

Opinion: We don't just need precision medicine, we need precision health

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We are coming up on one year since President Obama, in his State of the Union address, committed the nation to a \$215 million investment in precision medicine. Since then, we have seen many breakthroughs in the development of therapies tailored to individual patients to treat the deadliest of diseases. Recently we heard the remarkable story of President Carter's advanced cancer in remission from a new immunotherapy treatment. Developments like these give us all hope that we can beat the most difficult medical conditions facing humankind.

I share those high hopes, but I can't help but think that we should aim even higher. If the amazing scientific advances of recent years can help

us more effectively treat disease based on individual factors, shouldn't we also put them to work by helping us keep people from getting sick in the first place?

The vision would be to go beyond [precision medicine](#): instead of a frantic race to cure disease after the fact, we can increasingly focus on preventing disease before it strikes. By focusing on [health](#) and wellness, we can also have a meaningful impact in reducing health-care costs. At Stanford, we call this idea precision health, where we focus on helping individuals thrive based on all the factors that are unique to their lives, from their genetics to their environment.

Bringing the promise of precision health to patients will require a fundamental shift in our view of medicine, one which combines two seemingly different approaches—high tech and high touch.

Start with data. Progress in health care has always been based on a crude assessment of accumulated data. We see that something works for one patient, so we try it on a few more and observe what happens. That's all the clinical trials process is, really. But in the past few years, the amount of available data about health care has exploded, to the point where it can be overwhelming.

To take full advantage of these breakthroughs, doctors must add a working knowledge of data science to the natural sciences that have traditionally been the focus of our professional training. Doctors must increasingly be data specialists (and perhaps genomic specialists) and assess large pools of information through the lens of the individual patient.

However, understanding data is not enough. With the advent of digital health devices and online medical websites, more than ever, people have become active managers of their own health and demand a more

consumer-friendly health-care experience.

To be truly effective in building a culture of health and disease prevention, physicians need to return to some of the wisdom of our predecessors. We need to recognize that through the intimate bonds we form with our patients when we perform hands-on examinations and listen to their concerns with empathy, we enact a time-honored ritual and gain a different type of critical information than what we can garner from lab tests and radiological scans. This kind of rich, nuanced data—what is important to our patients, what they fear, how their symptoms manifest and how they feel—must also factor into a truly holistic approach to [health care](#).

Increasingly, medical schools are collaborating with engineering, computer science and business innovators throughout Silicon Valley to incorporate the latest developments in their respective fields into medical training and practice. From detailing the human immune system, to finding new applications for drugs, to deciphering autism in children or monitoring pandemic strains with the help of social networks—students are learning how to harness data to improve human health.

Physicians are also partnering with the top minds in Silicon Valley to not only gather data but to better understand how to use it. Stanford, for instance, is collaborating with Google Life Sciences to collect anonymous genetic and molecular information to create what will be the most complete picture of a healthy human being.

We've also launched Presence, a center to foster research, dialogue, and collaboration across Stanford's seven schools to improve the clinical experience for our patients, providers, and families in our hospitals and clinics. Led by Dr. Abraham Verghese, Presence builds upon the Stanford Medicine 25 program, which provides hands-on sessions to

emphasize bedside physical exam skills to make sure all of our doctors—from those just entering training to those who have been in practice for decades—maintain a strong bond with patients, make the obvious diagnoses when such signs are written on the body, and use technology judiciously to ensure patients get the care that is right for them.

We really are on the brink of an amazing transformation in how we approach medicine. But we can only go as far as our vision allows us to. I hope President Obama will use this year's State of the Union address to set our sights higher. Because when it comes to health, we must think as big as we can—not just about treating disease, but about making and keeping people healthy.

Provided by Stanford University Medical Center

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