



Beware of Capitalising on Fear

Demand for direct-to-consumer genetic and medical testing is largely based on unfounded anxieties.

If you're curious about your cholesterol levels or concerned you might be genetically predisposed to illness, you may not need to consult a doctor in order to get tested. A growing number of diagnostic labs and genomics companies are marketing their services to the general public. Supporters of direct-to-consumer (DTC) testing say that circumventing the medical middleman makes for more informed, empowered patients. Some doctors, though, argue that the commoditization of health information shortchanges patients and poses risks to public health. However you slice it, the financial opportunity is inarguable: In the U.S. alone, **the value of the DTC market** is expected to top \$350 million per year by 2020, up from \$15 million in 2010.

If DTC testing becomes the next healthcare gold rush, there will be additional ethical implications. It's easy to imagine less scrupulous companies ginning up demand by playing upon people's fears of illness and mortality. Removing the gatekeepers—the doctors—from the testing transaction leaves consumers potentially vulnerable to cynical, emotion-based marketing. In addition to amplifying the perceived threat to public health, this should be a red flag all its own for regulators.

My recent working paper "**Demand for Genetic and Medical Testing: The Role of Anticipatory**

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Emotions and Probability Distortion" (co-written by Luc Wathieu of Georgetown University) uses behavioural economic models to show how emotion-based consumption patterns could be exploited by DTC testing firms. In the process, we indicate what policy-makers should watch out for going forward.

Seeking reassurance

Before testing a patient for a particular disease, doctors usually require clear signs that something is amiss, e.g. serious symptoms and/or a compelling family history of that illness. All else being equal, they will also be more likely to test for diseases that are highly treatable and less expensive to cure. Where's the good in diagnosing illness if there's nothing to be done, or if the treatment cost would be prohibitive anyway?

Those without medical training are less rational when it comes to their own health. It takes very little to stoke anxieties that will keep some people up at night. Entering almost any commonplace symptom into Google turns up no end of terrifying possibilities. Patients aren't necessarily reassured by the knowledge that such worst-case scenarios are unlikely, even when their trusted family doctor tells them so.

Therefore, conventional economics, with its

emphasis on rational choice, can do little to trace the specificities of demand in this emerging sector. However, theories from **behavioural economics**, my field of specialty, can help tease out the chief ways an anxious patient's decision-making process differs from that of a more rational actor.

Emotional vs. rational testing preferences

First of all, our model finds that patients would prefer to test for much more rare and life-threatening illnesses than medical professionals would deem necessary. Secondly, while doctors would be less likely to prescribe tests for incurable illnesses, emotional decision makers generally prefer to test for precisely those illnesses.

It all makes perfect sense when you consider that people order tests for reassurance. The scarier or more anxiety-provoking the illness, the more reassurance there is to be gained when the test comes back negative. And the rarer the disease, the more reason there is for patients to anticipate that the test result will be reassuring.

Genetic vs. medical testing

The healthcare community is currently debating whether genetic testing—designed to identify a patient's probability of eventually contracting disease based on his or her genetic makeup—differs fundamentally from medical tests meant to capture one's actual state of health. Our findings come down on the side of so-called "genetic exceptionalism" because the speculative nature of genetic tests maximizes potential anxiety and hence reassurance-seeking. These tests don't confine themselves to the here-and-now but prompt speculation about the distant future, even future generations as genomics firms invite would-be parents to screen for inherited disorders. Additionally, gene-predictive diseases tend to be severe, rare, and difficult if not impossible to cure—all features that are ideal for driving business to DTC testing firms. Therefore, we argue that genetic testing should be an area of special concern for regulators.

Genomics companies have previously pinged regulators' radar for alleged inaccuracy. Leading U.S. firm 23andMe, for example, was only recently **cleared to provide health and wellness reports** by the U.S. Food and Drug Administration. Controversies over accuracy may not dissuade consumers, however. According to our research, emotional decision makers may prefer tests that are less sensitive, i.e. likely to generate false negative results, when the disease in question is not treatable, or treatment is extremely costly. That's because false negatives maintain hopefulness and provide reassurance. So in genetic testing,

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inaccuracy may actually be a selling point in some cases.

Marketing DTC testing

This market's rapid growth suggests that the patient population is already highly anxious and craving reassurance. But cynical companies could inflate the demand for their products even further with optimistic marketing messages emphasising peace-of-mind. They could use language like, "Get tested, get treated, and live a happy life", or "Why worry? Be certain. Get tested and move on with your life". Crafty marketers could also use pessimism to ratchet up the fear factor around easily curable diseases, e.g. "Did you know Disease X can be fatal? Get tested now".

Susceptible consumers would end up buying needless tests for illnesses they were never likely to have, spending much more money in the process than they would have if they'd relied on their doctor's advice.

The popularity of DTC testing is part of an anti-expert, anti-elite backlash that is gaining ground in business and politics. In this case, though, policy-makers should remember that experts (i.e., doctors) stand for patients' medical and financial best interests. Intervention may be required to prevent the irrational cycle of anxiety and reassurance from spinning out of control.

Jeeva Somasundaram is a post-doctoral research fellow at National University of Singapore. In 2016, he completed his PhD in Decision Sciences at INSEAD.

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