MobileHelp

Big Data and Its Role in the Health IT Space

Presented by MobileHelp

With excerpts from an interview with Jean Robichaud, CTO of MobileHelp

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Executive Summary

With a close look at how Big Data can provide the right combination of analytics to spot emerging trends and identify areas of improvement, this whitepaper will examine the way businesses can leverage Big Data to provide substantive analytics and better position themselves – and their customers – for improved outcomes.

Through the application of these concepts, it is possible to better forecast and predict trends. These can then be extrapolated to support the move into new markets, such as the Health IT and healthcare spaces, where the use of Big Data can influence cost and efficiency of patient care as part of the value-based model.

Big Data and Its Role as the Proverbial "Man behind the Curtain"

Big Data hums through the background of today's business world, largely due to the proliferation of digital technology and an ever-increasing amount of online synergy. Banking institutions use Big Data to measure credit scores and determine potential loan gain or risk levels, while online businesses such as Google and Amazon track trends in searches, clicks and purchases to deliver advertisements or search results that are highly tailored to potential customers.

And though it has been later to enter the space, the healthcare industry is now also fully entrenched in its use of Big Data, especially among hospital networks, pharmacies and payers. The reams of data collected within the higher levels of healthcare organizations can be used to pick out trends such as predicting high-risk, high-cost patient populations which are most likely to be at risk of re-hospitalization, increased emergency room stays or higher costs of care.

An underlying goal across the entire healthcare industry is to constantly improve the cost efficiency and quality of care, both on a general and individual level. The success healthcare organizations have in areas like patient education and population health management can be greatly influenced by how those organizations leverage Big Data in their processes.

This makes predictive modeling that can determine what type of patient is going to need what type of care essential; the older reactive models are unnecessarily expensive and do not take advantage of the types of technologies that are available today.

With the rise of Big Data and its predictive models, it has the potential to completely change the way patients receive treatment and education. And as the healthcare industry moves ever more deeply into the digitally connected space, many health IT companies are responding by bringing product solutions and services to the healthcare marketplace, allowing hospitals, payers and patients to use Big Data to deliver better patient care.

Blazing the Big Data Trail

Due to its more behind the scenes nature, the current emphasis on Big Data as a standard component in business practice may seem to simply be another executive word du jour. But according to Jean Robichaud, the CTO of MobileHelp, it has been a long time coming – and will remain one of the most critical components in business strategies of the future. "At MobileHelp, Big Data has been a crucial part of our

Jean Robichaud, CTO of MobileHelp

overarching strategy from the beginning, and really out of necessity," he said. "In adopting best in class solutions for Sales/Marketing automation, CRM and Service Delivery, we really needed to link these large data sets and have the ability to mine and create models with single view of a customer."

Case in point: MobileHelp sought to develop a method to answer such basic business questions as, 'What marketing campaign, yielded what customer, that uses the system in this particular fashion, that would be more likely to benefit from certain features?'

The creation of such descriptive models from its use of Big Data has allowed MobileHelp to move into developing predictive data models – and then using those to better understand patterns of use that could help augment its medical alert systems business, and examine how customers could potentially benefit from its healthcare solutions as well.

Research in Big Data related to healthcare uses predictive analytics to look at which factors may or may not influence patient health. For example, socioeconomic data might show that people in a certain zip code are unlikely to have a car – which means that a patient in that zip code might have difficulty making it to a follow-up appointment without transportation.

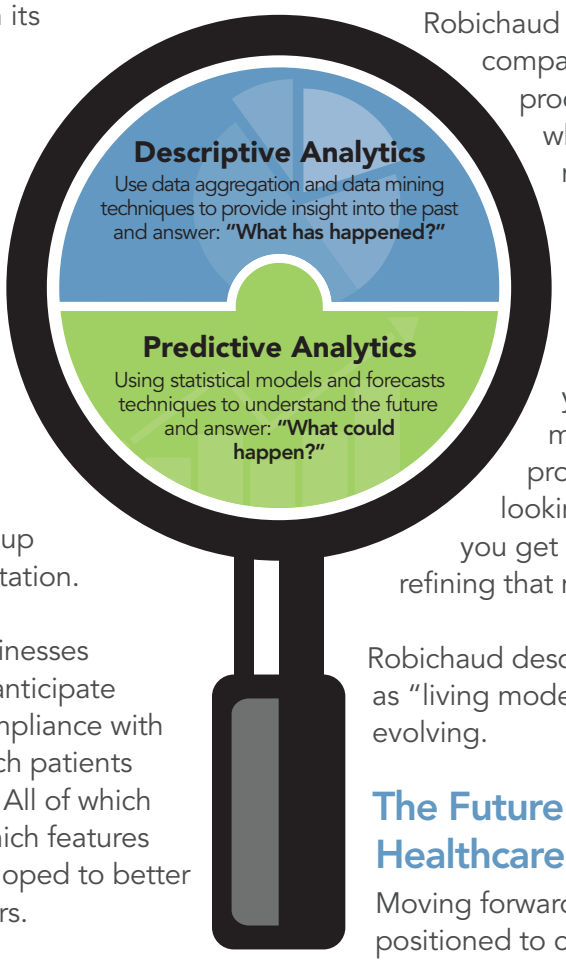
This kind of data can help businesses and healthcare organizations anticipate missed appointments, noncompliance with medications, or assessing which patients might be more at risk for falls. All of which can help inform them as to which features and benefits need to be developed to better support patients and customers.

Reaching the Correct Conclusions

Of course, given the tremendous amount of data available that comes through these systems, it can still be difficult to build predictive models that are accurate.

A classic example: decades ago, scientists "confirmed" – based on data analysis – that greater intake of ice cream led to a higher probability of drowning. People were able to poke holes in this theory with general common sense; the common denominator for both ice cream eating and swimming accidents is actually summer. So while there may have been a correlation in those statistics, they lacked causation.

For companies to be able to create predictive models that actually work, they need to understand what information to analyze, some of which comes from trial and error.



Robichaud says, "At MobileHelp, the company relies on the people and processes to carefully research what models do and do not make sense."

"We have people whose expertise lies in examining our data and creating new hypotheses," he said. "When you're doing predictive modeling, it is not a perfect process. But you begin by looking for patterns. Sometimes you get a wrong answer. But we keep refining that model until we have it right."

Robichaud describes these predictive models as "living models" that are constantly evolving.

The Future of Big Data in Healthcare and Health IT

Moving forward, MobileHelp is well-positioned to continue collecting large

quantities of health related data to allow for accurate predictive modeling for the health IT marketplace due to the sheer size of its customer base.

"Our customer demographic consists of people that are more likely to suffer from a chronic illness – in fact, about **92 percent** of our customers are managing at least one chronic disease," said Robichaud. "If each of our subscribers had our new telehealth equipment, we'd have the ability to collect large data sets on a patients that are generally more at risk for repeat hospitalizations and worse outcomes, according to healthcare analytics."

Analyzing historical data from patients with similar conditions, predictive algorithms can be created using programming languages to faithfully predict the trajectory of a patient over time. This will allow for physicians and healthcare professionals to intersect a patient's negative trajectory and set him or her on the proper course.

That sort of modeling is promising for the healthcare industry. As federal regulations mandate ongoing payment reforms, there is a growing recognition that population health management is the key to fighting the overwhelming tide of chronic disease. Healthcare providers who continue to invest in Big Data analytics may be able to position themselves for success as the availability and analysis of large volumes of patient data becomes increasingly central to the complex, never-ending task of chronic disease care.

"The long-term goal is in partnering with clinicians and healthcare organizations who focus on developing predictive analytics. We will be able to provide them with large data sets so they can start mining and developing more advanced models."

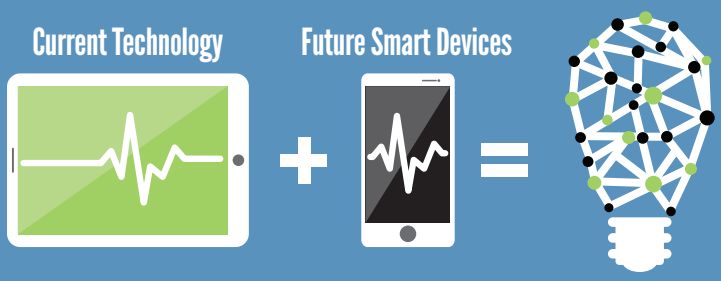
The crux then lies in the ensuing ability to take that data and turn it into augmented programs and services that will work to help customers manage their chronic disease. Empowered, engaged patients who take more control over their health add important data to the tapestry of their healthcare journey. And research indicates higher patient satisfaction from coordinated, data-driven care.

Companies such as MobileHelp are poised to do just that: partner with healthcare organizations to create products and service that will empower and engage customers by leveraging the promise held within Big Data's numbers.

Given how relatively new the field of Big Data analysis is to the healthcare industry, the possibilities for how it will evolve in the future are endless. And yet, as Robichaud would say, predictable as well.

The Advantages of Big Data and Healthcare IT

As this field continues to progress, data capture and exploration will become increasingly-accurate and comprehensive. This will ultimately reduce costs, reduce physician workloads and improve patient care.



By combining the data from many current and future devices and technologies, healthcare providers can have a **greater insight into medicine.**

This technology could **generate thousands of data points** about a person's health, which could lead to ***faster*** **and** ***cheaper*** **correct diagnoses.**

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