HEALTH CARE LOOKS TO UNLOCK THE VALUE OF DATA

A new era of personalized medicine hinges on analytics

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If there's one group of people you expect to be particularly careful about hand washing, it's probably doctors. But a large hospital found that its physicians, in the rush to go from patient to patient, followed hand hygiene guidelines only 40 percent of the time.

After the hospital began measuring and incorporating hand-washing data into its analytics system and presented that information to doctors on dashboards that gave metrics on their hygiene performance, compliance leapt to 90 percent, dramatically reducing the risk of spreading disease.

As an industry, health care faces numerous challenges, and health care companies see data and analytics as a path to resolving them—from improving clinical practices to increasing business efficiencies.

EMBRACING EVIDENCE-BASED MEDICINE
By using analytics to make connections among disparate bits of information, health care providers and payers are finding new best practices. For example, analytics are helping health care organizations reduce the common problem of infections that result from inserting and maintaining the tubes that administer chemotherapy, antibiotics and other treatments.

These data initiatives relate to the health care industry's embrace of "evidence-based medicine," which emphasizes using evidence from well designed and conducted research in health care decision-making. This might seem like a no-brainer in many industries, but it's a dramatic change for health care: Historically, medicine has been based on "fee for service," reimbursing practitioners for activities, whether or not those activities provided any value to the patient. "Now the leading health care providers will start their analytics efforts by connecting the clinical and financial sides of their operation, so they

will not reimburse for things that do not help the patient," explains author and renowned analytics thought leader Tom Davenport, professor of information technology and management at Babson College.

For such reasons, health care companies see tremendous value in analytics, according to a new survey conducted by Oracle in partnership with WSJ. Custom Studios and IPSOS North America Market Research. In the survey, health care executives rate themselves as "extremely skilled" in capturing and protecting information, and this skill reflects the huge volume of data produced by health care that can be applied to both clinical and business issues as well as to the industry's special privacy concerns.

UNDERSTANDING PATIENTS BETTER
At the same, the survey shows that health care executives understand they need to do a better job of using this data. This calls for making data easier to work with by integrating multiple systems and processes, as well as using visualization tools, which represent data in graphs and other forms that make it easy to understand. The health care industry also needs to use data in real time so the complex chain of providing care runs smoothly.

The need to use real-time data goes hand-in-hand with the concept of "personalized medicine," where treatments are honed for each specific patient. Consider the Veteran's Administration, long considered a leader in the use of analytics. The VA health care system operates 144 hospitals and 1,018 outpatient sites of care. The system produces an enormous amount of data.

In the health policy journal *Health Affairs*, the VA explained that it analyzes each primary care patient according to 120 different variables. Each veteran is given a statistical profile based on the probability of six different outcomes.

The veteran is ranked for his or her probability of "hospitalization," "death" and "hospitalization/death" over the next 90 days and over the next year. Those numbers can be used by the nurse coordinator on the patient's care team and to help him or her decide on the optimal treatment choice—such as home care, home monitoring or specialty care.

"If you're good at scoring risk factors of patients when they're admitted to the hospital, you prevent bad things from happening," says Robert Morison, a management consultant and, with Davenport, co-author of *Analytics At Work: Smarter Decisions, Better Results*. "You also create a smooth path that affects important metrics of patient care, from the amount of time patients spend waiting to see a doctor to their length of stay if they're admitted."

OVERCOMING SILOS
While the survey indicates that few health care firms excel at data management, executives see a strong point in their ability to make strategic decisions based on data. This speaks to the idea that they realize the changing health care landscape requires better use of data, but the industry's traditionally siloed technology systems (where different departments or organizations have trouble exchanging information and communicating) and regulatory issues are making them proceed more slowly than do other industries.

The health care organizations that work through these issues can see a huge payoff, though. Recently, a large health care system with millions of medication records used new big data tools to slice and dice those datasets to make finely tuned correlations about which medications benefit which patients. "We are starting to realize that giving the same drug to everyone with a particular disease doesn't work well," says Davenport. "What's more, the one-size-fits-all approach is horrendously expensive."

Health care companies are in the early stages of analyzing the genetic and metabolic makeup of specific patients in order to narrowly target their diseases. "Pharma has operated under the concept of blockbuster drugs—cures for common ailments like ulcers where a wide variety of patients have similar symptoms but different characteristics," says Graham Leask, consultant and researcher in pharmaceutical strategy and return on investment (ROI) analysis at Aston Business School in Birmingham, England. "Now we are reaching a point where conditions like specific types of cancers are more difficult to treat with a one-size-fits-all drug. In an ideal world new drugs will be far more specific to the needs of the individual."

IMPROVING BUSINESS PRACTICES
Analytics can also improve business practices in the health care industry. "On average, a pharma company wastes 30 percent to 50 percent of its promotional spend," Leask says. "Half to three-quarters of this loss can be recovered and redeployed (or shifted to the bottom line) through the use of powerful modern analytics." Unfortunately few companies have yet to grasp this opportunity.

Morison points out that analytics are also being offered to patients, allowing them to access their own health records and connect with physicians online. "People are shopping around for second opinions and services, and that's directly related to the use of analytics to put comparable information in their hands," he explains. "Health care providers will need to use analytics to make recommendations on treatment, and they will need to transparently expand the logic behind those recommendations to patients. Smart consumers expect their physicians and medical providers to become more astute users of technology and data."

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