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# HOSPITAL REVIEW

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## Real-world precision medicine: Challenges and opportunities in hospitals across the US

By Heather Punke

When it comes to precision medicine, some hospitals are timid to dip their toes too far into the water, while others embrace the opportunities it can afford patient care delivery.

Physicians and hospital administrators expressed several concerns around establishing robust precision medicine programs too early in the game, but expressed optimism for its potential impact, during an executive roundtable at the Becker's Hospital Review 8th Annual Meeting in Chicago on April 20. The discussion was led by Sunquest, a leading diagnostic IT company.

For the discussion, precision medicine was defined as the use of molecular medicine and genetics to diagnose, classify and treat patients.

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“We’re in the most exciting decade...of genetic and molecular testing capabilities. We can make a difference clinically,” said Matt Hawkins, president and CEO of Sunquest.

### Potential impact on personalized, targeted treatment

Some hospitals have taken the leap into precision medicine already. For example, one small hospital in New Mexico started using precision medicine to help its behavioral health patients receive the most effective medications possible. At a children’s hospital in Illinois, cancer and epilepsy are two main precision medicine priorities, according to the hospital’s CIO. One academic medical center stated they are pursuing full genetic profiles for their patient population to help inform patient treatment strategies.

An executive from a large Midwestern integrated delivery network shared a patient case example of the potential impact of precision medicine on care decisions and patient outcomes. In the example, a physician ordered molecular testing for the patient and discovered the patient had a genetic variant that causes colon cancer. Unfortunately, the molecular testing took place only after another care provider cancelled a

colonoscopy and the patient was subsequently diagnosed with cancer and had a portion of the colon surgically removed. The executive indicated the physician stated treatment would have been different if the genetic disposition had been known and the colonoscopy hadn't been cancelled.

While the promise of precision medicine was acknowledged, a number of the other clinicians and administrators in the room cited cost as a barrier to entry into the precision medicine world.

### **The No. 1 barrier to entry**

For some hospitals, their size and patient makeup make precision medicine financially infeasible — for instance, the New Mexico hospital using precision medicine for behavioral health couldn't make it work financially for oncology, the hospital's CEO said. Other executives worried costs would balloon as physicians run the tests required for precision care, which can be pricy.

"I do think because of the cost, protocols would need to be in place" as to what tests physicians should run when, said one physician and medical COO of a five-hospital health system based in Wisconsin. "I'm a primary care physician, [but] I don't think every primary care physician can have unlimited access to order whatever they want from a precision medicine perspective."

Some hospitals run tests in batches to lower costs, but that strategy means results are slow to get to the patient. Others are still pursuing molecular testing, but are narrowing the focus of the tests.

However, the cost barrier could soon be a thing of the past, according to Nabil Hafez, executive director of molecular solutions with Sunquest. He referred to the "plummeting costs associated with genetic sequencing or genomic sequencing" and referenced Moore's Law, which states that computing power doubles roughly every 18 months.

### **Concerns beyond cost**

While costs of genetic testing are poised to decline, thus making it more accessible to hospitals of all sizes, hospital executives and clinicians expressed other concerns when it came to investing in precision medicine technology.

***Genetic expertise needed.*** Clinicians and administrators alike were concerned they didn't have a set path once a patient's genetic profile comes back from the lab. The need for genetic expertise was discussed to help provide support and education for physicians.

"A key component is knowing what to do" after the test is done, the CIO from the children's hospital said, and there is a lack of established best practices in that area. "It's your responsibility to provide your clinician with as much information as you have," she said.

A physician from a large system in Texas said establishing best practices around precision medicine is a key component of a successful program. "Unless you establish a unified best practice, you're not going to be able to establish energy behind the physician workforce [as to] what you do next," he said. To standardize care throughout the system,

he emphasized the importance of having CMOs help create a unified physician workforce to then establish best practices.

Related to decision support, the nation's lack of genetic counselors is also holding hospitals back from setting up a precision medicine strategy. According to the Bureau of Labor Statistics, there were 2,400 genetic counselors in the U.S. in 2014, but that number is poised to grow — the BLS says the genetic counselor jobs are growing at a much faster pace than the average job.

***Accessibility and action-ability of data.*** One pharmacy director cited two-way communication as a barrier to embarking on the precision medicine journey. Leaders want genomic testing data to integrate with the EMR and be easy to tap into.

This is an especially large problem when it comes to retesting patients, the leaders said — patients do not always tell new physicians if they have been tested before, which leads to repetitive testing. CIOs and physicians alike wished for notifications built into the EHR to alert physicians if a genetic test has already determined a patient to be a fast metabolizer, for example.

“What I hope for is something easily actionable for primary care physicians,” said the medical COO from a Wisconsin system.

Despite these challenges, the leaders in the room had a positive outlook for the future of precision medicine and what it can do for patients. One physician executive summed it up by stating that he hopes for precision medicine to become easily consumable, and concluded, “I want to know this so I can better treat patients.”