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These case studies vary by practice size, practice location, specialty, EMR vendor, and length of time using EMR. One practice is still evaluating vendors for its system, while others have had EMR for several years. All of the people interviewed—physicians and nonphysicians alike—have struggled with some aspect of EMR. With few, if any, exceptions, they believe that the benefits outweigh the drawbacks.

Each case study describes:

• The nuts and bolts of the practice—its specialty, number of physicians and staff—so that readers can quickly identify which physician groups are of most interest to them
• The practice’s decision to use EMR and its evaluation of vendors
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To prepare the case studies, MSMS commissioned Public Sector Consultants, a Lansing public policy research firm that has worked with the medical society on numerous projects, including the Future of Medicine report. Senior Vice President for Health Policy Peter Pratt and Senior Consultant for Health Policy Amanda Menzies visited practices and spoke with physicians and nonphysicians to hear their perspectives on EMR.

Although the purpose of the report is to convey the valuable details of physicians’ experiences with EMR, this introduction highlights comments that came up frequently during the case study site visits or seem particularly useful for physicians considering EMR. It is important to note, however, that this is not a statistically significant research study. While we have attempted to present varied practices that reflect the physician practice environment in Michigan, the 14 case studies are not a representative sample of physician practices in our state.

To one degree or another, these are success stories—or, at the very least, stories of promise. Almost all the physicians we talked with think EMR improves the quality of care. Many believe they have seen or will see a return on their sizable investment in the technology, even when they consider the time spent evaluating vendors and readying their practices for change, and losses in productivity in the first months of adoption. In other words, success does not arrive without much hard work, perseverance, and adaptability. Almost every practice said it took more time than expected to identify a vendor, train the staff, and go live.

One measure of EMR’s promise is the frustration and impatience that physicians and office staff feel once they have adopted it. Many physicians see the enormous and, as yet, unrealized potential that EMR brings. Many said that they cannot wait to find time to do more with EMR than it does for them and their patients now. For some, interconnectivity—and with it access to all a patient’s health and health care information—will usher in a new era of medicine. EMR just whets their appetite for that day.

EMR can also be daunting. Access to so much new information about a patient, or a population of patients, means that physicians must meet the challenge of organizing and assimilating that information in a way that improves patient care. As with so much in our daily lives, EMR can bring information overload.

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The case studies also show the diverse experiences of physicians. For example, some say that the EMR speeds up documentation, some say it slows them down. Almost everyone agrees, however, that EMR fosters more thorough documentation, which is always a positive.

Many practices are excited by the payoff—in improved patient care at the very least—from their investment and hard work. But even those who are struggling acknowledge two facts: They cannot go back to paper now and payers will require that physicians have EMR to document aggregated patient information in the near future. In fact, several practices lauded EMR because it gives them a ready means of presenting such information for payers so that they qualify for quality bonuses.

While this is not, strictly speaking, a study of best practices—case studies, after all, must also catalogue frustrating practices, if only to help others see what not to do—each practice did offer words of wisdom to their colleagues who are considering EMR. This summary concludes with a selection of these, a few of which (see “physician buy-in”) contradict each other.

Many physicians see the enormous and, as yet, unrealized potential that EMR brings.

Here’s what the case studies revealed:

Getting Ready

• It is really up to physicians to build the systems to meet the goals they set.
• Practice knowledge and assessment are essential. The better you know your practice in all its details, the better you will be able to pick the best system and insist on proper implementation.
• Think of how you want to change your practice before you buy a system. That will drive your decision and make EMR more advantageous to you and your patients.
• Expect it to be two years from the day you decide to implement an EMR until everyone is comfortable with the system. Let everyone in your practice know you expect it to take this long. If you give yourself two years you will begin to see some return on investment, which will bolster your confidence in the decision.

Physician Buy-in

• Don’t wait for everyone in the practice to agree to implementing an EMR. If you want to implement an EMR, one or two doctors or nurses have to push for it, but don’t expect everyone to be on board.
• Obtain strong backing of as many providers in the practice as possible to ensure the EMR’s success. If the providers don’t understand the system and provide their input, it won’t work.
• Doctors have to be on board in a way that they have no choice. You can’t have people silently sulking. Before you spend any money, have a meeting where everyone signs on. If you can’t achieve that kind of consensus, you have to get rid of the naysayers or decide not to implement the EMR.

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**Family Ear, Nose, Throat, and Allergy**

*An experienced physician starts from scratch with EMR*

**Practice Profile**

Joe Gilletto MD is starting from scratch after moving to northwest Grand Rapids from the Upper Peninsula. He brought no patients and no paper with him when he set up his otolaryngology practice in July 2007. After practicing for 23 years as an employed physician and a partner with other doctors, Dr. Gilletto decided that he wanted to go solo: “I’m an old horse-and-buggy doctor who wants to spend more time with his patients. If I join a group, they’ll care only about productivity.” He is seeing 25–35 patients a day from the greater Grand Rapids area.

**Why EMR?**

Dr. Gilletto went live with his EMR when he opened his new practice on July 5, 2007. He knows that physicians of his vintage—Gilletto is 60—are often resistant to change when it comes to EMR. “The biggest stumbling block is what do you do with all of the paper? In a group practice I used to be in, the staff came in on weekends to key in charts to the EMR.” Nevertheless, he did not hesitate to start anew with EMR. “I didn’t bring any paper with me. And EMR will be mandatory in five years.” He has positive reasons for adopting EMR as well: “The promise of efficiency is attractive; the main impetus isn’t money, but to make my life and my patients’ care simpler.”

**Assessing EMR Vendors**

Dr. Gilletto undertook a thorough review of EMR vendors before choosing AllMeds. He began by watching videoconferences on three systems after hearing from a fellow ENT physician that these three were the best for their specialty. Next, Gilletto attended specialty society meetings and saw demonstrations of each system. His acid test is to select a hard-to-diagnose condition—he chose burning mouth syndrome—and explore how the software responds. “In the end,” he explains, “the system I chose was one put together 15 years ago by an ENT doctor. It has numerous clients in my specialty. I also liked that the vendor listened to physicians’ comments at the user conference on how to improve the system.” Finally, Dr. Gilletto liked AllMeds because it is developing allergy software that he can incorporate into his current system.

**The Transition to EMR**

Training on the EMR was five days onsite. Support, which Gilletto pays for at an hourly rate, is necessary: “For immediate needs—when I’m with a patient—I can call the 24/7 support line. For less pressing issues, I have a running list of questions that I e-mail now and then.” He notes that it is essential that support be able to pull up the same patient screen as the doctor is viewing: “AllMeds gets to my patient’s record so glitches can be
resolved easily.” As he gets acclimated to the system, Dr. Gilletto figures that patient visits have risen from 15–20 minutes to as much as an hour.

**Current and Future Benefits**

Only 40 days into practice with the EMR, Dr. Gilletto sees benefits: “Before the patient gets to the front desk, I have sent a letter to the referring doctor and a fax of the prescription to the pharmacy. Also, there’s no hunting for charts. Before, they could have been anywhere—at the front desk, the to-be-filed pile, my desk. I can get to the chart anywhere via the Internet—I can even check for allergies when I’m in the operating room.” In addition, he likes the billing functions: “EMR allows you to bill more completely by clarifying the distinctions between levels of visits.”

Gilletto also sees promise in improving the quality of care he delivers to patients: “I like that I’ll have a patient with a ruptured eardrum and I can click on a number of adjectives to describe the condition and then add my own notes. EMR leads to more thorough documentation. It asks questions that I’ll forget—it’s a memory prompt.”

Avoiding coding errors is a huge benefit of EMR: “By the time I’d catch an error before EMR, a lot of time had passed and I’d have to resubmit the claim.” The ability of EMR to clean claims has real financial advantages.

Dr. Gilletto also saves time and costs on dictation and transcription, while acknowledging that he does type slower into the EMR than he dictated. In time, he expects to address this by having a scribe in the examination room with him and the patient. With the scribe in place, he will have more face-to-face time with patients, which is the experience of other ENTs he has spoken with who have had an EMR longer than he has.

Looking down the road, Dr. Gilletto sees more benefits from EMR. He hopes that EMR and equipment manufacturers—makers of audiograms, pulse oximeters, and others—will synchronize systems so that values will be sent straight to the EMR, without the physician or scribe having to input them. He also hopes to access x-rays and CT scans from local hospitals.

Patients like the EMR, he says, though some have expressed concerns about the security of their private medical information. Both Dr. Gilletto and the patients appreciate how EMR can help promote management of chronic conditions: “The EMR has patient information loaded in folders,” the physician explains. “I just click on swimmer’s ear or acid reflux and the handouts are printed right there.”

Dr. Gilletto also uses the EMR to cluster patients who have certain illnesses or symptoms, “like cancer or headaches.” Says Gilletto: “I use this analysis for my own research. For example, EMR can tell you which of three antihistamines gets the best response from patients.”

**Financial Implications**

Dr. Gilletto estimates that he spent $40,000 for the EMR and a practice management system and training. He continues to pay additional hourly support costs as necessary. He recognized from the start that he would also need local IT support. In an area the size of
Grand Rapids, he was able to find a consultant who works with several physician practices that use AllMeds.

Gilletto was not pleased that AllMeds charged him for the travel costs of the trainers over and above the agreed-to training fee. This $3,500 was in the fine print of the contract but, as he notes, “I have my patients sign consent forms all the time, but I go over them to make sure they know exactly what they’re signing. EMR vendors should do the same thing.” Also, a separate training on the system for his outside billing agency was cancelled at the last minute because Dr. Gilletto was not aware that full payment for the training had to be made before the session. The cancellation was sent via e-mail—there was no phone call, and Gilletto was not able to check e-mail. These are frustrating and costly lapses in communication.

As for return on investment, Dr. Gilletto sees great potential in avoidance of coding errors: “IT guys I trust tell me that doctors are making fewer coding errors. Months can go by [without payment] if I don’t catch an error.” Even so, he thinks that it is very hard to assess return on investment: “I document more thoroughly because of EMR, and I suspect I’ll be faster in time. But how do you quantify these things? How do you quantify problems that you avoid? The main impetus for me was making life simpler for me and my patients.”

**Challenges**

“The biggest challenge for me is navigating the system, understanding its logic, which isn’t the same as mine,” Dr. Gilletto states. “Some of it is counterintuitive. For example, it took me quite a while to figure out how to get to the flexible scope of the larynx screen and box.” There is the usual frustration of learning, he adds. “I wish it would move faster, but I know I’m the bottleneck. With the trainer, everything works perfectly, of course. And I forced myself to use the system with all of my patients from the start,” an immersion he figures slowed him down in the short term but will help him in the long term. “There is more benefit than not with EMR,” he concludes.

**Excitement and Potential**

Dr. Gilletto looks forward to making up his own templates down the road, which will help address his concerns with the logic of the system: “I can add my favorite questions to the system pretty easily.” He also relishes not having to look for charts or do dictation, and the ease of one-click faxing of prescriptions to the pharmacy and the thoroughness of documentation that EMR invites.

**Words of Wisdom**

Dr. Gilletto offers three suggestions to fellow physicians considering EMR:

- When you are testing different EMR systems, choose a hard-to-diagnose condition and look at what the software does with it.
- Make certain that the phone support team from your vendor can pull up the same patient screen that you are viewing. Problems can be solved much quicker, and this is important when you are with a patient.
You will need local IT support. If you live in a metropolitan area, ask fellow physicians which system they use and, if it is the same as yours, whom they use as a local IT consultant. You may be able to find local support familiar with your system.
John Vassallo MD

New primary care physician starts out with EMR

Practice Profile

John Vassallo, MD, is an internal medicine physician who opened his solo practice in Howell in October 2006. He currently sees an average of ten patients each workday, but this number will increase as he continues to build his practice. In addition to Dr. Vassallo, one full-time nurse/receptionist and a part-time office manager work in the office. Dr. Vassallo is a member of both the Huron Valley Physicians Association and the Livingston Physicians Organization.

Why the EMR?

Vassallo’s office started out using Misys Tiger practice management software for billing and scheduling when the practice opened and about two months later was using Misys EMR for charting and tracking patient medical information. “From the time we opened we had everything in place. We used paper for a couple of months, but transferring the records of 25 patients was no big deal,” Vassallo says.

Dr. Vassallo said of his decision to start out with an EMR, “I’m very disorganized. I lose things continuously. So the EMR’s a good way to organize information.” Theresa Chalifur, the practice’s full-time nurse, says in implementing the EMR, the practice was looking for “better record keeping and easier access to patient records.”

Vassallo and Chalifur agree, too, that EMRs are an unavoidable reality for physicians, so they were in a sense just staying ahead of the game. “This is just the electronic age. Everything’s based in electronics,” states Chalifur. Dr. Vassallo adds, “I know it’s the wave of the future.”

Preparing for and Choosing an EMR

To assess different EMRs, Vassallo says, “Basically, I went online and looked at them and I’d heard good things about Misys. I looked at NextGen and one more, but Misys seemed best for my needs.”

Because the practice was so new, Dr. Vassallo didn’t know exactly how his practice would benefit from using an EMR and so his selection criteria were broader than those for other offices. He says he was looking for a system that was “easy to use and intuitive.” He wanted a system that could be learned quickly and that wouldn’t be too difficult to train someone on.
**Going Live**

Before Dr. Vassallo’s office went live, he, the nurse, and office manager had one-on-one instruction on-site with a representative from Misys. During this training, the representative worked with Dr. Vassallo and the staff to identify any sort of customizing of the system that might be necessary for the office and then she was able to make those changes remotely from her office.

Dr. Vassallo reports that unfortunately, “the training for this was a waste of [the trainer’s] time and our money” because after the initial training session, the trainer got sick and wasn’t able to come back to the office for a couple of months for “a tune up, and we’d already been using it and learning it on our own.” However, in some ways this has worked out for the benefit of the office because the trainer is responsive to Dr. Vassallo’s questions and often doesn’t charge them for additional training time because she “realizes we didn’t fully benefit from training,” Vassallo reports.

**Using the EMR**

Dr. Vassallo and Chalifur each have a tablet for using the EMR in exam rooms. Chalifur says, “I do vitals, prescriptions, and chief complaint.” Following a patient visit, she says, “[Dr. Vassallo] can do billing right from [the EMR]. He sends it to me; I add anything I need to and send it to the insurance company.”

Chalifur reports that she and Dr. Vassallo were comfortable with the system fairly quickly: “After the initial training, we were using it the next day. I would say [it took] about one to two weeks for me to get it and less than a week for the doctor.” In Dr. Vassallo’s estimation it took him longer to become familiar with the system: “It took about a month, maybe a month and a half.” But his concern is with the parts of the program he was still learning and has yet to learn how to use: “I’m not using it to its full capability yet. I have about 30 percent under my belt.”

Diagnostic tools such as blood pressure monitors can be connected directly to the tablets, so the computer will automatically log and evaluate patient test results. The practice is also using alerts to remind them to do lab procedures at certain intervals.

**Current and Future Benefits of EMR**

Several benefits of using the EMR in Dr. Vassallo’s practice have become apparent:

- The EMR is accessible off-site. If a patient calls the doctor on the weekend, he can view the chart from home.
- The system can check for potential adverse drug interactions.
- The system facilitates clean claims, and reimbursement from insurance companies seems to be faster.
- E-prescribing saves time and paper and makes prescriptions legible, reducing the chance for dispensing errors.
- Documentation of patient visits is easier to send to specialists since it can simply be selected from the patient’s chart and faxed or e-mailed.
Populations of patients can be aggregated by condition or medication or other characteristic. The practice used the system to create a list of all patients taking Avandia to warn them of some potential problems with the drug.

Patient education is facilitated with the tablets. Dr. Vassallo can connect to the Internet to show patients pictures and diagrams to better explain diagnoses and treatment decisions.

Dr. Vassallo expects that other benefits will be realized as he and Chalifur become more familiar and skilled with the EMR. The system contains guidelines for common problems, such as hypertension, but Dr. Vassallo says, “It does have guidelines for certain diseases, I don’t use them though because I’m inexperienced with the system still.” The system can also generate preventive treatment reminders, which is a module Dr. Vassallo is beginning to use, but hasn’t fully implemented yet.

Patients have responded positively to the EMR. Chalifur says, “They think it’s excellent. They think it’s very ‘electronic age.’ They especially like the electronic prescriptions.” Dr. Vassallo reports that “patients get a kick out of it. They say, ‘Wow, that’s cool!’ It gives the appearance that I’m on top of things.”

Vassallo says he’s not worried about the possibility of being exposed to legal issues from using an EMR: “I’m not concerned. I mean I’m too worried about getting the practice up and running.”

Financial Implications

Dr. Vassallo says implementing the EMR and practice management system did entail some unexpected costs in terms of time and money. “It’s been expensive,” he says. “When you consider the cost of the system and the components and training, it’s a large investment.” But, he adds, “We’ve saved on billing, filing claims, and probably decreased staff costs.”

Challenges

Although the practice is pleased overall with the EMR, it hasn’t been without challenges. Dr. Vassallo reports that he is still dictating and paying a transcription service because the voice recognition software he purchased crashes his system. He also says that documenting directly into the EMR is slower than dictation, which is the opposite of what he expected.

Since he hasn’t been able to spend the time building templates to his specifications, the system isn’t as flexible as Dr. Vassallo or Chalifur wants it to be. One specific issue that Chalifur notes is that she “can’t put in a diagnosis for a new patient. For example, if a new patient comes in with a previous diabetes diagnosis, I have to put in the symptoms of the chief complaint, not the diagnosis.” Dr. Vassallo says he’s been “playing with the history and physical portion of it. A lot of people don’t fit into boxes. The templates are sort of a bummer.”
**Excitement and Potential**

Despite a few frustrations, Dr. Vassallo and Chalifur are happy with the EMR. Using the system means “having everyone’s charts right at your fingertips [and] all of our medications are electronic. The doctor hardly writes any prescriptions. He e-faxes and e-prescribes,” Chalifur reports.

Dr. Vassallo is looking forward to having enough patient data and enough knowledge of the system to be able to graph and average all of the HbA1C’s of all of his diabetic patients. He adds, “Pay for performance is going to be huge and I’ll be ready with cholesterol monitoring, HbA1C monitoring, BMIs, patient demographics. If they mandate reporting, it will be easier for me than if I had used paper.”

Vassallo also sees EMR as a competitive advantage in attracting both patients and clinicians. “I think it says something about the practice—that we’re willing to adapt and embrace new things.”

Dr. Vassallo is planning to spend more time using the template builder so he can continue to customize the system to his practice’s needs: “In the future I see [the EMR] being really handy, when I finally have it the way that I want.”

One of the most exciting things about the system for Dr. Vassallo is “the ability to take this thing anywhere.” He recounts the following example of the benefit of accessing patient records off-site:

> I had a patient I was struggling with treating. When I was up north a few weeks ago, I was asking another doctor about my patient and I was able to show this other physician what I was doing with the patient and he helped me come up with new medications. I e-prescribed them, called the patient, and it seems to be working out.

Michigan Medical PC

A two-physician primary care practice switches from one EMR to a better one

Practice Profile

Michigan Medical PC (MMPC) is a physician-owned, multispecialty group practice with more than 200 physicians spread across 19 west Michigan locations. This case study describes EMR use from the vantage point of MMPC’s Coopersville location, which offers primary care services to patients from Coopersville, Allendale, Conklin, Fruitport, Grand Rapids, MArne, and Spring Lake. MMPC Coopersville has two full-time physicians who see an average of 40 to 45 patients each work day; MMPC Coopersville has six employees (five FTEs).

MMPC uses Medical Manager’s practice management and EMR system. The Coopersville location has been using the practice management system to perform scheduling and billing functions since Dr. Greg Gadbois opened the practice location six and one-half years ago; they’ve been using the EMR for five years.

Why the EMR?

Dr. Gadbois says that implementing an EMR was promoted at the corporate level of MMPC but he welcomed the opportunity when he joined the practice: “When I was in discussion with MMPC about starting out here, they mentioned EMR and I was wholeheartedly for it. I had no reservations.” Gadbois says he viewed EMRs as a way to improve efficiency and documentation, increase patient safety, and reduce costs. He says the EMR allows him to maintain a low staff-to-physician ratio of 2.5 to 1, which “allows me to see only 20 patients a day and know that I’ll be able to pay my bills.”

Although Dr. Gadbois and his staff were ready to use an EMR, their enthusiasm is not shared throughout MMPC. Most are using the system, but, Gadbois reports, “there are still some offices that don’t want to switch to EMR. Some don’t trust it or they aren’t comfortable using computers.”

Preparing for and Choosing an EMR

Dr. Gadbois was not involved in the initial assessment of practice management and EMR systems. He says the practice began using Medical Manager 11 years ago, even before the system had an EMR component. He says, “Medical Manager realized early on that EMR was a burgeoning market and they had to put something together. They put together an EMR and plopped it down on the other part. Since we already had the practice management part and they gave us a good deal on the EMR, we used it.” He adds, however, that MMPC is outgrowing the Medical Manager system and has found that the

- Specialty: Primary care
- 2 physicians
- Using EMR for 5 years
- Location: Coopersville
practice requires capabilities the current system is unable to offer, so they are in the process of switching to a new vendor—Epic.

Dr. Gadbois sat on MMPC’s committee to select the new system and describes the process they used to make a decision. First, with the help of a consulting firm, the committee identified specifically what they want in a system. Gadbois says this resulted in a 20-page-long checklist. Next the committee developed an RFP that was sent to vendors. The committee graded the proposals they received against the criteria they had already developed and narrowed the list to seven or eight companies before finally selecting Epic. Gadbois says the following criteria were key to their decision:

- The system had to integrate practice management with EMR.
- The company had to be comfortable working with a large multispecialty group practice.
- The company had to be stable.
- The system had to provide easy access to patient information, lab work, imaging, and demographics.
- Patient and practice data had to be sharable across sites and include the ability to aggregate that data.

**Going Live**

Dr. Gadbois and staff at the MMPC Coopersville site received occasional training from Medical Manager’s IT staff over a period of three or four months, which Gadbois says was effective. Support from Medical Manager has also been very effective, although Gadbois says their responsiveness has been slipping; he believes this is due to their awareness that MMPC will soon be switching to a new vendor.

Gadbois reports that the practice didn’t lose any productivity in switching from using paper charts to an EMR: “We were already utilizing certain parts of the product. I was already dictating, which I continue to do now. If anything, I got more efficient very quickly.” Gadbois suggests that the “immaturity” of the site at the time of the transition contributed to the ease with which they made the switch. He says, “We probably had only 800 patients and staff scanned in the charts as appointments were scheduled. With a more mature practice with, say, five doctors, it will take a lot of time and they’ll have to reassess how they do their job.”

Gadbois anticipates that even though patient volume has increased substantially in his office and another full-time physician, Dr. Kendal Gluck, has joined him, “my staff will have a very easy transition to Epic. We’re already computer-oriented as opposed to staff who are used to seeing a paper chart. All I’m doing is changing the interface, not the structure.”

**Using the EMR**

At the MMPC Coopersville site, the physical presence of paper charts is long gone. This, Gadbois says, represents an enormous savings to the practice. “MGMA [Medical Group Management Association] says it costs $4 to $6 every time you pull a chart. At my last
practice, people would be there past closing just to pull charts for the next day. Not having to deal with paper charts cuts down overhead,” he says.

The EMR is used for documenting patient visits, e-prescribing, and intra- and inter-office messaging. Dr. Gadbois says it took him “a month, tops” to get how to use the EMR. Although, he adds, “It might take longer as we start to utilize templates with Epic.”

Drs. Gadbois and Gluck each have a tablet they take with them into patient exam rooms, which they use to document much of the visit. However, both also still dictate, which they are hoping to discontinue when they start with the new system at the end of the year. Although the current EMR and practice management system are “functional,” as Dr. Gadbois puts it, “It’s nothing we could continue with in the long term.” But, he adds, “I would never go back to paper and pen. Ever.”

Current and Future Benefits of EMR

The EMR currently in use by MMPC has offered several benefits to the Coopersville site:

- The physicians can access notes and labs from specialists within MMPC by going online.
- Since the system is Web-based, patient charts can be accessed from physicians’ homes.
- E-prescribing has resulted in fewer prescribing errors and the prescription is automatically documented in the patient chart. In other words, physicians don’t have to write the prescription and then note it in the patient’s chart.
- The efficiency offered by the system allows the site to have fewer staff and to see fewer patients than they might have to if they were using paper charts.
- Needing to see fewer patients also means that the physicians are able to spend more time with the patients they do see.

Patients have responded favorably to the system, too. “Especially to the e-prescribing,” says Dr. Gluck. “When I first started sending prescriptions right from the room, they were amazed.” Dr. Gadbois adds, “More importantly, no one’s complained about the system.” He believes this is because the transition was fairly seamless for patients: “Just like in baseball, the best umpires are the ones you don’t even notice.”

Even with these benefits, Drs. Gadbois and Gluck look forward to the transition to Epic, which they believe will bring a host of other benefits. Quite often their comments about the benefits of the current EMR are tempered with the qualification, “but Epic will do this better.”

Right now, the EMR doesn’t speed up physician documentation. The doctors hope that using the Epic templates in conjunction with voice recognition software will make documentation faster and eliminate the need for transcription, saving the office $24,000 annually.

While the current system has allowed some efficiencies to be realized, more can be done, and it is expected that Epic will deliver. The current system doesn’t address undercoding, but Epic will have a feature that helps the practice assess the accuracy of coding. The
current system also does not facilitate more clean claims, but again, the practice is banking on Epic’s practice management component to do this.

Another area that is lacking in the current system is a focus on quality of care. One way in which they believe Epic will be a vast improvement over Medical Manager is in its capability to “make sure patients are getting the preventive care they need. It will remind us that a patient needs an annual physical, for example.” Not only do the doctors see this as a way to improve the quality of care, but Dr. Gadbois notes, “It’s a way to increase revenue. When we know what patients need, we can call them to get them in for an appointment.”

Epic will also allow physicians to access information on patient care guidelines and to have ready-made patient handouts regarding certain conditions. Dr. Gadbois says, “I’ll be able to select a document and have it print out at the front-desk for the patient to pick up on the way out.” When Epic is in place, patients will have access to certain parts of their own records online as well.

Once Epic is installed, the doctors plan to use the system to aggregate populations of patients with chronic illness, too. They’re currently tracking the parameters they will measure in a separate computer program (not Medical Manager) in preparation for transferring that data into Epic so they will be able to, for example, find the average HbA1c of all diabetic patients.

Drs. Gadbois and Gluck are not at all concerned about being exposed to legal issues due to using computer-based medical records. Dr. Gadbois says, “I don’t have any issues. The IT department is very cognizant of safety information.” And, he adds, “There’s just as much risk with paper as with a computer system.”

**Financial implications**

The initial investment in Medical Manager was minimal for MMPC Coopersville given that the office opened after the system had already been purchased and, as Dr. Gadbois noted, productivity loss was minimal if any when the office began using the EMR.

Gadbois says the cost of the new system will “be millions of dollars and there will be down time and lost revenue across the entire practice [MMPC].” However, he is confident that the transition will not affect the bottom line of his office too negatively. He adds that even with the large initial investment, “it’s a financial benefit in the long term.”

Drs. Gadbois and Gluck believe the capabilities of the new system will lead to further savings above what has been realized through the use of Medical Manager’s EMR, including the elimination of dictation and transcription and increased speed of documentation through templates.

**Challenges**

Most of the EMR challenges faced by MMPC are specific to the current system they are using. Among other things, the system doesn’t support templates, it doesn’t easily allow the practice to aggregate populations of patients, and it doesn’t provide the practice with
preventive care reminders for patients. These problems, they hope, will be addressed by the new system.

**Excitement and Potential**

Drs. Gadbois and Gluck are looking forward to implementing the new practice management and EMR system later this year. They see it as an opportunity to continue to improve the quality of the care they provide their patients. Dr. Gluck says the disease-management capabilities will be especially helpful because it can be difficult to keep track of the various patient care guidelines that are available: “It’s too complicated to provide care without having something there to help you.”

Dr. Gadbois says he thinks the new system “takes us into the twenty-first century, where we should already be.” The physicians are not concerned that the system might detract from their ability to form strong interpersonal relationships with patients. Dr. Gadbois says, “I think this is still a very human job.”

**Words of Wisdom for Other Practices**

Drs. Gadbois and Gluck offer the following three pieces of advice for other practices that are considering implementing an EMR:

- Know what you want the system to do for your practice.
- Conduct a thorough search for a system that meets those needs.
- Maintain realistic expectations.
Family Tree Medical Associates

A rural family practice thoroughly plans and implements EMR

Practice Profile
Family Tree Medical Associates (FTMA) is a primary care practice in Hastings that provides care to patients throughout Barry County. Patients also come from Battle Creek, Grand Rapids, Kalamazoo, and Lansing. Three full-time physicians and two part-time nurse practitioners (1 FTE) see an average of 75–100 patients each workday. FTMA has 23 employees, 19 of whom work full time and four who work part time. The practice is a member of two physician organizations, the Barry Physicians Alliance, with 35 physicians, and the much larger Physicians of West Michigan.

FTMA went live with its EMR system in June 2007 after more than a year of exploration, internal meetings, and vendor assessments. (This site visit was conducted one month after the go-live date.) Everyone in the practice believes that this preparatory work was absolutely necessary to ensure that the EMR system chosen met Family Tree’s needs.

Why the EMR?
Family Tree wanted an EMR that met both patient care and business needs. “The EMR can bridge these two goals. The return on investment was intriguing, but it was more about customer service,” explains Debbie Mays, the practice manager. “What more can I give the patient?” Family Tree’s physician champion Troy Carlson, MD, saw the EMR as a way to improve patient care through efficiencies: “We’re trying to manage a large variety of patients. Our patients desire efficient customer care—they understand that efficiency gives us more time with them.”

A key aspect of the electronic medical record decision was the physicians’ desire to balance life and work. At the very beginning of the process, Mays asked the three physicians what their personal and professional goals were. She also wanted them to define Family Tree’s role in the community. All of these factors would drive the kind of EMR and practice management systems that Family Tree would investigate and eventually choose.

To get physician buy-in for EMR, their personal needs had to be paramount. “The doctors and nurse practitioners wanted to see more patients and have more personal time,” says Mays. “They wanted to monitor patients more closely. They wanted easier access to internal reports (staffing, business). They wanted the ability to share information across providers to better care for patients. They also hoped to promote self-care and empower patients.”
**Preparing for and Choosing an EMR**

In preparation for EMR, Family Tree undertook a systematic review of internal work processes, with assistance from the Michigan Peer Review Organization’s Doctor’s Office Quality—Information Technology (DOQ-IT) program. DOQ-IT helped FT develop an RFP that “would attract vendors that were serious. We wanted a vendor that would meet our specifications, time table, and price,” says Mays. Carlson notes that “DOQ-IT had a good outline for how to look at an EMR contract and what to look for in a system.”

Family Tree’s evaluation of the four vendor finalists involved its entire staff: “Everyone was on board with EMR, in part because the physicians were up front about their fears,” states Carlson. Each staff person completed an assessment checklist during the four vendors’ on-site demonstrations.

After careful consideration, the choice came down to two Web-based systems. The winner—eClinicalWorks—gave Family Tree access to a user comment site so clinicians and staff could see positive and negative comments about their own system. This transparency led Family Tree to ask more questions about how the vendor was addressing client concerns. It helped with contract negotiation: “One of the biggest complaints lodged against the vendor was that its support stinks,” says Mays. “We were able to build weekend and after-hours support into our contract. And support is good so far.”

As is true of most practices, physicians and staff at Family Tree used technology before EMR adoption. Clerical staff checked patient copays and coverage through the computer, though paper claims were still common in billing. Some referrals to specialists had been done online over the last couple of years. Doctors have used PDAs and the Internet, but not in any systematic way as part of patient care.

A great deal of time and thinking—by physicians, nurse practitioners, other clinical staff, and the office manager especially—went into the planning for EMR and evaluation of vendors. As nurse practitioner Kathleen Carlson explains, “No one’s going to hand this to you. You have to do your homework and stand your ground. You have to force the vendor to make the system your own.”

Troy Carlson makes it clear that the practice must be relentlessly assertive with the EMR vendor: “Small offices need an implementation specialist—IT and clinical—to help manage the headache. You need to be aggressive with the vendor. They want to give you an off-the-shelf product, and you’ll want some customizing. Also, eClinicalWorks oversold its product—they told us it could do more than it can easily do. They’re lacking in customer service. But they do have a great product.”

**Going Live**

Members of eClinicalWorks’ staff were on site from June 4 through June 15, 2007, to conduct training for everyone at Family Tree. Debbie Mays says that practice staff were trained in multi-disciplinary teams rather than separate trainings for billers, front office staff, nurses, and physicians and nurse practitioners. “The vendor didn’t want to do it this way, but we took control of the training process based on what worked for our practice.”
Family Tree was satisfied with the training. As Dr. Carlson states, “Training was effective. We’re using about 80 percent of what we learned. We’re not ordering labs yet. Now we need another level of training to address new questions.”

The trainer left on June 18, having done four days of troubleshooting after the formal training had concluded. Mays and Carlson figure that clinicians were seeing 50–75 percent of the patients they would normally see during the month-long EMR training and transition. Family Tree had made a point of telling patients 3–4 months beforehand that appointments would be harder to get during the transition and they took it well. After a month, the practice is back at full volume.

**Using the EMR**

Front office staff are scanning documents directly into the system, including into patient charts, rather than copying. Billers have made the huge transition to all electronic billing statements—they are doing very well, as they are not afraid of the new technology and welcome it. Physicians and nurse practitioners are using laptops and tablets in patient rooms. They send referrals electronically and most prescriptions directly to pharmacies. It took clinicians a week or so to “get it” with EMR. Only a month in, physicians find themselves asking “Is that all I have to do? It’s so easy.” Using the technology has removed the need for transcription completely.

Kathleen Carlson describes a significant shift in how work is and might be done: “Now we could do everything: order labs, send prescriptions, referrals, print education materials. Staff used to do all of that for us. We used to have to delegate, but it’s right at our fingertips. We haven’t figured out how delegating work will happen over time.” At the same time, she adds, “[With EMR], the work is mentally straining: You were in a groove for so many years and now we feel overwhelmed with how much you can do for a patient because it’s all at your fingertips. You’re managing the patient in the room far more than with a paper system. Case management is now possible. It wasn’t in the paper world. We can graph out non-compliant diabetic patients’ values and then ‘grab’ the patient and be proactive not reactive. A lot of opportunity is available through EMRs.” Carlson adds that it takes time to get comfortable with the system, after which the physicians and nurse practitioners will be ready to “dig deeper to figure out the best ways to use the system.”

The EMR may reduce Family Tree’s need for staff, Carlson explains: “We don’t want to lose the personal touch, but we may not need the same level of staff. We need the right people. We need higher-thinking individuals to maximize time. Now we’re looking at the quality of staff, not just quantity.”

**Current and Future Benefits of EMR**

Family Tree’s physicians, nurse practitioners, and office manager see many benefits already with their EMR:

- Physicians have to handle information (orders, referrals) only one time.
- Refills and new prescriptions can be filled more quickly. Except for controlled substances, the physician hits a key and the prescription is sent to the pharmacy.
Outgoing referrals to other doctors and specialists are much faster. The patient note can be sent right to the specialist, without waiting for dictation.

Providers enter information in patient charts once in real time and it is then available for everyone to see—everything is accessible (labs, x-rays, phone calls).

Flow sheets of chronic conditions on the EMR show what the patient needs and what information is missing. Lab values come into the flow sheets automatically.

No time is wasted chasing lab reports and paper charts.

The practice management system allows for preparation of a higher percentage of clean claims, which means faster reimbursement from insurers. The average time for payment of a claim has declined from 30 to 14 days.

Physicians can review patient records off site.

Lab test and x-ray results are posted in the system as soon as they have been completed, provided that the laboratories have this capability.

Family Tree also noted that some areas have not emerged as benefits or will only do so down the road. The undercoding module is too conservative, according to Kathleen Carlson: “If you’re not coding right to begin with, the system won’t help you. Coding is still very much individual qualitative decision making.” Caregivers believe that EMR has the potential to allow them to spend more time with patients, but it will take time before they can understand all the patient information to be mined in the EMR. Interfacing with hospital EMRs has the potential to streamline information exchange, but it is as yet largely unrealized. “We are working with the local hospital to order labs electronically, but the hospital is not set up for this yet,” explains Mays.

Family Tree sees great promise in the years ahead for EMR to facilitate case management, patient education, preventive treatment reminders, and trends in patient data. Dr. Carlson is excited that “we will have the ability to sort information (such as lab results) and sort by condition/organ. This will be huge down the road. That’s the power of the system: It will allow us to proactively manage patient care, not just react to patients.”

The practice is beginning to consider a patient portal and kiosk that would allow patients to go to a secure site to see lab results, e-mail providers, request refills, and schedule appointments. “That is exciting,” states Matthew Garber, MD. “Patient education will be beneficial when it’s integrated into the system. There’s a lot of room to grow.” Eventually, Family Tree would like to do group visits for patients with the same illness and have a patient library. The EMR helps make this happen for a small practice.

Patients have generally responded well to EMR in the examination rooms. “Using the laptop or the tablet isn’t any different from flipping through charts when talking to patients,” says Kathleen Carlson. “You can also show patients the wonders of EMR, how it can help them more. You can share what you’re doing and involve them in their care.” Dr. Garber feels that “it hasn’t impeded patient interactions at all.” Dr. Carlson adds that “patients are excited, but are concerned about security of their confidential information in a Web-based system.”
Family Tree believes that EMR protects them from liability concerns. “We don’t lose charts and we have good, clear records,” says Mays. Dr. Carlson agrees: “EMR raises the bar for safety. And I look at it that it facilitates consistency [of care and documentation], which improves quality of care.”

Financial Implications
In Dr. Carlson’s estimation, Family Tree spent roughly twice as much money as it initially thought it would implementing its EMR, including hardware, software, training, outside IT consulting, and related phone system improvements. This does not take into account the staff time involved in preparing the RFP for vendors and evaluating them, as well as lost productivity during training and transition. As the physician champion, Carlson figures that he alone spent 275–300 hours in these activities.

Nevertheless, Family Tree sees its return on investment emerging already. It will save $30,000 annually in transcription costs. Faster reimbursement due to more clean claims helps a good deal as well. In time, fewer staff may be needed. The practice believes it will recoup all costs in 18 months. Dr. Carlson also sees EMR as a competitive advantage in attracting clinicians who want to work in a state-of-the-art practice, an advantage that has obvious financial benefits.

Challenges
Implementing the EMR was both easier and harder than Family Tree expected. Dr. Carlson captures this well: “It is more work than we expected. It takes mental fortitude. But five weeks in, it is going better than we expected, probably because of our preparation.” Kathleen Carlson elaborates: “The system gives you so much to think about, especially the potential to do more for patients. How do you manage all the new patient information at your fingertips? You’re doing less by rote, though you’d think the EMR would make it otherwise.”

And it is not only patient information that the EMR reveals. Debbie Mays explains that “the system makes it transparent that people have different abilities. EMR shines the light on people’s strengths and weaknesses.” How the practice manages this will be an ongoing challenge.

Implementing an EMR in a physician practice is hard work. “It feels like climbing a mountain—and we spent a lot of money,” states Dr. Carlson. And there are a number of kinks that need to be worked out, for physicians and nonphysicians alike:

- Vendors’ lack of knowledge of small practices and their unwillingness to individualize implementation are very bothersome. The bottom line is that they have a product that they want to fit you into rather than vice versa. “We worked hard to avoid a cookie-cutter product.”

- The EMR has a very generic review of organ systems. Family Tree had to set up its own templates.

- The system is not set up for nurse practitioners and physician assistants, who are considered “resource staff.” NPs and PAs are seeing patients and the EMR should be user-friendly for them.
Dialogues between caregiver and patient have to be transferred into a computer system. EMR doesn’t easily accommodate lengthy conversations with patients, which limits long conversations—just has brief statements to check.

Until a practice sets up its own templates, it is very difficult to make exceptions—such as prescribing less common dosages for certain medications.

For the office staff, scanning patient records into the EMR can be slow.

One major frustration is not knowing enough about computers and technology. The practice has to rely heavily on an outside IT consultant.

Excitement and Potential

Despite the struggles, Family Tree’s team is enthusiastic about the EMR and its potential. “Everyone is on board,” says Dr. Carlson. “Our teams see that this will work well for us. We’re just impatient that it won’t happen tomorrow.”

Patient care is foremost when Family Tree providers think about the EMR. “It brings us to a level of care on a consistent basis,” says Dr. Carlson. “And the difference between good and great is consistently high quality care.” Kathleen Carlson has “great expectations. I’ll get to practice the way I’ve always wanted to. We will get to be partners with patients.” Dr. Garber sees greater efficiency as the practice customizes more of the templates: “We’re using only a fraction of the EMR capability.” And Family Tree sees EMR in a broader, community context as well: “The tool is freeing us up as a health care organization to start reaching out to the community. We can move on to bigger and better things. I can’t wait to get to the case management aspect of it,” says Kathleen Carlson.

Words of Wisdom for Other Practices

Family Tree suggests that other practices consider the following ideas as they move to implement an EMR:

Practice knowledge and assessment are essential. The better you know your practice in all its details, the better you will be able to pick the best system and insist on proper implementation.

It is really up to the physicians to build the systems to meet the goals they set.

Have the right IT person. The day-to-day management of the system required Family Tree’s outside consultant to work many hours. This person, whether it be an employee or a contracted consultant, must be able to manage the technical aspects of the EMR and speak to laypersons about it.

Create opportunities for the entire staff to meet to talk about EMR. It is important to debrief on how the system is working for everyone. People yearn to learn from each other. These meetings can also be used to develop the next set of EMR priorities and functionality for the practice.
Mansion Street OB/GYN

OB/GYN practice using EMR for ten years and still going strong

Practice Profile
Mansion Street OB/GYN is a specialty practice in Marshall that provides care to patients who come primarily from Marshall, Albion, and Battle Creek. Three full-time physicians and one full-time physician assistant see an average of 50 to 70 patients each work day. Mansion Street has nine full-time and one part-time employees.

Dr. Mark Walker, the owner of Mansion Street OB/GYN, reports that the practice has been using computers for scheduling and billing for 12 years and has been using an EMR for ten.

Why the EMR?
Dr. Walker says that when he and his wife started the practice, they “knew things were headed this way and [we thought] if we could get on computers now, why not?” He also believed an EMR could offer several benefits over paper charts. An EMR would allow the practice to:

- Save money on charts, supplies, and space
- Save time on note taking and filing
- Improve legibility of notes and prescriptions
- Easily reproduce charts without photocopying
- Provide remote access to patient charts
- Improve documentation of patient care

Dr. Walker says he and his wife and staff were in agreement about the purpose of implementing EMR. Although, for staff, he says, it wasn’t a big change since they had already been using computers for billing and scheduling. He and his wife were ready for the challenge of charting on computers and, as new doctors have joined the practice, they’ve quickly adjusted to working in a paperless world.

Preparing for and Choosing an EMR
Since it’s been at least a decade since Mansion Street began using an EMR, choosing an EMR was not very difficult, according to Dr. Walker: “There weren’t all that many available. And I like Macs and I don’t like Windows because it locks up. Very few vendors did anything with Macs, so it limited who I would investigate.”

Of the products that were available, Dr. Walker says “some had good practice management systems and bad EMRs and vice versa. I ended up pulling different pieces together into sort of a hodgepodge system [initially].” Since then systems have improved and Dr. Walker says he is still working with the initial vendor, which unrolled an updated product last year that Mansion Street now uses.
**Going Live**

What Dr. Walker recalls most about the experience of his office implementing its first EMR is that he spent a lot of time “writing a whole bunch of templates specific to OB/GYN” because “at that point the system was fairly crude. The original system wasn’t designed to be very dynamic. I would use fields for things they weren’t intended for. It was makeshift.”

Mansion Street OB/GYN implemented a completely new version of their EMR in 2006. With this update, the practice experienced some of the challenges common to other practices that are implementing EMRs for the first time. Again, Dr. Walker spent quite a bit of time building templates: “I took all my own templates and redid them for the new system.”

The practice also lost some productivity in the transition. The office was closed for two days for training and because the new system has “a completely different architecture” from the old system, according to Walker, “it meant learning a new program.” Old patient files can not just be opened in the new system, either; they must be transferred into the system, so this has taken time as well.

Dr. Neysa Bartlett reports that with the new system “It’s always a learning process.” Still, she believes physicians and other caregivers “were very comfortable [with the system] within a month.” Dr. Walker concurs: “It took anywhere from a couple of weeks to six weeks to fully get it. And over time there are still issues, but fewer and fewer.”

**Using the EMR**

Previously Mansion Street had a computer in every room; now each provider will have a laptop that s/he carries with him/her. Even with easy access to the technology, a couple of the physicians prefer taking paper notes, but following the patient visit, they enter the information into the computer.

If the front desk staff need a copy of a patient record, they can simply pull it up and print it off, which is inarguably quicker than looking for a paper chart and photocopying it. They are also able to easily fax records and patient notes to primary care physicians or hospitals. Billers use the system to verify documentation for coding when they send out claims for reimbursement and nurses are able to verify prescriptions when pharmacists call with any questions.

Mansion Street OB/GYN uses its EMR system only for gynecology patients (about half of the practice’s patients). Its obstetrics patients’ records are all maintained in the hospital’s EMR system. According to Dr. Walker, this hasn’t been problematic or created any confusion. “If we’re seeing an OB patient we simply go to the hospital site.” This is actually an improvement over past practice that required Mansion Street to use paper records for OB patients and send them to the hospital approximately five weeks prior to the patient’s expected due date. Now the hospital has the patient’s records no matter when the actual delivery takes place. Being connected to the hospital’s system also allows the obstetricians to monitor patients’ labor from the office rather than having to go to the hospital. When the patient is hooked up to a monitor, the physicians can “watch” the contractions from their computers.
Overall, staff and providers are happy with the EMR. Dr. Walker “wouldn’t do without it. There may be better systems out there,” he says, “but this one is easy to use and it serves us well.”

**Current and Future Benefits of EMR**

Several benefits of the EMR for Mansion Street OB/GYN are apparent:

- Documentation of patient care is thorough; more detail is captured through the use of templates.
- Providers have ready-access to patient histories and medication lists. They can easily see which prescriptions they have given to patients, even for past years.
- Using the EMR allows physicians and other caregivers to spend more time with patients.
- Populations of patients can be easily aggregated to track any number of care measures. This is incredibly difficult with paper records.
- Patient notes and prescriptions are legible.
- The system is accessible off-site.
- Charts aren’t lost and time is not wasted searching for them.
- The system facilitates clean claims. If billers have questions, they can look at the patient note to double check for appropriate documentation.
- The system prevents ordering duplicate tests or prescribing duplicate prescriptions. If a patient’s physician is unavailable, another physician can easily look at the patient’s record to see what care has been provided.

Mansion Street OB/GYN is also looking forward to a few features being added to the EMR. Soon the system will allow them to send prescriptions electronically and a coding feature will enable them to double check that they are coding appropriately. They will also be purchasing a signature pad, similar to those used at many retailers, to accept customer signatures for credit card purchases. Mansion Street will use this feature to enter a patient’s signature directly onto a HIPAA form or other paperwork requiring a signature, thus eliminating one more piece of paper that they now collect and scan into the system.

Mansion Street doesn’t plan to use the system to access information about treatment alternatives, since the Internet is readily available with myriad sources of good information. “Besides,” Dr. Walker adds, “EMR programs can’t keep up with new care guidelines.”

Patients have responded very positively to the EMR and appreciate having physicians who are using new technology. “Most are pretty excited when they see me using the computer,” reports Walker. “They view you as being at the forefront, progressive. Patients like that; they find that appealing.” Dr. Bartlett concurs and adds that patients are beginning to expect this of their health care providers: “I think they’re expecting most physicians to be moving in this direction. I think patients feel that it’s really capturing what they’re saying.”
Mansion Street is not at all concerned about the possibility of being exposed to legal issues due to their use of an EMR versus paper charts. “We have password-protected security for employees so there isn’t unauthorized use. And we back up and back up and back up. If a computer goes down, our data is secure.” Sharon Schmidt, the practice’s office manager, adds, “We’ve had site visits from insurance carriers. They don’t seem to have a problem with the system. They can download charts and audit them. They know it’s secure.”

**Financial Implications**

It is difficult for Mansion Street to consider its EMR in financial terms since it has always been part of the way they do business. Dr. Walker believes, though, that if he were to start again today with two physicians and six staff, he could have a system up and running for $25,000, including purchasing the necessary software and hardware. He knows that other practices are spending much more than that but he thinks some vendors “are ripping other people off with fees for support and other monthly fees.”

As far as cost efficiencies and savings, Dr. Walker says EMRs can help cut down the amount of staff necessary to run a practice: “You don’t have to have a file person; you don’t have to hunt for charts; there’s no more paper shuffling.”

**Challenges**

Mansion Street OB/GYN reports few if any challenges associated with the EMR. Perhaps having an EMR as part of the practice for so long means that EMR challenges are simply business challenges. But Schmidt points out that it can be bothersome to have to toggle between the old version of the EMR and the new version if a patient’s record hasn’t been completely transferred to the new version. She quickly adds, however, “It doesn’t seem to have any effect on work flow, though.”

Dr. Bartlett notes that she tends to include more in patient notes than other physicians do so she generally finishes a patient note after the visit rather than in the exam room. But, she says, this doesn’t mean that the EMR slows her down. She says the amount of time it takes her to document a patient visit in the EMR is equivalent to the time she spent documenting in paper charts.

Dr. Walker says “I’d always like for it to be able to do more things, but no system can do everything. And this one does well at a lot of things.”

**Excitement and Potential**

Mansion Street OB/GYN is excited about the present and future of EMRs. Schmidt says of the current system, “I just think it’s a cleaner cut way of tracking productivity and looking for what tests are missing. You can look at whether things are cost effective. It gives you exact numbers. You can run reports on what types of surgeries people have had done.” But, she adds, “Knowing Dr. Walker, there will be evolution. He’s always thinking of ways to make it more efficient.”

She’s right. Dr. Walker says, “The EMR is convenient. If you have a chart system you don’t know who has the chart. [With EMR] There’s no paper getting lost. If a patient calls with a problem you can find out easily what’s wrong and doctors can schedule
patient appointments from home.” He adds, though, “It’s not as complete as I want it yet. We’ll get more advanced and become more efficient.”

**Words of Wisdom for Other Practices**

Mansion Street OB/GYN can offer a few suggestions to practices considering implementing EMRs:

- **Spend enough time creating templates that fit your practice.**
- **Search out a vendor that meets your needs and is not going to surprise you with hidden costs.**
- **Obtain strong backing of as many providers in the practice as possible to ensure the EMR’s success. If the providers don’t understand the system and provide their input, it won’t work.**

Dr. Bartlett encourages other physicians to start moving toward EMR implementation: “You can be an early adapter or a late adapter [but] it’s the way of the future.”
Women’s Health Center of Alpena

Ready to implement EMR, but waiting for the local hospital

Practice Profile

The Women’s Health Center (WHCA) is located in Alpena (population 11,000), but sees patients from Alpena and five surrounding rural counties. The practice—with two full-time obstetrician/gynecologists, one part-time family practice physician who has done a fellowship in OB/GYN, and a full-time nurse practitioner—has not yet implemented an EMR, as it is waiting for the local hospital to make a long-delayed decision on its system. The WHCA has 19 staff and 15 FTEs, including the clinicians.

The WHCA has an electronic practice management system now for scheduling and billing. Physicians use PDAs and ePocrates to check on prescription drugs and review clinical guidelines and provide patient handouts. They can also pull radiology test results electronically from the local hospital.

Why EMR?

Office administrator Betty Smigelski and Christa Williams, MD, say that the practice will implement EMR for many reasons. “I’d be happy if our staff size and the number of patients we see stayed the same,” explains Dr. Williams. “I think we’ll spend more time with patients and be able to bill at higher levels. And we’ll get home sooner. It’s a quality-of-life issue, too.” She envisions that EMR will improve the quality of care: “We want to be more clinically adept. We don’t want to miss issues of managing patients.” Dr. Williams cites as an example that it is valuable to “have a coherent problem list and allergy list at my fingertips—and a medications list that is up to date all the time.”

There are more specific benefits that they hope to see as well: “We spend a lot of time looking for charts,” Smigelski says. “And the doctors will be able to fax lab and x-ray orders from their laptops before the patient leaves the exam room.” In addition, Dr. Williams notes that they hope to improve coding, ease scheduling, and avoid the costs associated with transcription. “We’re looking for a system with a good OB component and one that can easily generate a clinical note,” she concludes. “We also want to be able to easily customize the templates. And, of course, it has to be affordable.”

Her colleagues have largely entrusted the investigation into EMR systems to Dr. Williams: “I haven’t sat down with them to discuss the details. But they are gung ho. As the physician champion in the practice, I’m more hesitant to jump. The hospital is about to pick a system, and it hasn’t interfaced with the practices in Alpena that already have EMR. We’re afraid of choosing a system that’s not compatible with the one the hospital chooses.” She notes that this concern about the hospital’s choice may have a great deal to
do with the extent to which the practice’s physicians see their patients in the hospital and rely on it for testing.

**Assessing EMRs**

As with most practices considering EMR, the assessment has been thorough. “To prepare,” explains Dr. Williams. “I reviewed the American Academy of Family Practice website and its recommendations, but mainly I looked at what users said about various systems. I read discussion groups.” Smigelski says that they then had demonstrations from five vendors: “We saw the first two, who were weak, and we’ve become more selective.” Initially, they settled on one vendor and began contract negotiations, “but then we heard bad things from users about its training and that it wouldn’t negotiate its service contract.”

The practice pulled back and now will likely chose one of three vendors: eClinicalWorks, eMDs, or Practice Partners. Dr. Williams says, “I have a fairly good idea of the system that we’ll pick, but if the hospital chooses one with a good outpatient system and we don’t hook in, we won’t be able to communicate with it for years.”

They are worried, too, about implementation, “especially transitioning the charts,” says Smigelski. “We’ll have to pare down schedules, and we’re booked out several months, so it’ll be a scheduling nightmare.”

**Financial Implications**

Dr. Williams says she expects a return on investment from EMR: “Every vendor who has demo’ed for us says so,” she notes with a chuckle. “We know it won’t come as fast as they say it will.” The initial investment is admittedly scary, and maintenance costs are “unbelievable,” Smigelski adds, but they hope to save on transcription costs and more clean claims. In the end, however, states Dr. Williams, “it’s quality of life more than increased revenues.”
Medical Arts Health Care

A rural health clinic finds an enjoyable challenge in EMR

Practice Profile

Medical Arts Health Care is a Medicare-approved rural health clinic providing primary care services in Houghton. Patients primarily come from the Houghton-Hancock area, but the practice also serves patients from outlying areas, as far as Ontonagon and Baraga. Three full-time physicians, one part-time physician, and one part-time nurse practitioner see an average of 70 patients each work day. Medical Arts has ten full-time employees.

Prior to implementing its EMR system in fall 2006, Medical Arts office staff used computers for billing and providers had PDAs for looking up medications and keeping calendars.

Why the EMR?

Mark Shebuski, MD, who made the initial push to move Medical Arts toward an EMR system, listed several reasons for promoting it to his colleagues. Dr. Shebuski saw EMR systems as a way to prevent adverse drug interactions, increase legibility of prescriptions, reduce overhead costs, provide better documentation for billing, and save time. “We spent too much time trying to find charts and we had lost a couple of charts,” Shebuski reports. Occasionally Dr. Shebuski would have to come back to the office from the hospital to get patient charts, so he was also looking for the ability to access patient records off-site.

Not everyone at Medical Arts was as excited about the possibilities of an EMR system as Dr. Shebuski. “Most people were reluctant,” he says. “Front office staff were afraid of it. In fact, two people left because they were worried about the time it would take to use the system.” He adds, “As the owner of the practice, I could see the benefits. But others couldn’t.”

Preparing for and Choosing an EMR

Dr. Shebuski admits that although he is happy with the EMR system the practice purchased, when it came to preparing for the assessment of different EMRs, “We probably didn’t prepare as well as we should have.” About eight different vendors sent disks with sample demonstrations of their product to Medical Arts. From those, Shebuski says they narrowed the group to four. Two vendors provided an online demonstration and two came to the Houghton office to conduct a demonstration. Ultimately, the practice decided to purchase a system from Praxis.

Dr. Shebuski says the assessment of the various vendors and the final decision to go with Praxis were based on several criteria. He had read reviews in technology magazines, and,
of course, he considered the cost of each system, but he also looked for answers to the following questions:

- How closely does the charting system match the current paper chart?
- Does the system facilitate communication among staff?
- How much do we have to build ourselves and how long will this take?
- Is it compatible with voice recognition software?
- Does it have a pharmacy/medication module to check for adverse reactions?
- Is it capable of faxing prescriptions to the pharmacy?
- How easy is it to print information for patients?
- What do other customers think of the system?

**Going Live**

Medical Arts paid for ten hours of on-site training from Praxis. Since going live with the EMR in early 2007, additional training has come from free online webcasts and from Dr. Kim Dovin, whom Dr. Shebuski now refers to as Medical Arts’ EMR physician champion. Although Shebuski was the initial champion of implementing an EMR system at Medical Arts, Dr. Dovin has taken on the work of helping implementation go smoothly. Dr. Shebuski states, “Once we were on our own, it was difficult. But in-house training from our physician champion, who would talk to our trainer and watch webcasts, has been very helpful.”

As Medical Arts incorporated the EMR system, Dr. Shebuski estimates that the practice lost about 15 percent of its productivity. He says he’s still getting out of the office later, but, “we’re almost back to the full number of patients.”

Judy Lell, Medical Arts’ medical records custodian, notes that “Once you have the training, you need practice.” Dr. Shebuski agrees and says that as the office transitioned to the EMR system, they would close the office and “take one or two hours on Thursdays every other week and use the time to practice.” He adds, “We were slow at first with patients; now we’re quicker.”

**Using the EMR**

It took only weeks for physicians and other caregivers to “get” how to use the system and overall everyone at Medical Arts is pleased with how well it works. Work flow at Medical Arts has so far changed only slightly with the implementation of the Praxis EMR system. “Office work flow is still changing as we learn more about what we can do,” Dr. Shebuski states.

Prior to implementation, nurses would pick up a patient’s paper chart from the reception area and bring the patient into an exam room, where they would take patients’ vitals and ask about the reason for the visit. This information would be written down on a piece of paper that would get “stuck” to the front of the patient’s chart and placed on the door of the exam room. The doctor would then conduct a patient visit, including reviewing medications, handwriting prescriptions (if necessary), and identifying any testing or labs needed. If possible, the doctor would dictate the visit right away. Otherwise it would wait
until later that day or evening. A nurse would then schedule any necessary tests or labs and send paperwork to the lab.

Since the implementation of the EMR system, a computer has been placed in each exam room and providers use it to record all components of the patient visit, rather than shuffling paper charts around the office. Now when patients register, they show up on the system as “arrived.” A nurse takes the patient into an exam room and records vital statistics directly into the EMR and also reviews the patient’s medication list and asks if he or she needs any refills. The nurse also records the reason for the visit directly into the EMR. To signal that the patient is ready to see the doctor, the nurse places the patient’s super bill—rather than the entire paper chart—on the door of the exam room. While in the room with the patient, the physician enters an assessment and visit objectives into the EMR. Nurses can order most labs and tests directly through the computer and can easily e-mail the patient note to the lab. Prescriptions can be sent electronically to pharmacies.

Making the switch to running a medical practice electronically takes time and sometimes the “old way” of doing business will continue. Lell reports that of the four providers at Medical Arts, two have completely transitioned to using the electronic charts but two are still using paper charts in addition to electronic charts, although she expects that “they will probably be done [with the paper charts] within the year.” In addition, Dr. Shebuski says that although he uses the computer to enter the assessment and objectives, he still dictates the subjective part of the visit as well as the plan of care for the patient. He notes that “some EMRs have plan templates, but they might not work for us. They might not accurately reflect the conversation with the patient.” Most of the time he uses a voice recognition program to dictate right into the chart, but when he gets behind, he dictates the entire visit into a Dictaphone and has a transcriptionist enter the dictation directly into the patient’s chart.

Of the EMR system as a whole, Dr. Shebuski says, “I think it has a lot of value.” Lell notes that “It has cut chart hunting down by 90 percent. It saves medical records staff a lot of time.” Dr. Shebuski adds that “medical records staff are usually the first to leave; they used to be the last to leave,” and, he adds, although “some of the nursing staff have trouble typing and it takes them longer, they’re becoming more comfortable.”

**Current and Future Benefits of EMR**

Several benefits of the EMR system are apparent:

- Staff and providers can locate reports more quickly, resulting in fewer phone calls to hospitals and referring physicians.
- Appointment scheduling is easier.
- A patient’s complete history is available at the click of a mouse.
- The system speeds up objectives and assessments.
- Records are neat, legible, and thorough.
- The EMR can be used to chart individual patients’ hemoglobin, blood pressure, or other vital statistics.
- Medication lists are more complete and accurate and prescriptions are legible.
Phone messages are entered directly into a patient’s chart and flagged for follow-up by a physician, who can reply directly through the system.

Lab reports from hospitals that are sent electronically can be uploaded directly into patient records.

The system facilitates more clean claims. Medical Arts hasn’t had a claim rejected since implementing Praxis.

“Dictation is more efficient,” according to Dr. Shebuski, since he dictates (most of the time) directly into the record. However, he jokes, “I still don’t know how to make answers to patients’ questions more efficient.”

Dr. Shebuski adds that “the EMR doesn’t lose things.” This is what lies behind the practice’s confidence in the system to be a support rather than a hindrance in any sort of legal dispute. Dr. Shebuski says, “I’m not worried. I think documentation is better now.”

Patients also seem to like the system and none have voiced any concerns about how the information in their records is being used or who has access to the data. Lell says they like it because they can “add or change things as they view the record with the doctor.”

Sharing patient information with specialty care physicians outside Medical Arts is easier now, too. Although the practice is unable to send the information electronically yet, Lell explains that “when the patient has a referral, we can easily pull everything from the electronic chart to mail, fax, or e-mail to the specialist. It’s easy to print off exactly what we need.”

In the future, Medical Arts may expand its use of the EMR system to meet a broader set of practice objectives. Dr. Shebuski says the primary obstacle, however, is time. For example, he says they “haven’t used the system to aggregate populations of patients because I don’t know how much time that would take.” Medical Arts could also use the system to access information about treatment alternatives or recommended guidelines, but this takes time as well: “It’s an option, but we haven’t done it. We use the Web instead. Time is the issue. We could put documents in the EMR to use with patients, but we haven’t had time.”

Medical Arts is planning to begin using the Praxis recall module in the near future, though. This will assist with scheduling patients for follow-up visits. Dr. Shebuski reports that Medical Arts is also “working on being able to give hospitals access to certain parts of the system” to facilitate continuity of care.

**Financial Implications**

Dr. Shebuski says implementing the EMR was a major investment for Medical Arts, including costs for the system itself, training, hardware, and voice recognition software. The practice has also acquired the services of a local IT professional to help support the system. This financial outlay does not include the cost of the initial drop in productivity. Although some savings have been realized in terms of efficiency for office staff and reduced transcription needs, it will be some time before a return on the investment will be realized. Even so, Dr. Shebuski is not unhappy with the decision to implement the EMR system, and Lell adds, “I would hate to go back to the old way of doing things.”
**Challenges**

Although Medical Arts staff have been happy with the system overall, it hasn’t been without its challenges. One of the frustrations of using the EMR system for Dr. Shebuski is that it slows him down. Dictating an entire patient visit is quicker than recording part of it directly in the EMR and dictating another part. And while the intra-office message system has its benefits, Dr. Shebuski says the process of communicating with staff and other physicians through the EMR system is slower than he’d like: “I didn’t expect how long intra-office messaging would take; handwriting was quicker.” He also notes the time involved in creating an EMR system that meets the specific needs of his practice. Overall, this is Dr. Shebuski’s biggest complaint about the system: “The biggest issue is time. It should be faster. I didn’t expect it to take more time.”

However, the time involved in entering information into patient charts is offset by the fact that records are now more thorough and legible. Dr. Shebuski is especially pleased with the improvements he has seen in the accuracy and completeness of patient medication lists: “We thought we were pretty accurate before,” he says, adding, “But we’re finding out that we weren’t.” Dr. Shebuski also notes that “Annual exams have actually gotten faster. Once a patient’s past medical history is in the chart, you just hit the ‘annual exam’ button and it pulls up all the history that would be part of the exam.”

Another issue with the system—although Dr. Shebuski believes it is minor—is that the practice’s designation as a Rural Health Clinic creates a different set of billing rules for Medicare and Medicaid beneficiaries and the system is not set up for billing those patients. This means that a separate billing system is still being used in the practice for those patients.

**Excitement and Potential**

Dr. Shebuski remains excited about the EMR and says, “I enjoy the challenge.” He’s thrilled with the fact that with the EMR charts are at his fingertips and they’re legible and complete. He likes that he can write prescriptions more quickly and be confident they’re correct. His confidence in the accuracy of patient medication lists is especially important to him. Lell says what excites her most about the system is it’s “proficiency—the ability to see a report in the chart at first glance instead of going through stacks of paper.”

**Words of Wisdom for Other Practices**

Perhaps because of the time involved in getting the system to do what Dr. Shebuski wants it to, his primary piece of advice for other practices is to “figure out what’s most important to do first. What do you really want to get out of it right now? Then add more if you can.”
Practice Profile

A small but growing multispecialty practice, Eye and ENT Specialists (EENTS) has five full-time physicians, two optometrists, an audiologist, and an optician. Including these professionals, the practice employs 32 people in the equivalent of 20 full-time positions. The main practice office is in Hastings, a city of 7,100 people, with an office in Charlotte (near Lansing) open one day a week and a new satellite office opening in Caledonia (adjacent to Grand Rapids) in October. The entire practice sees 95–100 patients a day.

Why an EMR?

EENTS went live with its electronic medical records (EMR) and electronic practice management system in January 2006. The practice actually had a DOS-based practice management system for many years before this. Part of the impetus for the new systems was the physicians’ desire to keep up with the latest technology. A bigger part of the decision, however, according to practice administrator Jean Aldrich, was “physician quality of life. They spent hours at the end of the day dictating. Now they can see more patients and be done sooner.”

The practice had high hopes and many expectations for EMR. But first there was a fundamental challenge: “We have two specialties and no system was strong in both,” explains Aldrich. “Some weren’t even doing ophthalmology.” The physicians also wanted to spend more time with patients: “I love taking care of patients. Getting rid of dictation was a huge motivator. It’s redundant to do it [see the patient], think it, chart it, and then have to dictate it,” says Kimberly Norris, MD, the practice’s ophthalmologist. “I was also looking for clarity of documentation and speeding provider referrals.” Aldrich adds one more benefit: “Efficiency. We hoped to avoid spending a lot of time looking for charts.”

Preparing for and Choosing an EMR

EENTS has had EMR for more than a year, longer than many small practices. “We actually wondered if we were starting too early,” says Aldrich. “We felt like pioneers in the small practice world.” Having said that, she notes that they went through a long and thorough process for evaluating systems—two years, in fact. To start, Aldrich says she read journals and talked at length with vendors at specialty society meetings. Then the
practice formed a multidisciplinary team with physicians, administration, billing and front office staff, medical assistants, and eye technicians. “I hand picked them because they were most enthusiastic about change,” she states. “Then we chose six or seven vendors for the first cut. These vendors demo'ed their systems and we asked them all a set list of questions, based on the wish list that our team developed.”

After the vendor presentations at the practice, Aldrich and Norris spoke with existing customers. The decision was then narrowed to two finalists. “It was very important that the system interface with ophthalmological equipment,” states Dr. Norris. “We wanted the data to be sent directly to the EMR without a scribe inputting it manually.” She adds that vendors are fond of saying that their system “can do something, whatever you ask them. We insisted that the vendor’s system must have already done it. That’s why talking to other doctors was essential.”

The practice selected NextGen because, among other things, it had systems in a few ENT practices and committed to getting templates from those practices for EENTS to use and modify. (Unfortunately, this arrangement is still being worked through.) Dr. Norris says, “We decided to go with a more customizable system, which was good, but that required more work on the front end. We’ve had to develop our own templates. We’re reaping the benefits now.” Aldrich sums it up: “It took us years—you can’t rush it. We stepped back a few times and reassessed. We took time and made sure what we got was what we needed.”

**Going Live**

NextGen’s training was “phenomenal,” says Aldrich. “They never led us astray.” The practice used a train-the-trainer model, with five core trainers then explaining the system to the other staff. Two physicians were among the five core trainers, so they learned a great deal about the details of the system, but they did not, in the end, have time to train other staff.

EENTS set up 20 stations in its conference room and encouraged staff to come in early and on weekends to get comfortable with the testing environment. Then they began entering actual patient information. On the first day live, a clerk asked how to enter certain information in the record. Aldrich’s response is telling: “The same way you always have; you just do it on the computer at your desk rather than walking down the hall to find the chart.” EMR is both very different from and the same as the practice’s previous way of doing things.

The transition to EMR was painful, according to Aldrich, but EENTS “lost little productivity because we trained and prepared during lunch hours and after hours.” The practice also chose to stagger implementation: “The vendor told us to cut our patient schedule in half,” she explains, “but instead we transitioned by keeping some patients on paper [medical records]. We put only our on-hour and on-half-hour patients on EMR, which is about a third of our patients.” Aldrich estimates that it took the practice 12 weeks to get 90 percent of its patients on EMR.

The key was that “nurses and techs wanted to get patients on the system,” says Aldrich. “And we gave everyone an ‘out’: they could use paper if they got too stressed. We put the
patient before the process and it all eventually worked out.” In the end, there was a modest decrease in visits, but it was not the result of a conscious decision to schedule fewer patients.

Support after training and going live has been “perfect,” to use Aldrich’s term. “NextGen always calls back within two hours and starts resolution of a problem.” The project manager phoned her at a set time each week to go over the practice’s problem list: “Everything on the list was resolved,” Aldrich states, and surmises that this success is because the support team had experience running physician practices. These weekly calls continued for 18 months.

Aldrich and Dr. Norris figure that it took physicians 3–4 months, on average, before they were comfortable and more efficient with EMR. “The doctors varied in the time it took. One is a perfectionist and didn’t ‘get it’ until everything was just so, particularly adjusting the templates to suit her practice,” says Norris.

Using the EMR

“The doctors are driving this now,” says Aldrich. “They are tired of carrying charts around. Eighteen months in, we wouldn’t go back to a paper world.” She believes that they made “the right decision on the right products, thanks to careful planning.”

EMR both changes and does not change the way that physicians care for patients. Dr. Norris explains that “there was a learning curve. You have to learn to work a bit differently. I thought I was in a good rut, but I had to change—we all had to. But now it’s as good or better than it was.” She spent a lot of time adjusting the EMR templates so that they mirrored the paper forms they had developed for themselves, but acknowledges, too, that EMR forced them to change practice in small ways to conform to the templates. This give-and-take with the templates is time consuming, Dr. Norris admits: “In hindsight, I wish we had the resources to build templates up front. Changing templates is not easy and that would have made us more efficient sooner.” She also says that she can delegate more work now because the chart is transparent to everyone in the office—the paper chart was not.

Having said all that, Dr. Norris states, “EMR doesn’t change how I examine or think through care for a patient.” Aldrich adds that EMR “won’t fundamentally change doctors’ behavior. If they didn’t like to document, it won’t change that, though it does have prompts to nudge them along.”

The nonphysicians in the office varied in their response to EMR. “We lost one key person—a nurse—who couldn’t deal with it,” says Aldrich. “She’d been with us for 15 years and couldn’t adjust to entering information on the computer. We knew we’d lose a few, and people were more stressed out than they let on.” At the same time, EMR “is much more point and click for staff. It’s black and white, and they can work with it.” She concludes that the billing staff love it because they do not have to track down charts for coding and billing.
Current and Future Benefits

The EENTS physicians see many benefits to the EMR. It significantly speeds up and improves physician documentation, according to Dr. Norris: “I love to create the note in the patient chart, hit the button, and it’s faxed to the primary care physician. Before, that had to be done separately.” The physicians also like immediate access to patient charts offsite, the fact that they do not have to look up adverse drug reactions, avoidance of dictation and transcription costs and time, and the EMR’s ability to generate preventive treatment reminders for patients. All of these contribute to efficient and effective patient care.

Thanks to EMR, communication with hospitals is improving as well: “We have a strong link on x-rays. The local hospital now accepts our EMR documents as pre-op reports, so we don’t have to fill out new forms,” says Norris.

EMR means that the physicians can either see more patients or spend more time with patients. One otolaryngologist in the practice has increased his patient volume by 5 percent because of EMR: “We don’t spend more time with patients because our philosophy has always been that the patients get the time they need,” explains Aldrich. Dr. Norris, however, does spend a little more time with patients, as the EMR helps give her that: “The scribe is with me and documents in the chart as I examine the patient. I review everything in the chart every day, but I now spend less time writing and reviewing at the end of the day.”

EENTS has used the aggregating capability of EMR to send out targeted patient mailings. The practice will soon begin contacting diabetic patients to make sure they have an annual eye exam. There is a financial benefit, too, as the ease with which aggregating can be done qualifies the practice for the new Medicare 1.5 percent quality bonus.

On the nonclinical side of the practice, EMR has fostered several improvements:

- Space (120 square feet) was gained where patient records were stored. The practice will create a new office and a permanent space for the server.
- Compliance auditing, which EENTS takes very seriously, can be done more efficiently because data can be extracted from EMRs faster than from paper records.
- Alerts are automatically sent to the billing manager when claims fall outside the practice’s contracts, which have all been imported into its electronic practice management system.

Unlike some other practices, EENTS has not seen a big difference with EMR for undercoding or cleaning claims, even though the vendor pushed these as adding significant value.

In the future, Dr. Norris hopes that equipment and EMR vendors will work together more so that patient values can be streamed automatically into the EMR without manual inputting. Aldrich intends to create a space in the practice so that the medical assistants can interview established patients, updating their history and taking vital signs. This will mean less waiting for patients. “We look forward to making enough time to do all the EMR allows us to do. Our tech-savvy doctors want to have the latest tools,” she states.
Both Dr. Norris and Aldrich see EMR as a competitive advantage in attracting patients and clinicians. Younger physicians expect it and patients, especially those under the age of 50, see it as evidence of higher quality care and lower risk of losing their chart.

**Patients and EMR**

EENTS has had no negative comments about the use of computers in exam rooms, and the practice randomly samples its patients every month about their visits. One physician uses a scribe and the others type in notes while the patient is checking out. Dr. Norris acknowledges that she has to “be careful that the computer doesn’t come between [her] and the patient. I can put the tablet on my lap and look at the patient.” She adds that patients like that they are in a state-of-the-art practice. “A few fear loss of the medical record,” she asserts, “but I tell them there was a much greater chance of that with the paper record.”

The practice has gone to great lengths to assure the security of its system. At the outset, EENTS hired a hacker to try to break into the system. He was not successful. The EMR is also set up so that any access to a patient record is time stamped, so that no one can modify charts after the fact. This actually helps with liability concerns, as it addresses the issue of tampering, if it were ever to arise in a liability action.

**Financial Implications**

EENTS expects to see a return on its investment in EMR in 5 to 7 years, given that it is committed to ongoing training—the practice is changing templates and updating the software continually and this consumes people’s time. “This is an ongoing investment,” states Dr. Norris. “It may take us longer to get return on investment because we bought a more expensive system that we felt would allow us to practice higher quality medicine. That is not a bad investment by any means. A practice is not all about money and we’ve reinvested in the practice to get better and better.”

There have been some immediate financial benefits. EENTS is well poised to document quality and therefore earn the Medicare quality bonus. The practice added a new physician, who will spend much time in the new office in Caledonia, without adding staff. The new office requires no chart storage space, which freed the practice to have an extra examination room. More clinical space is always good, Aldrich says. EENTS has also saved on transcription and printing patient record forms.

Aldrich offers some valuable financial insight on the negotiation with the vendor:

> NextGen has the image of being expensive, but you really need to compare apples and apples among vendors. I put everything on a spreadsheet. NG included everything it could possibly offer us and we negotiated down. The other vendors bid low and had many add ons. We wanted NG and were shocked by the original bid cost, especially implementation support. But we called others using the system and they helped us decide how to trim support costs. It worked out well—and we haven’t had to buy extra support time.

She believes that this due diligence had a large role in keeping EMR costs down.
Challenges
The learning curve has undoubtedly been the biggest challenge with EMR, in Dr. Norris’s estimation. Despite the fact that the practice chose a system with templates that were more readily customizable than those of the competing vendors, it still required time and effort: “Think about it: you have to take what happens in a doctor’s brain and translate that into a computer template.”

Aldrich feels she went into EMR selection and implementation with her eyes wide open—and NextGen exceeded her expectations on training and support—but the change wrought by EMR is constant: “I expend a lot of energy keeping it going after 18 months, making sure we don’t stagnate.”

Excitement and Potential
All in all, however, Aldrich is pleased with EMR: “I’m proud of the accomplishment, being part of a small practice on the cutting edge. We’re better for it.” Dr. Norris sees it similarly: “It has improved my quality of life—I spend much less time reviewing charts at the end of the day.” When she reflects on the entire process, she acknowledges that “it wasn’t easy, but it’s worth it.”

Words of Wisdom for Other Practices
- Much is rightly made of the importance of having a “physician champion if a practice is to implement EMR. It is equally important that the practice have a non-physician champion. The office administrator or manager must spearhead efforts because, obviously, doctors must continue to see patients and generate revenues. This is especially true with implementation.
- Vendors are fond of saying that their system can do whatever you ask them. Insist that the vendor show you that its system has already done it.
- Establish a regular (weekly or biweekly) call with the vendor’s project manager to go over the practice’s problem list.
- Ask if the training and support team includes people who have run physician practices. They are best equipped to understand and address the issues you will face.
- Have an outside hacker try to break into your system.
Preferred Medical Group

Primary care practice increases efficiency with EMR while building EMR physician network

Practice Profile

Preferred Medical Group (PMG) is a primary care practice in Madison Heights that provides care to patients who come primarily from a 15- to 20-mile radius surrounding the practice. Five full-time and two part-time physicians and two full-time physician assistants see an average of 280 to 300 patients each work day. Preferred Medical has 26 employees. The practice is a member of United Physicians, a 1,900-member independent physician organization (IPO).

Prior to implementing its EMR system, PMG providers were using paper charts, but much of the front office work was already being done on computers, including billing, scheduling, and checking patients’ insurance coverage.

Why the EMR?

Drs. Marc Weisman and Larry Lieberman, the champions of implementing an EMR system at PMG, give two primary reasons for their decision. “First,” Dr. Weisman says, “we were trying to increase the efficiency of the office. Second, we were trying to get a network of physicians together.” The second goal refers to the fact that it was through membership in United Physicians and participation in the IPO’s IT Committee that Drs. Weisman and Lieberman came to select Misys as the EMR to implement at Preferred Medical Group. Dr. Weisman had wanted to bring an EMR system into his practice for a long time and he welcomed the opportunity to work within an IPO to select a system.

United Physicians’ IT Committee went through a selection process similar to that which many individual physician offices go through in selecting an EMR. The primary difference was that United Physicians planned to promote its final selection to its members with the idea that a large network of physicians could use the same system and, ultimately, be able to share patient information when appropriate.

While working with a network of physicians was important to Drs. Lieberman and Weisman, the purpose of EMR adoption that others in the office related to most was the need to increase efficiency. The practice was running out of space and hunting for charts was becoming a problem. Karri Carpenter, the practice’s office manager states, “Charts were everywhere and they took up a lot of office space. We used to really have to look for charts.” In fact, while the practice was transitioning to an EMR system, it was also adding more office space on another floor of the building. Although the addition was not a consideration in the decision to implement an EMR system, Dr. Weisman reflects that,
“We wouldn’t have been able to work with the expansion without an EMR. We would be running up and down stairs to get charts and reports.”

**Preparing for and Choosing an EMR**

Since Drs. Weisman and Lieberman sit on United Physicians’ IT Committee, they were able to describe the selection process. When choosing an EMR vendor they looked at how many successful launches a company had made; whether the company was “physician-friendly”; the size of the company and its financial standing; how many other practices use the system; and customer testimonials. After narrowing the list of potential EMR vendors, the IT committee interviewed three or four and ultimately chose Misys, which Dr. Weisman says is popular in Michigan. The doctors report that the entire selection process took just over a year.

Preparing for the launch in the office took some time as well, primarily to convince office staff and other providers that the decision made sense for the practice. Dr. Lieberman notes that “We and Karri were ready,” but adds, “our more than 20 office staff were pretty hesitant and we had one doctor who barely used computers.” As Carpenter describes it, “Staff were open-minded, but they were nervous and the other doctors were worried about how the system would affect their speed.”

Once Misys was chosen, a large amount of work was done by Drs. Lieberman and Weisman to create templates and enter other information into the system. Carpenter explains that she and Drs. Lieberman and Weisman designed the EMR content for Preferred Medical Group. She says, “It was a lot of work for the doctors, who spent hours of personal time at home. The system was set up for specialty practices, not primary care practices, so we spent up to six months putting in information to make it work the way we wanted it to.”

**Going Live**

Misys provided on-site training to PMG providers and staff prior to the office “going live” with the new system. Each staff group (doctors and PAs, front office staff, and medical assistants) received about one week of training. PMG was pleased with the training. Dr. Weisman says, “It was especially effective for Larry and me; then we did a lot of troubleshooting in the first six months.”

As the Misys system was implemented, PMG saw fewer patients and staggered the implementation among providers. Carpenter says, “We had a reduced patient load for about two to three weeks and we started out with two doctors using the system, then two more, and so on.” Dr. Weisman reports that the practice “lost about 35 percent productivity for maybe a month, 25 percent for another month, 10 percent for another month, and then we were back to full capacity.” He adds, “We’ve actually added a doctor and a PA without adding support staff.”

Carpenter says implementation “was a slow process. Getting the [front office staff] to find where they needed to look in the system took time. They weren’t any slower than they were with paper, but they weren’t as fast as they eventually could be with the new system.” On the other hand, she says, “When we first implemented the system, I said
‘Give us a year to adjust.’ It only took us three to six months to be up and running. Everyone learned the system faster than predicted."

**Using the EMR**

Patient charts, reports, and other documents are now being scanned directly into patient records. Front office staff have transitioned from the software they previously used to Misys Tiger, Misys’s medical practice management program that complements its EMR. Medical assistants each have a small tablet and physicians and PAs each have a larger tablet. Providers record patient visits directly into the EMR and transcription has been eliminated completely.

Dr. Weisman says of the transition to the EMR, “the biggest problem was ‘living in two worlds’—using both paper and computer charts and patient information for the first three to six months. We were proactive in choosing which parts of the patient chart needed to be in the computer to conduct a patient visit. We had 60 to 70 percent of patient chart information in the system by the six-month mark.”

As the complete transition to paperless charts takes place, front office staff have been assigned the responsibility of making sure that any paper information gets into the system, as Carpenter describes: “One front staff person is responsible for entering anything that is mailed to the office; one is responsible for entering test results; and one is responsible for scanning in patient charts. All of this gets scanned into the computer into a queuing system, where it’s queued to go in a patient’s chart. So we’ve hired another staff person to move things from the queue into patient charts.”

It took providers about four to six weeks to “get it” with the EMR system. Dr. Weisman says: “We set a deadline date at which we were going to terminate our dictation company—about a month after implementation. That forced people to learn the system. Two weeks later we were really ‘going.”’ And as new providers and staff join the practice, they are able to pick up the system quickly. “The new PA, who started after the system was in place, took about two weeks to get it, and new MAs pick it up right away,” says Carpenter.

Dr. Weisman says, “Universally, we really like it. No one wants to go back to the old system.” He notes that the nursing office manager, who is 61, was “initially resistant, but now when front office staff have a problem, they go to her to figure it out.”

**Current and Future Benefits of EMR**

Several benefits of the EMR system have emerged since implementation:

- When providers leave the exam room, they are finished with the visit. The chart is done, prescriptions are done, and there is no need to dictate or look over transcriptions.

- The practice management system has led to preparation of more clean claims, which means fewer rejections from insurers. Billers have easier access to the physician documentation of a visit and can, therefore, provide better support for the claims up front.
Communication between doctors and staff is improved. When patients call, staff can type a note to the doctor directly into the system and doctors can respond through the system.

Sharing patient information with specialists or other providers outside the practice is easier since patient notes can easily be printed and faxed.

Neither providers nor staff have to search for charts.

Signing patients in is faster. It used to take six to ten minutes; now it takes two to three minutes.

Providers can access records off-site, which is especially helpful when they are on call.

Test results, reference labs, and other patient information are available at the click of a mouse.

Patient problem lists, medication lists, and allergy lists are up to date.

The system has helped the practice avoid miscommunication, misplacing charts, and misfiling paperwork.

One thing the EMR doesn’t do is speed up physician documentation. Dr. Lieberman says, “I used to do a 30-second dictation. Using the computer takes two minutes. But the notes are far superior and they are immediately available. There is no wait time for dictation and I don’t have to proofread the notes.”

PMG is currently working on getting lab results directly from Beaumont Hospital. When this happens, lab information will come to the practice electronically so they won’t have to scan those test results into patient charts. This will have two immediately positive effects. First, it will eliminate three-quarters of the scanning the practice currently does (equivalent to one-half FTE). Second, and more importantly, the information will be in a digital format. When information is scanned in, it simply puts a picture of the test result in the patient’s chart, while the digital data will allow the practice to trend individual patient information.

The practice isn’t yet aggregating patient populations, although this is something they would like to do in the future. Dr. Weisman says of the Misys EMR, “I’m not sure it’s there or if we haven’t been appropriately taught that.”

Patients have responded favorably to the EMR. According to Carpenter, “patients are very positive about it. They find they have faster, more efficient visits because doctors don’t have to wait for patient records. Some are amazed. They also appreciate getting quick test results.” She notes, however, “A few think caregivers pay too much attention to the screen [instead of] to the patient. But this is only a very few.”

Drs. Weisman and Lieberman say they are not concerned at all that the EMR exposes them to legal issues that paper-based systems do not. In fact, they feel they are further shielded against legal battles. Dr. Weisman says, “We have zero concern about legal issues. We’re better prepared for audits or lawsuits. We really don’t think about it. The potential for compromising information is there, but it’s everywhere.”
Financial Implications
Dr. Weisman estimates that hidden and unexpected financial costs made Misys EMR and Tiger about 30 percent more expensive than he expected. He also says the loss of revenue from lost productivity was greater than expected.

However, some return on the practice’s investment is already being realized. Dr. Weisman notes that “Dictations before EMR cost $30,000 a year; this expense is gone. And we’re more efficient.” He also says, “We’re still at the investment state. It will be three to five years before we see money coming in as a result of the EMR.”

Challenges
So far, PMG has found only a couple of issues with the Misys EMR that they would like to see improved in future versions. Although the current version allows e-prescribing, Dr. Lieberman says, “We can’t connect pharmacy fax numbers to individual patients. We can fax through the computer, but we have to look up fax numbers. That leaves more room for error.”

The second issue involves generating patient reminders. Dr. Weisman explains, “We built preventive treatment reminders, but it’s not as automated as we’d like.” Currently, when providers want to schedule a patient to come back to the office for a follow-up visit related to a specific diagnosis or following a certain lab or procedure, they must note this specifically in the chart to generate a treatment reminder. They would prefer, however, that if a patient has a certain diagnosis or undergoes certain lab tests, that the system would recognize this and automatically flag the patient for follow-up. This is something they will look for in future versions of Misys.

Other than these issues with the system itself, Dr. Weisman notes that the biggest challenge was the transition. He says, “Living in two worlds was harder than expected. But we got through the hump.”

Excitement and Potential
PMG providers and staff have found that the EMR and practice management systems are meeting and exceeding their expectations.

Dr. Weisman notes another benefit of the EMR that helps him rest easier: “In the past, if the building would have burned down, we’d lose everything. Now the records are safe. Everything is backed up daily and kept off site.”

As the practice continues to use the EMR, Dr. Weisman says he hopes they will have “further automation in the way of labs and prescriptions.” And he hopes to “integrate with other systems, like RHIOs [Regional Health Information Organizations].”

Carpenter notes that new patients are hearing about the practice and its EMR from their friends. And, she notes, “They can find us online and download new-patient paperwork ahead of time.”

Dr. Weisman says, “I had high expectations [of the EMR] and they’ve been pretty much realized.” Carpenter says for the office staff, “I didn’t expect to come so far so fast. It’s
better than we expected. Even for people who were worried, the reality is better than they expected.”

**Words of Wisdom for Other Practices**

Preferred Medical Group offers the following advice to practices considering implementing an EMR:

- Conduct a careful search to find an EMR that works for your practice
- Spend the necessary time building the system to meet your needs
- Be proactive in choosing which parts of the patient chart need to be in the computer to get started
- Give yourself time to get over the transition of “living in two worlds” (paper and computer)
Asthma Allergy Centers of Southwest Michigan

A single-specialty group practice develops its own EMR

Practice Profile

Asthma Allergy Centers of Southwest Michigan (AACSM) is a single specialty group practice with 14 offices. The office locations are bounded by Jackson and St. Joseph in the east and west, respectively, and Holland and Coldwater in the north and south, respectively. Patients served by the practice come from about a 100-mile radius. Four full-time and two part-time physicians and one full-time physician assistant see an average of 150 patients each work day. An additional 250 patients visit one of six offices each day for allergy injections, which can be done by nurses and medical assistants. Across the 14 office locations, the practice has 41 employees, five of whom work part time.

Prior to implementing its EMR system in 2001, Asthma Allergy Centers was using computers for billing and scheduling patient appointments as well as for checking patient copays and coverage.

Why the EMR?

The fact that AACSM is spread out over 14 offices was a key factor in the decision to pursue an EMR for the practice. Giri Dandamudi, MD, says, “We have so many offices and communication is key for any practice management. You can’t have good communication across offices without an Internet system.” While having access to all patient records from any of the practice’s 14 sites is important, so is being able to access patient records from home or other locations. Sheila Wilson, a receptionist at the Battle Creek office, notes that this feature of the EMR improves the ability of providers to help patients: “If a doctor is paged in the middle of the night he can look at the patient’s record without coming into the office. Or if the patient is in the ER, he can look at the record to see what’s going on.”

Increasing productivity, improving patient satisfaction, reducing medical errors, and becoming more cost-effective overall are also reasons behind the decision to implement an EMR system at Asthma Allergy Centers.

Andrea Force, the practice manager, adds, “We were afraid a lot of mistakes were being made because of writing everything. We were afraid phone calls were not being documented and advice was being given and not documented.” Security of patient records was another reason for the move toward an EMR, says Force: “If a fire were to
happen [with the paper system] we would lose everything. Everything is secure with the EMR system.”

Sheila notes the system is also a good way to create uniformity in the way the practice’s 14 offices operate. She says the system offers a way “to put everybody in all locations on one level—all following the same steps.”

Force adds that the practice hoped the EMR would allow providers “to spend more time with the patient and doing patient education and not so much time writing and charting.”

**Preparing for and Choosing an EMR**

In preparation for implementing an EMR, Dr. Dandamudi pulled together a team of nurses and other staff to identify answers to the following questions: “What are their needs? What do we want to do with EMR? Only prescriptions? Only labs? What is our time frame?” Wilson says it was a lengthy process during which “Dr. Dandamudi held meetings with doctors and staff. Staff actually had quite a bit of input on it. We were telling him what we needed to make our jobs easier and to streamline [our work]. There was a lot of back and forth on ideas. He would give us an idea and we would say whether or not we think it would work.”

It was also important to address the fears of staff during the decision phase. “Most of the staff, I think they were worried about job security and doctors don’t [generally] address this issue up front. I told them I won’t lay off any staff because of computer system,” states Dr. Dandamudi.

It was in this way that the purpose of the EMR was clearly agreed to in advance, at least by those who participated in the meetings and those whom Dr. Dandamudi could convince to join him in this quest. He says that initially there was a lot of resistance from the other physicians in the practice, and the nurses and staff as well. Now he laughs about how others in the office reacted to his idea: “[The other physicians] were not ready. Whenever I would bring it up they would walk away from me. I was the only physician champion. So I developed it with the nurses. They weren’t ready either. But I’m the boss.”

AACSM identified a number of criteria an EMR would have to meet.

- The system must be Internet-based so information is accessible from each of the practice’s sites and from each exam room.
- It must be adaptable to changes in the practice.
- It needs to track allergy injections and patients’ reactions to allergy injections.
- The system should also have a mechanism to ensure that the correct patient is receiving the correct allergy shot.
- Billing and claims reports should be user-friendly
- An EMR system should be able to track patient wait time following an allergy injection. (Patients are required to wait in the office for 20 minutes after an injection in case they have an adverse reaction.)
■ It must produce real-time data. When information is entered from one office, it should show up immediately in the system so providers and staff at other sites can access it if necessary.

After spending some time clarifying what they were looking for in an EMR, AACSM had seven different vendors come in to demonstrate their products. Ultimately, none of the vendors had exactly what the practice was looking for, so they hired two IT programmers to follow staff and providers around the office for a year and to develop a system that would meet the needs of the practice.

The name of the system that was ultimately developed, and that Dr. Dandamudi now markets to other practices across the nation, is Module MD. The two programmers that followed the staff around along with eight billers are now working for the Module MD company, which Dr. Dandamudi owns. Module MD employs eight billers because the company provides billing services for many of the practices that purchase Module MD software.

Going Live

Since this was a self-designed program, there wasn’t a formal training for providers and staff; instead, Dr. Dandamudi says, “I just told other physicians how to use the system.” Force says of the physicians, “They’re all learning from Dr. Dandamudi. It’s a user-friendly system and they are all computer savvy. The PA is right on top of things, too.”

To ensure a smooth transition, the practice only rolled out one component at a time. Dr. Dandamudi says this approach helped them maintain the practice’s productivity during the transition: “We didn’t lose any productivity. We slowly implemented the system. We did the allergy module first, then prescriptions, then added lab orders.”

Force says of the transition, “We still got everything done every day. Everybody was gone by 5:00. Before we would be here until 5:30 or 6:00 to finish up. We didn’t reduce patient load at all; people just pitched in and helped each other as they finished their work. Doctors helped nurses if they were running behind.”

Providers and staff had an opportunity to practice with the EMR as well, which helped ease the transition. The program includes a training site where nurses and others who use the system can enter information about fake patients and try out the different parts of the system without worrying about making mistakes. Force has also made a practice of sending memos out to the 14 offices that contain step-by-step instructions for implementing the different modules of the system as they have been rolled out.

Using the EMR

When the EMR system was initiated, a PC with an Internet connection was placed in each exam room in all 14 locations. The front office of each location received new computers and began scanning lab results and other patient information into the system. Force says, “We try not to keep any new paper.” Communication between the office locations is now handled mostly through instant messaging.
The system has lessened the need for transcription services, but has not removed it completely. Dr. Dandamudi says he and other physicians usually dictate patient notes for new patients and have the dictation transcribed and then entered into the chart. For repeat patients, however, Dandamudi is able to pull up the information from past visits to populate a template to follow for the visit. The practice’s two part-time physicians, who are in their late 60s and plan to retire in the next couple of years, dictate all patient visits and do not use the EMR for data entry at all. Nurses transcribe patient notes into the computer record and ensure that other patient information is recorded in the EMR as necessary.

Experience with the system has been mostly positive for providers and staff. Estimates of how long it took for providers and other caregivers to “get” how to use the system vary. Force reports they got it within a week: “It’s literally so easy,” she says. She adds, “A lot of nurses didn’t really know how to use computers. But they picked it up within a couple of days.” Dandamudi and Wilson give a more conservative estimate of a few months, although Dr. Dandamudi adds, “They’re all into it now. Everybody likes it.”

Force explains that one of the initial challenges the practice faced with using the system was a lack of uniformity in how physicians were creating patient notes. She says, “It has changed a lot. When we first started, it was basically free-text or doctors would use templates. But the templates didn’t fit everybody so we had ‘Doctor 1 template,’ ‘Doctor 2 template,’ and so on. Now we’ve agreed to certain template language but it’s still modifiable.”

IT support has not been a problem at all for the practice. Initially, the programmers worked for the practice so they were readily available to provide technical support. Now that the programmers work for Module MD, support is still very good. Support is available 24 hours a day. During business hours the programmers are available by phone; after business hours, they can be paged. Force reports that she can easily “get them on the phone or use online support. Usually we get results within half an hour.”

While the programmers built the initial system and have been responsible for building new modules as necessary, tailoring the system to meet the needs of AACSM is largely handled in-house by the practice’s PA. Force says, “She’s been instrumental in setting it up. She built and wrote all of the templates based on what doctors told her. She also puts information in the system on all new medications that come on the market.” Force estimates that building and writing the templates has taken the PA only 20 hours all together.

**Current and Future Benefits of EMR**

The benefits of the EMR and practice management system for AACSM are numerous.

- Patients are seen more quickly when they arrive for their scheduled appointments. The scheduling module of the practice management system has helped staff schedule appointments more efficiently.
- Reimbursement from insurers is much quicker. The practice generally receives payment from insurance companies within ten days, since a higher percentage of
claims are “clean.” The billing system notifies the practice if information is missing from the claim or if a code may not be supported by the diagnosis.

- Physicians can review patient charts from anywhere in the office and off-site.
- Patient notes can be faxed to primary care physicians within a day; it used to take up to four weeks for transcriptions to come back.
- Prescriptions can be sent electronically. The practice no longer receives phone calls from pharmacists who can’t read the prescription, which used to be a daily occurrence.
- Lab and x-ray orders can also be e-faxed. Lab results can be uploaded directly into the system as soon as they are completed. One local lab already has this capability.
- Communication between nurses, staff, and physicians is improved. If a patient calls the office with a question, a nurse or other staff person simply enters the patient’s concern into the internal communication module of the system and the physician can see the note and respond from any office site or from home.
- Patient safety is improved due to the allergy injections module. The system calculates the next dose and serum vials have a number associated with the patient. Before administering the injection, nurses must enter the vial number into the system. That number must match the patient number or the injection will not be given.

Because other practices have requested it, Module MD does have the capability to suggest a level of coding. Dr. Dandamudi, however, doesn’t use this feature: “I don’t believe in EMRs offering this feature. I think it can lead to up-coding.” Module MD employs two full-time coders, though, who will double-check the codes of those practices for which it performs billing. Force says the coders pay special attention to “high codes to make sure documentation supports the code.”

The EMR is also capable of aggregating data. “I could look up how many patients in my offices between these ages have moderate persistent asthma,” says Dr. Dandamudi. Force adds, “we can request reports based on any information—demographics, diagnosis, medication type.” This ability has already come in handy, she says: “We had a drug company call and ask us if we had anybody with hereditary angioedema and we were able to look in the system and quickly find we had nine patients. We couldn’t have done this without the system. We’d have to go through thousands of patient records. Now we’re doing a drug study on those nine patients.”

Currently AACSM is using the system to generate automatic appointment reminders, but eventually they would like to use the EMR to generate preventive treatment reminders, which Dr. Dandamudi says the system can do.

Another plus is that physicians have more time with patients and are better able to provide patient education. Dr. Dandamudi says, “I’m not spending time writing a prescription or writing a lab order [when I’m with a patient]. I’m explaining things more clearly to patients and I can show them a picture of what I’m talking about on the screen.” He also explains that he is confident that the system is keeping track of what he needs to do at the end of the day so he is not preoccupied with concerns that he is missing charges due to an incomplete patient note. He says, “Spend time with the patient. At the end of the day, if I want to know what happened in the office, it’s there. If I don’t finish a
note, I can see that in the system so I don’t miss any charges.” Patients have responded positively to the system. Force reports hearing comments from patients who feel that nurses are better equipped to answer their questions and doctors treat them as if they were the only patient in the office.

The practice is also trying out new patient-friendly features of the EMR. They’ve created a patient portal, where patients can log-in with a username and password to review their medication lists, when they received their last allergy injection, and to review any payments they owe to the office. The providers have also recently given access to a communication portal to a few patients, who can send a message to physicians to request a prescription refill or to ask another question. Force says they are rolling this piece out slowly, though, “because we’re afraid patients will use it for emergencies and we only check for messages a couple of times a day.” So far, she reports, they haven’t had any problems and patients like being able to communicate with the office in this way: “It’s easy to use and patients just think it’s the coolest thing!”

Dr. Dandamudi comments that patients are usually happy to see a physician who is using technology to manage patient information. “It’s the doctor’s offices [that aren’t using EMR],” he says, “who are behind.” And, although some patients were initially concerned about privacy issues, Dr. Dandamudi assures them “it is more secure than Web banking.” He and other providers are very confident of the security of the patient data and are not at all concerned about the EMR exposing them to legal issues that a paper system would not. On the contrary, Dandamudi says, “EMR helps prevent malpractice. You can track lab results, you can track progress notes, you can track prescriptions.” Force adds, “Documentation is better now than before. Even when we give samples [of prescription drugs] it’s documented. I think we’re covered better legally.” The practice actually receives a discount on malpractice insurance because it is using the EMR system.

**Financial Implications**

Asthma Allergy Centers of Southwest Michigan is rare in that it financed the development of Module MD, but now the cost of the system is 7 percent of charges collected, just as it is for other customers of Module MD. This price includes the cost of the system as well as having Module MD perform billing for the practice. If Module MD were not doing the billing, it would charge the practice $200 per full-time physician per month.

Dr. Dandamudi maintains that costs for training and ramping up were minimal if they existed at all; although the expense is apparently the furthest thing from his mind when it comes to EMR and practice management systems, as he argues it should be for other practices as well: “Costs should not be a factor anymore. You have to use it, whether you like it or not. EMR will be required in the next five to ten years. If you use it efficiently it will save. Doctors look at it costing $50,000 and don’t see other savings.”

For AACSM, cash flow has improved because the system helps assure clean claims. Dr. Dandamudi also says it helps with charge capturing and that the practice collects 98 percent of charges within a month of submitting claims to insurers or sending bills to patients.
Challenges

One challenge fairly common among adopters of EMR is that it does not speed up physician documentation, but in fact slows it down. Dr. Dandamudi suggests that dictation is always going to be faster than recording information directly into an EMR. This is why he recommends that anyone implementing an EMR should dictate new patient visits, as he does, and use the EMR for repeat visits. Doing it this way, he says, allows him to see more patients. Force adds that even though EMR is slower, “It’s more complete and we can read it.”

Providers and staff at AACSM see few if any real challenges with the EMR and practice management system. Dr. Dandamudi admits, however, that he has “nightmares about connectivity. Keeping the system running is all depending on the Internet.” But, he adds, “In the last three years, the whole system has gone down for only about 15 minutes.”

Excitement and Potential

As the physician champion for the EMR system at AACSM, Dr. Dandamudi continues to be excited by the ways in which technology can be used to meet the objectives of the practice. He is looking to move toward what he calls second generation EMRs and describes his vision of the future through the lens of a patient looking for a new doctor:

I move into new town and have asthma. I want to be able to find a doctor and to look at insurance online to see who takes it. It shows the doctor’s credentials on the Internet. Once I choose a doctor, I inform my insurance company and inform doctor that I want that doctor—all online. I go to the doctor’s website and look for an open slot and request an appointment. The doctor's office responds that I'm booked for the appointment. The insurance company is notified and sends me a message as to my copay and what is covered as far as these services.

When I go to the doctor’s office, the receptionist welcomes me and takes me to an exam room. My insurance information has already been uploaded through the Internet. After the visit, the nurse and doctor notes are posted on a patient site so I can view them. The note goes to receptionist along with a time for scheduling the next appointment. The patient pays the copay and a claim is sent online to the insurance company.

Others in the practice may or may not share Dr. Dandamudi’s dream, but they are excited about how well EMR is working so far. Force says what is exciting for her about the system is that “documentation is so clear and complete. Everything is automatically dated and signed and you log in under your own password, so you know who wrote the note.” Wilson likes that it empowers her to take part in patient care: “I like that I can do prescriptions on the computer. It gives me more access and ability to help the nurses. If a patient calls about a prescription I can easily look it up in their chart and I can e-fax a prescription or do mail-order formatting as long as a patient has had the medication before and has been seen recently in our office.”

Words of Wisdom for Other Practices

Dr. Dandamudi suggests that other practices consider the following ideas as they move to implement an EMR:
- If it helps to have a paper chart with you, take the old chart into the room for the first year. Don’t try to scan in all of the old documents; just scan in the most important parts: the latest progress note, the latest lab report, important test results, and the medication list.
- Don’t cut short the training. Try to find a system with a training module so new staff and providers can practice doing everything they will do with real patients.
- Don’t wait for everyone in the practice to agree to implement an EMR. If you want to implement an EMR, one or two doctors or nurses have to push for it, but don’t expect everyone to be on board.
- Expect it to be two years from the day you decide to implement an EMR until everyone is comfortable with the system and let everyone know you expect it to take this long. If you give yourself two years you will have time to become truly comfortable with the system and you will begin to see some return on investment, which will bolster your confidence in the decision.
- Don’t be afraid to continue using dictation and transcription. Many offices try to cut out dictation to save on transcription costs, but if they use a mix of dictation and charting directly into the EMR, they will be able to see more patients, which will pay for EMR costs.
Wayne State University Physician Group—
Department of Internal Medicine

An academic practice tests EMR

Practice Profile
The seven-physician Wayne State University Department of Internal Medicine is part of the WSU Physician Group (UPG). As an academic practice, the internists see 25–35 patients a week, most of them from Wayne County. Only two of the seven physicians are now using EMR—they are “test” physicians as the UPG gradually expands EMR use across physicians and specialties. The internists without an EMR do use ePocrates for prescription medications. The practice also schedules and bills electronically.

Why EMR?
Anupam Goel, MD, one of the two physicians in the practice using the EMR, explains that the Wayne State University Practice Group started with ophthalmologists when it implemented EMR three years ago: “UPG began with ophthalmology because the specialty was in the forefront of data-intensive images, so it went with NextGen, which was their preference.”

Dr. Goel had no say in the decision on the selection of the EMR, but he did want to be a test physician for internal medicine: “The writing is on the wall. If you can’t keep track of what you’re doing for patients—with pay for performance and other programs—you’ll be in trouble.” He says that he saw in EMR the opportunity to aggregate his patients, avoid lost charts (“the group lost chart rate is 10–15 percent—that’s one patient a day”), and speed billing.

Going Live
Dr. Goel decided to stop using paper “cold turkey” when he started with EMR. “In the first two months, I worked 5–6 hours when I would normally spend four hours with patients.” This was due, at least in part, to the quality of the training. “It was terrible,” he states. “No one helped us through the templates. And when the computer freezes, you have to call the vendor, even if you’re with a patient. You wait at least a half hour. If the EMR crashes, you lose control.”

In the end, it continues to take more time than he expected. “UPG didn’t appreciate the time it would take to customize templates,” Dr. Goel says, “so we’re using standard templates for now.”
**Using the EMR**

Dr. Goel has strong mixed emotions about EMR, as the previous comments suggest. At this point, he says EMR slows him down: “It has templates, but most doctors type slower than they write. The paper form we used to use had check boxes and I could work through it quickly. I figure I’m 10–15 percent slower in a typical 10-minute visit.”

Liability is an issue for which Goel thinks EMR has pros and cons: “It’s beneficial because all your notes are legible. It’s detrimental because most legal cases turn on the amount of documentation and EMR encourages brief documentation.”

On the other hand, Goel feels that there are unquestionable benefits to EMR. “With the Avandia scare [in May 2007, the Food and Drug Administration issued a warning that controlled clinical trials showed that there is a potentially significant increase in heart disease and heart-related ailments in those taking the type 2 diabetes drug], the EMR allowed me to quickly identify the patients I’d prescribed the drug for. I could immediately send them letters urging them to call me right away to discuss the risks.”

This quick aggregation of patient information has many uses. “EMR can aggregate my hypertensive patients. I can see that out of 25, ten don’t have their blood pressure under control. So now I write letters to get my patients in to see me. This is unique to EMR.”

Dr. Goel also sees a huge benefit because he and his colleague can track their patients’ prescription narcotics use: “Some of our patients doctor-shop within the practice. This has stopped with EMR.” In addition, the electronic system helps him monitor patients: “When they call between visits, I can check the record and help them, often without ordering additional testing that they might have otherwise gotten.” In the end, “EMR empowers me with choices,” Goel says. “I can look at more information much faster.”

EMR addresses undercoding, according to Goel, by “telling you the rules and questions to ask that will get you to a higher-level visit.” He also likes that electronic communication of lab results and x-rays with hospitals is easier, even though “the hospital’s online system doesn’t talk to NextGen, so it doesn’t populate my EMR. I have to input the results myself.” Similarly, Goel wishes the EMR would generate preventive treatment reminders automatically for his patients, based on vitals and lab values.

Goel is very excited about the potential of EMR to improve the quality of care. “In the future,” he proposes, “we could have the EMR calculate patients’ 10-year risk of heart disease using variables and an algorithm entered automatically. And the next quantum leap will be when my EMR can talk to other physicians’ EMRs about a patient and we can compare notes.”

In the nearer term, Dr. Goel looks forward to customizing the EMR for his own needs. Once all the practice’s physicians have EMR, he would like to have medical assistants scan in the paper charts and have lab test requests sent directly to the labs and referrals sent directly to specialists.

**Patients and EMR**

EMR has changed the patient visit, Goel states: “It’s a different interaction now. I talk over a computer screen and I type while the patient talks. It’s important to make eye
contact and not feel rushed. I find I listen more to the patient because I’m typing. Before I talked more. The amount of time I spend with the patient hasn’t changed.” He likes that EMR allows him to type a summary of what he and the patient discussed during the visit—and give it to the patient before s/he leaves the office. He’s not sure what patients really think of EMR: “They think I’m more current, but they don’t know what it all means. They do like that I can send a prescription electronically to the pharmacy.”

Financial Implications
Dr. Goel says he was not aware of the costs of implementing his EMR, as they are borne by the university practice group as a whole. He did add, however, that he expects return on investment to be “a long way off because IT costs are high. We won’t get return until we let go of medical record or billing staff.”

Challenges and Excitement
For Dr. Goel, the reality of going live—and the aftermath—was worse than he expected: “A bunch of small things are bothersome—when the computer crashes or the system won’t let me type in a nonstandard dosage for a prescription.” Nevertheless, on the whole, he feels he has adapted quickly. “The benefits outweigh the costs,” he concludes. “The reality is that I can deliver better health care. I can see it. I’m doing stuff I didn’t think was possible because of EMR.”

Words of Wisdom for Other Practices
Dr. Goel offers two suggestions to fellow physicians:

- Try hard to talk with physician colleagues who have used the systems you are considering before buying. They will tell you about the quirks of each.
- Think of how you want to change your practice before you buy a system. That will drive your decision and make EMR more advantageous to you and your patients.
Western Wayne Physicians

Primary care group practice seeking benefits of EMR

Practice Profile
Western Wayne Physicians is a primary care group practice with offices in Allen Park, Dearborn, and Livonia. Nine full-time and two part-time physicians and two part-time physician assistants see an average of 300 patients each work day. The practice has a total of 54 employees. The physicians in all three offices are members of the Oakwood Primary Care Physician Group. The physicians in the Allen Park and Dearborn offices are also members of the Wyandotte Independent Physician Association.

Prior to going live with an EMR in March 2007, Western Wayne was using a practice management system for billing and scheduling.

Why the EMR?
For Western Wayne, implementing EMR was about keeping up with changes in the practice of medicine and changes in the health care system. Kandy Dulimba, office manager at the Allen Park office, says, “We knew [EMR] was coming for the future and eventually insurance companies would use [Healthcare Effectiveness Data and Information Set] and disease management for reimbursement.” Robert Jackson, MD, the physician champion of EMR at Western Wayne, adds, “We wanted to be able to keep up with the quality goals of managed care plans. I could see we weren’t going to keep up without some tools. Primary care doctors have about 30 HEDIS measures to manage. It’s not that easy to do in EMR yet, but it’s nearly impossible with paper.”

Dr. Jackson and other Western Wayne physicians also saw EMR as a way to be more competitive in the primary care market “by offering higher quality services, setting a higher standard of care in the community, and being able to demand higher reimbursement.” In Jackson’s view, as long as primary care physicians continue to be paid significantly less than specialists, “our health care system will collapse. We have to be able to pay primary care more money.”

Preparing for and Choosing an EMR
Before choosing an EMR, Dr. Jackson says he and the other providers in the practice agreed generally on the purpose of “improving quality and increasing our competitiveness” and then he and Western Wayne’s three office managers worked to choose the EMR that would best meet the needs of the practice.

The primary criteria on which the EMRs were evaluated included ’their ability to
- assist with disease management;
- connect to hospitals and labs; and
- interface with Western Wayne’s diagnostic tools and practice management system.

Dulimba says she and another office manager created a list of about 250 different EMR vendors and created a table of the general features each offered. From this table, the list was narrowed to about 50 vendors, whom they called to ask more specific questions about the EMRs. These phone calls resulted in invitations to 10 vendors to provide an in-house demonstration for Western Wayne providers and staff. Five vendors were called back for a second demonstration, at which point all of the practice’s physicians and staff were invited to provide input. Dulimba says once the field had been narrowed to two or three, “price and ease of use were the final considerations.”

**Going Live**

Prior to going live, staff received a total of eight hours of training—four for medical assistants and four for receptionists—and providers received eight hours of training. An online training site with fake patient information was accessible to staff and providers and was used to practice what they learned during training. Western Wayne staff and providers generally agree that the training was inadequate. The problem lies mostly in the fact that, as Dr. Jackson puts it, “until you start using it, it’s hard to know what to expect.” Dulimba adds, “Playing with test patients is completely different than actually using the system. ‘There’s a lot of stuff that isn’t there when you’re training.” Tanya Gooding, a medical assistant, agrees that they could have used more training: “I feel like the training was pretty good, but I feel like we needed more. We still had a lot of questions once we started using the system.”

Western Wayne went live with the EMR in March 2007 and considers itself to still be in the implementation phase. As their selected EMR vendor, Allscripts, had suggested, Western Wayne tried to get a handle on current processes and workflows so they would be able to translate them into an EMR. Nevertheless, they found the translation to be fairly difficult. Dulimba states, “Although workflow kind of stays the same, [EMR] doesn’t work the same [as paper], so it was kind of a waste of time.”

The practice struggled to maintain a reduced patient load while providers and staff became comfortable with the system. At the Allen Park office, Dulimba reports, “We expected to see two patients an hour for a month, then three patients an hour for a couple of weeks, and to keep increasing until we were back to 100 percent, but within three weeks, three doctors were back to a full schedule and then within a couple of weeks, the rest were back up. Patients needed appointments, so we just met that need.” It’s difficult for her to estimate how much productivity was lost in the transition to EMR, since, even though patient load bounced back fairly quickly, EMR is still slowing things down for staff and providers in some aspects.

**Using the EMR**

Western Wayne has been using EMR for about six months now, and Dulimba reports that providers and staff continue to hone their use of the system. She says of physicians and
other caregivers, “They’re learning still. They’re finding shortcuts and better ways to do things. I think that will continue for a while.”

Dulimba and Jackson agree that learning all aspects of the EMR will take time and much of it will come with “going in and playing and trying to figure things out,” as Dulimba puts it.

As they geared up to see patients using the EMR, Western Wayne tried to “get ahead of the game by getting patients into the system,” according to Dulimba, but they found out they weren’t as prepared as they needed to be to transfer the information. “When we first started, we didn’t know how to load patients,” states Dulimba, adding “We didn’t know how to manage information and that led to problems with data entry. After we made mistakes, we found out what not to do.”

So far, though, the practice has begun using EMR to manage several aspects of patient care. For example, intra-office communication has been streamlined. Dulimba says, “Receptionists used to take a message [from a patient] and put it on the doctor’s desk. The doctor would write out an answer and give it to his or her medical assistant to follow up. Now,” she says, “the receptionist takes a message in the EMR and sends it right to the doctor’s desktop and the doctor can respond through the EMR.”

The way in which lab work and test results are handled has changed as well. Dulimba reports, “Labs used to be sent to the doctors to sign off on before we would file them in the patient’s record. Now, the data comes right into the patient chart.” Physicians receive a notification of the labs that need to be reviewed, which they can do through the EMR.

Jodie Aben, a receptionist in the Allen Park office, says the EMR has “made it a lot easier for receptionists as far as pulling up patient results and getting messages to doctors. We don’t have to scramble around for a piece of paper or for charts. It’s just become a lot simpler.” Gooding adds, “I like not having to find charts. When a lab calls us for a diagnosis code, it’s right there.”

Physicians use the EMR to fill out prescriptions now, too, although, Dr. Jackson notes that this has actually increased the amount of work required of physicians with regard to refills. He says, “Before, someone pulled the chart and put a sticker on there with what they wanted. I would write a number and approve the refill and put it off to the side, but now I get it through the computer and I have to open up the message and the chart and I might have to put quantities in, which is slower than writing it down. Then I get to send it to the pharmacy, which is the equivalent of the phone call that used to be made by someone else.”

According to Dulimba, “On the whole [Western Wayne providers] think it’s an okay system. I don’t think any system would be perfect enough [to meet everyone’s needs].”

**Current and Future Benefits of EMR**

Several benefits of EMR have already become apparent at Western Wayne:

- Physicians can access patient charts away from the office
- Finding information in the EMR is easy
- E-prescribing and faxing of prescriptions have saved time overall
- Medication lists are more accurate and complete
- Messages from staff to physicians and vice versa are handled more efficiently
- Transcription has been all but eliminated
- Less time is spent hunting down patient charts

The EMR has also addressed undercoding to some extent. The EMR has a billing calculator that—when providers use it—“has helped them see which codes they should be using.”

As the practice continues to get more comfortable with the EMR, it hopes to implement more of the disease management modules and alert systems to remind them when patients need preventive care. Once they are more familiar with the reports that can be generated through the EMR and have more patient information in the EMR, Western Wayne will begin aggregating populations of patients to assess overall quality of care. They’re also hoping, eventually, to use the system to download patient information directly from hospitals, rather than having to scan patient records and test results into the EMR.

Patients have responded favorably to the EMR. Dulimba says, “I haven’t heard they haven’t liked it.” And she notes that “Our doctors use tablets, so they’re sitting with the patients” rather than at a computer terminal.

**Financial Implications**

Western Wayne’s investment in the EMR was significant. Dr. Jackson estimates that the practice spent at least as much on implementation as it did on the system itself. “It was an investment in time, that’s for sure,” adds Dulimba.

Dulimba reports that the Allen Park office experienced immediate cost savings. Since theirs was the only office that had been dictating and transcribing prior to EMR—the others had been hand-writing notes—they’ll see a savings of about $45,000 in the first year from near elimination of transcription. Dulimba adds that staff will be used differently and more efficiently over time since they won’t be spending as much time looking for and filing charts.

Dulimba says that Western Wayne probably experienced some unexpected costs as far as the amount of time they’ve had to spend creating templates. “We expected some of the templates to be more suited for us out of the box, but they’re a lot more general.”

**Challenges**

Despite finding several benefits to EMR, Western Wayne has found itself challenged by and, at times, frustrated with the system. Dr. Jackson reports that “Everything is slower so far. We all work harder than we did [before implementation] and we paid money for it.”

Dr. Jackson is most worried about how the time spent to implement the system might affect patient care: “It’s the first time in a long time we haven’t been able to give adequate access to our patients. We’re having trouble seeing patients as often as we
should. We’re working harder and our days are longer.” He admits, “It has eased up every couple of months, but a large percentage of patients I’m seeing in a day are already in [the EMR]. I think I’m as fast as I can be without more training.”

Much of the time involved has to do with creating templates specific to Western Wayne’s processes. Dulimba does quite a bit of this work and has worked with Dr. Jackson on creating templates as well. “It takes about a day to customize a template to get it the way [the providers] want it. Just to put a procedure in there—to create it off of paper—took five hours,” Dulimba says. Overall, Dulimba reports, “I probably spend 8 hours a week updating and doing things to the EMR.”

**Excitement and Potential**

Although it’s challenging, Jackson still sees some of the potential he initially saw when he championed the cause of EMR at Western Wayne. “I’m hopeful we’ll improve quality. It’s hard to get excited about more work, though, and it’s been more work so far.” He adds, however, “There are some good things. We have to give it some time and see what we can wring out in terms of quality improvement. I think that’s potentially there. There are some things that are happening already where we’re better than we were.”

Dulimba agrees that things will get better: “Once we get 100 percent on—all our charts in—it will function well. It’s just tough getting through the learning curve and developing templates.”

**Words of Wisdom for Other Practices**

Western Wayne offers the following advice to practices considering implementing EMR:

- Look for a reputable company and look into references.
- Form a good rapport with the engineer and trainers from the vendor you choose so you can call on them when you need them.
- Physician champions should be ready and willing to handle criticism from colleagues when the system isn’t performing as they hoped.
Michigan Heart PC

Cardiology group uses EMR to increase efficiency and improve quality

Practice Profile

Michigan Heart PC is a single-specialty group practice with one main office and seven satellite offices covering eight counties in southeast Michigan. Thirty-five full-time and three part-time physicians, two full-time physician assistants, and five full-time nurse practitioners see an average of 66,000 patients each year. Michigan Heart has 338 employees. The practice is a member of the Huron Valley Physicians Association.

Prior to going live with an EMR in 2004, the practice had used a practice management system—which it continues to use—for billing and scheduling.

Why the EMR?

Michigan Heart “has a bias towards innovation and wants to be on the cutting edge,” states Stephen Rosenblum, MD, the practice’s physician champion for EMR. Holly Daul, Michigan Heart’s business office manager, says the practice recognized EMR as a way to improve both production efficiency and clinical efficiency: “We’ve always been aware that technology can improve processes and we thought it could improve quality as well.”

Dr. Rosenblum says that on the business side, Michigan Heart was looking for EMR to improve efficiency, coding, and billing; cut back on transcription costs; and minimize the size of the medical records department. He adds that the practice was also concerned with patient safety: “The IOM [Institute of Medicine] quality chasm report came out around the time we started looking at systems, and we thought EMR could help reduce patient deaths.”

Even though Michigan Heart tends to embrace new technology, the practice still treaded carefully and waited until they believed the EMR systems available in the market “were ready for prime time,” as Dr. Rosenblum puts it. Daul expands on this point: “We knew this was the way to go, but we were waiting for the technology to be at a point where we knew it would work well. We had known of other practices that tried and failed and we wanted to be sure the technology would enable us to succeed.”

Michigan Heart also saw EMR as a way to track and report performance on various measures of quality. Rosenblum says, “We thought we had a high-quality practice and we thought we could differentiate ourselves by proving we had a high-quality practice. We knew pay for performance was coming and we saw the need to document quality. People are willing to pay for good care, but it better be good care.”
Preparing for and Choosing an EMR

The search for an EMR was led by Dr. Rosenblum and Michigan Heart’s then CFO. The primary features they were looking for included:

- A stable company behind the EMR
- A flexible product that could meet the needs of a variety of types of cardiologists
- A system with an “open architecture,” meaning the EMR would be able to communicate with other electronic systems as they came on the market

Michigan Heart’s search for an EMR took place over a couple of years, during which time Rosenblum and the CFO attended conferences and meetings at which various vendors’ EMRs were showcased. Rosenblum reports that TEPR (Toward an Electronic Patient Record) meetings were most helpful because the presentations tended to be educational rather than biased toward a particular vendor. Once the field of potential EMRs for Michigan Heart was narrowed down to the top two, Daul says, “Staff in various roles were invited to sit in on the vendors’ demonstrations to provide input.” Ultimately, in the spring of 2003, Michigan Heart chose NextGen because they felt that it had the most flexibility. As an added bonus, a cardiology practice in Oklahoma had also been using NextGen and was willing to share with Michigan Heart the templates they had already developed.

All the while Dr. Rosenblum was searching for an EMR, he was also preparing Michigan Heart’s providers and staff for the change. As Daul explains it, the decision to pursue an EMR at all and NextGen in particular “was a unanimous decision by the board, but it took a while to get that decision. Some of the board members [who are physicians in the practice] were very skeptical. It’s very much a paradigm shift.”

Rosenblum says he relished the challenge of carrying Michigan Heart through this change from an organizational standpoint. “People weren’t automatically on the same page,” he says, “and I was interested to know ‘How do you get an organization to change and how do you do that without a lot of casualties along the way?’” So serious was he about this interest that he took an executive-level course in organizational change at the University of Michigan to guide his efforts and those of the rest of the practice.

Rosenblum’s first order of business was to ensure that he had the buy-in of all of the Michigan Heart physicians. He laid out the reasons he believed the practice should be implementing the EMR as well as the price tag for the plan—about $1 million, which essentially comes out of the physicians’ pockets. Rosenblum says he went to the rest of the physicians and said, “I’m not willing to [head up the transition to EMR] unless you give me absolute authority to do this. Once we agree to go ahead, nobody is going to opt out of this plan; if they do we’ll ask them, ‘Where would you like us to forward your mail?’” Dr. Rosenblum says this was essential to the success of implementing an EMR at Michigan Heart. Having buy-in from his peers enabled him to move forward with confidence that that his efforts would not be undermined.

In addition to meeting with physicians, Rosenblum also held several meetings with staff to garner their support for the initiative and to allay their fears. Dr. Rosenblum states, “I would outline the project and acknowledge that it would be scary, but emphasized that
we’re doing it to save people’s lives and I explained how it would save people’s lives. I tried to make it clear to staff at all levels that this would enable them to take part in patient care. We have a highly motivated staff and they took up the flag of this project, but they also got the message that there was no choice.” During these discussions with staff Rosenblum had to answer the question on the mind of many staff, “Will the system replace us?” He says he was straightforward about that, answering, “We’re not interested in replacing them, but we would help them find new jobs if that came to be.”

Once the EMR had been chosen, Michigan Heart mapped out its current practices to help clarify how information was flowing in the paper world and then they looked at how the processes could be improved. Rosenblum sees two ways of going about implementing an EMR: “You can make an electronic imitation of paper, or you can look at what an electronic process adds and leverage that to make yourself better and more efficient. One thing I insisted on is that we not just pave the cow paths.”

The EMR implementation team, consisting of Rosenblum, Daul, the practice’s IT manager and medical information manager, and a few other staff, held regular meetings to plan out how the EMR would work for Michigan Heart. Daul, who acted as project manager for the team, says “We initially met with our NextGen project manager, who developed a timeline for us [and identified] what we should accomplish at various points.” Rosenblum adds, “We had a number of meetings with the physicians to identify what they wanted from the EMR.” Team members also visited Cardiology of Tulsa—the Oklahoma practice whose templates Michigan Heart was using—to see how that practice had implemented NextGen’s EMR.

**Going Live**

Preparation for implementation of the EMR was fairly intense. Training of physicians and staff began in the fall of 2003. The EMR implementation team decided on a train-the-trainer approach for training staff and physicians in the use of the EMR. Brenda Knedgen, BSN, RN, Michigan Heart’s EMR clinical manager, became the practice’s lead in-house trainer. She along with other staff became identified as “super-users” at Michigan Heart. At least one of these individuals was on hand at each site to troubleshoot any problems that arose. Only Dr. Rosenblum received training from a NextGen trainer; Knedgen trained the rest of the physicians, who were required to go through two hours of training and pass a test before they could go live with the EMR. Prior to going live with the first physician in EMR, Michigan Heart set up a mock clinic, in which a staff person pretended to be a patient so that the staff and Dr. Rosenblum could get a sense of how the EMR would work when the first patient was seen using EMR.

Michigan Heart’s first physician (Rosenblum) went live with the EMR in March 2004 and physicians were added to the system at the rate of about one per week after that. As each new physician was added to the system, those who were already using the EMR helped acclimate them to the system. The EMR was being used throughout the practice by the end of 2004. Physicians were not allowed to bring a patient’s paper chart into the exam room with them once they were using EMR, which Rosenblum says was to “force them to learn the system.” The approach worked. Daul says “physicians took to the system really well and were pretty much comfortable using it within two clinic days.” Dr.
Rosenblum adds, “We started blocking out way more time than was necessary. We doubled all of [the physicians’] visit times for a couple of days and gave each of them a week with a limited schedule to get through the learning curve; but most got it within a day.”

States Daul, “A big part of going live is getting existing records into the EMR. We hired staff to start scanning old records into the system in the end of 2003, prioritizing records of patients we were likely to see again in the near future.” As one would expect, the amount of staff time devoted to scanning old patient records into the system decreased over time, but the amount of time to load new patient information into the system has also lessened. Daul reports that “In the beginning an intake call would take 20 minutes; now it takes 10 minutes. We got more comfortable with the system. Also we’ve identified ways to enhance the usability of the system.”

**Using the EMR**

Until recently, Michigan Heart’s EMR was primarily used for intra-practice communication and capturing office exam–related data and notes. In the past six months, the practice created an interface with the laboratory at St. Joseph Hospital in Ann Arbor, whereby the lab work of Michigan Heart’s patients is sent electronically from the lab to Michigan Heart and uploaded into the patient’s EMR. Michigan Heart’s EMR has also recently been linked with a product called Heart Lab, which analyzes the results of digital ultrasound technology. The results are then automatically sent to the “scan portion” of a patient’s record. Dr. Rosenblum hopes soon to have the actual data sent to the patient’s record rather than just having a “picture” of the results, which will allow aggregated analysis of the results. In the coming year, Michigan Heart plans to add electronic orders for services to its EMR.

Prescriptions are now faxed to pharmacists and soon the practice will also begin e-prescribing. Nursing staff no longer receive paper test results to show to the doctor before filing the results in the patient’s folder. Rosenblum says, “Now they get ‘tasked.’ If there’s a test result it gets tasked to the nurse [i.e., sent to them in the EMR system for follow-up], who can send the results through the system to the doctor for review before the test is loaded into the patient’s chart.”

Dr. Rosenblum says that he and other physicians continue to dictate, although less than they used to. “So far,” he says, “we have decided to allow the physicians to dictate a short history of present illness.” Rosenblum reasons, “The value that we add to the process is analysis and planning in fairly complex situations. Human language is still better at doing that than computers. We could click in all those individual events, but in terms of conveying analysis, dictation is better.” Daul reports that even with continued dictation, the amount of work that is now done through the computer rather than by dictation has reduced transcription costs by 40 percent.

Rosenblum and Daul report that the overall valuation of the EMR is high throughout the practice. Rosenblum says of the office staff, “They love having everything available right from their PC.” He recognizes, however, that because Michigan Heart is not using NextGen’s practice management system, this means “they have to toggle back and forth between both programs and they would probably prefer having everything in one
system.” Of the physicians and other direct care providers he says “In general I think they like it and would never go back.” He adds, “I have to give them credit for sticking with it during the initial implementation. I would talk to them about what was going on and they would tell me what bothered them. I took everyone’s suggestions and wrote them down. We decided we wouldn’t change anything for the first six months unless it was something that obviously needed fixing. What we found is that a lot of initial complaints are related to it being different, not bad. If complaints remained after six months, we tried to tweak things to make it better.”

Since implementing the EMR, Michigan Heart has essentially replaced its medical records department with an IT department. Rosenblum says, “We have three general IT support people and three people who are involved in training and programming for the EMR.” He adds that while “NextGen support’s been pretty good, most of [Michigan Heart’s] support comes from in-house because NextGen is good when something is broken,” but the practice relies on its own IT staff for programming to make the system better.

**Current and Future Benefits of EMR**

Michigan Heart has found several benefits from implementing an EMR:

- Intra-office and intra-practice communication are improved. The use of an EMR messaging system means that providers and office staff can communicate more quickly and easily. This also means that patient get answers to questions more quickly.
- Clean claims are facilitated by easy access to patient records to confirm coding and billing.
- The accuracy of coding is improved.
- Prescriptions are easier to fill. Physicians can fax prescriptions directly to the pharmacy from their tablet.
- Access to patient records off-site has improved the care provided by on-call physicians.
- Quality of care has improved. Patients can be aggregated by condition or medication to assess whether they are receiving appropriate care.
- Overall practice efficiency has increased. The use of technology has allowed Michigan Heart to eliminate some paper-world processes.

Daul provides the following example of how the EMR has helped Michigan Heart improve its quality of care: “If you have coronary artery disease, you should be on an anti-platelet medication. In the EMR we’ve been able to create an alert for patients with the condition to be prescribed the medication. Physicians have to respond to the alert by either prescribing the medication to the patient or providing a reason why the medication hasn’t been prescribed.” Four such quality measures for cardiology are being promoted by Medicare, and Michigan Heart has developed templates in the EMR to assure that all four are being followed.
Dr. Rosenblum says the EMR has created greater efficiency in the office and offers this example of how the EMR has eliminated some paper processes: “In the past if I wanted to order a heart catheter for a patient, I had to fill out a form and send the patient to sit in waiting area to sit down with a scheduler who would fill out additional paper work and call the cath lab. They would then send the patient over for an EKG. With an EMR, if I want a heart cath, it launches a template, I click through why I want it, etc. That launches a sequence and generates a lab requisition to x-ray, lab, and EKG. The patient’s given a list of where to go and when. All that stuff comes back electronically in one little folder. If you have it programmed properly, it could tell you the results with an alert.”

The EMR has also saved time that used to be spent following up on lab results. Before EMR, Rosenblum says, “A lot of time was spent asking the MA (medical assistant) for test results. She would call the lab or the other office to get results. A good doctor will spend some time waiting for the information, but will give up if it takes too long because the patient is waiting. Now when a patient is here, the information and test results are already in their records. This means the doctor is less likely to make a mistake and more likely to make a good decision.”

Dr. Rosenblum says the ability to access patient records “from anywhere on the planet…alone is worth the price of admission to EMR.” In particular, he talks about how it eases the work of handling questions from patients who call the office while he is at the hospital. “We used to burn up the fax machines,” Rosenblum says. “We used to get a message from a patient and the nurse would look up the patient’s paperwork and copy the last five patient notes and fax them to the doctor.” Now physicians can look up the records from the hospital, or wherever else they happen to be if they have Internet access.

Patients benefit from clearer follow-up instructions. Rosenblum says, “People walk out of the office with a print-out of their medications and what they’re supposed to do. We’re getting fewer calls for follow-up because of this.” He adds, “I can print out education information, too.” Even though Rosenblum says “[Patients] really like [the EMR] and they think it’s cool generally,” he’s conscientious of how it can affect the physician-patient relationship. “You have to be careful,” he says. “Before the EMR I used to go into the room with the paper chart and they had my undivided attention. Now I am sometimes paying attention to the EMR and there’s an awkward moment at the end of the visit while I go through the checkout process, which takes five minutes. I’m just clicking through all of these screens and the patient’s just kind of sitting there waiting. Patients haven’t complained to me but I find it to be awkward.”

Rosenblum notes that he has “one or two patients who were paranoid about having their information on the computer but they have gradually come around.” He adds that he isn’t at all concerned that EMRs expose Michigan Heart to legal issues and in fact feels that it provides protection in the cases of audits or lawsuits because of the completeness and accuracy of the electronic records.

**Financial Implications**

Michigan Heart’s investment in the EMR has been “huge.” Rosenblum states, “It takes a lot of planning, training, and money. It also takes a lot of focus, dedication, and upkeep.” Part of the cost comes from keeping the system secure. “The doctors wanted 100 percent
security,” says Rosenblum, “but each level of security costs more money.” Other costs include having an IT department to maintain and update the system.

The one place where Rosenblum believes costs could have been cut is in abstracting patient information into the system. The practice ended up using more expensive staff to do this work, whereas he would have preferred to hire medical students and to pay them by record completed rather than paying RNs an hourly rate.

Of course, there have been cost savings as well. The medical records department has been all but eliminated and many of the benefits noted above have led to more efficient (i.e., less costly) use of staff time.

**Challenges**

Although the benefits of the EMR are numerous, Michigan Heart has found several challenges in implementation. The practice is challenged to continually improve the system to make it as efficient and effective as possible. While NextGen support is good when the system is broken, the responsibility for making programming improvements largely rests with Michigan Heart, and the pace of change can be slow. Rosenblum says, “I see a lot of opportunity to make things better and I can get frustrated that some of these enhancements can’t be made more quickly. From my point of view, we can’t move fast enough from the development side.”

Rosenblum also notes that the EMR has further “blurred the lines between work and home,” noting “We’re always connected wherever we are. For the last couple of years I would take the laptop with me on vacation. The last time I went on vacation I didn’t do this. I just informed the staff that I wouldn’t be checking the EMR while I was gone, so they would have to rely on my colleagues in my absence.”

Also, while EMR increases the overall efficiency of the office, it adds to the amount of work required of physicians. Dr. Rosenblum states, “If you ignore all the other benefits of EMR and just talk from the doctor’s perspective, it’s more work.” He explains, “If I had a 20-minute visit [before EMR], I would spend 19 minutes interacting with the patient and one minute dictating. In that one minute I could generate a note and hang up the phone and go on to the next visit. Now, before I go in the room, I’m clicking through a bunch of records to review the patient record and as we’ve come up with each new [alert or template], we have to click through more screens. If we keep adding these types of modules, we keep adding another three or four clicks. I’m not saying it’s a bad thing in terms of practice, but…we’ll have to be parsimonious in selecting what we implement.”

It’s because of this extra work on the part of the physician that Rosenblum says one of the biggest frustrations with EMR can be “when it’s really slow.” He adds, “I’m asked to do a whole lot of work in a short period of time. Things that slow me down irritate me and sometimes I can feel like it’s interfering with the patient-doctor interaction and I have to be very conscious of that because that relationship is important to me.”

Getting the various EMR and other electronic information systems to “talk to each other” is another challenge Michigan Heart faces in using electronic versus paper systems. “All these systems are generating reports on the spot so there’s no delay, but the systems...
aren’t talking to each other. For example, Heart Lab produces great reports, but they are simply dumped into NextGen as a scanned result, not as digital information.” He says, “We could have created a template in NextGen to do what Heart Lab does, but we had a choice. Do we take a year of programming to develop the template within NextGen and put aside other things we’re trying to fix, or do we use Heart Lab which already exists? There are a lot of vendors and no national standards. There is a language standard called HL-7, but even that is interpreted differently by different programmers.”

Although Rosenblum recognizes that Michigan Heart has a bias toward innovation, he says he still “underestimated the pace at which society would implement [EMR],” adding, “We feel very on our own.”

**Excitement and Potential**

As Michigan Heart continues to do more with technology and less with paper, Rosenblum sees several ways in which EMR will continue to advance both for the practice and for physicians’ offices in general:

- Systems will eventually be more linked and better able to communicate with each other, which means even less information will have to be scanned into records.
- Michigan Heart will move away from dictation and more toward templates for basic cardiac problems, possibly implementing a voice recognition program.
- Systems will include even more discrete databases and less free-text, so information is even more readily sorted and aggregated.
- Michigan Heart will implement more decision-support modules into its EMR, such as guidelines for treating heart failure.
- Michigan Heart may also begin to give patients access to certain portions of the EMR and practice management system so they can schedule appointments, see test results, and send questions to physicians online.

Michigan Heart is also part of a collaborative trying to develop a community database, in which three practices in the region that use NextGen will be able to share patient information through a server versus simply faxing a patient note. Essentially, says Dr. Rosenblum, “If primary care physician A wants to refer patient B to me, they can push through the server any information they want to about the patient. On our side, we’ll then push a button and download the information into our system.” While this is an exciting endeavor, it will be a challenge to fund and staff.

**Words of Wisdom for Other Practices**

Dr. Rosenblum offers the following advice for practices considering implementing an EMR:

- Spend a lot of time getting ready and getting everybody ready.
- Doctors have to be on board in a way that they have no choice. You can’t have people silently sulking. Before you spend any money, have a meeting where everyone signs on. If you can’t achieve that kind of consensus, you have to get rid of the naysayers or decide not to implement the EMR.
EMR is a huge change process. It’s not the software, it’s the process. It’s a very complicated corporate process change. Consider that very carefully. Consider what you will do if people refuse to get on board. Consider what you can do to get people on board in a positive way.

Do not pave the cow paths. You’re spending all this money for an electronic system. It’s a new paradigm. Think about how you can leverage this technology to do a better job than you’re currently doing.
Practice Profile

The MSU HealthTeam (HT) is a large multispecialty academic faculty group practice at Michigan State University in East Lansing. HealthTeam EMR users include 187 attending physicians, 163 residents and fellows, 209 medical students, and more than 300 nonphysician health care professionals. More than 200 front office staff, office managers, IT staff, billing clerks, and others who provide administrative support for the HT also use EMR.

The HealthTeam has more than 500,000 active patients in its EMR and conducted 223,867 office visits with patients in the last year. Given these volumes, it is not surprising that 200 to 250 people are logged into the HT EMR at any one time on a typical work day.

For this case study, we spoke with two internists in separate offices who are part of the HT faculty group practice. Michael Zaroukian, MD, PhD, is a general internist, MSU College of Human Medicine associate professor, and internal medicine clinic director for one of the 40 clinics comprising the HT faculty group practice. In this internal medicine clinic, 17 faculty members (3.5 clinical FTEs) see patients and supervise 30 residents (2.4 FTEs). The clinic averages 14,000 office visits a year. Dr. Zaroukian is also MSU’s chief medical information officer and serves on the American Medical Association Health Information Technology Advisory Group.

Thomas Mohr, DO, is in a five-physician HT practice with four general internists and a part-time endocrinologist. The practice is recruiting and hoping to hire two more physicians soon. In addition to the physicians, the practice has four medical assistants and three front-office staff. Dr. Mohr is also on the faculty of the MSU College of Osteopathic Medicine.

The comments of Drs. Zaroukian and Mohr pertain to both the MSU HealthTeam as a whole and their own practices.

Why the EMR?

Dr. Zaroukian explained MSU’s long road to EMR adoption. He noted that the push toward EMR adoption started in the late 1980s. Several rounds of exploration ensued over the following decade but none culminated in a commitment to purchase and implement an EMR system. In 2000, a grass-roots effort lead by the MSU Department of
Family Practice resulted in the selection of an EMR system for the HT. However, no other department was willing to commit to initial implementation, so the Department of Family Practice decided to move forward even if the rest of the HealthTeam wasn’t ready. Family practice invested $100,000 in the EMR system, which went live in 2001. In early 2002, MSU President McPherson saw a $6-7 million increase in the university’s employee health care costs and asked Dr. Zaroukian how the university could control costs and improve quality. Dr. Zaroukian cited two Institute of Medicine (IOM) reports [To Err is Human: Building a Safer Health System and Crossing the Quality Chasm: A New Healthcare System for the 21st Century] that touted EMR as essential to the six IOM quality aims. The president ultimately asked Dr. Zaroukian to lead the process of implementing the EMR system across the entire MSU faculty group practice.

Dr. Zaroukian outlines MSU’s four-phase approach to enterprise-wide EMR implementation, a “crawl—walk—jog—run” strategy:

- **Crawl:** Computers outside exam rooms, EMR chart and desktop navigation, document viewing and signing
- **Walk:** Computers inside exam rooms, with simple data entry (vital signs, problems, medications, allergies, messaging, prescriptions, patient handouts)
- **Jog:** Telephone conversations with patients, immunizations, injections, basic office visit documentation with free text, narrative templates and checklist/drop-down menus
- **Run:** Full office visit charting with custom clinical content, guideline-assisted clinical decision support, reminders, alerts, chronic disease management, coding advice, performance data reporting, discontinuing paper chart pulls

This process took time—years in most cases—and while physicians were expected to shift from paper charting to EMR use, there were no specific incentives to do so or penalties for not doing so. As a result, the rate and extent of EMR adoption among HT physicians has been “highly variable.” Dr. Mohr still sees wide variation among HT doctors in their use of EMR: “We’ll need to show more efficiencies—such as e-prescribing—to get all of the HealthTeam on board.”

Zaroukian does note that there was “one massive incentive for adoption: The MSU radiology department donated $550,000 to the project, enough to pay for every EMR license and nearly 200 tablet PCs. Adoption would have been much harder if clinics had had to pay for these themselves.” EMR funding also came from practice revenues and other university funds.

Dr. Mohr notes that he started with the EMR in 2002. “I’m a techie. I did programming as a kid, so it was a no-brainer to be one of the early adopters.”

Both physicians cite several reasons for the HealthTeam’s adoption of EMR and their own eagerness to be in at the beginning. Mohr says that he wanted it to “improve efficiency and quality of care.” Zaroukian ties MSU’s adoption of EMR to improving quality along the six dimensions described in the IOM report (care that is patient-centered, effective, safe, timely, efficient, and equitable), improving the research database.
infrastructure, improving efficiencies in clinical workflows and business practices, and finding a system appropriate to educating physicians.

**Preparing for and Choosing an EMR**

Dr. Zaroukian explains that the HT developed a “pretty demanding RFP” for an EMR vendor, with scalability and decision support key among several criteria and specifications. MSU received four responses, only two of which were good enough to merit demonstrations: MedicaLogic’s Logician, now GE Centricity® EMR, and Physician Micro Systems Inc. Practice Partner®. A large selection committee—led by family practice physicians and including primary and specialty care physicians, pharmacy, IT (even “IT novices and IT pessimists”), nurses, clinic managers, and front desk staff—chose GE Centricity® EMR because, as Zaroukian states, “it met more of the criteria in the RFP and was able to show what it could do, not simply tell us that it could do it. It also had to be flexible, as we weren’t sure exactly where we would be taking the system once we got it.”

Dr. Zaroukian says that the committee “threw the EMR systems several ‘curve balls’” on documenting and decision support and Centricity® EMR handled them pretty well. “Something as simple as getting robust decision support indicating which diabetic patients should be prescribed aspirin has many caveats depending on the patient’s age, medical history, and other factors, he explains. “We wanted a system capable of popping up with the right answer to the question, Should we give this specific patient aspirin? These were the ‘high trust reminders’ we were looking for.” He adds that the system that was chosen best met MSU’s education and research needs. All in all, he says, the HealthTeam “wanted a system that makes it easier to do it [providing high-quality patient care] right.”

**Going Live**

The MSU Internal Medicine Clinic began using EMR in October 2002. Dr. Zaroukian surmises that the practice “probably lost a bit more [productivity] than a typical private practice would because, as academic physicians, we don’t have as many clinic sessions per week as private practitioners typically do. If we were in clinic more often and used the EMR to see patients on a daily basis, we’d have gotten up to speed much faster.” He notes that one research study showed that its physicians lost approximately 20 percent in productivity the first month after going live on its EMR, 10 percent the second month, 5 percent the third month, and then returned to baseline productivity rates by the fourth month of EMR use. “In terms of documentation efficiency, within a couple of months most doctors got back to where they were with paper.”

Training, Zaroukian explained, was suboptimal because (1) training resources were limited, (2) getting physicians to devote adequate time to training was not always possible, (3) training was too often treated as optional, (4) learners were frequently distracted (training in clinic) or interrupted (pagers, cell phones), (5) one-on-one peer training options were limited, (6) training was not consistently combined with formal competency assessment, and (7) some learners failed to use the EMR promptly and regularly following training. “We had to train some people four or more times because they weren’t using the EMR after the training,” Zaroukian says. He asserts that, for
training to be most effective, “doctors must train doctors, and training must be protected
time, with no access to cell phones and pagers.”

Dr. Mohr trained himself on the EMR system, after which he trained the staff—
physicians and nonphysicians alike. He also programmed his own forms into the system.
The biggest burden was the time it took—6–8 months, he estimates—to scan in charts
from a physician who brought 1,000 patients with him to the practice. “You don’t get
time off to learn this. I didn’t attend the vendor training. MSU’s implementers came to
our office once. I sat down with my colleagues to make it work.” Mohr laments the
underuse of EMR’s capabilities across the MSU HealthTeam, as “no one has time to
learn it all.”

“It is impossible to have too much user support after implementation,” says Dr.
Zaroukian, “but user support without reliable connectivity and sub-second response times
is meaningless. It took IT a while to appreciate that some of our sites were having
connectivity problems that are unacceptable in a busy clinical practice; we cannot have
the network down or slow when we are seeing patients.”

**Using the EMR**

Dr. Zaroukian can speak from his own experience with EMR and, as chief medical
information officer at the university, from the stories he has been told by many other
physicians on the MSU HealthTeam. He believes strongly that EMR allows him to spend
the same or a greater amount of time with his patients, yet do a lot more for them. “There
is more time for patient education, more clarity of orders and prescriptions because of
EMR,” he explains. “The EMR’s decision support allows you to see quickly and
systematically what you have not yet done and take action to correct any care deficiencies
in an efficient manner. There is more information to deal with now, and when you are
getting started, you are chastened to see the backlog of care deficiencies you need to
address. On the other hand, you can easily be alerted to and address the care deficiencies
faster to help with patient care and improve quality, which in the end is what adopting
health IT is all about.”

Zaroukian is blunt about the personal benefits he gets from using an EMR: “It makes me
smarter. For example, guidelines suggest that you should monitor 12 different important
potential side effects in patients receiving amiodarone. In my experience, no doctor can
consistently recall all of these 12 at once. The EMR does this for me—it reminds me of
the 12 things to watch for and allows me to decide if any of the patient’s current
symptoms might be an adverse drug effect. This is the essence of decision support. Much
of the time, doctors need reminders more than they need new information.”

Dr. Mohr lauds the EMR for improving documentation in patient records (“You
document more with an EMR”) and monitoring staff performance (for example, how
rapidly they are making referral calls to specialists). And, he notes, “I can see my kids
more. It hasn’t reduced my workload, but I can work on documentation anywhere in the
world with Internet access. I can finish my charts at home after the kids go to bed.”
Mohr also believes EMR addresses potential liability concerns: “It helps us monitor health maintenance, it helps with timely referrals to other HT doctors—and we all can see what each doctor is doing for a patient. And the record is legible, too, of course.”

The two physicians believe that EMR allows them to communicate more easily with hospitals and other practices, with important caveats: “We can send and receive documents,” states Dr. Zaroukian. “Any portion of the patient record can be sent anywhere. But it’s amazing how hard it is to get e-mail addresses of outside practices—those that we have contacted still prefer us to mail paper [to them] and to send us their information as paper documents.” With regard to interfaces, Mohr says EMR currently helps only with laboratory, pathology, and radiology reports and images, and that widespread health information interconnectivity and exchange is still a dream.

Some HT physicians say it takes them an hour longer to document with EMR for each day they are in the clinic than it did with paper. This is due in part, Zaroukian notes, to the HT’s decision not to focus, standardize, and leverage certain efficient approaches to documentation using existing tools, and then to apply custom content development judiciously at a later date. He explains: “A huge amount of implementation team time, energy, and money was spent making customized documentation forms, many of which were used infrequently or not at all, even though those asking for them felt that the forms were critical to their ability and willingness to use the EMR. I believe we would have made much greater progress at lower cost if we had kept a focus on learning to use the existing EMR tools well, rather than allowing complicated form creation and customization to become a condition for progress in EMR use, which I believe did not work anyway. I see customization as both a blessing and a curse. In the internal medicine clinic, I believe we made unusually rapid progress in part precisely because we didn’t focus on customizing forms. Our focus was on learning to use the parts of the EMR that we liked extremely well. We decided we’d try to fine-tune some of the forms later through customization once we had enough experience using the forms to be knowledgeable about how they work and how we work with them. Some clinics wanted to build forms on the EMR, but they had never done it with paper, and even if they had, they didn’t have experience in the translation of checked items to document text.”

From Dr. Zaroukian’s perspective, how you look at EMR can sometimes be a reflection of “how other aspects of your life are going” and your outlook on technology in general: “If you didn’t see much benefit in moving from a corded rotary phone to a cell phone, if getting an EMR wasn’t your idea, if you don’t see the potential benefit, and you’re not willing to strive to learn to use the EMR to the benefit of your patients, colleagues and you, it is likely that you’ll hate it. On the other hand, if you’re a technological optimist, you’re likely to be interested. If you see problems in your practice that EMR can fix, you’ll welcome it. As we were getting started, we asked the clinics to name their top ten problems. On average, we felt that seven of the ten could be well addressed by proper use of the EMR.”

Mohr and Zaroukian agree that nonphysician direct caregivers, almost without exception, are enthusiastic and committed users of the EMR. Zaroukian cites a time-motion study in his own clinic, finding that, on average, “nurses and medical assistants spent 25–30 percent of their day looking for charts.” This time now can be spent with patients. He
elaborates in his recent article in the *Journal of Healthcare Information Management*, “Benefiting from Ambulatory EHR Implementation: Solidarity, Six Sigma, and Willingness to Strive”:

In general, nurses and medical assistants adapted most quickly to EHR work flows and they strongly favored the dramatically improved speed with which they could access and use patient chart information, their ability to process patient requests for assistance without multiple phone calls and voice-mail messages, and the ability to promptly handle patient care issues through the use of flags and telephone notes routed to physician desktops. They also appreciated the availability of documentation templates, text macros, and clinical decision-support forms, such as anticoagulation management, to facilitate care and speed documentation.

Dr. Mohr echoes these sentiments: “They can’t live without it. Phone calls and patient requests are handled quicker. Referral requests are fast. They are much more efficient. We can do a heck of a lot more.”

Both Drs. Mohr and Zaroukian take an expansive view of the promise of EMR; they both see many more benefits coming in the future. E-prescribing is on the near-term horizon; it was not approved by the Michigan Board of Pharmacy until earlier this year. “It’s coming,” says Zaroukian, “along with automatic eligibility and formulary checking, as well as patients’ drug dispensing history.” Mohr is impatient to see this innovation: “Some patients have a huge number of refills—15. Now, the patient calls our MA [medical assistant], the MA prepares the request for me, I approve the request, I send it back to the MA, and then the MA calls or faxes the pharmacy. All of this means spending less time with patients.”

The two physicians also see great opportunity in connecting providers of care through a regional health information organization (RHIO). “Care coordination with other providers who see a patient would be great,” says Mohr. “But we’re not there yet. I can’t get data when I need it (like pulmonary function test results). It’s like pulling teeth to get this from the hospitals. Discharge summaries, too. The hospitals dictate, print, mail, and then we have to scan it in.”

Closer connections with patients are also coming, according to Dr. Zaroukian. “With our patient portal (http://www.myhealth.msu.edu), we can send them secure messages, and they can send us messages. They can view and recommend changes to their problem lists, fill out online questionnaires that populate the medical history of the physician’s office note, request medication renewals or referrals, or ask for advice on non-urgent issues. We can also use the portal and its connection to the EMR to better monitor patients at home.” Both features mean that physicians can work with patients to manage their chronic illnesses. The same portal allow allows secure clinical messaging and document exchange between MSU HealthTeam providers and outside practices, hospitals, and pharmacies.

**Patients and EMR**

Patients are likely to see value in the EMR, in Zaroukian’s view, “if they feel included. If the EMR comes between the physician and the patient, it’s bad. Most patients want to be
able to see the screen when you’re working with them—they see looking at the screen as face-to-face time with the doctor. Some patients don’t like it at all, so for them I put it aside. If they then ask a question that requires me to consult the EMR, I ask if I can before turning back to it. There’s no harm in asking the patient if the EMR works for them.” Mohr says that his patients have no complaints, but he “struggles to get residents to keep their noses out of the tablet. Some doctors are flustered by the computer and become too focused on the document, not the patient.” He adds that the biggest problem with EMR and patients is lost connectivity—nothing is as irksome as computers going down in the middle of a patient visit. This, Mohr states, is “the hazard of a big system. We’ve closed the clinic three times because of this.”

In his article in the *Journal of Healthcare Information Management*, Dr. Zaroukian delineates how EMR has helped with scheduling patients:

> One particularly gratifying benefit was the ability to implement an ‘open access’ appointment scheduling policy, enabling most patients who called requesting an appointment to be seen on the same day or within 24 hours, even if the patient’s primary care physician was unavailable. This policy was made possible by the existence and predictable availability of sufficient electronic patient information to make covering physicians comfortable seeing frequently complex patients in an efficient and effective manner, something they were not comfortable attempting in a multi-volume paper chart environment.

**Financial Implications**

In his *Journal of Healthcare Information Management* article, Dr. Zaroukian lays out the costs and savings from implementing EMR in his internal medicine clinic at MSU. Total costs for initial implementation in 2002 were $192,500 and annual maintenance costs $57,425. The internal medicine clinics saving come from several sources. One important source is a decrease in the staff-to-physician ratio, which decreased from 3.2 before implementation to 2.5 after implementation, and has decreased further in the past two years to 1.8 support staff FTE per physician. Other savings included the virtual elimination of paper chart pull fees, and elimination of the vast majority of transcription fees. Total savings per provider FTE exceeded $63,000. The clinic broke even on its investment in 16.5 months.

On the other hand, Dr. Mohr says that EMR finances “are muddy. Our tablets are four to five years old and breaking down and there’s no money to replace them.” Dr. Zaroukian indicated that his clinic has been able to use a portion of the savings from improved clinic efficiencies to underwrite the cost of replacing tablet computers and purchase items such as automated blood pressure, pulse, temperature and oximetry devices that send the results directly into structured data fields in the EMR, thus saving additional staff time and eliminating errors in hand-entered vital signs.

**Challenges**

Drs. Mohr and Zaroukian are early, steadfast supporters of EMR in theory and practice. But they both lament the occasional sluggishness and down time of the network that supports the EMR.
Globally, Zaroukian is taken with how hard it is to change a culture in need of change—we tend to get lost in the thick of thin things. It has been estimated that 80 percent or more of the work and cost of EMR implementation is in change management, and organizational culture is often a big part of that. It is also important to be able to measure the successes and failures of various aspects of EMR implementation and use. Organizations should measure what they value, including EMR adoption and use, because what is measured and reported tends to be acted on and improved. In our system, EMR use by all providers was expected and encouraged but without sufficient resources to measure and take action on what the organization valued in this regard, the message to some was that EMR use was not required, especially if they could successfully make the argument that ‘it doesn’t work for me’. The job of an organization’s executive leadership is to make EMR use expectations clear, nurture and support champions and change agents, reward those who exceed expectations, hold those who do not accountable, and otherwise facilitate the organizational culture change needed for success.

Mohr states that he is a huge proponent of EMR, but adds, “I’m frustrated because I know how much it can do. Between pay-for-performance and regulations, there is not an option to ignore it.” He adds that “we must have much more interoperability—and learn how to share data across EMRs.”

**Excitement and Potential**

In the end, both physicians see much to praise and hope for with EMR. Dr. Zaroukian explains, “EMR does more than I thought it would. It’s more customizable and provides me intelligence I never anticipated. Every day, EMR helps me have the information to make wise decisions. And it allows me to focus on the hard stuff, leaving the smaller details to the EMR. To be able to do things I can’t do in paper that improve quality makes a durable difference.”

Dr. Mohr’s frustration with the current lack of interoperability is tempered by his high expectations for its eventual implementation: “If we could get to a unified, interoperable system, this would change the face of health care. No searching for information. Let me use my brainpower to help patients, with a free flow of information in and out. That will really improve quality of care.”

**Words of Wisdom for Other Practices**

- Physicians need protected time to be trained on EMR. They should not have access to pagers and cell phones. And the training must be hands on.
- In large practices, never underestimate the complexity of making certain that the computers and networks go down as seldom as possible. A network failure can affect hundreds of doctors and patients.
- In some practices, especially multispecialty practices, early customization may actually slow down physicians’ EMR adoption, as it can focus practitioners too much on the way they used to do things rather than how EMR can help them do things better.