumers to shop for affordable options, even when they have met their deductibles and out-of-pocket maximums. Even more, research shows that when consumers are presented with data about care quality alongside prices, more than 90 percent of consumers will choose providers with low-cost and high-quality scores[26].

RESEARCH AIM

The aim of this study is to understand and evaluate the availability and usability of consumer-based websites that provide healthcare price and quality information. The research quantifies the types of healthcare price and quality information, the ease in understanding the information, the navigability of the websites and the organizations providing consumer-based information. Specifically, the research objectives are:

(1) To categorize consumer-based websites with healthcare price and/or quality information;
(2) To analyze the usability of websites that provide price information across four domains: scope and comprehensiveness, website interface, presentation of information, and consumer experience;
(3) To analyze the usability of websites that provide quality information across four domains: scope and comprehensiveness, websites interface, presentation of information, and consumer experience;

METHODS

Consumer-oriented websites that provide publicly available information for general users are the focus of this research. Websites providing information on healthcare price and quality information were identified via multiple sources, including prior research[2], consumer advocacy groups, and an internet search. State government agencies and hospital associations are included since many states report healthcare price information that legislative or regulatory authorities require them to collect[27]. Insurers often provide price and quality information for their consumers only; therefore, the information is not publicly available. Thus, they are excluded from the analysis. Identified websites that do not provide details on healthcare price or quality are also excluded from the analysis. Any websites identified in the existing literature that were no longer in existence or did not have active links are also

excluded. Duplicated websites that are redirected from a different URL are counted as one website.

The quantity and prevalence of websites meeting the inclusion criteria are analyzed to better understand the plethora of consumer-based websites and the information they are providing (Research Question 1). Websites are also assessed across the domains shown in Table 1: scope and comprehensiveness, user interface, presentation of information, and the consumer experience (user-friendliness). These domains are adapted from current research which defines the criteria of good website design and evaluation features[9,10,22]. Two graduate students independently assessed and reached agreement on the identified websites across each domain for price information (Research Question 2) and for quality information (Research Question 3). Descriptive statistics are evaluated by domain and across the spectrum of price versus quality information.

RESULTS

Research Question One: Availability

Research objective one seeks to better understand the availability of consumer-based websites, meeting the inclusion criteria, with price and quality information. A total of 97 websites were identified. Of these, 63 (65%) were initially identified as having price information; however only 41 were valid websites. For quality data, 47 (49%) were identified as having information and the vast majority, 41, were valid websites (87%). The reduction from 97 to 63 and 47 is likely indicative of both the difficulty and interest in maintaining publicly available transparency data. Interestingly, only seventeen websites (18%) have both price and quality information publicly accessible suggesting the vast majority are not presenting consumers with needed information to make value-based decisions. Twenty-four websites (25%) provide only price information and another 24 websites (25%) provide only quality information (Table 2).

Table 2: Analysis of websites for healthcare price and quality information

	No.	%*
Characteristics	(N = 97)	
Websites that are likely to have price information	63	65.0
Websites that are likely to have quality information	47	48.5
Websites with both price and quality information	17	17.5
Websites with price information	41	42.3
Websites with quality information	41	42.3
Websites with only price information	24	24.7
Websites with only quality information	24	24.7
Websites that are excluded from the analysis	32	33.0

* Categories may exceed 100 percent as websites may fit one or more categories.

Research Question Two: Price Transparency
Research objective two seeks to evaluate the availability of consumer-based price transparency websites along four research-supported dimensions: scope and comprehensiveness, website interface, presentation of information, and consumer experience. With respect to price transparency, 63 websites were initially identified as likely to provide healthcare price data, but further research showed 22 of these websites do not actually provide price information or no longer exist. Of the remaining 41 websites, almost half are maintained by state hospital associations, with another third maintained by the state's themselves. The remaining belong to other stakeholders such as private, not-for-profit organizations. Much of the information reported is state-specific since these websites are often state-owned and funded. Although price information is typically searchable by facility location, service or procedure type, it is only available for a set of common procedures. The primary intended user is the patient, with only a few websites targeting healthcare providers. Table 3 provides a summary of the website evaluation, including data on the four established domains: scope and comprehensiveness, user interface, presentation of information, and the consumer experience (user-friendliness).

Scope and Comprehensiveness
Analysis of each website's usability in terms of scope and comprehensiveness shows most of the websites provide information based on a hospital or practice, with the state average as a comparison. In addition, some websites give the national average for additional comparison. None of the websites specify whether the information provided is for in-network prices versus out-of-network prices for physicians and hospitals and most report only billed charges (85%). Only one website reports price separately for uninsured (billed charges) and insured (out-of-pocket expense). Ten websites (24%) are more comprehensive and provide price information for a realistic episode of care (i.e. care that includes all medications, services, and procedures); however, most of the websites focus on only a few common diagnoses. Three websites (7%) provide information about provider performance such as quality-related awards at hospital level. No website has information on individual physicians. Eighteen websites (44%) give provider contact information (telephone and/or address), but not e-mail addresses or access hours. Seventeen websites (41%) include some relevant information on quality (including outcomes measures and other measures of safety, effectiveness, timeliness, efficiency, and equity). However, only one website provided quality information alongside price information; as opposed to a separate webpage. None of the websites provide price information with enough detail to determine the amount of total price and out-of-pocket contribution. That being said, twenty-nine websites (71%) provide information on prices of inpatient care for medical conditions and surgeries. Among these websites, twenty-three websites report price as 'amount charged' while others use cost (three websites), payment (two websites), allowed amount (one website), or a fee schedule price (one website). Twelve websites (29%) provide information on prices of outpatient services such as diagnostic or screening procedures; eight websites (20%) report prices of radiological procedures; three websites (7%) have information on prescription drugs; and two websites report prices for laboratory

tests. One website has price information that includes professional fees or facility fees. Two websites provide price estimates based on patient insurance status or specific health plan. Eight websites (20%) report the specific year for the information presented.

Table 3: Characteristics of healthcare price transparency websites

Characteristics	No.	%
	(N = 41)	
Ownership:		
Hospital or professional association	19	46.3
State government agency	15	36.6
Others	7	17.1
Scope and Comprehensiveness:		
Specifies in-network and out of network physicians	0	0.0
Includes all medications, services, and procedures	10	24.4
Includes provider performance	2	4.9
Includes contact information	18	43.9
Has healthcare quality information	17	41.5
Reports bill charged	35	85.3
Reports cost	3	7.3
Reports payment	2	4.9
Reports allowed amount	1	2.4
Reports fee schedule	1	2.4
Reports out-of-pocket price	1	2.4
Reports prices of inpatient care (medical conditions and surgeries)	29	70.7
Reports prices of outpatient services	12	29.2
Reports prices of radiological procedures	8	19.5
Reports prices of prescription drugs	3	7.3
Reports prices of laboratory tests	2	4.9
Price include professional fee and/or facility fee	1	2.4
Provides price estimates based on patient insurance status or specific health plan.	2	4.9
Specifies years of information presented	12	29.2
Interface Utility:		
Allows various search capabilities	3	7.3
Allows for comparison of alternative care settings	2	4.9
Clearly identifies higher-value providers	1	2.4
Provides consumers with real-time, annual, personalized scorecards about their own health activities	0	0.0
Users have access to live telephonic and online patient education and decision support	0	0.0
Provides assistance with online appointment scheduling	0	0.0
Provides users with maps and directions to provider offices	4	9.8

Characteristics	No.	%
	(N = 41)	
Presentation Utility:		
Allows users to rate and review providers	0	0.0
Displays procedures simultaneously by both common name and procedure code/diagnostic related group (CPT/DRG).	19	46.3
Consumer experience/User-friendly tools:		
Tool is easy to identify by user from homepage	32	78.0
Provides consumers with resources to obtain their personal medical information	0	0.0
Information is available in a printable format.	15	36.6
Accommodates all consumer; all individuals with special needs and/or limited technological access.	0	0.0

Interface Utility
Each of the consumer-based websites was assessed on the utility of the consumer interface. None of the websites provide consumers with real-time, annual, personalized scorecards about their own health activities, including use of high quality/efficient providers, price of services, in- and out-of-network use, use of services, and overall financial impact of choices. None of the websites provide access to live telephone and online patient education and decision support (e.g. diabetes information, treatment options, etc.), financial guidance (e.g. how to use the benefit efficiently), reference pricing, and other programs (e.g. centers of excellence, tiered networks). None of the websites provide assistance with online appointment scheduling and personalized calendars that display and alert users of upcoming appointments and the need for preventive screenings. Four websites (10%) provide users with maps and directions to provider offices or hospitals and three (7%) websites allowed various search capabilities. Evaluation of the presentation of the information shows that none of the websites allow users to rate and review providers. None publish provider ratings and reviews to make them easily accessible to all users. In fact, other than providing directions to facilities, the interface utility dimension of the study websites was lacking.

Information Utility
Each of the consumer-based websites was also assessed on the utility of the information, using two criteria. Interestingly, none of the websites allowed users to rate and review providers although this feature seems to be increasingly popular on many healthcare and non-healthcare consumer-based portals. Nineteen website (46%) display procedures simultaneously by both common name and procedure code/diagnostic related group (CPT/DRG). This is not surprising given the general public's lack of coding knowledge.

Consumer Experience (user-friendliness)
The consumer experience and user-friendliness of each website tool was evaluated using four criteria. Results showed thirty-two websites (78%) are easy to access for average users which seems to be a highlight in this research. Those that were found difficult employed such techniques as using queries based on CPT/DRG codes, making it near impossible for non-healthcare personnel to use. On some websites, links to price information are very hard to find from the home page. None of the websites provide consumers with resources to obtain their personal medical information. This is understandable given the "public access" criteria used for the research. Oddly, only fifteen websites (37%) provide printable versions of the information accessed (e.g. PDF files), again limiting the usability/ portability of the information. None of the websites discuss accommodations for individuals with special needs or limited technological access.

Research Question Three: Quality Transparency
Research objective three seeks to evaluate the availability of consumer-based quality transparency websites along four dimensions: scope and comprehensiveness, websites interface, presentation of information, and consumer experience. With respect to quality transparency, 47 publicly available websites were identified as potential sources of provider level healthcare quality data. Further investigation shows nine of the websites are either irrelevant (since they do not provide quality information) or no longer exist. Thus, 41 websites are included in the analysis. Evaluated website hosts are governmental agencies, professional associations, not-for-profits organizations and insurers. In contrast to price-related websites, approximately two-third of websites (63%) with quality information are maintained by organizations other than state hospital associations or the states themselves. They belong to either insurance companies or private organizations, many of which required membership to access any data on the website. Approximately 20 percent of the websites belong to a professional association of a state; therefore, the information reported is limited to that state. The remaining are maintained by government agencies. Quality information is mostly survey-based results provided at the facility-level. Table 4 provides a summary of the website evaluation, including data on the four established domains: scope and comprehensiveness, user interface, presentation of information, and the consumer experience (user-friendliness).

Scope and Comprehensiveness
Analysis of each website's usability in terms of scope and comprehensiveness showed that 15 websites (37%) provide nation-wide information, while the remaining websites are limited to one or a few states within a service area. Twenty-four websites (59%) provide general information about the hospital in the report. Twenty-two websites (54%) have information concerning quality of care at the hospital level. Only 10 websites have information about individual physicians. Eighteen websites (44%) provide patient safety data in addition to quality. Similarly, another set of eighteen websites provide information about the patient experience or satisfaction. Twenty-three websites (56%) show contact information

such as address and telephone number of the hospital. Twenty-seven websites (66%) allow users to compare results from different providers. However, only seven websites provide state and/or national average as benchmark for each reported measure. Fourteen websites (34%) inform users the time period of the data reported. Relative to the price transparency websites, a higher percentage of the evaluated websites score well on the criteria within the scope and comprehensiveness dimension.

Table 4: Characteristics of healthcare quality transparency websites

Characteristics	No.	%
	(N = 41)	
Ownership:		
Hospital or professional association	7	17.1
State government agency	8	19.6
Others	26	63.4
Scope and Comprehensiveness:		
Nation-wide information	15	36.6
Information are specific to one or a few states	26	63.4
Provides general information about the reported hospital	24	58.5
Provides hospital level information	22	53.7
Provides information about individual physicians	10	24.3
Provides patient safety information in addition to quality	18	43.9
Provides patient experience information in addition to quality	18	43.9
Includes contact information	23	56.1
Allows users to compare results from different providers	27	65.9
Provides state and/or national averages as benchmarks	7	17.1
Specifies years of information presented	14	34.1
Interface Utility:		
Searches by location	28	68.3
Searches by hospital name	26	63.4
Search by type of care or procedure	22	53.7
Presentation Utility:		
Allows users to rate and review providers	3	7.3
Consumer experience/User-friendly tools:		
Uses color, symbols, or graph to make it easy to recognize good quality providers.	20	48.8
Tool is easy to identify by user from homepage	41	100.0
Information is available in a printable format.	0	0.0
Accommodates all consumer; all individuals with special needs and/or limited technological access.	0	0.0

Interface Utility
Each of the consumer-based websites was assessed on the utility of the consumer interface. The quality transparency websites performed well on this dimension, with

over half of the sample meeting each of the evaluated criteria. Evaluation of the interface shows twenty-eight websites (68%) allow users to search for providers by location (city, county, state, or zip code). In fact, hospital name can be searched in twenty-six websites (63%) and users can search by type of care or procedure in twenty-two websites (54%).

Information Utility
With respect to presentation of information, only one criterion is presented in prior research and evaluated here. Three websites meet the criteria: allow patients to upload their experience directly to the website. However, most websites report patient experience using survey outcome data from the individual hospitals.

Consumer Experience (user-friendliness)
The consumer experience and user-friendliness of each website tool was evaluated using four criteria. Results showed twenty websites (49%) use color, symbols, or graphs to make it easy to recognize good quality providers. Unfortunately, they do not provide this information in a printable format. The remaining websites report quality data using numbers or percent rather than visually. Remarkably, all of the websites provide a link or easy access option from the websites homepage to information on provider quality. This may be a facet of how the websites were selected for inclusion in the study. None of the websites discuss accommodations for individuals with special needs or limited technological access.

DISCUSSION
The interest in healthcare prices and quality is growing at an exponential rate. This is largely due to the four percent annual growth in healthcare care spending[29], coupled with the growth in consumer advocacy groups and increased media attention. This increasing level of individual and governmental spending has created a sense of urgency around better understanding and publicizing healthcare costs and quality. Increased price and quality awareness should positively influence provider competition. High cost, low quality providers should be driven to improve their performance while providers with high cost and high quality should (presumably) be driven to maintain quality while prices regress to the mean.

Governmental agencies continue to fund websites aimed at informing consumers on healthcare prices and quality. As consumer interest and related governmental funding grows, so does the online availability of price and quality transparency websites. Unlike insurance company websites, which also provide price and quality information, these websites are readily available to the public. Although most websites provide charge data, some sites provide average reimbursement amounts. With this knowledge, self-pay and high deductible consumers are better positioned to ask for, and receive, rates lower than the chargemaster prices. Providers are positioned to use the information to compare themselves to their peers and improve their market position. Insurers may use the websites to be calculate a proxy for average costs, compare quality measures among providers, and shape their networks accordingly. Additionally, policy makers are readily influenced by both

the websites themselves and the consumer reactions while the media will continue to use the information to spur consumer interest in healthcare price and quality. Clearly, the potential for this online information to shape the behavior of consumers, providers and policy-makers exists.

 Unfortunately, there is tremendous variation in scope and comprehensiveness, interface utility, presentation utility and consumer experience for online price and quality transparency tools. Furthermore, price information is often provided without quality information, thereby presenting incomplete information on the value of the healthcare service and/or provider. In the absence of quality data, consumers may presume low cost providers have poor quality or that high cost providers are high quality. Providers may find themselves attempting to answer consumer questions regarding why price differences exist and the relationship between price and quality. Furthermore, some providers may be in the uncomfortable position of not just explaining, but justifying their data to consumers whose knowledge is predominately shaped by online information and media stories.

 Price and quality website studies are needed to better understand the information provided, its utility and the ease of obtaining it. The growth in the development and use of these websites is evident; according to the New Hampshire Insurance Department, its price and quality transparency website had an average of 4,500 visitors per month, about 70 percent of which are new[28]. There have been few efforts to standardize, centralize or even describe the data provided. The potential for price and quality websites to increase consumer confusion, rather than awareness of price and quality is high. Efforts must be made to create meaningful measures, to present useful information, to inform and educate consumers, and to understand usefulness. Healthcare providers are in the right place, at the right time to lead these efforts.

CONCLUSION
The number of websites providing publicly available data on price and quality are increasing, as well as the money spent to develop these websites. These consumer-based websites are well-positioned, and intend to influence consumer-purchasing decisions. However, the scope and comprehensiveness, as well as the utility and ease of use, of information on price and quality vary greatly. A clearer understanding of both the price and quality websites, as well as their impact on the healthcare market, is needed to inform stakeholders on appropriate development. In the near-term, competitive healthcare providers should be aware of the trends in price and quality transparency websites and their potential to influence consumers, providers and policy-makers, specifically as it pertains to their competitive markets.

Corresponding author: Lee Revere, PhD
1200 Herman Pressler Street, RAS W338, Houston Texas 77030
Telephone: (713) 500-9199; Fax: 713/500-9171
Frances.L.Revere@uth.tmc.edu

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APPENDIX

A. Websites that are likely to have price information

Arkansas Hospital Consumer Assist	http://www.hospitalconsumerassist.com
CalQualityCare	http://www.calqualitycare.org/
California Healthcare Information Division HID Dataflow	http://oshpd.ca.gov/hid/dataflow/
Colorado Hospital Price Report	http://www.cohospitalprices.org/hprices/index.php
CompareCare WV	http://www.comparecarewv.gov/
Florida Nursing Home Guide	N/A
Florida Drug Price Finder	http://www.myfloridarx.com/
Florida Health Finder	http://www.floridahealthfinder.gov/index.html
Hawaii Health Information Corporation	http://www.hhicpublicreports.org/index.html
Illinois Hospital Report Card	http://www.healthcarereportcard.illinois.gov/
Nursing Homes in Illinois	N/A
Iowa Hospital Charges Compare	http://www.iowahospitalcharges.com/
Kentucky Hospital Association Quality & Pricing Information	https://info.kyha.com/Pricing/MSDRG/main.htm
Kentucky Quality Indicators	N/A
Louisiana Hospital Inform	http://www.lahospitalinform.org/
Louisiana Health Finder Drug Prices	http://www.healthfinderla.gov/PrescriptionDrugPrices.aspx
MHA Keystone Center	http://www.mihospitalinform.org/
Maine Health Cost	N/A
Maine Health Data Organization MONAHRQ	http://gateway.maine.gov/mhdo/monahrq/index.html
The Maryland Hospital Pricing Guide	N/A
MyHealthCareOptions	http://hcqcc.hcf.state.ma.us/
Michigan Hospital Inform	http://www.mhakeystonecenter.org/
Michigan Drug Prices	http://www.michigandrugprices.com/
Minnesota Hospital Price Check	http://www.mnhospitalpricecheck.org
Minnesota HealthScores	http://www.mnhealthscores.org/
How much does it cost?	http://www.mnhealthplans.org/consumers/documents/HowMuchDoesItCost2005.doc
Minnesot DHS Nursing Facility	N/A
Minnesota Drug Price Compare	N/A
MoRx Price Compare	http://morxcompare.mo.gov/
Montana Hospital PricePoint System	http://www.montanapricepoint.org/
Nebraska Hospital Association's Care Compare	http://www.nhacarecompare.com/

Nevada PricePoint	http://www.nvpricepoint.net/Basic_EDS.aspx
Nevada Compare Care	http://www.nevadacomparecare.net
Nevada Personal Health Choices	N/A
New Hampshire Hospital Scorecard	http://www.nhpghscorecard.org/index.html
NH Health Cost	http://nhhealthcost.nh.gov/
NH Pricepoint	N/A
NH Health Cost for University System	http://nhhealthcost.usnh.edu/
NJ Hospital Price Compare	http://www.njhospitalpricecompare.com/default.aspx
NJ Drug Price Comparison	https://www6.state.nj.us/LPSCA_DRUG/index.jsp
NM PricePoint	N/A
Prescription Drug Prices in NY	https://apps.health.ny.gov/pdpw/SearchDrugs/Home.action
Hospital Charges by Facility for Top 35 DRG Procedures	https://www.ncha.org/issues/finance/top-35-drgs
Guide to Nursing Facility Charges	N/A
Ohio Hospital Association Patient Price	N/A
Ohio Long-term Care Consumer Guide	N/A
Oklahoma Hospital Pricing	N/A
Oregon Price Point	http://www.oahhs.org/patient-services/price-point.html
Oregon Hospital Costs	N/A
PHC4 Penn Healthcare Cost Containment Council	http://www.phc4.org/medicarepayments/Search.aspx
Rhode Island Price Point	N/A
South Dakota Hospital PricePoint System	http://www.sdpricepoint.org/
Tennessee Hospitals Inform	http://tnhospitalsinform.com/
Hospital Discharge Data System	http://health.state.tn.us/statistics/specialprojects.htm#hdds
Texas PricePoint	http://www.txpricepoint.org/
Utah PricePoint System	http://utpricepoint.org/
UTAH Hospital Comparison Tool	https://health.utah.gov/myhealthcare/monahrq/index.html
Vermont Prescription Drug Finder	N/A
Virginia Hospital & Healthcare Association PricePoint System	www.vapricepoint.org
Virginia Health Information	http://www.vhi.org
WSHA Hospital Pricing	http://www.wahospitalpricing.org
Wisconsin PricePoint System	http://wipricepoint.org
Wyoming Hospital Association Hospital Pricing	http://wyopricepoint.com

B. Websites that are likely to have quality information

Aetna	https://www.aetna.com
AHRQ	http://www.ahrq.gov/index.html
American Hospital Association	http://www.aha.org
Anthem	https://www.anthem.com
Blue Cross Blue Shield	http://www.bcbs.com/
CalQualityCare	http://www.calqualitycare.org/
Carechex	http://www.carechex.com
Castlight	http://www.castlighthealth.com
ChangeHealthcare	http://www.changehealthcare.com
Cigna	http://www.cigna.com
CMS Hospital Compare	http://www.medicare.gov/hospitalcompare/search.html
Commonwealth Fund	http://www.commonwealthfund.org
CompareCare WV	http://www.comparecarewv.gov/
Consumer Reports	http://www.consumerreports.org/cro/health/doctors-and-hospitals/index.htm
Healthcare Cost Institute National Transparency	http://www.healthcostinstitute.org/about
Health Grades	http://www.healthgrades.com
Health Insight	http://healthinsight.org/rankings/hospitals
HealthAdvocate	http://www.healthadvocate.com
Healthcare Bluebook	https://healthcarebluebook.com/
HealthinReach	https://www.healthinreach.com
Healthnet	https://www.healthnet.com
HealthSparq	http://www.healthsparq.com
Hospital Quality Institute	http://www.hqinstitute.org
Hospital Safety Score	http://www.hospitalsafetyscore.org
Illinois Hospital Report Card	http://www.healthcarereportcard.illinois.gov/
Kaiser	https://www.kaiserpermanente.org
Leapfrog	http://www.leapfroggroup.org
Louisiana Hospital Inform	http://www.lahospitalinform.org/
Maine Health Data Organization MONAHRQ	http://gateway.maine.gov/mhdo/monahrq/index.html
MedCost	https://www.medcost.com
MHA Keystone Center	http://www.mihospitalinform.org/
Minnesota HealthScores	http://www.mnhealthscores.org/
Minnesota Hospital Price Check	http://www.mnhospitalpricecheck.org/
Montana Hospital PricePoint System	http://www.montanapricepoint.org/
Nevada Compare Care	http://www.nevadacomparecare.net
Pacific Business Group on Health	http://www.pbgh.org
PokitDok	https://pokitdok.com

Quality Check	http://www.qualitycheck.org/consumer/searchQCR.aspx
Tennessee Hospitals Inform	http://tnhospitalsinform.com/
The Joint Commission	http://www.qualitycheck.org/consumer/searchQCR.aspx
Truven	http://truvenhealth.com
United Health	http://www.uhc.com
US News	http://health.usnews.com/best-hospitals/rankings
UTAH Hospital Comparison Tool	https://health.utah.gov/myhealthcare/monahrq/index.html
Virginia Health Information	http://www.vhi.org
Washington Hospital Quality	http://www.wahospitalquality.org
Why Not the Best	http://www.whynotthebest.org