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Health Care Plays Catch-Up with Big Data

By Randy Bean | Contributor | June 17, 2014

My wife has spent her entire career in health-care management and when she talks about it, my brain tends to go numb. When I speak about Big Data and analytics, my wife tells her colleagues that she thinks I am in the CIA. I think she means NSA.

When it comes to data and health care, what I've never understood is why I must repeat my medical history every time I see a medical professional. Don't they keep this stuff on file? So, it surprises me when I am told by many very smart people that health care and life sciences are the next frontier for Big Data. While financial service firms have been collecting, organizing, analyzing, and acting on data for decades now, health-care firms are trying to leap from the Stone Age to the Information Age in real time.

To understand the Big Data opportunity, as well as the challenges, confronting the health-care system, I sought out two executives who have spent long careers in the financial services industry before coming to health care. I also spoke with a senior clinician and professor at Harvard Medical School, to elicit the perspective of a practicing physician.

Phil Fasano, executive vice president and chief information officer for Kaiser-Permanente, was previously chief business information officer at CapitalOne and CIO at JP Morgan Chase, so he knows a bit about data and information in financial services. "In health care, we have an enormous amount and variety of data—ranging from how long it takes a nurse to complete rounding and infection rates in a given area to genomic data."

Health care is still trying to get a handle of all this data and, in many ways, the business is a "discovery" business, said Mr. Fasano, which lends itself to the use of data for discovery that lies at the heart of the promise of Big Data. "We believe that the greatest value comes from leveraging Big Data to identify clinical protocols that improve patient access to information, clinical outcomes, and health care affordability," he said. "The future of Big Data lies in its ability to support the safest, highest quality, most individualized care without constraint of borders and boundaries."

But there are challenges; health care, if you haven't already guessed, is a highly regulated industry with "significant sensitivities about security and privacy of information," said Mr. Fasano, who is also co-author of the recent book, Transforming Health Care: The Financial Impact of Technology, Electronic Tools and Data Mining.

Another challenge is learning how to develop insights from "often incomplete data sets," said Blue Cross Blue Shield of Rhode Island COO **Bill Wray**. Mr. Wray notes that influencing the behaviors of providers and patients "requires that we focus on outcomes, working with 'pretty good' 80/20 information, versus seeking multiple 9s precision before we act. Getting people aligned to think this way is the critical first step that precedes any technological decisions."

"Health care has been late to the game," but it is catching up fast, says **Dr. Daniel Talmor**, professor of anesthesia at Harvard Medical School and interim chairman of the Department of Anesthesia, Critical Care, and Pain Medicine at Beth Israel Deaconess Medical Center in Boston.

Dr. Talmor cites the example of the intensive care unit, where understanding the risks facing patients means using data to establish risk profiles for individual patients and entire hospital units. He notes, "We capture thousands of data points on the ICU patient, from blood pressure to oxygen levels, labs results, and ventilation parameters. We have the ability to capture all of these data points every 15 seconds, then store and analyze these in a real-time clinical context. This enables us to understand the at-risk population and to treat the patient proactively, preventing complications with a resulting benefit to both the individual patient and to the health care system as a whole".

Big Data and analytics initiatives are beginning to change the face and practices of patient care. Mr. Fasano sums up the benefit nicely, "Big Data allows us to study larger populations at a lower cost and more nimbly than ever. The ability to analyze data more rapidly allows us to implement treatment changes quickly, improving—and in some cases saving—lives."

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