Does precision health sound like futuristic hype? It's not. Here's why it's way more promising than many realize.

It was an exceptionally fortunate place to start: I began my medical education on an innovative new path to the MD pioneered at Brown in the 1970s. The program combined the undergraduate open curriculum with the more competency-based curriculum of the medical school.

At the time, this approach was nothing short of revolutionary. My fellow students and I were encouraged to be reflective learners – proactive in the conception and design of our own education. Sure, there were (and still are) certain requirements, but the curriculum and the faculty engaged students not just as passive recipients of knowledge, but as active participants in the learning process.

From the very first, my medical training experience prepared me for a lifetime of intellectual curiosity. I learned back then to be forward-thinking and never let the status quo stand. To me, imagination and hard work are the
ingredients to constant improvement.

This is why I’m a passionate champion of Precision Health.

The ultimate goal? A world where we use all relevant knowledge to prevent disease before it strikes. And cure it decisively if it does.

The ultimate goal of Precision Health is to bring about a world where we use all relevant knowledge to prevent disease before it strikes and cure it decisively if it does. It’s a world in which we enable our bodies to be their best, from the start. I believe Precision Health is the future – and this future is already on our doorstep. Here are three trends that prove Precision Health is no longer theory. It’s becoming fact.

Big data is making things happen. Take a look at the New York Genome Center’s work with IBM in the area of big data. They’re building an open repository of genetic data to accelerate cancer research, using insights from IBM Watson to personalize and plan treatments. Yes, the technology that once played games may now save lives. This is big news for Precision Health, which is about much more than merely gathering huge sums of data: it’s also about extracting insights from those data and applying them to prevention and care in a way that helps real people – you, me, and our families and friends. The Watson project is trying to do just that.

One new Precision Health product will give on-the-spot diagnoses for sepsis – which causes an estimated $20 billion in annual healthcare costs in the US alone.

I am also encouraged by the number of predictive devices and preventive tests now in development. These will more specifically and immediately increase our understanding of what a body needs. Google’s partnership with Novartis is a perfect example. They are developing a contact lens that can do much more than correct vision. It’s also capable of monitoring glucose levels in eye fluid, helping to determine blood sugar for tracking by diabetics.

Other projects? Across the Atlantic, a professor of engineering at Imperial College London, who started his career developing semiconductors for mobile phones, has founded the company DNAe – manufacturing microchips that can ‘read’ tiny samples of genetic material and provide on-the-spot disease diagnoses. The company’s first product, due in 2017, is a test for sepsis, the blood infection that causes an estimated $20 billion in annual healthcare costs in the US alone.

Gone are the days of silos – this is the age of sharing science.

More than anything, the future of Precision Health – of healthcare, period – will belong to the collaborators. And they are hard at work right now. Gone are the days of silos; this is the age of sharing science. Case in point: the announcement this summer of the $250 million Parker Institute for Cancer Immunotherapy. The institute will be tackling cancer with a team approach – a condition of the gift – by bringing together six of the leading cancer-fighting institutions, including Stanford, UCSF, MD Anderson, and Cedars Sinai. These types of collaborations are key. Our laser focus on individuals must include intense cooperation on their behalf – across campuses, institutions, industries, and the globe.

Nowhere is this belief in collaboration more alive than at the Stanford Byers Center for Biodesign, where our
faculty are working with other top minds around the world to devise tech solutions to some of human health’s most complex challenges. To share just a handful of examples: they’re developing a monitoring device that accurately predicts pediatric asthma attacks days before they occur, a cost-effective test for the genetic causes of heart disease, a rapid non-invasive test for potential heart-transplant rejection, and blood tests for solid cancer diagnosis and treatment.

I feel a kinship with these innovators near and far. They have the same sort of forward-thinking mindset that made it possible for me, earlier in my career, to discover and develop an effective treatment for a previously undescribed balance disorder and work with a multi-disciplinary team to develop new treatments for Ménière’s disease. And with similar advancements already in process and more underway, Precision Health is no longer a promising vision – it’s a fact.

*Image credit: Harry Campbell*

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