

THE DOCTOR GOES DIGITAL:

Health care industry moves to electronic patient record-keeping

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It's a ritual that's as much a part of seeing a doctor as sticking out your tongue and saying "Ahhhh." A medical assistant searches along a wall of shelves crammed with manila folders. She comes back with a dog-eared file stuffed with hand-scrawled paper dating back to your first measles shot – your medical "chart." **In the age of warp-speed computers, this old-fashioned method of record-keeping seems like a quaint remnant – almost unbelievable in a field so propelled by technology as medicine.**

But the fact is, the health services industry has lagged at least a decade behind other economic sectors in making the shift to the digital age. In Washington state, as elsewhere, the shift to electronic medical record-keeping has been a slow, painful struggle. "The health care industry is one of the few that doesn't rely on computers," said Richard Onizuka, policy director of the Washington State Health Care Authority and head cheerleader for the effort to establish a unified and efficient system of digitizing health care in this state. "Computers have revolutionized just about every other industry," Onizuka said. "What would you think if you went into a grocery store and didn't see scanners on the checkout stands?"

Tacoma-based MultiCare Health System, the South Sound's largest health care provider, is a notable exception. On Tuesday, MultiCare's pediatric intensive care unit went digital in all aspects of care, from admissions to ordering prescriptions, reporting test results, physician notes and billing. The pediatric division was a test run for the rest of the massive hospital system, which is poised to make the leap across the digital divide Oct. 14. The transition hasn't been cheap or easy. According to Florence Chang, MultiCare's senior vice president and chief information officer, the project has taken 10 years and cost an estimated \$100 million.

Few argue the benefits. Now, whether MultiCare patients go to Allenmore, Tacoma General, Mary Bridge Children's Hospital or even one of the 9-by-14 foot clinics MultiCare recently opened in RiteAid drugstores, they're instantly linked to a computer system that has all their records, lab tests and medications. MultiCare's Good Samaritan Hospital in Puyallup will join the network when renovations are complete in 2010.

Statistics released last October by the Centers for Disease Control and Prevention show how unusual MultiCare is. The CDC found that **in 2006, only 29 percent of office-based physicians in the United States used any kind of electronic medical record-keeping system.** The percentage of doctors who'd made the move to a full electronic system like MultiCare's was much lower – only about 12 percent of physicians nationwide.

The relative slowness of the health services industry to go digital shouldn't be attributed to inertia, Chang said. The demands of medicine are so complex, she said, it's taken this long for computer technology to rise to the challenge. "This is different than selling groceries," Chang said. "When you're dealing with materials, like in groceries or banking, it's very transactional. In medicine there is no black and white. It is art versus science. Every single human being is different. We need the capability to adapt."

‘AN AWESOME SIGHT’

MultiCare moved three of its four hospitals into the most basic aspects of electronic record-keeping in June 2007 when it coordinated systems for admissions, patient records and lab results. Tuesday’s shift in pediatrics added capacities for physician note-taking, lab orders and imaging.

Kathy Brown, clinical director of the Mary Bridge pediatric intensive care unit, said Tuesday’s switch took months of preparation, including classroom training, hands-on training in a “playground environment,” and hourlong staff huddles every morning for the final three weeks. “This project has been under some state of construction for the past two years,” Brown said. “On Tuesday at 0400 when we went live, it was really a celebration. It was an awesome sight. The bumps in the road have been relatively minor.”

Every patient room has its own computer, Brown said, and access to the digital system is increased with **mobile devices called WOWs**, for workstation on wheels. (They rejected the less appealing acronym COW, for computer on wheels.) **Doctors and nurses use small handheld devices** as well, **including a picture archiving and communication system**. The PACS machines, slightly smaller than a normal laptop computer, make **X-rays immediately available to physicians at the patient’s bedside** as they make their rounds. “We’re also able to show it to the kids,” Brown said. “They just think it’s magic.”

According to Chang, the magic feeling is shared throughout the health system, from physicians to accountants. Benefits were obvious immediately, she said. **“Ninety days after we went live last year, our turnaround time for lab tests and imaging tests improved by 50 percent,” she said.** The **average accounts-receivable** delay (the time it takes people to pay their bills) was 56 days before the transition, she said. After 90 days it **dropped by two days** and now is down to 50 days. “That is huge,” Chang said. **“An improvement of just one day in accounts receivable means savings in the millions.”**

Studies in medical journals indicate **the shift is better for patients**, too. For example, computerized physician order entry systems, which do away with notoriously illegible physician scrawls on prescription pads, have been credited with **reducing error rates** by as much as 55 percent and saving billions in annual costs.

AN EPIC CHOICE

Electronic record-keeping works for huge organizations like MultiCare, but what about small practices with one or a half-dozen physicians? “It’s definitely more of an issue for small clinics,” said Onizuka, at the State Health Care Authority. “Many of them complain they don’t see savings quickly, if at all.” Costs typically run from \$20,000 to \$30,000 per physician, he said, and the smaller the office, the harder the cost is to bear.

The software industry, sensing huge profits, is eager to help physicians make the transition. A decade ago the field was crowded with dozens of providers offering specialized programs. A Darwinian struggle has drastically reduced their numbers to a handful of survivors: Cerner, EPIC, Meditech, McKesson and GE (formerly IDX).

MultiCare went with EPIC, Chang said, because it found that company most responsive and compatible. “At end of day, the reason we chose EPIC is because this is a vendor who wants to be a partner with us,” Chang said. “They also share our focus on patient safety.” Chang was also

impressed with EPIC's customer support. When the three MultiCare hospitals went live at once in June, Chang said, "they brought up 115 of their staff here to work with us, 24/7 for two weeks." The Seattle-based Group Health Cooperative also chose EPIC, as did Seattle's Swedish Medical Center, which is in the midst of a hospital-by-hospital transition. The three systems' use of the same software implies compatibility, but as Onizuka noted, the hospitals all use different EPIC versions. "They can't talk to each another," he said.

Thirty-eight Eastern Washington hospitals linked by Inland Northwest Health Services use the Meditech system. The Franciscan Health System, a network of four hospitals and 39 clinics in Pierce, Kitsap and King counties, has chosen Cerner for an online inpatient system. According to Everett Newcomb, Franciscan's chief medical officer, the entire operation will be up and running within two years. Franciscan already has an electronic system that gives physicians throughout the community access to their patients' lab results, X-rays and transcribed reports.

'READ-ONLY' ACCESS

At this point, there's no way for MultiCare to share records electronically with individual patients or providers outside the system, according to MultiCare spokesman Todd Kelley. MultiCare will print out hard copies of some parts of records free for patients who want them, Kelley said. Other parts of records, such as doctors' and nurses' notes, require a copying fee. Kelley said he expects that inconvenience to change soon, to a system in which doctors outside the system are granted "read-only" access to records and patients can have their records transmitted electronically or copied to a computer disc.

Onizuka believes that a better approach than pushing a unified system that links all health care facilities, as some states have done, is a consumer-based approach in which patients collect and maintain their own records. "You can either do this through consumers or do it through the provider," Onizuka said. "We very clearly fell on the side of the consumer. The goal is to get all of the information into their hands."

Microsoft and Google have chosen that path, too, and are fighting it out with two competing patient-based platforms. Microsoft is working on a "HealthVault" system in a partnership with California-based Kaiser Permanente, the biggest health maintenance organization in the United States. And Google is working on "Google Health," in cooperation with the Cleveland Clinic. On Thursday, the Washington State Health Care Authority awarded \$1.7 million in grants for three health record bank pilot projects – in Spokane; Cashmere, Chelan County; and Bellingham – using the Microsoft and Google systems.

Chang isn't so enthusiastic about the consumer-driven approach. How will patients be able to exchange information with providers unless they speak the same language, she wonders. "The only way that data banks can become useful is if they link with a health system," she said. "Otherwise the information has to be manually entered. Also, she wonders what guarantee there will be that the information is accurate. "If a patient decides he doesn't want to share certain data," she said, "then the health provider will not have a complete picture."

'IT WILL BE AVAILABLE ANYWHERE'

In the long run, resolving those issues will prove to be mere details, Chang believes. **Twenty years from now, she said, sharing health data with providers will be as easy and seamless as using any ATM machine to access your bank.** Beyond that, she envisions all the old paper

medical records in the compost heap and microscopic digital versions of them physically imbedded in patients. “The information will not be restricted by building or hospital. It will be available anywhere,” she said. Medicine itself will be transformed by the transition to digital records, Chang said.

Today’s reactive system of people going to see a doctor when they get sick will give way to a proactive system of wellness programs and preventive care, based on individual genotypes and aggregated histories. “Technology is going to revolutionize health care,” she said. “What we are doing now is just putting together the basic building blocks.”