



WRITING SAMPLE

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Q&A With Charles Barnett

By Mary Ann Roser

After a 40-year executive career in health care, a field clouded by uncertainty, Charles Barnett says he now has a clear view of where the industry is headed.

Barnett had been chief of Austin's largest health system, the Seton Healthcare Family, and was easing in to a less-frenzied pace on Seton's board when he took a gamble two years ago. Trading his suit and tie for jeans and a T-shirt, he joined an Austin startup, Cognitive Scale. He is seeing firsthand, he said, how powerful new data tools can change the health system by delivering individualized information to people aimed at keeping them healthier.

Federal government payers are nudging health care providers toward preventive care by paying incentives to those who keep patients out of the hospital and penalizing those who don't.

Cognitive Scale has developed software that can analyze all kinds of data beyond numbers, including text, images and sound, to predict outcomes and determine which actions will produce the desired results. This machine-learning, or artificial intelligence technology, adapts to changing conditions much like Google's self-driving cars use sensors to constantly respond to traffic.

Cognitive Scale is using the technology in commerce, finance and health care to provide insights to clients and patients. What began as a startup in 2013 with a handful of people is now a firm with about 120 workers in Austin, India and the UK.

Barnett is president of Cognitive Scale's health care group, which is working on a pilot project with Intermountain Healthcare in Utah focused on young adults with diabetes.

Relaxing on a couch at the company's headquarters on Arboretum Boulevard, Barnett recently spoke with Mary Ann Roser, a communications consultant who was the Austin American-Statesman's medical reporter for 16 years. A condensed version of the conversation follows:

Roser: Are you having fun yet?

Barnett: Yes. Most of the time (laughs). I spent 40 years in health care and I still miss that. But with Intermountain, I get to work with people who are doing really good work and trying to help these young adults who are type 1 diabetics self-manage their chronic condition more effectively.

How are you using artificial intelligence to do that?

We have written an application delivered through an iPhone to a group of young adults who are part of a study Intermountain is doing in conjunction with Stanford. It's about how we can better engage and educate patients with a chronic condition so they make better choices with regard to their natural environment. For example, we're using Fitbits and wireless glucometers and showing them what's happening with their sleep patterns, their activity levels and their heart rate in relation to their control of their blood glucose. It's pretty neat.

So, over a period of several days, it could identify trends and say we notice your blood sugar level falls around 4 o'clock each day, so if you just ate some nuts...

That's exactly right. Historically, they've only been able to do two things: Examine blood glucose levels and diet.

Our technology is not just a machine-learning algorithm. There is a pattern recognition it can do using cognitive tools, and there are basic insights that are generated by looking at a combination of the data in the patterns. What you're trying to do is understand how these different behavioral patterns relate to the patterns in their blood glucose levels.

When we started showing them this information, they said, 'We've never seen this before.' For example, they had never seen their sleep patterns in relation to their blood glucose levels.

And why is that important?

Sleep can either be a contributor to high or low blood glucose. Or it can be an indicator of a need for bigger or lesser degrees of insulin. Type 1 diabetics don't make any insulin. This is tailored to each individual we're working with.

What we didn't expect was these 18- to 25-year-olds we are working with are developing their own insights from the data to connect it to what is happening in their environment.

I understand this is a pilot project so you're trying to prove up whether or not this is effective.

Yes, this is to demonstrate—can you engage these young adults and does that engagement provide information that then helps them to better manage their diabetes.

Why tackle diabetes?

The RAND organization published a prediction that said by 2025 we'd have 164 million Americans who have one or more chronic conditions. That's essentially 49 percent of the population. And a huge percentage of those are diabetics.

What we know now is you cannot provide support, care and information to patients in an episodic way, which is how the U.S. health care sector is organized, and expect to have much success in enabling people to be better at self-managing their chronic condition. What we are using our technology to do is augment the program at Intermountain Healthcare, which is continuously providing care, support services and information to these individuals.

Much of medical research is done in a very controlled environment and what happens in your environment may be very different. We're looking at things that haven't been measured in a clinical sense.

So, you're pretty bullish on this technology and see it as a way to transform our health care system.

Yes, I do—especially for people with chronic conditions. Eighty-four percent of health care costs are related to chronic conditions, and it's growing. That's part of the challenge. When you leave the hospital, what happens? You go home and what is there to help you stay as healthy as possible? I don't know how we expect, here in the United States, to manage our costs to a sustainable level unless we begin to support, inform, serve and care for people continuously out where they live.

Who are your competitors?

There are lots of people working in this space now. IBM is, and there are lots of members of this organization who came here from IBM, like our founder Matt Sanchez.

The Watson project.

Yes. I was on IBM's advisory board for Watson (made famous for winning Jeopardy in 2011). I think it's a marvelous technology and they've assembled some really wonderful resources. Progressive health organizations, of which I think Intermountain is one of the most progressive, are really looking at a lot of providers of this type of technology. A lot of them are companies that didn't exist before the late 1990s.

What about the local health care folks? Are they interested in this?

Yes. I know that Ascension (Seton's parent) is working with companies nationally, and we've had a number of conversations. Actually, the Watson technology was used at Seton in the early days. I think in the end what's going to emerge is the development of an ecosystem of multiple companies with technologies that are complementary. If you add them all together, you'll get what you need. This isn't an end-to-end solution, nor do I see one anytime in the immediate future.

Are there opportunities here for startups in Austin?

Absolutely.

What about them working with your company?

We're not an organization that is acquiring new companies. We just finished our B-round of funding (\$21.8 million) so we've got the work we're doing in the three domains, and that's keeping us plenty busy.

So what opportunities for startups do you see, not necessarily becoming a partner of yours?

Well, they could. We partner with IBM and IBM is one of our investors. So is Intel. I think the next frontier will be the development of remote monitoring devices. It enables you to have real-time data about what's happening to you ... and feeds it back to you so you can make choices.

This whole field is individualizing the data collection, whether it's the self-driving car or managing a chronic condition. There are some people who think this is scary, but I don't.

Well, I've seen movies like Ex Machina, and who can forget Hal, the renegade computer in 2001 that scared the bejesus out of a whole generation?

That is scary. But think about these new technologies as augmentation and not as replacement technologies. There are a lot of very smart people who have looked at both sides of this. For me, the opportunity to provide meaningful information to people with chronic conditions to make meaningful choices—that is an ideal application of this technology. Unless we do it, I don't see how we're going to sustain the health care space with all these people who have chronic conditions.

I'm very optimistic. I think we can absolutely transform health care.