

Technology is driving a shift in communication

Hospitals and practices are spending millions on efficiency moves

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By Bea Quirk

In the last few years, hospitals and doctors' practices -- like most U.S. businesses -- have been using computers and information technology in increasingly sophisticated ways in their administrative functions.

Now the health-care industry is looking to automate, computerize and digitize clinical care as well.

The major hurdle health-care administrators face is not physician opposition, cost or the learning curve of implementation, but rather trying to decide what products will best suit their practices and their hospitals.

"We are saturated with applications vendors," says Bill Aikens, director of information services at Sanger Clinic, a cardiology practice. "Weeding through them to choose one is like looking for a needle in a haystack. And even if you find one, the question is whether it's sharp enough to (meet your needs). And the technology keeps changing every three to six months."

For example, Sanger created its own cardiology software called Numatrix, which allows for standardization and accreditation of patient reports. And with new networking and wireless technology, physicians can view the results wherever they are, in real time.

That means while a patient may have an echocardiogram in Sanger's Pineville office, the physician at the Carolinas Medical Center office can see it almost immediately, make a diagnosis, talk to the patient over the phone, create a medical report online and start the patient on the next step for treatment. That applies whether the physician is across town, across the country or across the globe.

"Earlier software was too complex and wasn't efficient," Aikens says. "The vendors didn't understand physicians' need for efficiency and sense of urgency. These systems maximize a physician's time, which is good for patient care -- it means they can spend more time with the patient."

Hospitals take next steps

At Novant Health Inc., doctors use PDAs to download and access patient information (such as lab and radiology results, medical history and medication orders) as they conduct daily rounds. The technology-intensive process saves about 45 minutes, says Toni Kourey, the system's chief information officer. On weekends, when back-up physicians usually conduct rounds, it saves them about two hours.

Carolinas HealthCare System has a similar process, which has proved a valuable tool for physicians and the hospital.

"Physicians are not spending time looking for a chart or trying to find results that haven't been transcribed or someone else has," says Alan Smith, CHS vice president of information services and clinical applications.

He says about 200 physicians use a PDA daily and 400 use the CHS Web-based portal to remotely access patient results and status.

Both hospital systems are in the process of adding information to their network, such as having nursing assessments automatically put online and allowing doctors to write orders and create reports electronically. This eliminates errors that can be caused in transcribing handwritten notes or recordings, plus it means diagnoses can be made faster and treatment started sooner.

Protecting privacy

Patient safety is another reason hospitals are turning to electronics. Novant and CHS both use bar-coding technology to ensure the accuracy of all medications. At Novant, for example, before dispensing a patient's medication, a nurse scans the bar code on the patient's bracelet and the code on the package holding the medication. If there is a discrepancy in the kind or dose of the medication, the time, frequency or format, the scanner flashes a red light and beeps. At CHS, two robots -- one at CMC and one at CMC-Mercy -- use bar codes to fill the bulk of medication orders for all its Mecklenburg County facilities.

Both hospitals are also in the process of creating practically filmless radiology departments, so that all images will be electronically created and physicians will have access to them online. Instead of being stored on film, the images will be burned on CDs.

None of this technology comes cheap.

Novant developed a five-year systemwide plan in 1998 and has spent about \$20 million annually during that period. Kourey is developing a three-year plan, during which she expects the annual expenditures to be closer to \$15 million.

But, says Aikens, "We always remember that the whole point of technology is better patient care."

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