



Data Science that Simplifies Healthcare Delivery Analytics

By Suzette Norris | Jun 26, 2015 | Healthcare | 0 Comments

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[In an interview with the New York Times](#) a couple of years ago, Erik Brynjolfsson, an economist at Massachusetts Institute of Technology suggested that the impact of Big Data is similar to the impact the microscope made four centuries ago. Like the microscope, modern techniques in data science are making it possible to see and measure things at an entirely new level.

This could be just what the doctor ordered for state governments challenged with providing the best health services for the poor and disabled. An increasing number of states today are contracting with Managed Care Organizations to manage the financing of Medicaid delivery, which creates a new playing field in healthcare that requires new layers of oversight. Other states continue to use a fee-for-service model where health care providers are paid directly by states for each service, such as an office visit, test or procedure.

Either way, these systems typically are awash in disconnected silos of data – claims as well as records such as clinical, financial, operational and customer service. All of these data points are valuable, but they don't necessarily paint a

complete picture in and of themselves. To ensure that states get the best health outcomes for their investment and approach to Medicaid, they need a Big Data version of the microscope – a view of the data that allows them to see and measure things at an entirely new level.

**Big Data is healthcare's new microscope, but only if we know how to use it. Step 1: Break the data silos. <http://ctt.ec/5p9qb+>
<http://ctt.ec/7bYVm+>**

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“Make no mistake, silo-breaking is a huge task requiring significant investment and changes in attitude and working culture,” Craig Saunders wrote in *Big Data in Western Europe Today* (page 18). “Many organizations are starting to successfully use a hybrid approach: A clear top-down strategy, with enforceable guidelines, that encourages silo-breaking at a pace that suits the stakeholders ... where silo-breaking is happening in a piecemeal fashion, it is not necessarily a negative sign.” Craig is director for the Analytics Resource Centre for Xerox Consulting and Analytics.

Building Blocks that Bust the Data Silos

A research team of data scientists at PARC, a Xerox company, have developed the analytic building blocks needed for this sort of analytics platform. Chopping up the analytics into manageable blocks, the platform serves up insights that normally require both human-clinical and statistical expertise. This approach to data analytics allows Medicaid administrators to “see” – for example – whether patients in a certain part of the state have enough access to care. They can “see” if a Managed Care Organization’s network of providers is adequate for certain populations, given disease states and other health conditions that are prevalent among the population.

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And they can find the answers in real time – a significant improvement from the way these evaluations take place today. Consider this:

Old Approach: Most states using Managed Care Organizations typically receive a handful of dated, written reports each quarter that provide basic information about performance. One set of reports is self-reported by the care organization, and the other report is issued by an external quality review organization. The process requires humans to mill through the information and connect the dots to determine which factors are producing outcomes.

Data Analytics Approach: State policy makers and program administrators tap into a continuously updated database

of real-time information. A data analytics platform identifies relevant facts to a particular query, and systematically generates findings, recommendations, and predictions. This makes it possible to quickly analyze things like readmission rates or emergency room visits using current information. It's also easier to compare and score Managed Care Organizations to see which ones produce better health outcomes for patients.

Big Data is Not a Vision for the Future

The research team is working closely with clinical experts at Government Healthcare Solutions at Xerox. They have found that approaching healthcare data in this modular fashion allows administrators to answer all sorts of questions so that they can deliver healthcare at an entirely new level.

The Big Data scenario is not a vision for the future. It's occurring now, and very soon we'll see the fruits that significantly improves lives, much like we did when the microscope moved from being a novelty to a scientific tool.

Editor's Note: Suzette Norris helps Xerox communicate its scientific breakthroughs & innovation success stories by writing press releases, blog posts, video scripts, employee news items and other materials. Working closely with scientists and executives, she supports the Xerox Global Public Relations team, the Xerox Innovation Group and PARC, a Xerox Company.