The Role of Decision Aids in the Affordable Care Act

By Samuel Hansen

Imagine an 86 year-old patient who is diagnosed with terminal cancer. One day, the patient suffers a mild stroke, falls down, and breaks her hip. She is admitted to a hospital, where a doctor says she has around three to nine months to live. If she receives a hip-replacement, there is a high chance her weak heart will not hold out for the surgery. But if she does not receive the replacement, she will painfully suffer through her remaining days. This is precisely the dilemma President Obama faced when his terminally ill 86 year-old grandmother, Madelyn Payne Dunham, broke her hip two weeks before she passed away in 2008. When asked how to approach difficult medical decisions, Obama said, "…there is going to have to be a conversation that is guided by doctors, scientists, ethicists" and ultimately, patients (Leonhardt, 2009, p. 6).

This "conversation" is the core theme of a new approach of delivering medical care known as shared decision-making. Section 936 of the Affordable Care Act (ACA) defines shared decision-making as:

> A collaborative processes between patients, caregivers or authorized representatives, and clinicians that engages the patient, caregiver or authorized representative in decision-making, provides patients, caregivers or authorized representatives with information about trade-offs among treatment options, and facilitates the incorporation of patient preferences and values into the medical plan (United States, Congress, House 409).

In short, shared decision-making is a discussion between a patient and a physician meant to find the "right" treatment option when the relative risks, benefits, and costs of multiple medical treatments are uncertain. Shared decision-making is an integral part of health care reform because it redefines the patient-doctor relationship, emphasizes informed consumer choice, and has the potential to provide higher quality care at lower costs.

To facilitate shared decision-making, "decision aids" – medical information in the form of software, pamphlets, and other media – have become popular tools to help

patients make better choices about various medical treatments. Over the past decade, decision aids have gained relative popularity among physicians because of their potential to improve quality and control costs (O'Connor et al. 1). To expand the use of decision aids, Section 936 of the ACA presents guidelines for funding, developing, certifying, and implementing decision aids in the US healthcare system (United States, Congress, House 409). However, while there are many proven benefits of decision aids, their cost saving potential has led to the entry of for-profit decision aid developers and insurers into this lucrative new market. Indeed, the content and presentation of information in decision aids have profound effects on patient treatment choices with health consequences.

Given the risks of an unregulated decision aid market, the federal government has a responsibility to protect patients by a) requiring developers to be non-profit, and b) promoting the establishment of a nongovernmental organization of physicians and decision scientists that studies and creates unbiased decision aids.

Decision Aids: What are they, and how do they work?

Section 936 of the Affordable Care Act defines a patient decision aid as:

> An educational tool that helps patients, caregivers or authorized representatives understand and communicate their beliefs and preferences related to their treatment options, and to decide with their health care provider what treatments are best for them based on their treatment options, scientific evidence, circumstances, beliefs, and preferences (Ibid.).

Decision aids are used in instances of preference-sensitive care – care involving "tradeoffs that affect a patient's quality and/or length of life" (Bronner 1). For instance, various life-saving breast cancer treatments involve the risk of breast loss, and prostate cancer procedures often pose the risk of incontinence – requiring patients to weigh expected quality of life over length of life.

To facilitate these tradeoffs, computer-based decision aids allow patients to input their unique preferences to match them with specific treatment plans. For instance, if a patient with prostate cancer wants to choose between undergoing surgery and localized radiation treatment, they could use the online decision aid pictured in Figure 1 to make a decision consistent with their personal preferences (see appendix).

After the patient reads the background information, compares treatment options, and enters their personal preferences (noted in steps 1-3 on the top tab of Figure 1), this decision aid will generate a personal summary of their recommended medical choice, which the patient can then use to make an informed decision with his or her doctor. For example, a prostate cancer patient will have to choose whether they are more concerned about the risk of excessive bleeding from surgery or the risk of erectile dysfunction from localized radiation. Additionally, if a patient has limited insurance coverage, he or she may have to compare the financial costs of treatment paths. Such interactive web-based tools are becoming common mediums for decision aids, but similar information can be conveyed in print form as well as phone-based information sessions between patients and decision aid consultants.

Ideally, decision aids should function as unbiased sources of information, but they have the potential to psychologically influence patient behavior by the application of heuristics and cognitive biases. In 2002, Daniel Kahneman won the Nobel Prize in Economics for pioneering the field of psychological heuristics – common human cognitive errors that influence judgment and decision-making ("Daniel Kahneman – Autobiography" 1). Such heuristics can be considered "mental shortcuts." A common heuristic known as the "anchoring bias" occurs when people make decisions "anchored" upon previous information or numerical values (Tversky and Kahneman 1). For instance, "the awards from lawsuits are influenced by the plaintiff's initial demand—the plaintiff gets more if he or she requested more" (Nofsinger 1).

In the case of decision aids, there are many heuristics susceptible to potential manipulation. One of the most common ones is called ordering bias – the "skewing of results caused by the order in which information is presented" (*Cdc.gov* 1). Evidence suggests that patients perceive information more favorably when it is presented first. For instance, a recent study involving decision aids for breast cancer patients found that those who first learned about the risks of a drug treatment favored the drug more than patients who first learned about the benefits (Ubel et al. 1). A decision aid developer could use this information to steer patients towards or away from the drug.

Similarly, a study involving decision aids for prostate cancer patients compared the ratios of negative to positive words (i.e. risks vs. benefits) in decision aids developed by

the government, academia, and for-profit insurers. The study found that for-profit decision aid developers used significantly more negative words to describe surgery – an expensive treatment – and more positive words to describe watchful waiting – a less expensive management option (Col et al. 1). Figure 2 suggests that the government and private insurers – the financers of healthcare coverage – may nudge patients towards cheaper treatments by making expensive ones seem less favorable.

Decision aid developers also varied the lengths of treatment descriptions to give the impression that ones with shorter explanations are less worth considering. In this way, the organization and presentation of information in decision aids can influence patients' medical choices by appealing to their cognitive biases.

The Impact of Decision Aids on the Cost and Quality of Care

Despite the potential exploitation of decision aids by for-profit developers, decision aids have been shown to improve the quality of medical care. Although "quality" care can be defined in many ways, decision aids have been shown to improve quality when it comes to informing patients about treatment options, conveying risks and benefits, improving satisfaction with medical choices, and reducing decisional conflict (Shafir and Rosenthal 7). For instance, a recent study of breast cancer patients in Ontario found that patients who used decision aids before receiving surgery were more educated about alternative treatment options, and as a result, experienced less decisional conflict than those who did not use decision aids (Whelan et al. 1). A separate study of patients with ischemic heart disease showed that patients were significantly more satisfied with their care when they used decision aids than those who had not (Morgan et al. 1) The use of decision aids also improves patient participation in the decision-making process, as evidenced by a recent report on patients using decision aids for benign prostatic hypertrophy (Murray et al. 1). Although there is agreement that decision aids can improve the quality of care under these measures, their impact on cost reduction remains unsettled.

However, increasing evidence suggests that decision aids can reduce costs for specific health conditions. For example, a groundbreaking report by Group Health Cooperative in Seattle – deemed the "largest observational study to date of the implementation of patient decision aids" – examined the effect of decision aids on the rates of knee and hip

replacement surgeries (Schwitzer 1). They found a 26% reduction in hip replacements, a 38% reduction in knee replacements, and cost savings between 12% and 21% over the six months decision aids were used for such elective surgeries (Ibid.). Similarly, a study of women with menorrhagia in England found that patients who received information packets, videos, and medical consultations (all forms of decision aids) incurred significantly lower costs than those who did not (Kennedy et al. 1).

Clinical evidence suggests that decision aids generally promote non-interventional treatment options over surgical ones by about 20% (Shafir and Rosenthal 7). Because surgical procedures are often more expensive, reducing surgeries reduces costs. In this way, decision aids involving specific conditions – which often involve surgical options – have the potential to dramatically reduce medical costs. In fact, the use of decision aids for 11 procedures involving preference-sensitive care could bring about healthcare cost savings of $9 billion over the next decade (Ibid. 2). However, the question remains what potential negative consequences can result from non-surgical interventions when measured in terms of quality of life. For example, reducing hip-replacements may control costs, but at the expense of pain and suffering borne by candidates who do not receive treatment.

The Use of Decision Aids by For-profit Companies

The cost saving potential of decision aids has sparked demand for their production and use. Naturally, a new market has evolved to meet this demand – one made up of for-profit developers, insurers, government agencies, academics, physicians, and others. While academics and care providers have little incentive to control patients' choices through decision aids, those who pay for healthcare stand to gain by encouraging cheaper treatments. For instance, consider the following statement on a heart surgery decision aid: "For at least 70% of people who have heart bypass surgery, the survival rate is no better than if they had chosen to take medication alone" (Coetzer 3). Regardless of whether this statement is true, there is clearly a biased tone discouraging surgery in favor of less costly medication treatment. If instead the statement was, "For at least 30% of people who have heart bypass surgery, the survival rate is better than if they had chosen to take medication alone," patients would likely favor bypass surgery because a 1 in 3 chance of

improvement sounds appealing. In this case, the information is exactly the same, but the phrasing reflects the intentions and biases of the author.

Similarly, the statement "More care does not equal better outcomes" – which appears on a separate decision aid – discourages treatment in general without providing evidence related to any specific disease (Ibid.). In fact, it is likely that more care does improve outcomes in some cases. While the marginal costs may exceed the marginal benefits of receiving more care, there may be small advantages from elective treatments that the patient wishes to receive. From an insurer's standpoint, the patient should stop demanding care at the point of indifference[1] - which insurers enforced by requiring prior authorization of treatments during the managed care era of the 1990s (Barr 195). But since healthcare has become more patient-centered, the choice to receive additional care has entered the realm of shared decision-making. As a result, insurers and for-profit decision aid developers (who are often allied together) try to infiltrate this process by creating biased decision aids against expensive treatments.

A 2012 report published by the Beazley Institute for Health Law & Policy found that "Decision support tools created by for-profit corporations or other interested parties may dramatically increase the risk of exposing patients to bias and misinformation, particularly given the fact that *no legal mechanism* currently exists to protect against such harms" (Sawicki 1). Although Section 936 of the ACA calls for decision aid certification standards, it mandates that the Department of Health and Human Services partner with an unspecified "entity" to design minimum requirements (United States, Congress, House 409). Based on the language in the ACA, there are no restrictions barring this "entity" from affiliations with the private insurance industry, for-profit decision aid developers, the pharmaceutical industry, or other special interest groups. Given the amount of lobbying involved in the ACA, it is likely that a biased "entity" could influence that certification process and further deregulate the "wild-west" market of for-profit decision aid developers.

Regulation of the Decision Aids Market

[1] Point of Indifference: The point at which the marginal costs of a treatment equal the marginal benefits.

To regulate the ability of for-profit decision aid developers from influencing patient decisions, their financial incentives must be removed by requiring them to be non-profit. By removing their profit motives, developers can focus on creating informative products, not biased ones directed towards cost-savings. A recent report from the American Medical Association (AMA) highlighted the importance of developer objectivity when it stated, "…The independence of groups creating these tools and the use of quality control measures is especially important" (McAneny 4). Such groups must remain independent in two ways: a) detached from direct financial incentives, and b) unaffiliated with those who seek to use decision aids for cost-reduction.

As previously described in Figure 2, payers of healthcare coverage are automatically incentivized to reduce costs – including both for-profit insurers and the government (Col et al. 1). Because of their vested financial interests, neither for-profits nor government agencies should be entrusted to develop unbiased decision aids. Therefore, as suggested by the AMA, only an independent advisory board is qualified to study and develop decision aids for clinical use.

Even President Obama acknowledged the necessity of such a board when he said, "…you have to have some independent group that can give you guidance. It's not determinative, but I think has to be able to give you some guidance" (Leonhardt 6). Although this "independent group" is missing from the ACA, a coalition of doctors, decision scientists, and medical professionals would be best suited to study, evaluate, and develop unbiased decision aids to be used in the modern US healthcare system. Such a group would lack profit motive, be independent from government and private sector interests (such as cost reduction), and provide tools to facilitate shared decision-making. Additionally, doctors – who guide the shared decision-making process – would be best positioned to identify practical patient needs and structural inefficiencies with decision aids in clinical practice. In turn, they will be more qualified to provide feedback about improvements to decision aids than profit-motivated developers who do not work directly with patients.

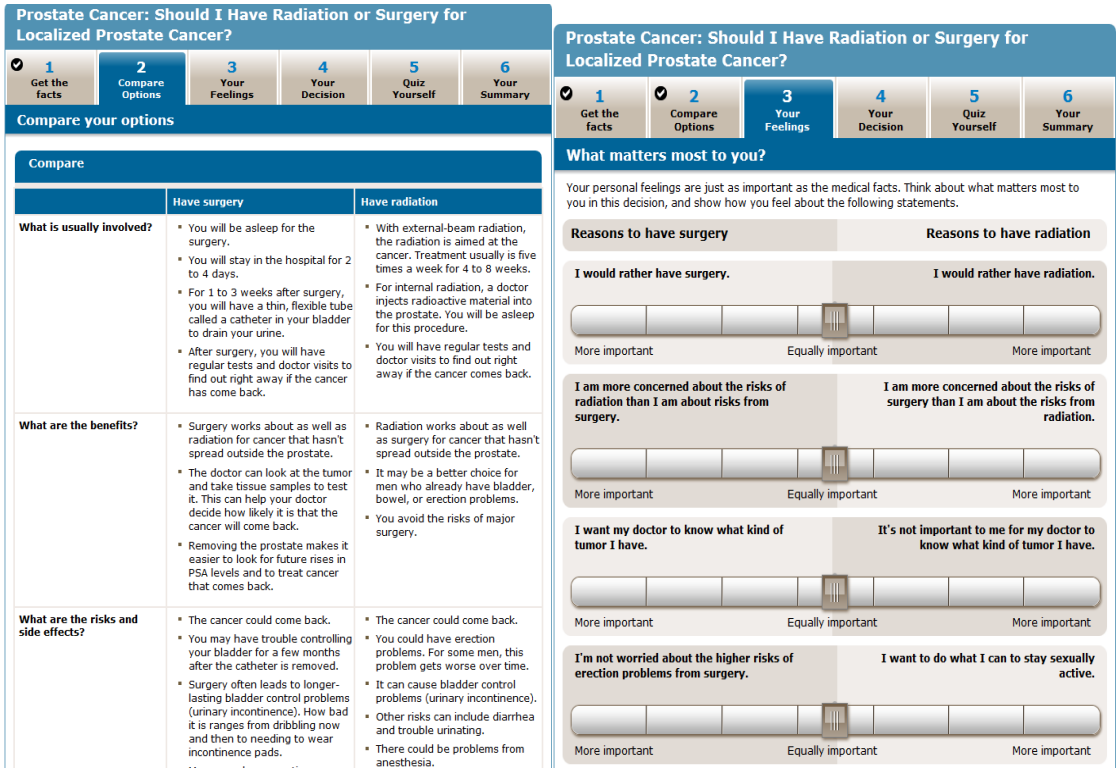
Once formed, this independent group should serve as the "entity" designated in the ACA to partner with the Department of Health and Human Services and develop certification standards for decision aids. These standards should address controls for bias

and set minimum requirements for quality[2] of outcomes when decision aids are used in clinical settings.

The Affordable Care Act takes steps towards achieving full transparency and accountability when it comes to creating unbiased decision aids, but falls short of fully regulating the burgeoning decision aid market. President Obama must follow through on his intention to create an "independent group" and amend his keystone piece of healthcare legislation to protect patients from manipulation by financially motivated interest groups. As a legislative task, it is not complicated to enact a non-profit mandate or establish an independent advisory board; it just requires immediate leadership before patients are harmed.

Appendix

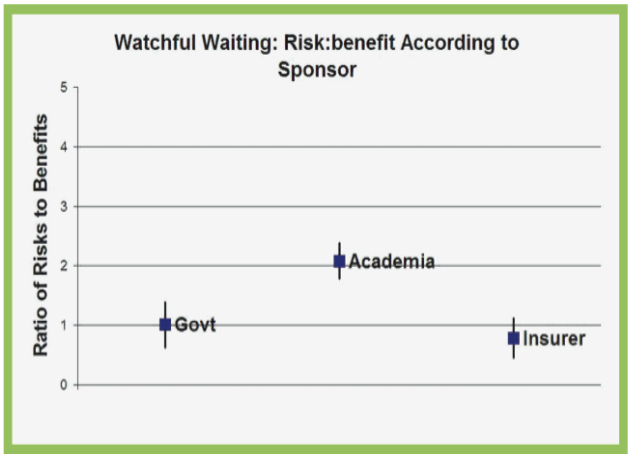
Figure 1: Prostate Cancer Online Decision Aid

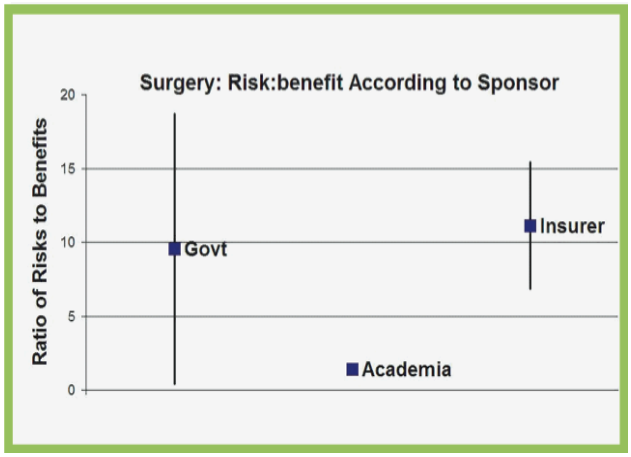


Source: Thompson and Wood 1

Figure 2: Comparison of Risk-Benefit Ratios According to Decision Aid Sponsor

[2] Quality measures include (but not limited to): improved patient satisfaction, knowledge of treatment options, participation in treatment plan, reduced decisional conflict, etc.





Source: Col et al. 1

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Factors That Affect the Purchasing Decisions of Online Bookstore Consumers

By Ganesh Raj Kumaraguru

Abstract

A lot of papers have studied the behavior of customers in different areas of business. Even in the online book industry, several papers have been written. However, given the rapidly changing nature of the book industry, it is difficult to find a dated paper that accurately reflects the current market. This paper will explore the factors that currently affect the behavior of an online book customer in purchase decisions. It will mainly focus on college students although some insights can be applied to all consumers. Due to the small survey response rate, it is difficult to comment on statistical significance although trends in data are definitely noted and analyzed.

Introduction

Research question

What factors play a role in the purchase decisions of an online book customer?

Scope of paper

This paper seeks to examine the main factors that affect the decision purchase of a consumer. Data analysis reveals that consumers have different preferences in that some weigh price more than quantity in a given scenario and vice versa. Utility theory is used this explain this phenomenon.