

# Consumer Engagement through Effective Decision-Support Tools

Successful strategies to help consumers make informed decisions about their own health care.

To meet consumer needs for assistance with treatment and provider choices, as well as cost and budget management, consumer decision-support tools have evolved and proliferated in recent years. Interest in these decision aids has accelerated with the expectation that consumer participation in health care decision-making will promote self-care and information transparency. Consumer participation should also enhance quality through plan and provider performance accountability.

The Pacific Business Group on Health (PBGH) has sought to advance breakthroughs in use of consumer tools, resources, and performance information. The goal is to influence employees' value-based decision-making and participation in managing their personal health. To date, leading purchasers have set expectations for their plan partners to expand decision-support programs, while making direct investments in this area in the form of plan choice tools and health education.

Against this backdrop, PBGH developed an evaluation framework for selected consumer tools and identified best practices and improvement opportunities for next generation consumer decision aids. This project was funded by the California HealthCare Foundation (CHCF) and PBGH's Quality Improvement Fund, and recently culminated in the presentation of findings and leading research at a jointly sponsored conference.

National researchers and industry stakeholders convened at the symposium to highlight practical approaches to engage employees across diverse workforces using decision support. Health plan and product innovators reported on experiences with consumer outreach and health coaching. Industry leaders also presented features of prevailing products currently in use by purchasers of the Pacific Business Group on Health and the Silicon Valley Employers Forum, along with lessons learned by early adopters.

PBGH shared selected findings of its Consumer Tools report, which focused on three (3) types of consumer decision-support tools sponsored by health plans, employers, or other third parties in the areas of:

- Treatment option support;
- Hospital choice; and
- Personal cost decision support.

Understanding the strengths and weaknesses of leading online consumer decision-support tools will inform the development and enhancement of additional Web-based services, as well as refine consumer engagement techniques. As performance information becomes increasingly available, it is critical to apply proven decision-support techniques to produce consumer tools that work. While this symposium focused on Web-based products, all attendees recognized the need for complementary support services for individuals with varying degrees of Internet access and health literacy. The underlying decision-support techniques may also guide other media and communication strategies.

This summary provides highlights of the conference and key findings of the consumer tools evaluation project. The full report is downloadable along with conference presentation materials at [http://www.pbgh.org/programs/documents/ConsumerToolsReport\\_06-2007.pdf](http://www.pbgh.org/programs/documents/ConsumerToolsReport_06-2007.pdf).

# Symposium Highlights

## The Promise of Consumer Tools

A key objective of the symposium was to help employers, health plans and vendors understand and adopt best practices and to move those best practices into play, said Pacific Business Group on Health CEO Peter Lee, in his opening remarks. "Purchasers seek to catalyze advances in design, content and functionality of consumer tools. Many of the tools you'll hear about today are really dramatic improvements from where they were not too long ago."

Consumer decision-support tools are rapidly evolving, as evidenced by PBGH's assessment of consumer tools and recent studies on the science of decision support. Sara Knight, PhD, associate director of the UC San Francisco Comprehensive Cancer Center, described her research on patient experience and decision preferences with a cancer treatment support tool.

Knight's survey of 200 men with prostate cancer showed that patients don't necessarily want to make decisions entirely on their own, nor do they want physicians to make decisions for them (Figure 1). Rather, the vast majority of patients want to make decisions independently with input from their doctor or with shared responsibility.

Given that consumers want to be the primary agent in health decision-making, support tools can help frame the decision by outlining potential risks and benefits of various options and by helping consumers assess their own values and goals. Well-designed tools have several benefits for patients. They help consumers:

- Understand their conditions or disease;
- Become knowledgeable about the full range of treatment options available to them; and
- Integrate values and preferences consciously in their decision process.

"Often times men with prostate cancer really don't need treatment. But when they hear the words cancer they want treatment; they want surgery or radiation to get rid of it," explained Knight. "For many men, active surveillance, or watchful waiting, makes more sense. With more information, patients may be more likely to choose that option." And, she noted, informed patients may actually save time rather than become a burden to clinicians. "They [informed patients] tend to ask more targeted questions

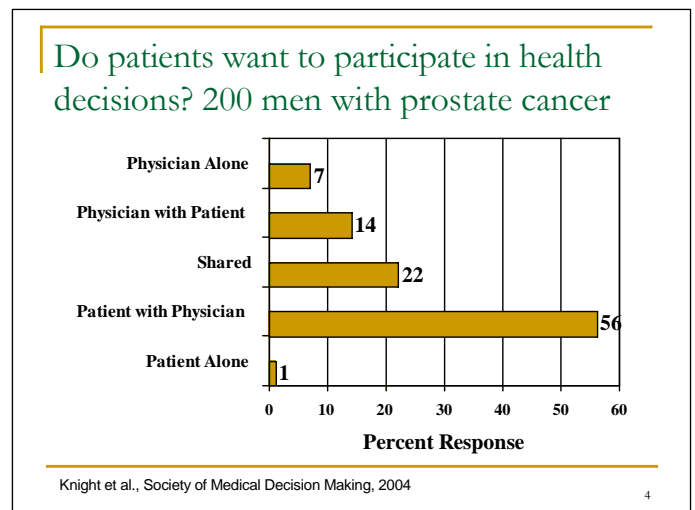
and have better strategies for communicating with doctors," she said.

However, Knight also sounded a cautionary note about the promise of these tools in delivering desired outcomes and in effectively reaching patients. Her study of a prostate cancer decision-support tool used by VA patients showed that, while two-thirds of users based their selection of a preferred treatment on the information presented in the tool, a surprising one-third of these patients did not receive their preferred treatment. Moreover, in spite of the tool's audio and visual aids, men with lower health literacy did not understand the medical information presented.

These two findings point to the need for careful appraisal of the design and performance of existing decision-support tools, said Knight, who suggested that employers and plans consider several factors when selecting a product. Ideally tools should define the decision and explain why the patient's participation in the decision is important; provide information about the patient's role in the treatment; and explain the information in an understandable, accessible manner.

Overall, patients in Knight's study were highly satisfied with the cancer treatment support service. Decision tools in general seem to help patients achieve greater satisfaction with the decision process as well as with the choice itself. This leads to improved quality of life, she summarized. It is

Figure 1.



also not uncommon to find that patients using decision support opt for more conservative treatments that result in lower costs.

### How Consumers Approach Choice

Alana Conner, PhD, a researcher with the Stanford University Graduate School of Business, echoed Knight's conclusions with her presentation on the importance of understanding consumers' feelings about choice. Conner's work focuses on socioeconomic factors in health care decision-making, and specifically class differences in approaches to choice. Her studies show that working-class Americans tend to make fewer decisions, have less experience choosing, and have more negative associations with choice than middle-class Americans.

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***"Too much choice  
may be bad  
for employees."***

***Alana Conner***

***Stanford Social Innovation Review***

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Conner suggested employers rethink the sometimes-unexamined assumption that more choice is necessarily better. Instead, offering fewer but better choices to employees, and less but better information for each choice, might be a more effective strategy for engaging some consumers. "I would submit that too much choice may be bad for employees," she concluded.

### Integrated Decision-Making

Vince Kerr, MD, executive vice president of network and clinical solutions at Uniprise, pointed out that consumers make so many different kinds of decisions when interacting with the health care system that it's important to identify and define where they are along the decision-making continuum. "You really have to segment decisions consumers make in a variety of ways," he suggested. Kerr described a "health care pathway" where consumers face different issues at different times. Selecting a health plan, understanding the health plan, managing illness and health information, and accessing care may be key points along that pathway.

"Don't just think about tools; think about consumers," said Kerr. "How will they integrate this into their value stream and decision-making process?" Kerr also focused on the importance of integrating quality with cost data, which requires a multi-pronged approach. Uniprise currently gives patients estimates of individual and total costs for in-network and out-of-network services as well as side-by-side cost and quality information for hospitals and doctors.

Kerr argued that quality information should be apparent on the electronic health record, billing statement, Website, and all materials that are making contact with patients, rather than just via an online tool. "When you take that approach you can drive differences in consumer behavior," he said.

Ann Mond Johnson, senior vice president of health services at WebMD, concurred in advocating outreach through targeted communication campaigns that segment and prioritize populations. Noting that it's important to reach people when they are ready to change, Johnson said that health risk assessment (HRA) results are an ideal way to find consumers who would be amenable to outreach. Specifically, the HRA allows employers, plans and vendors to segment populations according to health issues and receptiveness. When contact is initiated Johnson said "the call to action must be explicit and concise." She also suggested that employers "put on their marketing hat" when strategizing about how to reach employees with health and wellness information. The key is to contact consumers the right way, at the right time, through targeted messages based on claims and electronic health records, she concluded.

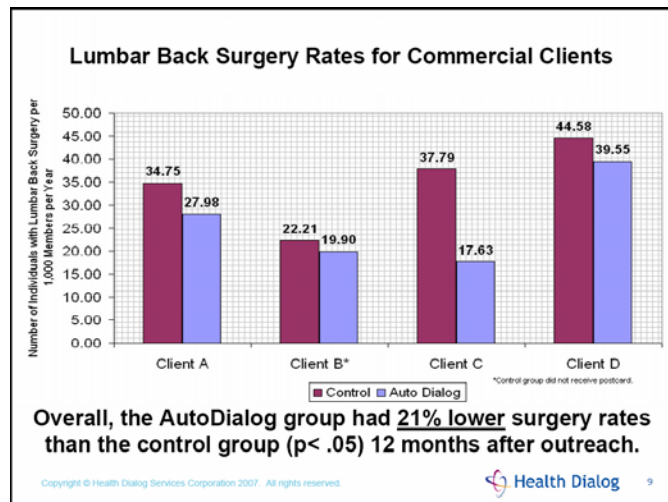
### New Directions in Consumer Support Tools

The conference concluded with presentations from several vendors who showcased advances and innovations with consumer support products.

Dan Levin, vice president and general manager of Quicken Health Group, Intuit Corp., described a new product under development at Intuit that will consolidate critical health information, translate it into accessible language, and track overall health expenses. "Quicken Health answers consumers' most fundamental questions: whom should I pay, how much should I pay them, and is it right?" said Levin.

Mary Jane Favazza, senior vice president of business development and client services at HealthDialog, highlighted innovations with interactive voice response technology (IVR) and consumer segmentation. Both of these strategies improve consumer engagement by identifying patients most receptive to assistance, said Favazza. For example, HealthDialog uses claims, predictive models, and third party data to segment consumers into detailed profile categories. The program then targets each consumer with a highly personalized message. The IVR technology delivers key information to patients using an automated phone line with interactive voice prompts that helped patients with back pain make more informed treatment choices. HealthDialog's study of lumbar back surgery rates among commercial client members showed that patients who used "AutoDialog" had 21 percent lower surgery rates than a control group (Figure 2).

Figure 2.



## CONSUMER TOOLS EVALUATION

### Performance of Leading Tools: Where are They Now?

Ted von Glahn, director of performance information and consumer engagement at PBGH, provided an overview of leading consumer decision-support tools and offered strategies that plans and employers can use to find a tool that suits their members.

*"A disconnect behind the curtain ... causes some of the most valuable information to be missing."*

*Ted von Glahn  
Pacific Business Group on Health*

When thinking about consumer decisions, it's useful to consider the types of decisions patients are making and what impact actionable information can have on those choices. For example, employers may want to consider what decisions are most prevalent or important for the particular population. Considerations might include the volume of health conditions that are high cost or that have significant variation in use of evidence-based practices, and prevalence of certain chronic conditions. These objectives should be considered in the context of key benefit strategies such as engaging members in self-care decisions, reducing workplace absenteeism due to disability. Providing patients with clear information about the potential risks and complications associated with specific treatments can increase patient satisfaction with their care experience. "From a planning perspective, plans and employers may want to zero in on one of these areas," said von Glahn.

For some, said von Glahn, the high cost of health care trumps all, and cost containment is the primary driver. Consumer support tools can assist employers with addressing specific cost issues by targeting decision-support services to certain high cost health problems (Figure 3). Because there is a great deal of practice and cost variation with conditions like low back pain, decision support may help consumers consider lower cost, less invasive options, yet produce comparable outcomes.

No less important is the linkage of health condition information and quality information that helps educate consumers about their choice of providers. One of the greatest challenges of current tools is the integration of back-end systems with front-end tools, said von Glahn. Consumers need treatment and cost information that's relevant to their coverage scenario and provider

Figure 3.

Health Problem	Cost*	Per 1,000 Employees
Heart Pain	\$235.69	42
Hypertension	\$160.23	124
Low Back Disorder	\$90.24	53
Heart Attack	\$69.23	4
Back Disorder, Other	\$63.50	60
Bipolar Disorder	\$64.10	19
ENT Disorder	\$49.72	135
Osteoarthritis, Severe	\$47.04	15
Knee Cartilage Injury	\$36.76	11
Breast Cancer	\$36.09	5
Osteoarthritis, Chronic	\$33.94	21
Colon & Rectum Cancer	\$33.81	3
Depression	\$24.02	21

\*Cost includes medical payments, disability & work absenteeism  
Source: Goetzel, R. J Occup Environ Med. 2003;45:5-14)

preferences. Integration of such data with user interfaces often overwhelms third party vendor products, he said, leading to, “a disconnect behind the curtain that causes some of that most valuable information to be missing.”

Hence, PBGH elected to focus its assessment on leading treatment, hospital, and cost decision-support tools. PBGH found significant variation between products in all three categories of tools.

**Treatment Choice.** In the world of treatment choice, the factor that most differentiated tools was what von Glahn described as “identification of the crux of decision.” For example, a patient with hip osteoarthritis needs to know that there is no cure for the condition, that treatment options focus on alleviating symptoms, and that choice of options will therefore depend on what matters most for each individual.


**Hospital Choice.** Hospital choice tools face several challenges, said von Glahn. Many products are directories rather than interactive programs and, in general, hospitals tools tend to be less advanced than treatment choice products. “This is an area that is a generation behind when it comes to effectiveness of decision-support technique,” said von Glahn. For example, many patients want to know if their doctor is affiliated with a hospital, yet this functionality is not present in many tools today.

Moreover, some tools may mislead people by reporting performance differences between hospitals in local markets when the data do not necessarily support such conclusions. “Some vendors declare differences, when it’s just not clear that there are,” he said.

Another key limitation of hospital tools is that they are, by and large, lacking cost information, and this represents a key opportunity for improvement for “next generation” products. As the breadth of publicly reported hospital quality information grows, including the addition of standardized patient experience information, the delineation of performance differences may become more precise.

**Personal Cost Decision Support.** With the introduction of account-based plan designs and expansion of high-deductible options, there has been significant and growing interest in cost transparency and tools that demystify what purchasers and consumers are paying for. Current financial choice tools vary in their precision, said von Glahn. This isn’t necessarily an obstacle if the level of precision is sufficient for the decision being made. For a health savings account, the estimates should be very precise. However, in other circumstances a relative cost comparison between two treatments may be adequate.

To the extent that cost may influence a patient’s treatment option decision, it is important that such data be linked with treatment choice support. One of the greatest opportunities for next generation tools is the integration of treatment and cost information that reflects an individual’s benefit design *and* provider selection.

The conference was the first of its kind to showcase practical applications and perspectives on where the market of decision support is headed. Participants left the conference with a better understanding of best practice expectations and recognition that decision-support tools are rapidly evolving. 

# Report Summary

More detailed information about PBGH Consumer Tools Evaluation is included in the report, “**Evaluation of Consumer Decision-Support Tools: Helping People Make Health Decisions,**” which can be accessed at [http://www.pbgh.org/programs/documents/ConsumerToolsReport\\_06-2007.pdf](http://www.pbgh.org/programs/documents/ConsumerToolsReport_06-2007.pdf). What follows is a summary of each type of decision-support tool that PBGH assessed and highlights of the key findings.

The project focused on three (3) types of consumer decision-support tools sponsored by health plans, employers, or other third parties in the areas of:

- Treatment option support;
- Hospital choice; and
- Personal cost decision support.

Most of the analytic work was conducted in 2006, reflecting plans and vendor tools commonly in use at that time. Through this analysis, PBGH seeks to assist its purchaser members in understanding the performance of leading products and to ultimately advance the refinement of plan- and vendor-based services. This report aims to provide concrete guidance on how to make services more relevant to the consumers who use these tools.

The evaluation framework was also used to inform the Consumer Engagement module of the eValue8™ Health Plan RFI. Data from this analysis were used to define health plan performance expectations and scoring algorithms in assessing the consumer support tools provided by health plans. Detailed observations are presented in the Report with summary results reported in the tables that follow, using a three-tier grading system:

- **Exceeds standard** – The tool offers features beyond the primary functionality or content
- ◐ **Meets or largely meets standard** – The primary decision-support functionality and content was present
- **Below standard** – The tool does not offer core decision-support functionality or the content is too limited to meet a user’s basic needs



## TREATMENT OPTION CHOICE

In an era of increasingly complex medical science, ever-evolving therapeutic options, and expanded consumer participation in health care decisions, making the “best” treatment choice can be a formidable challenge for patients and their physicians. When choosing among treatment options, patients must consider a multitude of factors including efficacy, time to recovery, qualifications of providers, plan coverage, and cost. Moreover, in many cases, there is no “best” therapy, but rather a series of options with trade-offs that vary depending on the patient’s values, personal preferences, and budget.

Web-based treatment decision-support tools help consumers navigate this complicated decision-making process. Such products provide consumers with trustworthy, pertinent, and personalized information when they need it most – particularly when facing a new diagnosis or difficult medical decision.

For this evaluation, a team of consultants assessed four tools using one of five conditions and patient profiles to test each product:

- BestTreatments
- HealthDialog
- Healthwise
- NexCura.

Each tool was evaluated on these performance dimensions:

- Provision of treatment and condition information;
- Effectiveness of decision-support techniques; and
- Website ease of use.

PBGH integrated the consultants’ assessments and assigned grades for each decision tool. The findings are presented in **Table 1**.

Overall, HealthDialog’s Health Crossroads was rated highest among the four products because of its superior explanation of patient priorities. HealthDialog’s tool helps patients consider their preferences and explains the trade-offs in benefits and risks of alternative treatments, including the option of no treatment, for particular condition-choice scenarios. The tool crisply frames the decision using key choice attributes, and its content uses familiar language to help demystify complex issues.

**Treatment and Condition Information.** The NexCura and BestTreatments tools do not address the comparability of outcomes across treatments nor do they consistently identify the likelihood of treatment benefits and harms. All of the tools, except BestTreatments, explain treatment duration, the patient’s role during and after treatment, and the recovery period based on treatment. Similarly, all four products provide links to evidence of treatment efficacy. The number and types of conditions and treatments addressed in each of the tools varied greatly by vendor.

Table 1.

TREATMENT CHOICE EVALUATION SUMMARY				
	BestTreatments	HealthDialog	Healthwise	NexCura
<b>Treatment and Condition Information</b> Does the tool identify the crux of decision (what matters most to people in treatment decision), explain the medical condition and treatment benefits and risks, the patient’s role during and after treatment, the costs, and evidence for the alternative treatments?				
<b>Effectiveness of Decision-Support Techniques</b> Does the tool help user frame and organize the decision, consider other patients’ experiences, identify personal preferences, and guide user in follow-up with physician/others?				
<b>Website Ease of Use</b> Can a user easily find, interpret and use the information that is relevant to them?				


Key: Exceeds standard Meets or largely meets standard Below standard

**Effectiveness of Decision-Support Techniques.**

The tools demonstrate marked differences in the effectiveness of decision-support techniques. The HealthDialog and Healthwise tools support patients in explaining what matters most to people making the decision and in considering their preferences through narratives of other patients' decision-making processes. All four products provide guidance about engaging the patient's physician in the treatment decision.

**Website Ease of Use.** All of the tools – with the exception of NexCura – meet the ease of use criteria with clear navigation and attractive, readable print formats. In contrast, NexCura's format is not user friendly; the site has high text density, cumbersome navigation and requires a higher literacy level than the other products. In fact, the literacy level of all four sites was high for many people, hovering in the 8th-13th grade level range. Ideally, Websites should target their content to an 8th grade level reader and include more non-text elements in order to engage a broader audience.

In spite of the shortcomings outlined in this report, vendors have made great strides in the functionality of treatment decision-support tools with greater facility to customize information to the individual user. It's important to note that, in many cases, positive health outcomes are defined as much by the patient and his lifestyle as by the provider or more traditional clinical measures. In this context, decision aids help patients identify and achieve their most desirable health outcomes.

Given the benefits of treatment decision-support tools, plans and employers should promote such services to employees through health plan and vendor partners, self-care incentive programs, and internal communications. The utility of treatment decision-support tools would be significantly enhanced by their integration with information about treatment costs. Not only is it important to connect treatment option information with costs, but it's also necessary to tailor that information based on provider selection and benefit plan design. 

## HOSPITAL CHOICE

PBGH evaluated three (3) tools in this category. The project focused on hospital choice in part because numerous studies have documented pervasive disparities in hospital quality, safety and pricing of services. These inconsistencies present a challenge for patients who, when faced with an illness or serious condition, must sift through overwhelming amounts of data to find a high quality and affordable provider, if indeed relevant quality and usable information are available for their condition.

Web-based hospital choice tools help consumers focus their search by providing users with reliable, pertinent and personalized information on hospital performance. These tools may also serve plan and employer interests by directing patients to higher quality, higher value providers, improving consumer engagement, and reducing employee use of low-quality facilities with high complication rates.

A typical patient can use hospital choice tools for a number of purposes. For example, a patient in need of knee replacement surgery can use a hospital choice tool to find nearby hospitals that perform this procedure; to view a ranking of facilities by performance; and find a summary of complication rates for knee replacement procedures at each facility. Determining if one's provider practices at that hospital or assessing out-of-pocket costs are important services that are not typically offered by most tools today.

While hospital tools are now commonly offered by health plans, employers, and other third parties, little is known about how these various products stack up against each other. This project evaluated leading online hospital choice tools available to consumers through commercial health portals:

- HealthGrades
- Healthcare Advisor (formerly Subimo\*)
- WebMD Select Quality Care (formerly HealthShare).

\*Based on version nested in the Wellpoint/Blue Cross of California Website

Experts identified the performance information evidence for mortality, complication and treatment volume indicators for each of ten (10) common, elective procedures. The criteria summarized in **Table 2** were used to assess and compare each tool. WebMD Select Quality Care met or exceeded the standard for each of the three evaluation categories and was rated highest among the three tools evaluated. Healthcare Advisor and HealthGrades were comparably rated: each met key criteria in selected categories but lacked important decision-support functions.

**Hospital Performance Information.** Healthcare Advisor and WebMD Select Quality Care report comparable sets of performance metrics. The HealthGrades tool scored lowest among the three tools for comprehensiveness of performance metrics. The site uses a relatively limited set of condition-specific performance measures largely based on Medicare cases. In some instances, HealthGrades

Table 2.

HOSPITAL CHOICE EVALUATION SUMMARY			
	HealthGrades	WebMD Select Quality Care	Healthcare Advisor
<b>Hospital Performance Information</b>			
Does the tool report the available hospital performance and features information and are the performance indicators accurately presented?			
<b>Effectiveness of Decision-Support Techniques</b>			
Does the tool help user frame and organize the decision; narrow the search to relevant hospitals and compare hospitals on aspects of performance that match their interests and that are meaningful indicators for a given treatment?			
<b>Website Ease of Use</b>			
Can a user easily find, interpret and use the information that is relevant to them?			

Key: Exceeds standard    Meets or largely meets standard    Below standard

aggregates multiple treatments into a category that is a less relevant classification for consumers (e.g., 'gynecological surgery' rather than hysterectomy, ovarian cyst removal etc.).

Importantly, these tools use relative rather than absolute performance ratings – performance is assessed relative to other hospitals rather than benchmark criteria – and therefore it's unclear if higher performing hospitals are actually "better" simply because they score higher than reference hospitals. All three tools demonstrate one notable flaw: none educates the user about the distinction between condition-specific and hospital-wide performance metrics or the value of hospital-wide metrics in the context of hospital choice for a particular service. This is an opportunity for future improvement.

#### **Effectiveness of Decision-Support Techniques.**

In terms of improving decision-making quality and reducing decision-making effort, the tools deliver on one promise – all three identify the highest and lowest performing hospitals. Healthcare Advisor and WebMD Select Quality Care tools rank the hospitals based on preference weights and performance results, whereas the HealthGrades tool presents the user with the option of viewing hospitals' 'overall quality rating' or a summary quality rating (the condition-specific survival/ complication rate compared to the expected rate).

However, none of the tools explicitly frame the hospital choice decision, and capabilities for eliciting user preferences are flawed. For example, the WebMD Select Quality Care and Healthcare Advisor pre-defined sets of preferences include factors that are weakly related to the value of a consumer's hospital stay. The tools do little to help users understand the relevance and meaning of the listed preferences, and HealthGrades offers no user preferences functionality.


**Website Ease of Use.** The team assessed how readily users can find, interpret and make use of the hospital choice information provided by each tool. In this category, our consultants rated the HealthGrades tool highest among the three competing products due to its user-friendly format and immediate presentation of summary results. WebMD Select Quality Care's navigation scored well in this

category with its conventional but intuitive presentation, whereas Healthcare Advisor's initial path is cumbersome and requires six clicks to reach summary results.

It should be noted, however, that the positioning of such tools in health plan Websites (distinct from direct access to the product) may influence the path to producing summary information. One benefit of a customized portal is the ability to link consumers to a health plan's specific hospital network, including its Centers of Excellence. HealthGrades includes a hospital profile that allows for a search of affiliated physicians, while Healthcare Advisor and WebMD Select Quality Care do not.

All three (3) tools showed significant drawbacks in the interpretability of content. Healthcare Advisor lacks a summary performance display, its "preferences match" score is confusing, and its use of three different sets of text legends is difficult to interpret. Likewise, WebMD Select Quality Care's secondary information tier presents difficult-to-interpret statistical legends and counter-intuitive bar charts. HealthGrades achieved better results by focusing on fewer condition-specific indicators and utilizing an attractive, unified format that consistently displays a star icon to indicate performance.

Healthcare Advisor's distinctive architecture had several advantages: it couples treatment decision support with the hospital choice functionality, includes questions about insurance coverage, and provides users with questions to ask a physician. The other tools, in contrast, do not provide users with this type of follow-up help.

However, as was the case with the treatment choice tools evaluated, out-of-pocket cost information was not available. Despite limited charge-based information in the WebMD Select Quality Care Tool, cost data is not adjusted for benefit design and insurance coverage. Other opportunities for improvement include tailoring the decision frameworks to specific conditions or treatments and restricting the decision-making to aspects of choice that are critical to the decision. Additional refinements should include educational content for the user about the distinction between condition-specific and hospital-wide performance metrics and the value of hospital-wide metrics in the context of hospital choice for a particular service. 

## COST ESTIMATOR & BUDGETING

The Consumer Tools project also assessed leading cost calculator and budgeting tools. This area of consumer support is evolving with the recent introduction of consumer-driven products. In the past, consumers rarely sought information about the cost of their own health care – traditional insurance insulated them from concerns about cost, and market forces created a climate in which physicians, hospitals and health insurers did not disclose prices. As health care costs have increased, patients have become more price-conscious and sought greater transparency in navigating the complex interface between benefits, cost and health care delivery.

Today several Web-based services allow patients to gauge their out of pocket costs for a variety of care needs: prescription drugs, acute care, and chronic conditions. Other cost estimation and budget support tools assist users with budgeting for HSA and FSA accounts and help them assess their tax savings compared to potential out-of-pocket dollars. Additional tools allow patients to check costs for specific treatments and services. The latter is made more complicated because pricing for medical services often bundles related diagnostic and ancillary services that may accompany a routine office visit. An episode of treatment that involves surgery or ongoing

condition management is even more complex. And, to be meaningful, the tool should consider the user's benefit design and contracted provider rates.

How do existing cost calculator tools measure up and how can they be improved? PBGH sought to answer these questions by assessing these capabilities and limitations of leading services currently available to public and private purchasers through their health plans and third parties.

PBGH evaluated of five (5) plan and vendor tools:

- Aetna
- Healthcare Advisor/Subimo
- CIGNA
- United HealthCare
- WebMD.

PBGH created a Personal Cost Decision-support Evaluation Framework in consultation with actuarial advisors. The results are reported based on an aggregate plan/vendor level. Cost and budgeting tools often are presented in different parts of the Website, with varying linkages to treatment option choice and provider choice, along with historical information located in transactional areas of the organization's Website. For this study, budgeting was defined as prospective planning capability rather than record-keeping functions, such as monitoring FSA/HSA

Table 3.

TREATMENT AND SERVICE COST ESTIMATOR EVALUATION SUMMARY					
	Aetna	Wellpoint /BC of CA (Subimo)	CIGNA	United Healthcare / (Ingenix)	WebMD
<b>Medical Cost Estimator</b> Does tool personalize cost estimates to member's benefits coverage and health plan contracted fees? Can user tailor expected service use for ongoing care cost estimates and obtain annual expected costs?					
<b>Medication Cost Estimator</b> Does tool personalize cost estimates to member's benefits coverage and health plan contracted fees? Does tool automatically compare equivalent alternative medications including generic & OTC and compare retail vs. mail-order? Are medication lower cost alternatives automatically presented?					
<b>Website Ease of Use</b> Can a user easily find, interpret and use the information that is relevant to them?					

Key: Exceeds standard Meets or largely meets standard Below standard

account balances. The evaluation addressed multiple dimensions that were broadly organized into the following categories:

- Chronic condition care cost estimator functions;
- Medications cost estimator functions;
- Personal account budgeting functions;
- Effectiveness of decision-support techniques; and
- Website ease of use for treatment and service cost estimation.

Using these criteria, PBGH and consulting experts tested the cost support tools under a series of common patient scenarios that reflect how typical patients might utilize the services. Additional observations on Website ease of use are included in the full report. PBGH assigned grades for each decision tool using a three-tier rating method as summarized in **Tables 3 and 4**.

**Medical Cost Estimator.** Four of five tools evaluated do not meet the core requirement of estimating costs based on the member's benefits coverage. In this module, United HealthCare's (UHC) cost estimator outperforms services offered by competing plans (Aetna, Wellpoint/Blue Cross of California, CIGNA) and WebMD. UHC's tool allows patients to estimate their expected service use so that cost approximations better fit their circumstances. Users can see how a potential purchase decision would impact their progress towards meeting a deductible and reaching out-of-pocket maximum amounts. The tool also shows such

estimates in FSA/HSA account balances and lists the projected value of FSA tax savings.

**Medication Cost Estimator.** Although standalone prescription drug calculators were not reviewed for this study, a number of health plans, PBMs, and third-party vendors have robust tools to inform drug choices, substitution options, and generic equivalents. As a whole, such tools are more mature because drug information has been broadly available and discrete unit pricing is more readily understood.

**Website Ease of Use.** As is the case with any decision-support tool, the ability to tailor information to the individual consumer is critical. Tailoring health care pricing information to the patient's treatment scenario is complex. In many cases, consumers require a cost estimate for an episode of care rather than a discrete service. For example, a patient with back pain may want to estimate the overall treatment cost, including a doctor's visit, an MRI, and pain medication. Tools that parse costs into discrete units – a much easier estimate to generate – rather than episodes of care may not provide a valuable service to consumers.

Finally, patients rarely make treatment decisions on the basis of price alone; other considerations include quality of provider options and relative treatment effectiveness. Cost estimation and decision-support tools should integrate price data with these other key dimensions of care choice.

**Table 4.**

PERSONAL ACCOUNT BUDGETING EVALUATION SUMMARY					
	Aetna	Wellpoint /BC of CA (Subimo)	CIGNA	United Healthcare (Ingenix)	WebMD
<b>Personal Account Budgeting</b> Does tool personalize budgeting to member's benefits coverage and health plan contracted fees? Can user tailor expected service use? Does tool provide local average prices for dental, vision/other services? Can user allocate monies across HSA and FSA and assess tax savings?	Not available	Not available		Not available	
<b>Effectiveness of Decision-Support Technique</b> Does tool organize services into a few clear categories (e.g., office visits)? Can user readily adjust expected use assumptions? Are alternatives easily compared? Is navigation intuitive? Are topics like costs, services and personal accounts clearly defined?	*	*		*	

**Key:** Exceeds standard Meets or largely meets standard Below standard

\*Comments and rating reflect techniques offered in FSA and/or HSA calculator tools, as prospective budgeting function is not available.


The WebMD tool distinguished itself in providing treatment cost estimates for a number of chronic conditions (e.g., asthma, arthritis, hypertension, diabetes, depression, osteoporosis, migraines, cancers) and surgeries, diagnostic tests and therapies (e.g., x-rays and scans, office visits, vaccinations, allergy shots, surgeries, labs, eye exams). Geographically-specific charges are derived from a national charge database, with estimated service counts and cost ranges by service type (e.g., office visit, test). However, costs are not based on members' coverage.

**Personal Account Budgeting.** While the evaluation determined that none of the tools is superior across all of the six (6) performance dimensions, this is an evolving area. Several of the tools have retrospective or transactional functionality in showing claims expense deductions from account balances, but only the WebMD and CIGNA tools had good *prospective* personal account budgeting compared to the other tools that had no planning functionality. HSA budgeting is integrated with cost estimate functions (expected number of common visit types and tests, recurrent conditions, prescription drugs, etc.). The budgeting tool presents a recommended FSA contribution given FSA maximum and expected out-of-pocket costs for each plan, as well as optimal contribution to an HSA account.

**Effectiveness of Decision-Support Technique.**

The organization of services into clear categories with appropriate explanatory content is important for comparing alternatives. Clear definitions of costs, services and personal accounts are required. Distinguishing features include user-defined levels for expected use of prescriptions and medical services. Only United HealthCare's tool accounts for member's benefits coverage and the health plan's contracted provider fees.

The limitations of the tools evaluated in this report reflect, in part, the ongoing challenges with advancing price transparency in the current health care environment. Some health plans and providers may view price transparency as a threat to their negotiating leverage, or erosion of their individual price position in a given market. At the same time, purchasers seek broader reporting of efficiency that incorporates both unit price and utilization, as well as relevant quality measures.

In conclusion, existing tools address some elements of the cost estimation process but have several weaknesses which limit their current utility. Future iterations of cost and budgeting tools that address these issues can go a long way towards meeting consumer needs and enhancing the role of the consumer in the health care marketplace. 

**The Pacific Business Group on Health (PBGH)** is one of the nation's top business coalitions focused on health care. Our 50 large purchaser members spend billions of dollars annually to provide health care coverage to more than 3 million employees, retirees and dependents. PBGH is a respected voice in the state and national dialogue on how to improve the quality and effectiveness of health care while moderating costs. Partnering with the state's leading health plans, provider organizations, consumer groups and other stakeholders, PBGH works on many fronts to promote value-based purchasing in health care.

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