

Table 2. Price Shopping Attitude and Behavior by Type of Health Plan

Attitude or Behavior <sup>a</sup>	HDHP, %	Non-HDHP, %	P Value
Health care prices and quality			
There are large differences in prices for medical care <sup>b</sup>	60	58	.49
There are large differences in quality of medical care <sup>b</sup>	68	64	.19
Regarding choice of physician			
Higher-priced physicians provide higher quality care <sup>c</sup>	17	20	.21
Out-of-pocket costs are important when choosing a physician <sup>d</sup>	71	68	.17
Regarding choice of facilities			
Higher price facilities provide higher quality care <sup>c</sup>	16	25	.001
Out-of-pocket costs are important when choosing a radiology facility <sup>b</sup>	81	74	.003
Would use information on prices if available <sup>c</sup>	56	50	.06
During your last use of medical care, did you...			
Consider other health care professionals?	11	10	.67
Consider other health care professionals and compare costs across health care professionals?	4	3	.37

Abbreviation: HDHP, high-deductible health plan.

<sup>a</sup> Attitude or behavior are weighted frequencies. Shopping activities are predicted probabilities based on logistic regression and adjusted for differences in age, sex, health status, income, education, race/ethnicity, employment status, and whether patients have family coverage. An HDHP was defined as having an individual coverage deductible \$1250 or greater or a

family coverage deductible of \$2500 or greater.

<sup>b</sup> Corresponds to the share of respondents who reported agree/strongly agree.

<sup>c</sup> Corresponds to the share of respondents who reported likely/very likely.

<sup>d</sup> Corresponds to the share of respondents who reported important/very important.

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1. Westhealth Policy Analysis. *Healthcare Price Transparency: Policy Approaches and Estimated Impacts on Spending*. Washington, DC: Westhealth Policy Center; 2014.

2. Government Accountability Office. *Health Care Transparency: Actions Needed to Improve Cost and Quality Information for Consumers*. 2014. <http://www.gao.gov/assets/670/666572.pdf>. Accessed February 15, 2015.

3. Wharam JF, Landon BE, Galbraith AA, Kleinman KP, Soumerai SB, Ross-Degnan D. Emergency department use and subsequent hospitalizations among members of a high-deductible health plan. *JAMA*. 2007;297(10):1093-1102.

4. Beeuwkes Buntin M, Haviland AM, McDevitt R, Sood N. Healthcare spending and preventive care in high-deductible and consumer-directed health plans. *Am J Manag Care*. 2011;17(3):222-230.

5. Sood N, Wagner Z, Huckfeldt P, Haviland A. Price-shopping in consumer-directed health plans. *Forum Health Econ Policy*. 2013;16(1):1-19.

6. Internal Revenue Service. High-Deductible Health Plan Definition for 2014. <http://www.irs.gov/pub/irs-drop/rp-13-25.pdf>. Accessed December 12, 2015.

#### Editor's Note

### High-Deductible Health Plans and Higher-Value Decisions: A Mirage or Are We Just Not There Yet?

High-deductible health plans—insurance plans that have lower premiums but higher deductibles than traditional health

plans—have been increasingly promoted as a means to incentivize higher-value health care decision making. However, we have little information on how individuals take accessibility, cost, and quality information into account when making health care decisions. Moreover, there remains uncertainty about whether individuals will obtain recommended health care services while at risk for greater out-of-pocket costs.<sup>1,2</sup>

In this issue of *JAMA Internal Medicine*, Sinaiko and colleagues<sup>3</sup> conduct an internet-based survey of enrollees in high-deductible health plans and traditional health plans to better understand how they think about health care decisions. Individuals enrolled in plans with different financial incentives actually share many of the same beliefs about health care pricing and how to obtain high-quality care. Both rarely consider obtaining care from a different health care professional and even less often compare costs among health care professionals. Despite the limitations of an internet-based sample and few questions to disentangle the nuance of decision making, an interpretation of this study could be that high-deductible health plans are rationally designed for individuals who do not yet have access to sufficient information to make higher-value decisions in today's market, suggesting that these plans have not yet succeeded at making cost and quality information more available and more actionable for their enrollees. However, a more likely interpretation is that getting enrollees to make higher-value decisions remains a mirage. High-deductible health plans take advantage of an irrationally designed health care system. In fact, information about our health care system is asymmetric in that it is better understood by physicians and less so by patients, which means patients obtaining care are not truly informed decision makers.

It is true that high-deductible health plan enrollees have “skin in the game.” However, these enrollees are exposed to substantial out-of-pocket cost risk with little evidence that this risk exposure will incentivize higher-value health care deci-

sions, meaning they are essentially playing the game blindfolded with one hand tied behind their back.

### Joseph S. Ross, MD, MHS

1. Newhouse JP. *Free For All?: Lessons From the RAND Health Insurance Experiment*. Cambridge, MA: Harvard University Press; 1996.
2. Ross JS, Bradley EH, Busch SH. Use of health care services by lower-income and higher-income uninsured adults. *JAMA*. 2006;295(17):2027-2036.
3. Sinaiko AD, Mehrotra A, Sood N. Cost-sharing obligations, high-deductible health plan growth, and shopping for health care: enrollees with skin in the game [published online January 19, 2016]. *JAMA Intern Med*. doi:10.1001/jamainternmed.2015.7554.

## Hospital Care Efficiency and the SMART (Specific, Measurable, Agreed, Required, and Timely) Medicine Initiative

A considerable proportion of hospital resources is spent on various laboratory and imaging tests. This reality presents a significant challenge to medical teams with regard to intelligent and efficient use of these tools during hospital care.<sup>1</sup> The SMART (Specific, Measurable, Agreed, Required, and Timely) Medicine initiative, conducted by the Division of Internal Medicine at the Rambam Health Care Campus, aims to improve the efficiency of medical investigations by making the use of diagnostic tools more precise, focused, and based on the clinical findings.

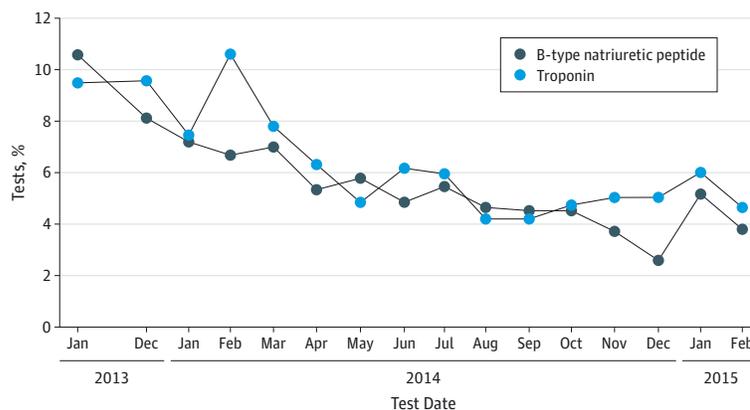
**Methods** | The project was a multifaceted medical education campaign managed by a group of senior physicians (including D.B.-H., A.Y., and J.K.), with continuous and systematic monitoring and feedback. The group met monthly to discuss issues from the practice of internal medicine with a content expert and Intel engineers (V.B. and N.G.) who volunteered as part of a nationwide community involvement program. At the end of each meeting, the forum wrote up a set of recommendations that were communicated to all physicians in the Division of Internal Medicine through various channels. The impact of the initiative was continuously measured by quantifiable data related to blood and imaging tests, and a defined set of measurements was reported to the staff as

monthly feedback. The need for study approval was waived by the institutional review board of the Rambam Health Care Campus.

**Results** | Various topics were discussed during 2014, and a set of recommendations for common laboratory tests and other diagnostic tests was compiled by the forum. For example, we agreed that measurement of B-type natriuretic peptide levels as part of the workup for acute dyspnea should not be included in cases with an unequivocal diagnosis of acute left heart failure or with a more likely alternative diagnosis.<sup>2</sup> Proper use of troponin level measurement in the workup of patients presenting with chest pain and recommendations for avoiding unnecessary repeated testing represented another example. Use of both tests was significantly reduced (Figure 1). Another issue discussed by our forum was routine (and unnecessary) blood tests. We found that unbundling panel chemistry tests reduced the use of routine measurement of lactic dehydrogenase, creatine kinase, and amylase levels by more than 50% (Figure 2). The number of tests ordered for C-reactive protein, hemoglobin A<sub>1c</sub>, and thyrotropin levels was also significantly reduced. During the first year of the project, we achieved a 20% reduction in the total number of laboratory tests performed, resulting in a savings of \$250 000. In addition, the laboratory turnaround time from sample receipt to results dispatch was reduced.

**Discussion** | We have presented an example of successful development of a method for the use of diagnostic tools for a specific topic list, inspired by the US Choosing Wisely campaign,<sup>1</sup> in an individual hospital. Our initiative was implemented through an educational model that included systematic monitoring and feedback. Although the selected topics may not be generalizable beyond the scope of our division's practice, the guiding principles of the method can be applied in other settings. In recent years, many studies dealing with cost-effectiveness and reduction of low-value health care activities by different types of interventions have been published.<sup>3-6</sup> However, several elements make our initiative unique. First, our recommendations are based on thorough discussion of the

Figure 1. Rates of Measurement of B-type Natriuretic Peptide (BNP) and Troponin Levels



Recommendations were released in March 2014 for measurement of BNP levels in the workup of acute dyspnea and of troponin levels in the workup of acute chest pain. Use of both tests declined significantly ( $P < .001$ ).