hospitals in pursuit of excellence™
Accelerating Performance Improvement

DETROIT MEDICAL CENTER

▸ Detroit, MI

▸ 2,000 beds

▸ www.dmc.org

Detroit Medical Center (DMC) operates eight specialty hospitals and a rehabilitation institute, making it the largest employer in southeastern Michigan. DMC is a three-time Most Wired winner.

S.T.E.E.E.P.

SAFE
Bar-coding medications and CPOE drove down reported medication errors by more than 60 percent in the first year and another 50 per cent the following year

EFFECTIVE
With a single repository of data that can be sorted by practitioner and order set, DMC monitors that standards of care are followed and quickly makes corrections if needed.

PATIENT-CENTERED
With the EHR's standardized order sets and practices, DMC is seeing an important rise in compliance with Joint Commission core and non-core measures, including 100 percent adult immunization

IMPROVING SYSTEM-WIDE CARE AND EFFICIENCY BY LEVERAGING EHRS

The Problem

DMC wanted to chart a new path for fulfilling its mission of offering the best possible care to its urban, sometimes struggling communities. It also sought to distinguish itself in a highly competitive health care market. To meet these goals, the health center became an early proponent of health information technology as a foundation for improving performance. However, an 2004 attempt to implement an electronic health record at one hospital failed due to lack of clinician involvement and systems that were not stable and robust enough to deliver the requisite availability and performance.

The Solution

Still convinced of technology's efficacy, DMC Chief Executive Michael Duggan hired Mike LeRoy as CIO and set a goal of rolling out a system-wide EHR in under two years, rather than spread it out over four to five years as initially envisioned. LeRoy began by shoring up the IT systems with more servers and computers on hospital floors. Also importantly, he joined with DMC's chief nursing and medical officers to run the EHR project. "We didn't want the EMR to be seen as IT-led. That hadn't worked well in the past," says LeRoy. "We wanted it to be known as clinician-led."

Results

» Will collect an estimated $40 million in additional revenue from fiscal 2011 to 2015 by meeting the EHR meaningful use definition for American Recover and Reinvestment Act money

» Medication turnaround time—the time the order is placed and pharmacy reviews, verifies, fills and delivers the order—has fallen from as much as three hours to less than 30 minutes

» Captured $1.6 million in 2009 revenue, far beyond target of $1 million, by meeting regulatory requirements to document start and stop times for intravenous infusions, IV pyelogram and IV piggy-back medications

» Alert 100 percent of patients over the age of 50 about the need for a pneumococcal vaccination, up from 50 percent

Background

To drive improved levels of safety and quality, DMC decided to deploy a closed-loop system with an EHR, medication bar-coding and computerized physician order entry. In a huge auditorium with breakout rooms, DMC held system-design meetings with more than 350 staffers from all facilities, including occupational therapists, nurses, pharmacists and lab technicians. Grouped by discipline, the teams mapped out their existing processes, which varied by hospital. Then, they used their EHR vendor Cerner's methodology to streamline and standardize the processes, deciding what to stop, what to start and what to continue.

For implementation, DMC took a "big bang" approach, rolling out the new EHR on all patient floors and emergency departments at all hospitals between April 2006 and May 2007. "We decided to do as much technology as we could at one time while still providing the best care," explains LeRoy.

DMC trained super-users traveled from facility to facility. To promote excitement, each hospital had its own theme and color for the launch. "We had a rainbow of super-users by the last hospital," recalls Deana Simpson, RN, corporate director of clinical transformation. And the system-wide benefits continue: "It really enhanced collaboration among the clinicians," she says.

Principles of Performance Excellence

Employee Empowerment
By creating a visible partnership between clinicians and IT, the tone was set for the entire project. As those who would have to work with the electronic record system, frontline staff played a vital role at every phase, from design to implementation and training.

To further unite the entire system behind this effort, CEO Duggan held a competition during which each hospital made a presentation about why it should be the first to deploy the EHR. Detroit Receiving Hospital and the Rehabilitation Institute of Michigan tied for first place, so DMC did a simultaneous launch at the facilities.

Since launching the system, employees have often championed improvements. For example, they initiated a change in the electronic record to unify immunization information in one location instead of several spots, says Pamela Haddox, RN, transformation support associate. To encourage regular contributions, DMC has a selection committee that evaluates suggestions. Employees whose suggestions are chosen for implementation have lunch with CEO Duggan and received a gift cer-

tificate.

Reducing Process Variability
In addition to creating standardized work flows, volunteer clinicians worked with Leland Babitch, MD, chief medical informatics officer and Pat Natale, RN, chief nursing officer to develop evidence-based order sets for the entire health system. "We committed to having a single standard of care practice across all sites, so wherever a patient is, the care looks and feels the same," Natale explains.

With new order sets, processes and technology, "it took awhile to get used to and incorporate into my work," notes Bryon Harris, a respiratory therapist. But he now cannot imagine going back to paper. "The work goes faster and we are addressing the needs of the patients more quickly," he says.

Highly Reliability Organization
DMC is actively working to extend its EMR and accompanying evidence-based standards of care into the offices of its affiliated physicians. Following the change in Stark rules, it has been subsidizing physician practices who invest in EHRs. In 2009, it added a second EHR so doctors can choose between a full system and one with more limited functionality and lower cost. "We don't believe one size fits all and there are different rates of adoption," says Dr. Babitch.

So far, 67 physicians have taken advantage of DMC's offer, and the EHR vendors are holding demonstrations for dozens of other medical practices. "It's the future and it's what patients are looking for," Leroy says.

Patient focus

The closed-loop system prioritized safety. "There was a clear focus on the patient's five rights—right patient, right drug, right dose, right route, right time," notes Colleen Frey, RN, corporate clinical transformation specialist. Adds Simpson, "IT eliminates the problem of illegible orders and makes orders available immediately instead of waiting for someone to transcribe them and send them to the right department."

The benefits to the patient extend beyond simple automation that minimizes manual errors, though. With access to the EHR, "I get to see more of what's going on with the patient than ever," explains Clinical Pharmacist Martin Shaw. "We get to really take care of the patient in real-time as a team."

Continual Improvement

DMC recently introduced a dashboard that tracks some Joint Commission core measures, including pneumonia, congestive heart failure, acute myocardial infarction, as well as strokes. It's currently building a baseline compliance rate for these measures by doing retrospect chart reviews. Once it deploys new software in early 2010, it can automate compliance tracking. "We can conduct an active and ongoing review while the patients are here," notes Dr. Babitch. "We can contact the providers when the measures are not being attained rather than after the fact."

DMC also is using its EHR to help manage Medicare never-events, starting with pressure ulcers. DMC added system functionality to help document pressure ulcers during the nursing intake process. Because of the EHR and changed clinician procedures, pressure ulcers are put into the medical record in less than 24 hours from admission compared to three days with the old approach. In the first 10 months of use, DMC has saved nearly $2 million in what otherwise would have been denied reimbursements for not identifying existing pressure ulcers.

DMC has even bigger plans for its electronic record system. "We've clearly spent a lot of time and effort getting data into the EHR in the past four or five years," says Dr. Babitch. "Now we want the EHR to process and present data in new and innovative ways."

DMC is targeting several conditions that its feels signals a breakdown in the hospital, including ventilator-acquired pneumonia, blood stream infections and venous thrombosis. Working with its EHR vendor, it is developing software with features to better manage, measure and report on these conditions. It will search for patterns to identify persistent problems or other areas that can contribute to these conditions and develop solutions to reduce the incidences.