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INSIDE EDGE

Optimizing the EHR for Measured Clinical Benefit

Optimizing the EHR sounds like a perfectly reasonable stage to follow implementation, like fine-tuning a car engine you just built in the garage. You can almost hear the EHR engine revving as the CMIO tests the new upgrades in the data center. This cartoon image belies the fact that many health systems are, one, optimizing their EHRs while they implement them and, two, that EHRs are today considered enabling tools in the larger effort at clinical transformation of the enterprise.

This is clear from our snapshot of three SI members—BayCare, Centura Health and Texas Health Resources—each of which provides a different perspective on optimizing the EHR for measured clinical benefit.

All optimization, all the time

Implementation and optimization go hand-in-hand for Greg Hindahl, MD, VP and CMIO at BayCare Health System, which serves Tampa Bay and central Florida with 14 hospitals, nearly 26,000 employees and 5,600 physicians (450 of whom are employed). He's worked at BayCare for the past five years helping guide hospitals and ambulatory sites implement Cerner as the core EHR, tirelessly getting physician feedback on hundreds of workflow changes and software tweaks in the process.

Hindahl says it's best to simultaneously implement the EHR and optimize by reengineering workflow and retraining physicians as need arises. "Meaningful use didn't allow you to optimize as you went. You just wanted to get the system in. We got lots of feedback from physicians that it made health systems go too fast. That includes training. When you only train physicians at the start, they often forget the EHR's functionality."

A key lesson learned was that EHR optimization is a full-time job.

BayCare

"We've recently hired a dedicated EHR optimization team that does nothing but optimization. Otherwise it gets put on the shelf." This six-person, all-clinical team—nurses and a pharmacist who understand clinical workflow—works closely with physicians to ensure they internalize how to use the EHR over time.

The team is working on major issues like improving medication reconciliation, oncology workflow and the end-to-end patient-discharge process. "There's lots of opportunity to streamline and create value, benefiting lot of users and patients," he says.

Greg Hindahl, MD, VP & CMIO, BayCare Health System

Cutting documentation time

A key optimization tool is Cerner Advance, which enables analysts to determine how much time each physician spends in documentation, highlighting ones who can be coached to do it faster. "It's not necessarily related to quality, but allows doctors to get their work done more efficiently," says Hindahl.

This year BayCare trained 100 Cerner Advance users who identified the top 10 percent of inpatient and ambulatory physicians who can be helped the most in documenting, revising the chart and writing orders in the next three months. If the pilot demonstrates results BayCare will expand the program to all its physicians in 2017. Use of the tool has already cut documentation

time in one BayCare ED. "If physicians can get time back in their lives that's a major win," he says.

Analytics is also used to track 1,300 measures required by CMS and the American College of Cardiology. "We track lots of quality, safety and patient satisfaction measures. A lot of optimization involves identifying metrics—for VTE prophylaxis, for example—and making it easier for physicians to improve those metrics," Hindahl says.

> *"We're seeing lots and lots of burnout with EHRs due to poor usability."*

Other informatics teams contribute to EHR optimization doing day-to-day maintenance and updates to the EHR. A 35-person team works with hospital doctors and nurses. Another 10 staffers, also with clinical background as medical assistants or nurses, work with 170 physician offices to help with changes to their ambulatory EMR. Of course, traditional "Super Users" who work in clinical departments act as the first line of user assistance.

Rocky Mountain EHR

"A lot of our work in informatics is implementation," says Louise Schottstaedt, MD, CMIO at Centura Health, a Centennial, Colo.-based health system with 17 hospitals, 12 affiliated hospitals, 21,000 employees and 6,000 physicians serving Colorado and western Kansas. "When your EHR is turned on, people are using it and your goal is to make it better. First, to

make sure our patients are safe. If we identify ways they're not safe then it's an absolute priority to enhance the EHR to keep patients safe."

A second priority is to enhance the EHR to reduce clinical variation using established best practice protocols. Other priorities include enhanced usability and high reliability, which is also closely related to patient safety.

Usability involves making sure clinicians can navigate, record their observations and view an array of clinical data easily and quickly. "We're always concerned about improving usability, otherwise clinicians will feel forced to use the system and experience increased cognitive load. That triggers a real defeated feeling, which is today more common than stomping of feet, a huge issue 10 years ago. Now we're seeing lots and lots of burnout with EHRs due to poor usability," says Schottstaedt.

Implementation and optimization seem to coincide at Centura Health, which went live this year with a new Epic EHR, after winning the 2015 HIMSS Enterprise Davies Award on its previous Meditech platform for substantially improving patient outcomes while achieving return on investment.

Louise Schottstaedt, MD, CMIO, Centura Health

Reducing clinical variation

"We're turning on a new system while we continue to work on clinical workflow optimization," she says. Currently the focus is on evaluating the use of telemetry and ventilator hours, and the utilization of advanced imaging. "We don't know where we sit. Is it too many or too few hours? We have a wide inter-facility variation. Anything we do that's unnecessary can further testing, anxiety and cost. So it's an opportunity to reduce the cost of hospitalization."

The EHR is the engine to reduce unnecessary clinical variation. "We've used our EHR to drive all clinical improvement and provide analytics to help physicians make decisions in the moment. We don't call it optimization so much as putting the right information about the right patient at the right time in the hands of the right provider," says Schottstaedt.

Enhancing clinical workflow is the price of doing business. "You don't want nurses confused about 'held orders' between the OR and the blood bank. We work on that stuff every day. Is that optimization? It's not the exciting part, but just as important," she says.

Cath labs are a case in point. Using the new EHR, physicians do much more structured reporting than previously, a requirement that cascades down to the technicians assisting a procedure. To incorporate the reporting change into the workflow required several weekly onsite meetings at the cath lab to assess its impact on the process. A breakthrough moment occurred when the group realized that simply moving a high-definition display screen from one wall to another allowed the tech to view it directly and eliminate awkward 180-degree turns to check the screen—and disengage visually with the doctor.

A simple repositioning of the monitor resulted in the tech becoming more confident and making better decisions. Also, the tech can now complete nearly 70 percent of the documentation during the procedure and free up the physician's time.

No more 'watch and remember'

"This means the cardiologist and tech need to learn a fairly structured language. We needed role-playing around that, which you don't get in a classroom. While previously cardiologists 'just watched and remembered,' and dictated a report, now the doctor and tech speak in a structured language as they do the procedure," says Schottstaedt.

Centura Health has built a strong governance model to support optimization. "We're structured into 29 teams by service area such as OB, perioperative, medical or ambulatory. Each of our teams combines multiple operational disciplines and IT. For example, the directors and managers of all the ORs are members of the team along with one or two physician champions and ad hoc members from health information management (HIM), regulatory and quality departments. It also includes a medical informaticist and representatives from IT and analytics.

> **"We don't call it optimization so much as putting the right information about the right patient at the right time in the hands of the right provider."**

"Each team generates a list of pain points related to patient safety or clinical care that they work through, determining among other things how much is workflow-based and how much can be automated in the EHR," she says.

Application steering committees provide a foundation. In addition, system-level committees oversee clinical content for ordering and documentation, clinical decision support and the patient experience. These multidisciplinary teams—representing many parts of the organization by both geography and role—establish design and usability standards for the EHR.

Two principles guide these committees: First, no one person can veto anything; Second, solutions are always standardized across the system. For example, the EHR cannot be subdivided for the needs of an individual hospital. "We hold ourselves tightly to those two principles," says Schottstaedt.

Three E's

EHR optimization impacts the entire care-delivery organization, with a laser-like focus on clinicians.

"We see optimization as improving three aspects of the physician's job: effectiveness, efficiency and experience," says Luis Saldana, MD, CMIO at Texas Health Resources, an Arlington, Texas-based health system with 29 hospital locations, 23,000 employees and 5,500 physicians serving North Texas. He views optimization today as having matured with the EHR.

"Back in 2005, the EHR tools were rudimentary. The job was to get users to make a major adaption to new workflows and tools. It was quite difficult and physicians did it on faith. Since then we've tried to address the shortcomings and shift from a tool to which they had to adapt to one that helps them adapt."

Luis Saldana, MD, CMIO, Texas Health Resources

The low-hanging fruit for Texas Health in this process was improving medication safety by eliminating handwritten orders and improving communication. But the key was the establishment of a culture of measurement, according to Saldana, that convinced physicians they were getting benefits like faster time to find a patient record or chart or improved patient safety.

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"That gave us credibility early on. This is a journey to improve care and it's not all about the EHR," he says. "EHR optimization has evolved into clinical optimization. That hearkens back to Texas Health's overall strategy for the next decade and how we can build tools to support it. That's our journey now."

In the past 18 months Texas Health has scrutinized its clinical and administrative processes and developed what it calls Reliable Care BluePrinting (RCBP), a clinician-led, multidisciplinary initiative that mixes industrial engineers with technology experts to reduce or eliminate patient falls, catheter-acquired urinary infections, sepsis and other preventable events.

"RCBP is still a work in progress, but we're getting the debate on analytics to be real-time so the nurse on the unit can use EHR-embedded analytics to determine how many patients on a unit have urinary catheters, whether they are being monitored daily and so on," says Saldana. The EHR extracts data from Texas Health's data warehouse, crunches it using analytics and displays it on a dashboard created with a data-visualization tool. "If the accountability tools aren't there you have to build CDS [clinical decision support] into the EHR at the point of care. That's where the art comes together, when you get people in the patient's room to help design it. Then we measure."

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Conclusion

Optimizing the EHR for measured clinical benefit is a multidisciplinary, structured approach to improving quality, efficiency and user experience of the EHR. But it is ultimately about clinical transformation of the enterprise for value-based care.

"We're becoming a learning health system," says Saldana. "It's a big undertaking. We have a system integration office to bring all the moving parts together with the EHR. All our hospitals are HIMSS Level 7, we're at Stage 6 in our practices, we won the Davies Award. We have full, closed-loop medication administration including bar-code verification at the bedside, which should help to further reduce medication errors, but we still have a long way to go. We all must become the bridges to population health and the patient experience. How do we deliver appropriate care? Are we good stewards of our resources?"

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September, 2016