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How Baptist Medical Center South built an all-electronic environment while bigger, more prestigious hospitals failed.

News Story by Julia King

JUNE 13, 2005 (COMPUTERWORLD) - Less than two years ago, cows grazed on the Jacksonville, Fla., site of Baptist Medical Center South (BMCS). Today, physicians at the brand-new hospital make their rounds toting wireless devices to check lab results, view X-rays, update charts, order prescriptions and send and receive e-mail.

At bedsides, nurses use wireless devices on wheels, or WOWs, to record progress notes and check doctors' orders. If they administer medicine or change a bandage, the supplies they use are electronically tracked and matched by bar code to individual patient records, enabling more accurate patient billing and automatic inventory replenishment.

What's conspicuously absent everywhere is paper. And for a busy hospital whose staff has just a few weeks of experience working in a totally electronic environment, the overall atmosphere is strikingly tranquil. The doctors and nurses seem completely confident and competent in their new digital workplace.

Yet digital by no means equals impersonal. Original artwork graces the walls, waiting rooms have the cozy feel of a private library, and lots of windows look out on the hospital's well-tended gardens.

You have to wonder: How did this small, 92-bed community hospital manage to succeed where larger and more prestigious hospitals have failed?

For example, Cedars-Sinai Medical Center in Los Angeles pulled the plug on its \$34 million electronic medical record (EMR) system after just three months in 2002 because staffers refused to use it. Nationwide, only about 6% of hospitals have computerized systems for doctors' orders. "It's all about changing the culture," says BMCS CIO Roland Garcia.

From the beginning, Garcia says, he and other hospital executives realized that they had a unique opportunity to build not just a new hospital, but an entirely new culture and health care delivery model that relies heavily on technology to enhance patient care and safety.

To seize that opportunity, they first had to secure the buy-in of the area's independent physicians, who have a choice of where to practice. Before the ground had been broken, BMCS recruited a physician advisory board, which worked with cross-functional IT and operations teams on virtually every aspect of the hospital project, from choosing which technology to use to conducting exhaustive simulation testing in the months before the hospital opened on Feb. 16.

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The teams spent months parsing the thousands of steps and processes involved in treating patients. Everything was dissected, from patient scheduling and clinical procedures to discharge and billing.

Ordering and filling a prescription, for example, involves 148 discrete steps carried out by different people and departments, notes chief medical officer Dr. Keith Stein, the project's executive champion.

The challenge was streamlining those steps and then accurately mapping the best possible process into the hospital's EMR software, which is from Kansas City, Mo.-based Cerner Corp.

That's where BMCS's clinical informatics team comes in. Headed by Trish Gallagher, a registered nurse, the 10-person informatics group is composed of technology-savvy clinicians. From the beginning, they worked side by side with about 65 programmer/analysts and a core group of physicians, nurses, dieticians, physical therapists and other clinical and ancillary personnel to define and refine each and every process before it became part of the computerized system.

"Every week, we had two-hour meetings where we focused on two things: our culture and the [user] experience," says Gallagher.

"We wanted to improve current pitfalls [in processes at other Baptist facilities] and find out exactly what users wanted to see in the system."

Senior project manager Serrine Dully describes the informatics team as "middle-ground translators."

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"They communicate physicians' and nurses' needs to IT programmers," she says, and that translation makes all the difference. "You cannot send a programmer to a physician or nurse and have this kind of outcome."

One of the biggest challenges, Dully says, was getting clinicians to break away from thinking about the way they had always done things in the past. "We started every one of our meetings with a speech in which we basically told them we wanted them to think outside the box and ask themselves if they had every opportunity, how would they do things differently," says Dully. "We never quit hearing, 'But we've always done it this way.' But eventually, we heard it less and less."

The informatics group and IT are also working with physicians to develop "care sets" within the system. Care sets are groups of specific procedures, tests and medications that an individual physician may use to treat a certain condition or illness, such as pneumonia. "Care sets make things easy," notes Jim Altomare, a physician at BMCS. "You can also build your own care sets using templates."

He explains the lure of developing personalized care sets this way: "I want to do my patient care. I don't want to learn a new system."

Physicians also have wireless access to external sources of medical information as well as full X-ray images, which enhances patient care, according to Stein. "With built-in links to evidence-based medicine, if you're at an impasse in your treatment, you can go out on the Internet and get more information," he notes.

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Altomare recalls a situation in which he was able to convince a recalcitrant elderly patient that she had a case of pneumonia that required in-hospital care. He pulled up an X-ray of her lung on his wireless device, and seeing the X-ray then and there convinced the patient; she agreed to be admitted for treatment.

Having wireless access to previous test results in a fully electronic medical record is especially valuable to doctors in the emergency room, says physician Ted Glasser. "Having all of that information helps you make an evaluation on the spot," he says. "Either send a person home because what you're seeing doesn't represent a difference from their previous health state, or -- if it represents a big difference -- act aggressively."

The system also creates an ID and time stamp each time a record is accessed or a process is completed, building an ongoing electronic history and timeline. This helps with insurance and regulatory compliance requirements. And ultimately, it also helps deliver better patient care, according to Garcia. "Capturing and time-stamping information allows us to come back and do analyses and see where we can make improvements," he notes.

Garcia says that all of this information saves time, whether it's time spent looking for X-rays or tracking lab results. "If the technology can reduce hours from ordering meds or completing blood work," he says, "it all goes directly to improving patient care, which is why we are here."