Unscaling Population Health

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I have the privilege of being on the Board of Directors of 2 publicly held companies. As such, I’m an avid reader of several magazines and journals devoted to the work of governance in the for-profit sector. One such magazine is NACD Directorship, which is published by the National Association of Corporate Directors. In the January/February 2018 issue of the magazine, a book review, titled “The Argument for the Creative Destruction of Scale,”1 caught my attention regarding a soon-to-be-published book, Unscaled: How AI and a New Generation of Upstarts Are Creating the Economy of the Future,2 by well-known venture capitalist Hemant Taneja and co-author Kevin Maney.1 I read the interesting review of the book1; the book itself was released on March 27, 2018.2

A week before the public release of the book, I got a phone call from the president and chief executive officer of Jefferson Health, Stephen K. Klasko, MD, MBA, who excitedly told me all about meeting Mr Taneja. Dr Klasko is the head of our healthcare system, which includes our university, the clinical enterprise, and all our entrepreneurial activity, and is generally regarded as one of the top healthcare thought leaders in the nation. So, the confluence of reading the review,1 placing an order for the soon-to-be-published book,2 and then getting a phone call from my boss a week before the book was to be released made me incredibly curious about this work.

The good news is that I was not disappointed. I found the thesis of Unscaled: How AI and a New Generation of Upstarts Are Creating the Economy of the Future to be intriguing, and I think our readers will as well. I will give you the punchline upfront, and then focus only on the actual work. The central thesis of the book is that “smaller startups are more likely to win the race to deploy artificial intelligence (AI) to greater advantage against larger more established companies with iconic brands.”2 Another aspect of the book is that “companies big and small will be able to provide more personalized services and products to consumers, who in turn will grow accustomed to greater levels of individualization.”2

What does all this “business speak” mean for our industry? In chapter 4 of the book, which focuses on healthcare, the authors lay out their thesis very clearly. “Doctors will work hand in hand with artificial intelligence systems that plumb patient’s data to understand a great deal about the patient’s body. We won’t need to build more mega hospitals because unscaled businesses and services will be able to handle more and more of the patient’s needs.”2 Here, the authors are starting to sound like a faculty member in our College of Population Health.

In addition, “unscaling and applying AI to massive new stores of data offers a way to lessen the need for big hospitals, ease demand for more doctors, and turn back the trend of out of control costs.”2 The authors are again preaching to our choir. The only way to reduce cost is by reducing waste. If we can link AI and healthcare data, then we may be able to eliminate a huge amount of healthcare waste. In general, experts agree that approximately 33% of all healthcare spending is of little value.3

To buttress these futuristic arguments, Taneja and Maney give examples of some well-known clinical intelligence firms, including Humedica and Livongo. A detailed review of these firms is clearly beyond the scope of this editorial, but Livongo, I believe, is the poster child for the authors’ thesis. Livongo focused on diabetes as the fastest growing disease in the world, according to the authors, by developing a wireless device to measure blood levels.2

This is how the authors describe this device: “Livongo’s approach is simple and focused: it sends you a small mobile device that is both a glucose meter and pedometer (so it can track your exercise). It leverages cellular networks to communicate through the cloud back to Livongo software. As a patient tests glucose levels, and the Livongo device sends back data, Livongo’s AI-driven system gets to know that patient. If the system starts to see readings that point to a problem, it sends the patient a message to eat something, or to take a walk, or whatever might help. If the system determines there is a serious problem, the patient gets a call from a health professional within a few minutes of checking his or her blood glucose.”2
The artificial intelligence component of Livongo means that the software is constantly learning on an individualized basis about the behavior of every patient. For example, based on 10 weekends of recorded behavior, Livongo could predict when an individual patient may imbibe too much alcohol with a Saturday night dinner. Put this system into the hands of thousands of patients with diabetes, and Livongo can create an incredible global data set that can be mined for further insights. Now, you, our readers, can begin to see the big picture.

Back to healthcare on a larger scale, Tanjea and Maney claim that we are going to move from mass-market medicine to a market of one. You, our readers, are no doubt familiar with genomic healthcare, so imagine linking the concepts of unscaling, artificial intelligence, and genomic medicine. This quite rightly could be the beginnings of an industry focused on wellness and improving the health of the population—from individual and, hence, population foci—rather than on tackling disease after it has already occurred.

Certainly, some readers will look askance at the predictions that call for the dissolution of hospitals, and, from a clinician’s perspective, it seems unlikely that every intensive care unit will disappear. However, the notion of linking artificial intelligence, genomic medicine, and the authors’ appealing concept of unscaling paints a future that makes unscaling population health possible.

I’m looking forward to follow-up phone calls and meetings with Dr Klasko as to how Jefferson Health may link up with Mr Taneja and his general catalyst team. It remains to be seen what disruptive innovation could emanate from such an intriguing partnership. I’ll be sure to keep our readers posted about any near-term developments.

As always, I am interested in your views. You can reach me via e-mail at david.nash@jefferson.edu.

References