

Agencies, providers turn to data analytics to improve health care

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The nation's health care providers are creating and collecting more health data than ever before. The challenge is making use of that data to improve patient care.

Experts say today's U.S. health data totals some 150 exabytes, which may not mean much until considering that five exabytes of data would contain all words ever spoken by human beings, according to an October report on big data by the industry group TechAmerica.

As more providers increase their use of electronic health records and aim to boost information sharing with each other and federal agencies such as the Veterans Affairs and Defense departments, managing data effectively to improve health care is critical.

"Our clinicians and hospital staff are inundated with reams of data in EHRs [electronic health records], charts" and other sources, said Michael O'Neil, founder and CEO of GetWellNet-

work. The Maryland-based company develops interactive technology that allows patients to provide feedback on their care and get educated on their health condition, medications, tests and procedures during their hospital visit and via the Internet, television and mobile applications at home.

The VA medical center in Birmingham, Ala., and Naval Medical Center San Diego are among providers that use the company's technology.

At the VA hospital, for example, an incoming patient's data is entered in the hospital's electronic health record system. That triggers the GetWellNetwork interactive system, which the patient accesses through the television in his room. The system welcomes the patient to the hospital, provides information to ensure a safe stay and ensure the patient is able to take care of himself long-term. The system shows interactive videos and other content, and the patient responds using a keyboard. For example, a veteran may be asked if he is aware of VA's My

HealtheVet website, where he can access his personal medical record.

The company's system provides hospitals with electronic dashboards that tell them who is using the system and for what purpose, and senior hospital staff can view feedback in real time and quickly make changes in patient care.

The system can also help the hospital monitor fall rates, staff responsiveness and other data input by patients. Using the data, hospitals can better understand the patient experience, whether patients understand their health situation and what the hospital can do to improve medical outcomes, O'Neil said.

Hospitals are required to track and report on key measures, including hospital readmissions and patient satisfaction, O'Neil said. Today, hospitals mail millions of paper surveys to patients once they're discharged to get feedback. Electronic feedback may someday be the new standard, he said.

"It's less about doing the survey and more about what are you doing at the point of care to impact

the results of the survey," he said.

At Florida Hospital Celebration Health, a 174-bed facility in central Florida, the hospital is using the interactive technology to track key metrics about patient care. The hospital reported a 25 percent increase in room cleanliness, an 11 percent increase in nurse communications with patients and better staff responsiveness over the past year, all of which affect hospitals' Medicare reimbursements, O'Neil said.

Another facet of the data management challenge is the ability to analyze electronic health data for trends, correlations and opportunities for improving patient care. One way is through analytics.

"The increased use of electronic health records, coupled with new analytics tools, presents an opportunity to mine information for the most effective outcomes across large populations," according to the TechAmerica report.

"I think it's really about reviewing the use cases and understanding what's possible," said Bethann Pepoli, chief technology officer for state and local education at cloud provider EMC. Pepoli encourages organizations to initially focus on two or three outcomes they want to determine using big-data analytics.

As of 2011, about 10 percent of U.S. hospitals had health data analytics capabilities, or techniques

applied to clinical, financial and administrative data to improve the quality and efficiency of patient care, according to a June report by research and consulting firm Frost & Sullivan. That number is projected to reach 50 percent in 2016, as providers increase adoption of electronic health records and generate more electronic data.

The study identified potential benefits of health data analytics to:

- Identify high-risk patients and patient populations.

- Measure physician performance against peers and other institutions.

- Help organizations manage regulatory compliance through detailed information reporting.

However, barriers such as lack of standardized health data will affect the use of analytics.

"The challenge is to be able to present data in a meaningful way that means the same things when you go from one organization to another," said Colin Barry, CEO of MEDfx Corp. The company, which provides software that allows doctors to securely share health data using common standards, has worked with VA and the Defense Department.

"Unless the data makes sense to everyone and we're talking the same language, then we're not going to get anywhere to improve the state of health care," Barry said. □



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