



# EMR STAT

Long before the current government stimulus package, Mizzou started building a system of electronic medical records. Story by Dale Smith  
Photo illustration by Nicholas Benner

**MICHAEL LEFEVRE VIVIDLY RECALLS** the portable information technology of his days as a family medicine resident at MU. "We used to have what we called our peripheral brains. The pockets of our white coats were stuffed with reference books and cheat sheets," says the professor of family and community medicine and chief medical information officer for MU Health Care. "But now electronic medical records connect us to the world." LeFevre, BS EE '75, MD '79, MS '84, has seen MU's electronic medical records (EMR) system start from scratch 10 years ago and grow to cover MU's University Hospital as well as its Columbia Regional Hospital.

Although national political debates paint electronic records as the wave of the very near future, at MU, the world of EMRs is now. The university's system includes records generated by all of its

◀ Electronic medical records can help physicians such as Karl Kochendorfer cut down on paperwork, offer better treatment to patients and save money. Kochendorfer studies EMRs as a faculty member in MU's Department of Family and Community Medicine.


physicians and covers diagnoses, test results, prescriptions and other treatments. It offers chronic-disease summaries that display many pieces of key information to help providers work more efficiently. It points providers toward guidelines for recommended care to help them choose the next step wisely. EMRs may already be nudging providers toward achieving recommended care by showing them how they compare to colleagues on important patient-care indicators.

MU built its EMR system to improve patient care and the bottom line, and to make providers' lives easier, LeFevre says. The goals are not just laudable; they're critical to individual patients' health and to the nation's long-term economic well-being. With that much at stake, it can't be simple.

For starters, LeFevre says, EMRs can save money. But whose? "There's a disconnect between who pays for the system and who benefits," he says. "Patients and insurance companies [payers] save money, but the cost of installing EMRs is borne by providers." For example: A doctor orders a blood test for a patient on Tuesday and the patient sees a second physician on Thursday. With paper records, doctor No. 2 can't see the test results and orders the test again, causing patients and payors to pay twice. But if the second doctor sees the test results in an EMR, then that one test informs both physicians. Despite the clear potential for savings, payors don't give discounts to providers with EMRs, LeFevre says.

Not surprisingly, few doctors have invested in the new technology. Nationwide, about 17 percent of physicians use EMRs, which cost about \$40,000 per physician and roughly \$5 million to \$10 million for an average-sized hospital. Government funding is a must, LeFevre says, to help providers afford EMRs. The federal government's stimulus package included \$19.2 billion to do just that. "The money will come back to them," LeFevre says. But not right away.

According to researcher Richard Hillestad's July 2008 testimony to the U.S. Senate Finance Committee, during a 15-year

Once 90 percent of hospitals and physicians adopt the [EMR] technology, savings could be about \$80 billion a year. 

adoption period from 2005–20, savings from implementing EMRs would be about \$510 billion, or approximately \$34 billion a year. However, once 90 percent of hospitals and physicians adopt the technology, savings could be about \$80 billion a year, or 4 percent of the annual cost of health care in the United States.

Meanwhile, back at Mizzou, EMRs are already paying off in other ways. For instance, university providers have worked with their vendor, Cerner, to develop ways of displaying on a single screen the many critical bits of information that providers need to treat patients with chronic diseases. In the days of paper records, doctors treating diabetes patients would have to spend several minutes thumbing through charts to collect data about weight, blood pressure, blood sugar, foot exams, eye exams and so on. Even in the early days of EMRs, it would take doctors two to five minutes and 50 clicks to collect all the pertinent data. The new summary screens gather and display the data automatically. Over the course of a day in clinic, saving even two minutes a patient gives doctors almost an hour they can use to take care of patients, rather than hunt for information, LeFevre says.

Working with Cerner, MU has developed 12 chronic-disease summary screens. These also include links to care algorithms — the next logical drug, test or advice for patients — reminders to schedule important tests, red flags signaling problems with drug interactions, and much more.

Researcher David Mehr, also a family medicine faculty member, and colleagues study what more EMRs might do to improve the quality of chronic-disease care. Researchers have looked at how EMRs can help individual patients, Mehr says, but few have investigated how they can use group-

level data to improve care.

One of Mehr's projects evaluates the use of EMRs to extend the medical profession's traditional practice in which individual physicians review their performance on particular cases face-to-face with peers to get feedback. Family medicine faculty have collaborated with Cerner to create a way to gather selected EMR data for patients of a group of physicians and to generate lists that compare doctors' performance on quality-of-care measures. One list could display the percentage of each physician's diabetes patients whose blood sugar and blood pressure are under control.

"On the screens we've created, you can see those data not only for your patients, but also for other physicians at MU and national norms," Mehr says. He thinks showing physicians the data will prompt self-examination and start a lot of conversations about how they do their work. "Most physicians want to do a good job," he says, "and this sort of tool can help them give better care." Mehr is studying whether these new tools will create changes in physician performance.

But using EMRs to push doctors toward compliance with national norms troubles some physicians, LeFevre says. "Some call that cookbook medicine and say, 'I know what's best.'" As a result, care sometimes varies enormously from doctor to doctor, but the variations don't seem to improve their patients' health. There is some value in following a proven recipe, LeFevre says. "It's much safer to fly than to go to the doctor. That's because the airline industry has rigorously standardized its work." The procedures minimize human error. Still, he says, when the situation warrants it, you want a doctor who can turn off the autopilot and land the plane in the Hudson River. ■