

Slide Shows

EHRs, Analytics Merge to Head Off Alzheimer's

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A new clinical center at NorthShore University HealthSystem is using the organization's electronic health records and advanced analytics to get ahead of the onset of Alzheimer's disease.

The Center for Brain Health is running data in NorthShore's records system through analytics to identify patients at risk for Alzheimer's, and then preemptively direct patients to take steps that can reduce the likelihood that they'll get the disease.

That's an abrupt shift in addressing Alzheimer's disease, which typically has only been diagnosed and treated after symptoms become all-too-obvious. That's an ineffective and expensive approach that angers Demetrius ("Jim") Maraganore, M.D., chairman of NorthShore's Department of Neurology. "In the Chicago area, we have about 10 million residents, and statistics show that 1.5 million will get Alzheimer's disease in their lifetime. Yet our approach as a healthcare profession is to wait until someone develops the first symptom. Then, it's sadly too late."

With the advent of population health, treatment of a pervasive disease like Alzheimer's now makes sense, Maraganore says. Before now, "common disorders that didn't generate a lot of fees for service got ignored. If you look at the new world of accountable care, it will not be about how many fees you can levy, but it will be all about how many costs you can save."

Clinical research has uncovered about 20 well-defined risk factors for Alzheimer's, such as lack of exercise and dietary choices, Maraganore says. By actively intervening and partnering with high-risk patients well in advance of when the disease typically would occur, much suffering, expense and family tragedy can be prevented.

The Center for Brain Health uses other organizations' research to formulate its risk factors, distilling it into an Internet-based web tool that patients can use to assess their risk for Alzheimer's. Patients can identify their own high-risk factors, such as whether anyone in their family has had the disease, whether they've had a concussion, if they don't get enough sleep

on a regular basis and whether they have heart disease, high blood pressure, high cholesterol or are obese.

NorthShore also is using information in its records system, from Epic Healthcare Systems, to analyze five years' worth of patient data and use it develop a prediction model that will be paired with the records system to assess the risk for Alzheimer's for every patient coming to NorthShore for treatment.

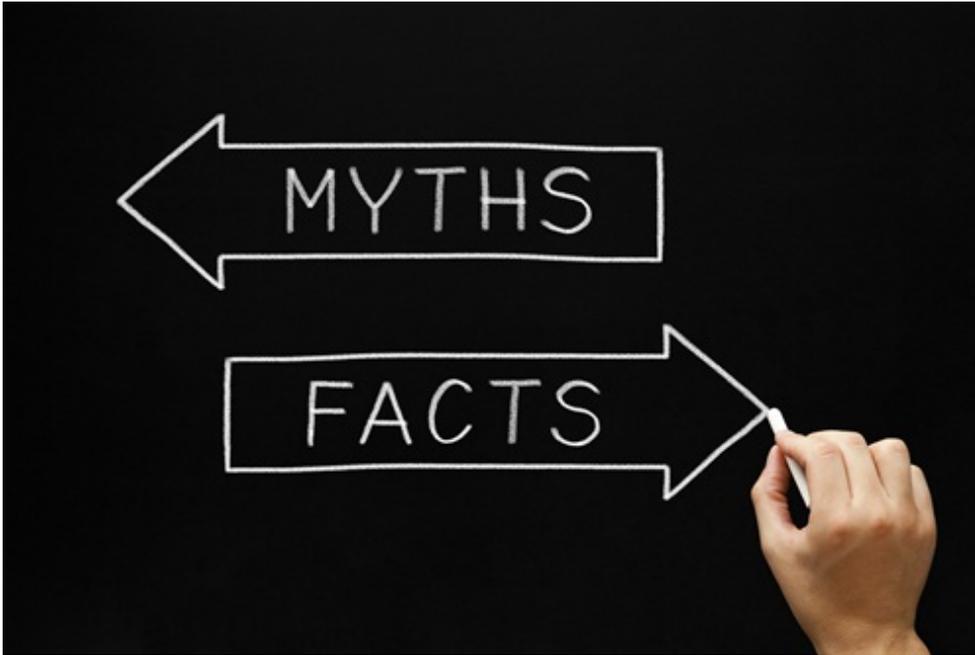
"Each patient will have an Alzheimer's disease likelihood score assigned, and this will be made available to primary care physicians," he says. "They'll have the opportunity to inform the patient of their risk. We don't know of any other records system available that comes with that type of capability built in."

Another IT approach to brain disease at NorthShore is a major research initiative called The DodoNA Project, which is intended to use DNA prediction to improve neurological health. Supported with an initial commitment of \$1 million from the Auxiliary of NorthShore at Evanston and Glenbrook Hospitals, the initiative aims to identify "DNA fingerprints" that predict adverse outcomes and therapeutic responses in patients with neurological disorders. The effort enables clinicians to use an electronic form that feeds information into the Epic EMR to capture data related to neurological conditions, pairing that with DNA extracted from blood samples.

DodoNA will study 11 neurological disorders, including Alzheimer's disease, Parkinson's disease, amyotrophic lateral sclerosis (ALS), stroke, migraine, epilepsy, sleep disorders, multiple sclerosis, brain tumors, brain injury and autism. The initiative will enroll 1,000 patients in each of 11 studies and involve NorthShore's team of neurological experts, as well as collaboration with colleagues at the University of Chicago Medical Center.

NorthShore also is taking a leading role in the Neurology Practice-based Research Network, funded by a federal grant by the Agency for Healthcare Research and Quality (AHRQ). Gathering data from the electronic health records of large healthcare organizations, the network aims to improve the quality and conduct practice-based research in neurology using electronic records.

IT will continue to play a role in determining best practices for preventing Alzheimer's disease and for gauging patients' compliance with preventive orders from clinicians, Maraganore says. For example, he expects that Bluetooth-based devices can show whether patients are exercising, getting sufficient sleep or showing physiological readings that may indicate non-compliance. "We'll be able to use digital health devices to maximize compliance and interventions, in coordination with lifestyle coaching."



4 Myths about Using Electronic Funds Transfer in Healthcare



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