How behavioral design is transforming the role and impact of life sciences in health care
How can we get to the heart of what makes people tick so we can nudge them in the right direction?

How can we minimize the difference between what we say we will do and what we actually do?

How do we overcome the influences on our behavior to turn bad habits into healthy behaviors?
The next revolution in health care will be driven by behavioral change

Health care around the globe is embarking on a once-in-a-lifetime transformation — the move to "Health 2.0", the consumer-centric, outcomes-driven, prevention-focused future of health care.

There are two catalysts for this shift. First, with aging populations and emerging market growth, chronic disease is becoming a global epidemic and driving health care cost inflation to unsustainable levels. To tame costs, payers and governments are realigning incentives around value and outcomes. At the same time, health is finally entering the digital age — unlocking information, empowering patients, enabling real-time analytics and bringing much-needed focus on prevention.

Behavior change is at the heart of this transformation (Figure 2). Centers for Disease Control and Prevention estimate that up to 40% of deaths from top chronic diseases, including heart disease, cancer, respiratory diseases, stroke and unintentional injuries, are preventable through behavior change.1 Considering the size of the opportunity, the sector has been slow at investing in this area. Rather than being front and center of prevention and treatment strategies, behavioral change is often an ancillary service or an afterthought, usually with a focus on adherence.

In 1997, Prochaska & Velicer came up with their Transtheoretical Model (TTM) on the stages of change, which was based on more than two decades of research.2 Their model found that individuals move through a series of stages — precontemplation, contemplation, preparation, action, and maintenance — in the adoption of healthy behaviors or cessation of unhealthy ones. As life sciences companies go on their own change journey in relation to behavioral change, we thought it would be useful to draw parallels to this model. As we believe that the industry has already progressed through the precontemplation stage, we start this journey at the contemplation stage, which is characterized by a lack of awareness and no intention to take action.

1 Contemplation: accepting that human beings are impulsive and often irrational creatures

Incentives to act rationally are all around us — from the way products are priced, how we are incentivized to perform at work, through to government policies and laws. The vast majority of these incentives assume that people are utility-maximizing “rational agents” who act in their own best interests. But, research has shown time and time again that, when it comes to human behavior, we often behave instinctively and irrationally. This is often referred to as “system 1” thinking: an automatic, fast and often unconscious way of thinking. As a result, it is efficient and requires little energy or attention, but can be prone to biases and systematic errors. “System 2” thinking, on the other hand, is slower, more controlled thinking that requires more effort. The good news is that the principles of behavioral economics can help us design and deploy customer engagement strategies, services and solutions that overcome our system 1 impulses and irrationalities.3

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Preparation: understanding what drives and influences people’s behavior

Too often, we see efforts to change behaviors fail for a number of reasons:

► The case for change or interventions are built on rational drivers and logical models, which make perfect sense academically, but do not account for the way humans make decisions.

► There is a focus on the positive drivers when, all too often, successful change is based on overcoming negative “barriers” to change.

► There is not a data-driven approach to change – businesses design change based on what they think will work rather than conducting research to test what will actually work.

► There is a lack of focus on how the behavior change will need to be integrated into people’s existing routines: for example, how technology can be used to embed the change.

The benefit of behavioral economics is that it identifies the ways in which we behave irrationally, ranging from status quo biases to social norms. Luckily, behavioral biases are consistent, which means we can build prompts, incentives and triggers that correct for them. The literature on this is extensive, so we have summarized the many biases out there into key groups that help us understand the influences on human behavior (Figure 3).

Once we understand these influences, we can start to make small changes to the way we provide content, services and approaches, which can have a big impact, as illustrated by the examples below:

► **Norms:** the UK’s National Health Service (NHS) text reminders that told recipients that “80% of patients arrive for their appointment on time – be one of them!” reduced the number of missed appointments by 32%, compared with messages that did not reference social norms.4

► **Defaults:** the University of Pennsylvania Health System changed the default choice on electronic medical records from a brand name to an equivalent generic medication. To order the former, physicians had to opt out by checking a box labeled “dispense as written”. This simple change to the default option immediately increased generic prescribing rates from 75% to 98%.5

► **Social:** during a 2011 study, dieters who were signed up to a leading weight loss program that incorporated group weigh-in sessions lost twice as much weight compared with a control group of dieters who were, instead, given weight loss advice from their GP.6 We are more likely to stick to commitments that are shared with and visible to others.
Figure 3: The drivers of human behavior

**Make it relevant**

**Norms**
- We are strongly influenced by what others do and exhibit “herd” mentality, mirroring those around us.

**Saliency**
- With an abundance of stimuli, our attention is drawn to things that appear novel, accessible and simple.

**Social**
- We “go with the flow” of preset options and have a strong tendency to stick with the status quo.

**Make it easy**

**Priming**
- Our subsequent actions are impacted when we are exposed to specific sights, cues or sensations in advance.

**Defaults**
- We “go with the flow” of preset options and have a strong tendency to stick with the status quo.

**Barriers**
- Seemingly small activities that require action often prevent us from doing it altogether.

**Make it attractive**

**Value**
- We respond to incentives using predictable mental shortcuts, e.g., we dislike losses more than we value gains and we value a gain today over one tomorrow.

**Structure**
- We find it easier to work through challenges that are broken down into clear, actionable and discreet activities.

**Ego**
- We overestimate our own ability and we like to feel good about ourselves and to stay consistent with our self-image.
Increased customer expectations and rapid technological advances are disrupting the health care industry, causing power to shift across traditional stakeholder groups and creating opportunities for new entrants. Although retail and government sectors have long been fertile grounds for behavioral economics, we are increasingly seeing the discipline appear in health care and wellness. A recent trend in the insurance market is the rise of “pay as you live” (PAYL) models that reward customers for adopting healthy behaviors such as maintaining a healthy body weight or not smoking. In exchange for providing data to the insurer via wearables or mobile phones, consumers are encouraged—in the form of lower premiums and personalized solutions—to make long-term changes that reduce the risk of chronic illness. This trend is quickly going to amplify, as three key factors help accelerate the behavioral economics revolution:

1. **Changing health care incentives**
   In order to bring costs under control, governments and insurance companies are moving away from fee-for-product or service reimbursement models toward paying for outcomes—for example, from payment-based on number of blood pressure tablets sold to payment based on the impact blood pressure tablets have on keeping blood pressure in a healthy range or on how well and quickly a patient recovers. This type of outcome-based contracting has the potential to transform health care and will force life sciences companies to get closer to their patients in order to improve health outcomes in a real-world setting. Designing for behavioral change will become essential (Figure 2).

2. **The rise of digital technologies**
   Technologies that empower patients and leverage real-time information through apps, wearables, sensors and social media are on the rise. These seamlessly connect patients and doctors, enabling prevention and real-time disease management in a more cost-effective way. Wellness-focused platforms of care linked to the development of fitness and nutrition solutions have already emerged. But, we are only beginning to see the emergence of platforms for managing chronic diseases, particularly in diabetes and asthma (Figure 4).

3. **The rise of design thinking**
   As business problems and the environments and contexts people operate in have become more complex and multifaceted, design thinking has gained prominence for putting the user at the center of the solution and focusing on the experience. Underpinning this are new ways of working that are proven to get better results faster, namely a “test and learn” or learning-to-fail-fast approach, rapid prototyping, and launching and iterating minimal viable propositions.

Although organizations are experimenting, we are yet to see health care take full advantage of these three trends to accelerate the adoption of behavioral economics and embed it in everything they do. The first organizations that manage to do so successfully are likely to see huge benefits and improvements in performance, while also addressing a number of society’s biggest challenges.

We see four areas where life sciences could apply behavioral economics at scale (Figure 5).
Positive lifestyle changes are critical to the long-term management of chronic diseases. We design sophisticated behavioral change programs that involve health care professionals (HCPs) and patients in nudging healthy behaviors across the entire spectrum of care.

Embedded prescribing habits can prevent HCPs from proposing the most effective treatment for their patients. We leverage behavioral economics to help HCPs consider viable alternatives and consciously choose the best treatment for each patient.

Today, the average patient or HCP is desensitized to the marketing content they experience. We leverage behavioral economics to improve your content, so it attracts patient and HCP attention, and nudges them to take action.
Maintenance: making it stick in life sciences will require new capabilities

Through working on behavioral change initiatives with industry leaders across life sciences, retail and government, we have condensed what we believe to be key factors in driving long-term behavioral change:

► **Understand current behaviors:** research is critical. We recommend combining a range of techniques, including ethnographic research, surveys and social listening, to get to the heart of what influences patient and HCP behavior. This forms the foundation of designing interventions that will work.

► **Ground behavioral change in the science:** as well as patient research, we recommend building your interventions based on the latest studies in academia and business, then tailoring them to your business context. There can often be unforeseen adverse effects of behavioral change (also known as the law of unintended consequences or the “cobra effect”) – so it is important to learn from others and avoid falling into the same pitfalls.

► **Own the experience:** the health care sector is incredibly fragmented, with patients having many touchpoints throughout the course of their treatment and care, which adds complexity and additional barriers. Helping to join up the end-to-end customer experience and series of interventions to improve behaviors presents a significant opportunity for life sciences organizations to grow their role and influence within the health care ecosystem – something that will be critical if they are being judged on the outcomes they deliver.

► **Do not lose sight of business value:** every intervention to change behavior needs to be tied back to a measurable business impact. That way, companies can be confident in allocating investment into scaling only those that drive business value.

► **Adopt an agile, continual design cycle:** the design approach needs to be responsive, where the right interventions are built, tested and implemented at pace. It is important to measure and refresh interventions continually so that they remain effective, long-term behavioral change is sustained and relapse is avoided.
Avoiding relapse: maintaining focus and embedding new capabilities

Organizations are, in many ways, similar to humans in that our cultures, norms and “muscle memory” often shape our decisions, and can be difficult to break. Leadership commitment to a new way of working is important, but the benefits of designing for behavior will only be realized when the enabling capabilities (from research through to design and measurement) are seamlessly embedded into key business processes so that people can see the results. This will remove two key barriers to adoption: “it’s too difficult to apply” and “I can’t see the value”. Get this right and the targeted behavioral change will follow.

The way forward

The case for making behavioral economics part of everything companies do is compelling and increasingly essential to the future competitiveness and success of life sciences companies. As policy makers and payers continue to demand better value for money and outcomes, companies across the health ecosystem – from providers to pharmaceutical companies and medical device manufacturers – will increasingly find themselves in the business of delivering health outcomes. When they do, having the capability to understand customers at a deeper level and then putting in place the right strategies to nudge people to make healthier decisions will be just as important as having an innovative product.
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How EY’s Global Life Sciences Sector can help your business

As populations age and chronic diseases become commonplace, health care will take an ever larger share of GDP. Scientific progress, augmented intelligence and a more empowered patient are driving changes in the delivery of health care to a personalized experience that demands health outcomes as the core metric. This is causing a power shift among traditional stakeholder groups, with new entrants (often not driven by profit) disrupting incumbents. Innovation, productivity and access to patients remain the industry's biggest challenges. These trends challenge the capital strategy of every link in the life sciences value chain, from R&D and product supply to product launch and patient-centric operating models.

Our Global Life Sciences Sector brings together a worldwide network of nearly 17,000 sector-focused professionals to anticipate trends, identify their implications and help our clients create competitive advantage. We can help you navigate your way forward and achieve sustainable success in the new health-outcomes-driven ecosystem.

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EYG No. 03861-184Gbl
EY-000067627.indd (UK) 06/18.
Artwork by Creative Services Group London.
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