



# Research Insights

## ■ The Demand Side: Consumer-Focused Strategies to Improve Health System Outcomes

### Summary

Many of the most visible contemporary efforts to improve the performance of the U.S. health system have focused on payment and delivery system innovations designed to change the way that care is supplied. Less noticed but equally essential are parallel efforts to make the demand side of the health economy function more effectively.

Demand-side strategies include helping consumers and purchasers differentiate between high- and low-value services, making consumers more cost-conscious shoppers for services and insurance coverage, and raising their awareness about the consequences of health behaviors. In all of these endeavors, the demand-side project entails broadening and deepening the research base for cost and quality analysis, communicating effectively with patients and consumers, and understanding the behavioral dynamics of patient and consumer decision-making.

This research brief summarizes the discussion of an expert panel AcademyHealth convened in June 2013 to take stock of recent research on demand-side efforts and inform policy deliberations on demand-side strategies. Among the subjects covered were value-based insurance design, wellness programs, high-deductible insurance plans, price transparency, and shared decision-making.

Challenges identified by the participants included the extent of further research needed to support informed decision-making and the need to understand better how patients and consumers respond to incentives. With a variety of demand-side experiments unfolding across a broad front, real-time information about the impact of these programs will be critical for stakeholders and policymakers.

More specifically, the group's goal was to identify and examine the range of strategies being used to engage consumers and purchasers to reduce waste, control costs generally, and improve health outcomes. Key questions included how much these strategies have succeeded in controlling costs and improving outcomes, what limitations they have encountered, and what are the outstanding priorities for future demand-side research.

### Background

The recognition of consumers' potential role as active participants in the health system is not a recent development. It may be worth remembering that the spread of relatively comprehensive insurance for health care, although it is now justifiably blamed for making consumers insensitive to the cost of care, was driven originally by successive waves of consumer demand for ever more generous coverage.

### Genesis of this Brief:

This brief is based on a meeting for federal policymakers which took place in Washington, D.C., on June 11, 2013. AcademyHealth convened the meeting as part of its Research Insights Project with funding from the U.S. Agency for Healthcare Research and Quality (Grant No. 1R13HS018888-01A1). AcademyHealth's Research Insights project provides resources for policy audiences to better understand relevant, rigorous research findings and identifies gaps in the existing research literature. The project convenes policy audiences and researchers in invitational meetings and webinars and commissions literature reviews, background papers, and issue briefs. Additional information and publications may be found on the project's website, <http://www.academyhealth.org/researchinsights>.

The risk of runaway utilization with comprehensive, first-dollar coverage was hotly debated by private insurers in the 1950s. At that time, some medical plans paid only a small portion of surgical fees, and most commercial medical coverage allowed doctors to balance-bill for charges above the insurers' indemnity limits.<sup>1</sup> Consumers were forced to be price-sensitive, whether they wanted to be or not; and over time, in a growth economy, they opted for increased protection.

In another precursor episode, workplace wellness programs enjoyed a vogue among some large employers in the late 1970s. Enthusiasm rode on hopes that promoting fitness and healthy habits might help check alarming spikes in workers' premiums and painlessly forestall the dread prospect of government intervention. But the effectiveness of these programs proved difficult to measure, and, without demonstrable returns on investment, employers' interest in these programs flagged.

In the mid- to late 1990s, enthusiasm for "market-based" health grew after the failure of legislated reform, creating a conducive environment for high-deductible health insurance, which placed primary responsibility for many health and spending decisions squarely on the consumer's shoulders. Enrollment in these plans has grown slowly but steadily, and their merits as tools of improved system performance continue to be debated, as explored below.

These historical episodes continue to resonate in questions about the interaction of consumer preferences with insurance benefit design and the uncharted potential of behavior change.

### Employer and Purchaser Decision-Making

#### Value-Based Insurance

The 1990s saw the emergence of a robust array of patient- and consumer-oriented strategies to manage care and its costs, many under the rubric of disease management (DM). Many early DM programs were sponsored by pharmaceutical companies and focused on medication adherence. They involved educating patients, monitoring targeted chronic conditions with clear-cut treatment guidelines, and supporting adherence and self-management with mailed, telephonic, and sometimes interpersonal contacts.

Cost-sharing remained a mechanism used almost universally by payers to restrain overuse but also in some cases to reinforce health goals. For example, copayments for some eligible patients might be reduced as an incentive for participation in DM programs. A tension between cost concerns and assuring patients' access to adequate services and medications hovered over these activities, reflecting a broader tension between insurers seeking to hold down costs and pharmaceutical manufacturers intent on boosting sales with detailing, direct-to-consumer advertising, and DM programs focused on medication adherence.<sup>2</sup>

It was into this simmering environment that the concept now known as value-based insurance was first introduced. With a growing body of evidence available to distinguish between best and suboptimal treatment for certain common, chronic conditions like asthma, diabetes, and hypertension, researchers at the University of Michigan proposed that copayments for effective, high-value treatments could be reduced. The idea was to encourage appropriate use for important patient segments while retaining checks and balances for insured populations as a whole.

A published description of the idea appeared in 2001, when pharmaceutical spending was rising by double digits annually and tight drug cost management worried chronically ill patients. The "benefit-based copayment" offered a safety valve and a tool to incentivize medication adherence.<sup>3</sup> It also represented a pioneering effort to measure benefit against cost in the health economy as a way to create a master metric of *value*, increasingly a touchstone for performance improvement in the new millennium. Eventually, the principle was also applied on a broader scale in tiered formularies, tiered provider networks, and reference-pricing initiatives, all of which tied cost-sharing to consumer choices among more or less costly or effective products, services, and providers.

Employer interest in value-based insurance design (VBID) grew rapidly, but implementation has proved complex and laborious. Fewer than 20 percent of large employers in 2007 and 2008 surveys reported actually using VBID, while 81 percent said that they were interested or very interested in implementing it within the next five years. Waived or reduced copayments for maintenance drugs was the most frequently used mechanism.

In 2008, 12 percent of survey respondents said that they had reduced cost-sharing for patients who used preferred provider networks, while 26 percent gave incentives for participation in disease management or care management programs.<sup>4</sup> A 2013 review of 13 peer-reviewed VBID studies found that these programs consistently resulted in improved medication adherence, averaging 3 percent gains in a year. But the programs did not produce reductions in spending.<sup>5</sup>

More comprehensive evidence is lacking about the effectiveness of VBID programs in improving health and reducing costs because most programs are employer-specific, often targeted to limited groups of chronic patients, shielded by proprietary concerns, and all but impossible to evaluate with controlled trials. One program reported a 26 percent reduction in emergency visits for a cohort of diabetics. Another waived copayments for diabetics and observed improvements in glucose control. Medication adherence improved modestly in another VBID program where waived or reduced copayments were linked to participation in disease management activities. In a multistate trial, post-heart attack medication adherence

improved, and subsequent vascular events and costs were reduced. But in most cases, program investments offset savings.<sup>6</sup>

Findings from these and other studies need to be interpreted with care. The effects of improved medication adherence, for example, might not be evident for many years, which is grounds for optimism in some respects but may also hedge employers' interest in investing in the effort if the benefits will ultimately accrue to someone else. Potential sponsors of VBID programs need to think through their targeting strategies carefully. Broad reductions in cost-sharing may be expensive. Clinically meaningful effects from improved adherence seem to occur most often among high-risk patients.

While the evidence is mixed, links to disease management programs may dilute the impact of reduced cost-sharing, so VBID programs need to be designed with a view to how well they fit with other strategies. Participants in the AcademyHealth conference agreed that continued clinical and comparative effectiveness research is needed to identify preferred treatments suitable for promotion with VBID. Finally, a caution that applies to many different incentive programs: Patients and clinicians may not respond to small or distal rewards which are easily lost amid the complexities of treatment and insurance coverage.<sup>7</sup>

### Workplace Wellness

Although definitive evidence of their benefits is somewhat elusive, about half of U.S. firms with 50 or more employees are currently believed to offer some type of workplace wellness program to their workers. Those who offer these programs say they are committed to maintaining those programs in the future and to expanding and strengthening them, although health gains and cost savings may take years to materialize.<sup>8</sup>

Self-reported Health Risk Assessments (HRAs) and screenings are by far the most commonly occurring activities, being used by an estimated 80 percent of all wellness sponsors and serving as a gateway for more targeted and intensive interventions geared to specific health risks. About 35-40 percent of wellness programs involve educational activities, ranging in depth from leaflets, mailings, and phone calls to counseling and group sessions. The most frequently targeted concerns are smoking and obesity, but three out of four programs target multiple risk factors, including blood pressure, diet, stress, and management of chronic conditions such as asthma and diabetes.<sup>9</sup> There is ambiguous data about how widely incentives are used to encourage participation.

As with VBID, the impact of wellness programs on health and costs is difficult to measure because of the diversity of program designs, settings, and evaluation metrics and because health effects may take many years to show. A large study by the RAND Corporation for

the U.S. Departments of Labor and Health and Human Services concluded that workplace wellness programs can reduce risk factors and boost healthy behaviors. The study did not detect cost decreases, although other studies have, in qualified terms.<sup>10</sup>

With or without incentives, participation rates beyond those associated with HRAs and screenings are modest at best. Data on these rates is sketchy and difficult to interpret because employers use different methods and definitions to track their programs and keep some information private. Reported rates varied widely in a RAND survey of large employers. On average, about 45 percent of employees completed HRAs or screenings when offered, but at a third of the surveyed firms, these rates were 20 percent or less.

Participation in active interventions was much lower. Sixty-five percent of firms in the RAND survey reported participation in disease management of 20 percent or less. Ninety percent of respondents had similar rates for smoking and weight loss programs, with an average of only 7 percent of smokers signing up for cessation interventions. Average take-up for fitness programs was about 20 percent.<sup>11</sup>

Employers have experimented with a wide range of incentives to boost these frustrating results. Estimates of how widely incentives are used range from about one- to two-thirds of known programs. Many firms that do not currently use incentives plan to do so in the future, and the RAND report finds that incentive amounts are on the increase. Small cash incentives are common for HRAs and are effective in eliciting participation at \$50 or more. Lifestyle programs often carry incentives, but incentives are infrequent with disease management.

Both positive and negative incentives can be built into employee premiums, and the Affordable Care Act (ACA) increased the maximum share of employee compensation that can be affected by incentive programs from 20 to 30 percent, and more in some cases. Incentives may be tied to program participation or, less frequently, to achievement of or progress toward health goals such as weight loss. Although most programs currently involve much smaller amounts, some observers are concerned that penalties under the new ACA ceiling may fall disproportionately on disadvantaged populations, among whom poor health conditions may be more prevalent than among the better-off.<sup>12</sup>

## Patient Behavior and Plan Incentives

### Incentives and Behavioral Economics

Ongoing developments in behavioral economics and decision science have shed fresh light on how incentives work – or don't – and AcademyHealth discussants gave particular attention to emerging insights from these fields. The design of conventional incentive programs tends to assume that patients and consumers will make

largely rational calculations about the pros and cons of any given decision. Experimental psychology, however, has demonstrated that such calculations are frequently distorted by a variety of subjective biases.

Future rewards are valued less than immediate ones. The risk of loss tends to outweigh the hope of gain. A bump up or down in an annual premium is unlikely to be salient from day to day over the course of a year. Biasing expectations toward a hoped-for outcome – wishful thinking – is another frequently observed subjective distortion. On another front, an example of the misframing of incentives was memorably described in the context of a VBID program to reduce copays for non-adherent patients: “Those who do not take medication will not notice changes in prices they are not paying.”<sup>13</sup>

A key practical insight from behavioral economics is that these distortions of rationality, referred to in the research literature as decision errors, can potentially be harnessed to support rather than impede healthy and cost-conscious choices. Small, frequent rewards can be more effective than larger ones given at longer intervals. Incentives should be parsed out in separate and distinct doses so they are not lost amid other financial transactions, as insurance premium modifications are likely to be.

Decision framing can be enhanced with “active choice” as in programs with default opt-ins, which require respondents to make an active decision not to participate. One rather complex mechanism known as a “regret lottery” offers a prize to employee subgroups who participate in wellness activities in greater numbers than competing groups, playing on workers’ loss aversion while entertaining them with a friendly competition. The workplace environment also figures in employee engagement. Corporate culture, communications, and sensitivity to intergroup interests all matter.<sup>14</sup>

A deeper dimension of behavioral effects is suggested by the observation that of the average person’s 5,000 hours a year of waking life, only a few of those hours are likely to be spent with a health care provider. Most people spend the vast majority of their time as their own caretakers. If their regular behaviors and activities have negative health effects and need to be changed, a regimen of frequent cues has a superior chance of breaking through the wall of habit. To this end, hopes have recently arisen for the potential of smart phones and similar devices through techniques quaintly referred to as “automated hovering.” Some pilot projects have shown promise in furnishing biofeedback, automated reminders, and improved links with providers. The limitation remains that non-adherent patients may simply choose to tune out their mobile messages the way they tune out spam.<sup>15</sup>

With or without electronic aids, the project of increasing patients’ involvement in their own care has begun to advance across a broad front. The ACA anointed patient engagement as a worthy objective for innovative care organizations, such as medical homes, while also raising the limits on incentives. In concert, incentives, benefit design, electronic communication, and other like mechanisms, anchored by effective interpersonal contact, may have the capacity to overcome the many barriers to behavior change that usually defeat single-focus strategies.

### Consumer-Directed Insurance

High-deductible (HD) or consumer-directed insurance plans rose to prominence after the demise of legislated health reform in the early 1990s. Under the banner of market-driven reform, these plans sought to leverage consumers’ economic rationality by exposing them to financial risk for their treatment decisions. Much of the plans’ cachet hinged on the expectation that the newly-hatched Internet revolution would give consumers abundant, transparent information on the cost and quality of care, enabling informed choice. More substantively, higher deductibles translate directly into lower premiums and speak to consumers’ underlying hopes for good health.

Critics insist that, until better cost and quality information becomes readily available, consumers are often unable to distinguish between needed and unneeded care – the same concern addressed by value-based insurance design. Warm debate about these plans, at times politically charged, has been embedded in an environment where progress toward transparency has been slower than hoped. Nevertheless, enrollment in consumer-directed plans has grown steadily. A variety of plan types has resulted in various estimates of their market penetration, but the Kaiser Family Foundation reports that, in 2012, 19 percent of covered employees were in an HD plan, up from 8 percent in 2009. Average annual premiums in these plans were \$4,928 for individuals and \$14,129 for families compared to an average of \$5,615 and \$15,745, respectively, for all plans – roughly a 10 percent difference.<sup>16</sup>

These lower premium levels and lower year-to-year premium growth may make HD plans increasingly attractive in insurance exchanges where competitive differences are designed to be more transparent than in the current market environment, where prices and benefits are notoriously difficult to disentangle. Some expect recent enrollment gains to accelerate. The ACA’s new excise tax on expensive plans may add to this competitive advantage, as could new limits on flexible spending accounts.<sup>17</sup>

The biggest clouds on the horizon for HD plans are the proposed limits on deductibles for small-group plans. If out-of-pocket limits are too low, they will undermine the primary purpose of

these plans and make control of premium growth more difficult to maintain. Meanwhile, in response to concerns about underuse of valuable preventive and screening services in HD plans, the ACA requires that such services be offered without cost-sharing. But one recent study found that only one in five consumers is aware that preventive care is available to them without charge, underscoring again the critical challenges of consumer education and engagement.<sup>18</sup>

### Price Transparency

As several participants in the AcademyHealth discussion observed, the ideal of enabling consumers to make smart decisions with transparent cost and quality information turns out to be an epic project. The idea that consumers could be wise shoppers hinged on having information about the quality of care. Without such information, consumers tend to assume that higher prices mean higher quality.<sup>19</sup> Interest in quality measurement was of long standing but gained momentum in the managed care era of the 1990s amid concerns that quality could suffer if efforts to reduce costs undermined standards of care. Research by the Institute of Medicine and others showing widespread shortcomings in care quality heightened the demand for measurement. Efforts focused on treatments for which consensus on best practices existed, to which actual performance could be compared. Payers then began to experiment with performance-based reimbursement modifications.

Once rudimentary methods for measuring quality were established, meaningful price comparisons could be made, and with them net assessments of value. But obtaining price information was not a straightforward proposition. Proprietary insurance contracts shielded from public scrutiny most actual prices paid to hospitals and doctors by private payers. Recently, however, a wave of disclosures about large and apparently arbitrary price differences among providers has renewed hopes that transparent information about price *and* quality could lead to significant savings.<sup>20</sup>

Within a single state, for example, a 2009 report found a fourfold variation in the price of a single type of magnetic resonance imaging scan—a relatively modest spread compared to some extreme outliers.<sup>21</sup> Similar differences have been unearthed by self-insured employers that price-shop for services for their workers.<sup>22</sup> Prestigious hospitals appear to exhibit pure market power in commanding high prices for their “must-have” services in insurance network contracts.<sup>23</sup>

Price gouging represents a burden on consumers but also an opportunity for stakeholders and policymakers, if increased price transparency were to succeed in increasing competitiveness in a market of well-informed consumers and purchasers. By 2013, at least 30 states and the federal government had enacted various kinds of

laws and regulations to increase health price transparency, according to the National Conference of State Legislators.<sup>24</sup> Some of these initiatives yield reporting only on average prices, which are of little use to individual consumers. Getting the market to work efficiently involves getting the right information in the right form to the right place at the right time – a tall order.

Even with insurance designs that increase the consumer’s cost-consciousness, the obstacles are many. Adequate information about quality is often unavailable, leaving the consumer to guess whether a lower-priced service is preferable to the alternatives. It is difficult for patients to know in advance what combination of services might be needed in the course of a hospitalization. Publishing prices at the episode level, many of which are currently being developed by insurers, could better facilitate consumer shopping.<sup>25</sup> Some envision an environment in which pre-procedure estimates might be available, as in auto repair markets.

Urgently needed care obviously precludes shopping, and many decisions are made by doctors without much patient input. Some economists also worry that published prices would allow lower-cost providers to lower prices but stay just below the high-priced competition, with the effect of raising average costs.<sup>26</sup> Finally, much of our thinking on price transparency for consumers is based on theory; because it is a relatively new phenomenon there is not yet much evidence about its effectiveness in practice. Again, the notion of patient engagement comes into play. Incentives, or disincentives, may have to be large to compel consumers to take increasing responsibility for difficult medical and financial decisions, a job they have been, for the most part, happy to leave to others in the past.

### Shared Decision-Making

A more intensive form of patient engagement and a paradigm for ideal care is the practice of sharing responsibility for care decisions by patients and providers. Unlike the examples of value-based insurance cited previously, which apply when there is a clear difference between high- and low-value care, shared decision-making (SDM) has developed as an approach to use when different treatment options have different pros and cons and patient preferences need to be taken into account.<sup>27</sup> Some early examples of the practice, for example, arose in the treatment of prostate cancer where a variety of tradeoffs and uncertain outcomes exist between different treatment options, involving highly sensitive considerations with respect to pain, continence, sexual function, future disease risk, and other factors.

Patient education is again a fundamental element. But the emphasis is on information sharing between patients and providers, entailing more active and interactive efforts on both sides than in many disease management programs, for example, which might have

minimal physician involvement, or in a system built around automated reminders. In short, SDM requires not only more “activated” patients but also a significant change in the behavior of providers, who traditionally take charge of treatment decisions without much more than a perfunctory bid for the patient’s assent or routine explanations, in many cases.

Increased recognition of consumers’ legitimate interests and increased use of quality metrics that gauge patient satisfaction has prompted attention to SDM programs. The Medicare shared savings program, as an example, requires participating care organizations to mount SDM efforts. Such organizations will be able to use decision aids such as educational videos and pamphlets to meet part of their obligation. But scaling up for more truly interactive SDM will entail many challenges. A demonstration project sponsored by the Informed Medical Decisions Foundation began in 2009 to test the approach at a sampling that grew to 14 geographically dispersed sites of different practice sizes. All sites were chosen because they had experience with quality improvement and, in some cases, with decision aids. Patient-provider conversations, as well as use of informational tools, were a necessary component of the demonstration.<sup>28</sup>

The biggest barriers to implementation included physicians’ complaints that they had too much else to do to give time to SDM. Programs that relied on physicians to distribute decision aids to patients found that only 10 to 30 percent of patients facing negotiable decisions received materials. Lack of sufficient provider training was another obstacle, coupled with reluctance on the part of many physicians to buy into the program. Supporting clinical information systems lacked the capacity to identify patients who could benefit, to report patient feedback to providers, to track patient progress, and to incorporate decision aids and patient preferences into the medical record. Patients who did participate showed large improvements in knowledge scores.

The Group Health Cooperative in Washington State has made extensive efforts to engage patients in decisions about preference-sensitive care, including about a dozen surgical procedures. In a recently published study, Group Health authors reported on how the use of decision aids was observed to affect rates of joint replacement surgery. They found that these tools were associated with 26 percent fewer hip replacements, 38 percent fewer knee replacements, and 12 to 21 percent lower costs over 6 months.<sup>29</sup> The organization also reported that a vast majority of participating patients said that the process helped them talk to their provider. Not being afraid to ask questions or disagree, the AcademyHealth group reflected, seemed like a giant step toward consumer empowerment.

Group Health’s favorable experience with SDM has depended, in large part, on a tight organizational structure and committed leadership. To be scalable in the wider world of fragmented, fee-for-service care, SDM will need flexible, adaptive capabilities. Employer interest is apparently limited, raising questions about how programs will be paid for. The research base itself will have to be patient-centered, in order to identify outcomes of importance to patients, as representatives of the Patient-Centered Outcomes Research Institute—which funds studies of comparative clinical effectiveness, not cost-effectiveness or payment mechanisms—emphasized.<sup>30</sup> Educational efforts need to be tailored to patients’ educational level, socioeconomic environment, insurance status, and other factors. In some cases, patient preferences will run counter to recommended care, as with unpleasant procedures such as colonoscopies and prostate biopsies. Where evidence is contradictory or ambiguous, as with mammography, what patients share is the angst of complex and difficult medical decision-making. The benefits of the SDM approach will in many cases be hard earned.

### Conclusion

Although it has its antecedents, engaging patients as “consumers” in the health care marketplace is a new world for providers and consumers alike, with unlimited potential but also an unlimited amount of work yet to be done. The first order of business will be to continue monitoring and evaluating the many and various initiatives that are under way or planned. Success factors need to be identified, tools and program designs refined. Opportunities to use different strategies to reinforce each other should be explored, as, for example, incorporating VBID into high-deductible plans. The potential of behavioral economics to sharpen and strengthen various types of incentive and decision-support strategies needs to be fully exploited.

There are still enabling circumstances that need to mature for empowered consumers to become full partners in the health system. Quality measurement and reporting are still expanding in scope and are still in need of improved framing to maximize their utility for consumers. Usable data on real costs and prices that is most likely to affect consumer behavior has been virtually impossible for consumers to access, and is now just very gradually beginning to be accessible and intelligible. While it is possible that recent revelations about price disparities will galvanize public awareness and ignite forceful demands for change, the mechanism by which this will happen is still unclear.

Most promising, perhaps, is the drift toward a better understanding of behavioral dynamics and the eclipse of outmoded assumptions about how people make decisions. The flat economic reasoning behind the first generation of high-deductible plans was flawed. With

better information and decision support tools, however, HD plans and other insurance design innovations may help make consumer engagement and activation an expected norm in the future.

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### Selected Bibliography

#### Employer and Purchaser Decision-Making

Baicker, K, Cutler, D, Song, Z. Workplace wellness programs can generate savings. *Health Aff.* 2010 Jan;29(2):304- 311. <http://content.healthaffairs.org/content/29/2/304.abstract>

Chernew ME, Rosen AB, and AM Fendrick. Value-Based Insurance Design. *Health Aff.* 2007 Mar – Apr;26(2):195-203. <http://content.healthaffairs.org/content/26/2/w195.long>

Choudhry NK, Rosenthal MB, and A Milstein. Assessing the evidence for Value-Based Insurance Design. *Health Aff.* 2010 Nov;29 (11):1988-1994. <http://content.healthaffairs.org/content/29/11/1988.abstract?sid=d1c2e6a1-0bef-4d01-9626-fa1ab46cc428>

Fendrick MA, Smith DG, and ME Chernew. Applying Value-Based Insurance Design to low-value health services. *Health Aff.* 2010 Nov;29(11):2017-2021. <http://www.sph.umich.edu/vbidcenter/registry/pdfs/HAAppling%20VBID%20to%20LowValueHealth-Services1110.pdf>

Ginsburg PB. Shopping for price in medical care. *Health Aff.* 2007 Mar-Apr;26(2):w208-216. <http://content.healthaffairs.org/content/26/2/w208.long>

Lee JL et al. Value-Based Insurance Design: Quality improvement but no cost savings. *Health Aff.* 2013;32(7):1251-1257. <http://content.healthaffairs.org/content/32/7/1251.long>

Lerner D, Rodday AM, Cohen JT, and WH Rogers. A systematic review of the evidence concerning the economic impact of employee-focused health promotion and wellness programs. *J Occup Environ Med.* 2013 Feb;55(2):209-222. <http://www.ncbi.nlm.nih.gov/pubmed/23287723>

Mattke S et al. Workplace wellness programs study: Final report. RAND Corp. 2013. See <http://www.dol.gov/ebsa/pdf/workplace-wellnessstudyfinal.pdf>

Osilla KC, Van Busum K, Schnver C, Larkin JW, Eibner C, and S Mattke. Systematic review of the impact of worksite wellness programs. *Am J Manage Care.* 2012 Feb;18(2):e68-81. <http://www.ncbi.nlm.nih.gov/pubmed/22435887>

#### Patient Behavior and Plan Incentives

Buchmueller TC. Consumer-oriented health care reform strategies: A review of the evidence on managed competition and consumer-directed health insurance. *Milbank Q.* 2009 Dec;87(4):820-841. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2888023/>

Buntin MB, Damberg, C, Haviland A, Kanika K, Lurie N, McDevitt R et al. Consumer-directed health care: Early evidence about effects on cost and quality. *Health Aff.* 2006 Nov;25(6):w516-530. <http://content.healthaffairs.org/content/25/6/w516.full.pdf+html>

Cosgrove DM, Fisher M, Gabow P, Gottlieb G, Halvorson GC, James BC, et al. Ten strategies to lower costs, improve quality, and engage patients: The view from leading health system CEOs. *Health Aff.* 2013 Feb;32(2):321-327. <http://content.healthaffairs.org/content/32/2/321.abstract>

Cutler, D., Dafny, L. Designing transparency systems for medical care prices. *N Engl J Med.* 2011;364(10):894-895. <http://www.nejm.org/doi/full/10.1056/NEJMp1100540>

Feldman R, Parente ST, and J Christianson. Consumer directed health plans: New evidence on cost & utilization. *Inquiry.* 2007 Spring;44(1):26-40. <http://www.hsnetwork.com/Inquiry%20Galley.pdf>

Hibbard J and J Greene. What the evidence shows about patient activation: Better health outcomes and care experiences; fewer data on costs. *Health Aff.* 2013 Feb;32(2): 207-214. <http://content.healthaffairs.org/content/32/2/207.abstract>

Horwitz JR, Kelly BD, and DiNardo JE. Wellness incentives in the workplace: Cost savings through cost shifting to unhealthy workers. *Health Aff.* 2013;32(3):468-476. <http://content.healthaffairs.org/content/32/3/468.abstract>

Loewenstein G, Asch DA, and Volpp KG. Behavioral economics holds potential to deliver better results for patients, insurers, and employers. *Health Aff.* 2013;32(7):1244-1250. <http://content.healthaffairs.org/content/32/7/1244.short>

Mehrotra A, Hussey P, Milstein A, and Hibbard J. Consumers' and providers' responses to public cost reports, and how to raise the likelihood of achieving desired results. *Health Aff.* 2012;31(4):843-51.

Mittler JN, Martsolf GR, Telenko SJ, and DP Scanlon. Making sense of "consumer engagement" initiatives to improve health and health care: A conceptual framework to guide policy and practice. *Milbank Q.* 2013 Mar;91(1): 37-77. <http://onlinelibrary.wiley.com/doi/10.1111/milq.12002/abstract>

Mittler JN, Volmar KM, Shaw BW, Christianson JB, and DP Scanlon. Using websites to engage consumers in managing their health and healthcare. *Am J Manag Care.* 2012 Sept;18(6): s117-184. <http://www.ncbi.nlm.nih.gov/pubmed/23286713>

Parente ST and R Feldman. Evolution and early evidence of the impact of consumer driven health plans: from e-commerce to health savings accounts. *Expert Rev Pharmacoecon Outcomes Res.* 2008 Aug;8(4):343-348. [http://www.expert-reviews.com/doi/abs/10.1586/14737167.8.4.343?url\\_ver=Z39.88-2003&rfr\\_id=ori:rid:crossref.org&rfr\\_dat=cr\\_pub%3dpubmed&](http://www.expert-reviews.com/doi/abs/10.1586/14737167.8.4.343?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%3dpubmed&)

Reed M, Graetz I, Wang H, Fund V, Newhouse JP, and J Hsu. Consumer-directed health plans with health savings accounts: Whose skin is in the game and how do costs affect care seeking? *Med Care.* 2012 July;50(7):585-590. [http://journals.lww.com/lww-medicalcare/Abstract/2012/07000/Consumer\\_directed\\_Health\\_Plans\\_With\\_Health\\_Savings.5.aspx](http://journals.lww.com/lww-medicalcare/Abstract/2012/07000/Consumer_directed_Health_Plans_With_Health_Savings.5.aspx)

Sinaiko A, Rosenthal MB. Increased price transparency in health care – challenges and potential effects. *New England Journal of Medicine.* 2011;364(10):891-893. <http://www.nejm.org/doi/full/10.1056/NEJMp1100041>

### Shared Decision-Making

Arteburn D, Wellman R, Westbrook E, Rutter C, Ross T, McCulloch D, et al. Introducing decision aids at group health was linked to sharply lower hip and knee surgery rates and costs. *Health Aff.* 2012 Sept;31(9):2094-2104. <http://content.healthaffairs.org/content/31/9/2094.long>

Barry, M.J. Shared Decision Making: Informing and involving patients to do the right thing in health care. *J Ambulatory Care Manage.* 2012 Apr-June;35(2):90-98. [http://journals.lww.com/ambulatorycaremanagement/Abstract/2012/04000/Shared\\_De-](http://journals.lww.com/ambulatorycaremanagement/Abstract/2012/04000/Shared_De-)

[cision\\_Making\\_\\_Informing\\_and\\_Involving.4.aspx?WT.mc\\_id=HPxADx20100319xMP](http://journals.lww.com/ambulatorycaremanagement/Abstract/2012/04000/Shared_Decision_Making__Informing_and_Involving.4.aspx?WT.mc_id=HPxADx20100319xMP)

Barry M.J. and S. Edgman-Levitan. Shared decision making - the pinnacle of patient-centered care. 2012 Mar;366(9): 780-781. <http://www.nejm.org/doi/full/10.1056/NEJMp1109283>

Dry SM and TS Purnell. Key concepts relevant to quality of complex and shared decision-making in health care: a literature review. *Soc Sci Med.* 2012 Feb;74(4):582-587. <http://www.sciencedirect.com/science/article/pii/S0277953611007398>

Elywn G, Frosch D, Thomson R, Joseph-Williams N, Lloyd A, Kinnersley P, et al. Shared decision making: a model for clinical practice. *J Gen Intern Med.* 2012 Oct;27(10):1361-1367. <http://link.springer.com/article/10.1007%2Fs11606-012-2077-6>

Friedberg NW et al. A demonstration of shared decision making in primary care highlights barriers to adoption and potential remedies. *Health Aff.* 2013;32(2):268-274. <http://content.healthaffairs.org/content/32/2/268.long>

Legare F, Turcotte S, Stacey D, Ratté S, Kryworuchko J, and ID Graham. Patient's perceptions of sharing in decisions: a systematic review of interventions to enhance shared decision making in routine clinical practice. *Patient.* 2012;5(1):1-19. <http://link.springer.com/article/10.2165%2F11592180-000000000-00000>

Stacey D, Bennett CL, Barry MJ, Col NF, Eden KB, Holmes-Rovner M, et al. Decision aids for people facing health treatment or screening decisions. *Cochrane Database Syst Rev.* 2011 Oct;10: DOI: 10.1002/14651858.CD001431.pub3. <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD001431.pub3/abstract;jsessionid=6EF8419523131337ECE189019F386884.d01t03>

### Endnotes

- 1 Bryan JE. Blue Shield faces its hour of decision. *Medical Economics.* May 1955;32:197-224.
- 2 Moran D. Prescription drugs and managed care: can 'free-market détente' hold? *Health Aff.* 2000;19(2):63-77.
- 3 Fendrick AM et al. A benefit-based copay for prescription drugs: Patient contribution based on total benefits, not drug acquisition cost. *Am. Journal of Managed Care.* 2001;7(9):861-866.
- 4 Choudhry NK, Rosenthal MB, Milstein A. Assessing the evidence for value-based insurance design. *Health Aff.* 2010; 29(11):1988-1994.
- 5 Lee JL et al. Value-Based Insurance Design: Quality improvement but no cost savings. *Health Aff.* 2013;32(7):1251-1257.
- 6 Ibid.
- 7 Fendrick AM et al. A benefit-based copay for prescription drugs: patient contribution based on total benefits, not drug acquisition cost. *Am. Journal of Managed Care.* 2001;7(9):861-866.
- 8 Mattke S et al. Workplace wellness programs study: Final report. RAND Corp. 2013. See <http://www.dol.gov/ebsa/pdf/workplacewellnessstudyfinal.pdf>



## The Demand Side: Consumer-Focused Strategies to Improve Health System Outcomes

- 9 Baicker, K., Cutler, D., Song, Z. Workplace wellness programs can generate savings. *Health Aff.* 2010 Jan;29(2):304 – 311.
- 10 Mattke S et al. Workplace wellness programs study: Final report. RAND Corp. 2013. See <http://www.dol.gov/ebsa/pdf/workplacewellnessstudyfinal.pdf>
- 11 Ibid.
- 12 Horwitz JR, Kelly BD, and DiNardo JE. Wellness incentives in the workplace: Cost savings through cost shifting to unhealthy workers. *Health Aff.* 2013;32(3):468-476.
- 13 Volpp KG, Loewenstein G, Asch DA. Choosing Wisely: low-value services, utilization, and patient cost sharing. *J Am Medical Assoc.* 2012;308(16):1635-6.
- 14 Loewenstein G, Asch DA, and Volpp KG. Behavioral economics holds potential to deliver better results for patients, insurers, and employers. *Health Aff.* 2013;32(7):1244-1250.
- 15 Ibid.
- 16 Claxton G et al. Health benefits in 2012: Moderate premium increases for employer-sponsored plans; young adults gained coverage under ACA. *Health Aff.* 2012;31(10):2324-2331.
- 17 Parente S. Unexpected boost for consumer-directed health plans (interview). Society for Human Resource Management (website) 2010. Available at <http://www.shrm.org/Publications/hrmagazine/EditorialContent/2010/1210/Pages/1210miller.aspx>
- 18 Reed ME et al. In consumer-directed health plans, a majority of patients were unaware of free or low-cost preventive care. *Health Aff.* 2012; 31(12):2641-2647.
- 19 Mehrotra A, Hussey P, Milstein A, and Hibbard J. Consumers' and providers' responses to public cost reports, and how to raise the likelihood of achieving desired results. *Health Aff.* 2012;31(4):843-51.
- 20 Meier B, McGinty JC, and Creswell J. Hospital billing varies wildly, government data shows. *New York Times*, May 8, 2013: A1.
- 21 Sinaiko A, Rosenthal MB. Increased price transparency in health care – Challenges and potential effects. *New England Journal of Medicine.* 2011;364(10):891-893.
- 22 Robinson JC and MacPherson K. Payers test reference pricing and centers of excellence to steer patients to low-price and high-quality providers. *Health Aff.* 2012;31(9):2028-2035.
- 23 Coakley M. Examination of Health Care Cost Trends and Cost Drivers (Massachusetts Attorney General's report), 2011. Available at <http://www.mass.gov/ago/docs/healthcare/2011-hcctd-full.pdf>
- 24 National Conference of State Legislatures. State and Federal Actions Related to Transparency and Disclosure of Health Charges and Provider Payments, 2013. Available at <http://www.ncsl.org/issues-research/health/transparency-and-disclosure-health-costs.aspx>
- 25 Sinaiko A, Rosenthal MB. Increased price transparency in health care – Challenges and potential effects. *NEJM.* 2011;364(10):891-893.
- 26 Cutler D. and Dafny L. Designing transparency systems for medical care prices. *NEJM* 2011;364(10)894-5.
- 27 Friedberg NW et al. A demonstration of shared decision making in primary care highlights barriers to adoption and potential remedies. *Health Aff.* 2013;32(2):268-274.
- 28 Ibid.
- 29 Arteburn D et al. Introducing decision aids at group health was linked to sharply lower hip and knee surgery rates and costs. *Health Aff.* 2012;31(9):2094-2104.
- 30 Fleurence R et al. How the Patient-Centered Outcomes Research Institute is engaging patients and others in shaping its research agenda. *Health Aff.* 2013;32(2):393-398. See also <http://www.pcori.org/>