

- Do the behavior modifications require one-time, short-term or persistent, long-term changes?
- What is the possibility that the interventions (what Edward Deci [1971] calls “extrinsic motivation) crowd out and supplant people’s intrinsic motivations to change their behavior?

APPLICATION OF BEHAVIORAL ECONOMICS TO INTEGRATED DELIVERY SYSTEMS

Organizations are beginning to use the insights from behavioral economics to improve their performance, and that of their employees and customers. (In fact, for decades marketers have exploited what is now known as behavioral economics to entice potential customers.) Examples include the following cases:

- Using defaults to improve employees’ contributions to retirement plans (Madrian & Shea, 2001)
- Using incentives to encourage employee participation in wellness programs (Mattke et al., 2013)
- Setting monthly and per-use prices to encourage customers to select the more expensive monthly plans (DellaVigna & Malmendier, 2006)

Behavioral economics has only recently been used by healthcare organizations to improve employee, patient, and organization behavior. In this section, we review how the field has been applied and consider its potential.

Managing Healthcare Organizations and People

Today, healthcare organizations in the United States are undergoing significant stress. The theory of the business of hospitals, physicians, and health systems is becoming obsolete, and healthcare leaders know that they need to realign—if not reinvent—their organizations. Yet, they also know that many stakeholders in their organizations will resist any meaningful change. The causes for this resistance have been identified elsewhere, but the concepts of behavioral economics may yield some useful perspectives, and perhaps more importantly some new levers of change. Consider loss aversion and the endowment effect. Those in hospitals—employees, physicians, trustees, and even patients—are comfortable with the current structure and payment system (even if they bewail its inefficiencies and inequities). People will resist having their “endowment” taken away, especially if system leaders cannot guarantee that the new environment will be better.

How, then, to convince these naturally reluctant participants to change? Here are some potential solutions from behavioral economics.

- *Use the “none die” framing.* Make the case that staying the course will inevitably lead to a worse situation, including failure of the organization. Although hospitals have proved remarkably adept at surviving the many changes they have faced during the past three decades, leaders need to persuade employees, physicians, and trustees that this time really is different.
- *Create opportunities for early wins under the new paradigm.* As we saw earlier in this chapter, many people use hyperbolic discounting in their decision making. If all they see from change is financial and psychic costs for the time being, with prospects of benefits and better days delayed until the distant future, they will succumb to the “slough of despond” and lose productivity. To address this issue, leaders need to create shorter milestones for success and create tangible rewards for reaching those intermediate targets.
- *Give upfront contingent bonuses for reaching targets.* An intriguing study in a suburb of Chicago found that teachers responded most when they were given bonuses at the beginning of the school year, which they would have to give back if their students did not achieve targeted test scores (Fryer, Levitt, List, & Sadof, 2012). Such incentives in a healthcare organization might accomplish two things: demonstrate senior leadership’s confidence in the workforce and take advantage of the endowment effect to induce reluctant employees to adopt the new paradigm.

Managing Physicians: A Special Case?

Obviously, physicians are a key element in creating and maintaining an integrated healthcare system. From an economic structure standpoint, the relationship between physicians and hospitals (or health systems) in the United States has been a peculiar one. For the most part, physicians have been neither employees nor owners of hospitals, yet they direct a large part of the allocation of resources in hospitals. This relationship has been changing rapidly, though, as hospitals and systems have been acquiring physician practices and employing physicians. Many healthcare organizations are finding it challenging to manage physicians profitably. Perhaps the concepts of behavioral economics can provide some helpful insights.

To see how this relationship might evolve, we should start with the basics. It has been known since the work of Ignaz Semmelweis in the 1840s that physician hand washing greatly reduces the transmission of disease to patients.

Yet, as mentioned earlier in this chapter, more than 160 years later physicians wash their hands, on average, less than half of the time that they should (World Health Organization, 2009). Why would physicians ignore a century and a half of history and evidence, given that they care about their patients and do not wish to do them harm? Clinicians themselves cite lack of time, irritation or dryness of hand washing agents, priority of patient needs, and even forgetfulness as reasons why they do not always wash their hands when they should. The core answer, however, may be something more fundamental. Think about the earlier discussion about System 1 and System 2. Physicians learn their craft using System 2, but over time they practice medicine largely using System 1. They use heuristics or rules of thumb in many patient encounters, and these heuristics serve them well. (For example, they need only a few seconds to determine that a patient who presents with fever and stiff neck most likely has meningitis.) Thus, over time, based on their own experience and what they see their colleagues do, physicians develop their own heuristics about hand washing. They may convince themselves that they are following best practices, even when they are not. One study found physicians estimated that they were 71% adherent to hand washing guidelines, when the observed rate was only 9% (Handwashing Liaison Group, 1999). Physicians will continue to use their own heuristics until they are given compelling evidence that other approaches are better (in particular, better for their patients).

Another, perhaps more dire, example is central line-associated bloodstream infections (CLABSI). It was not until 2007 that the magnitude of this problem was revealed, when a Centers for Disease Control and Prevention (CDC) study reported that 82,000 CLABSIs occurred in U.S. hospital ICUs, leading to 20,000 deaths (Klevens et al., 2007). Dr. Peter Pronovost and his team at Johns Hopkins University developed a simple, five-step checklist for clinicians to use when they placed central lines into patients. They successfully implemented the checklist in 103 hospitals in Michigan, reducing infection rates to near zero (Pronovost et al., 2006). Despite this success, Pronovost was unable to replicate the Michigan success in New Jersey and Maryland (the home of Johns Hopkins), and efforts to reduce CLABSIs have taken much longer to implement than anyone would have expected. Why would this be so?

In his book on the topic, Pronovost relates his struggle to convince his colleagues at Hopkins to adopt the checklist: “What was striking was that nobody debated the evidence, nobody challenged the items on the checklist, and nobody questioned whether we should do them. But everyone objected to the change in culture. The doctors saw it as a loss—a loss of power and respect” (Pronovost & Vohr, 2010, p. 49). What the physicians were experiencing was loss aversion, even when they understood the benefits of change. In addition, Pronovost and his team were asking physicians to replace their

longstanding heuristics. In the abstract, the new heuristic makes sense, but when the physician is faced with inserting a central line, he or she is likely to revert to the System 1 thinking and the previous heuristic.

How, then, to engage physicians to do what they know is right? The tenets of behavioral economics would suggest a couple of approaches:

- *Teach physicians to engage both System 1 and System 2 in their clinical decision making.* This recommendation may be obvious, but it also might sound naïve. Time-pressed physicians are not likely to slow down. However, Dr. Pat Croskerry (2009), an expert in medical decision making, advocates teaching medical students and young physicians what he calls “a universal model of diagnostic reasoning.” In this process a physician engages both System 1 and System 2 thinking. If a patient presents with symptoms that are familiar to a physician, she uses System 1; if the symptoms are not as familiar, then she uses System 2. The key, according to Croskerry, is that the physician must allow either system to override the other.
- *Make new research findings more salient to the individual clinician.* Practicing physicians do not have time to review and integrate every new medical finding. Researchers and research consortia (such as the Cochrane Collaboration) need to frame their findings in ways that clinicians can use, especially if the findings represent a change from current practice.
- *Frame practice changes in terms of improving patient care and reducing harm to patients.* Recent research (Grant & Hofmann, 2011) demonstrated that hand washing adherence increased by almost 50% when the messaging focused on the impact of hand washing on patients rather than on the physician’s own health. Physicians are altruistic by nature, so reminding them of their better nature will be a more effective nudge than other appeals.
- *Try lots of approaches.* A systematic review of strategies to disseminate and implement clinical guidelines for physicians found interventions that depended on a single intervention—education, reminders, performance feedback, or financial incentives—had only short-term effects (Grol & Grimshaw, 2003). By comparison, multifaceted interventions were much more successful in changing physician practice patterns and improving patient outcomes.

Managing Patients and Populations

Hospitals, physician practices, and integrated delivery systems have always been concerned with the health of the patients who present for diagnosis and treatment. With healthcare reform, it is highly likely that these organizations

will also need to concern themselves with the health of the entire population in their service area, regardless of whether community members are “patients.” Given that people can make imperfect decisions about their health care, we should consider the potential for behavioral economics to be able to explain and influence this behavior.

As I discuss in my book on behavioral economics and health care (Hough, 2013), there are any number of ways in which people do not act entirely rationally when it comes to their healthcare decisions:

- They insist on getting a prescription, shot, test, or some other intervention when they come to a physician with an illness, even though such treatments are unnecessary, and some may even be counterproductive.
- Even when they receive what they are asking for, they do not adhere to their treatment regimens.
- They make different treatment choices when benefits and risks are presented in different ways.
- Their bad habits (e.g., overeating, smoking, alcoholism) are easy to form and hard to break, and their good habits (e.g., exercising, eating nutritious food) are hard to form and easy to break.

These are significant challenges when hospitals, physicians, and health systems are dealing with patients. They become even more complex when these organizations are expected to be responsible for the health of populations, many of which will not engage with healthcare providers as traditional patients. In a sense, integrated delivery systems will need to manage both health behaviors and expectations. Behavioral economics may be able to provide some guidance in how to accomplish these tasks. One note of caution, however: A variety of experiments have tried to “de-bias” people—that is, to cure them of their irrational tendencies; almost none of these interventions have worked, suggesting that this behavior is deeply engrained in human beings. As a result, interventions should be targeted to working around the biases and irrationalities, rather than trying to educate people to do the right thing.

Consider the challenge of managing the expectations of patients and populations. The current social norm in health care goes as follows: (1) People can neglect their health until their health is threatened; (2) once ill, people can expect access to any and all health services as their right, with only partial financial responsibility; and (3) once treated, people can return to their prior lifestyles. This social norm has created a dynamic that may have been financially sustainable for health providers who were paid on a fee-for-service basis. In a population- and outcomes-based world, however, that norm is no longer viable. The challenge to integrated health systems is try to

change the norm, a difficult but not impossible task. In fact, the public health field has demonstrated that it is possible to change norms; witness the effective campaigns in favor of seat belts and safe sex and against drunk driving and smoking in public places. But it was not easy: These campaigns required long-term, sustained efforts with multiple approaches that demonstrated high-profile consequences to the behavior to be changed. To transform the well-entrenched norms of health care will require an equivalent commitment.

Perhaps somewhat easier is changing the actual health behaviors of individuals. Kevin Volpp and his colleagues have found success in incentivizing people to lose weight (Volpp, John, Troxel, Norton, Fassbender, & Lowenstein, 2008), stop smoking (Volpp et al., 2009), and improve medication adherence (Volpp, Loewenstein, et al., 2008). Even this work, however, demonstrates the difficulty of designing interventions that require long-term behavior change (in Volpp et al.'s studies, behavior regressed once the incentives ended) and that can be scaled up from small studies. Nevertheless, it is a first step.

Another health behavior that might be amenable to interventions from behavioral economics is medication adherence. As mentioned earlier in this chapter, one-fourth of patients fail to adhere to instructions regarding their medications: They do not take their medications at the right time, they take a different dosage than prescribed, or they stop taking the drugs before they are supposed to. Of course, a variety of potential reasons for such nonadherence exist: cognitive impairment, lack of trust in the prescribing physician, the complexity of treatment, or the cost of the medication (Osterberg & Blaschke, 2005). That being said, a significant body of evidence supports behavioral economics hypotheses regarding nonadherence. Several studies note that adherence rates are higher among patients receiving acute care than for those receiving chronic care, and among patients undergoing short-term treatment than among those undergoing long-term treatment (Sackett & Snow, 1979), which reflect hyperbolic discounting. In addition, adherence is higher when refills are sent automatically and when the patient expects to see the physician shortly.

More generally, an integrated delivery system needs to find other mechanisms for influencing the health of the population of the community, especially when the residents are not patients per se. Possibilities include the following measures:

- *Raising the “affect” of health behaviors.* One reason that people do not always engage in healthy behaviors (or avoid unhealthy ones) is they are not aware of the consequences of their behavior. Objective statistics rarely are influential; more powerful are descriptions of people like them who followed the good or bad behaviors.

- *Publicizing new social norms to both providers and lay people.* In 2012, the ABIM Foundation created the “Choosing Wisely” campaign, in which specialty societies named five tests or procedures in their discipline that have been found to be of little or no value (but which physicians often order or patients often request). Publicizing these tests and procedures could change the attitude of clinicians and patients, or at least give clinicians an authority to invoke when patients demand them.
- *Creating defaults.* In addition to publicizing the Choosing Wisely items, integrated delivery systems could create a default by which these kinds of tests and procedures are not scheduled unless the ordering physician provides sufficient evidence of their need. As we have seen with defaults in general, the mere presence of the default will dissuade many clinicians from ordering them.
- *Developing commitment devices.* Combined with the power of social norms, healthcare systems could sponsor contests among communities to lose weight (think “The Biggest Loser”), control diabetes, and minimize prescription drug abuse. Community leaders could pledge to perform menial—but useful—tasks in other communities if their area fails to meet its health targets. In addition, successful communities could be given cash prizes as well as public amenities not otherwise available.

FINAL THOUGHTS

The ideas presented in this chapter should be considered just a starting point for the application of behavioral economics to integrated healthcare systems. Here are some scenarios in which the tools of this field might be useful in finding creative solutions:

- Scenario 1: The health system has succeeded in creating an accountable care organization, and has been able to secure contracts with Medicare and the two largest private payers to accept financial risk for the population in its service area. The service area has an overweight rate of 73% and an obesity rate of 41%. About half of those who are overweight or obese are frequent users of the system, but the other half rarely come to a hospital, clinic, or physician practice associated with the system.
- Scenario 2: Orthopedic surgeons in each hospital in the system have agreed to use the same implant for all their knee surgeries. Unfortunately, the chosen implant differs from hospital to hospital. The system could save significant costs by ordering a single implant