

How to Successfully Navigate Your EHR Implementation

These clues can help you avoid the pitfalls you'll encounter on your EHR journey.

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Some electronic health record (EHR) implementations proceed on schedule with full involvement of their participants and achieve their goals. Others flounder, stall or struggle, experiencing only partial success or, in extreme cases, no success at all.

What accounts for the difference? Is it a problem with the people, the process or the EHR product? How are large-practice implementations different than small-practice ones? How can you fortify yourself against failure and plan for success? Keep reading for some answers based on my review of available literature on the topic as well as my personal experience. (See a list of Dr. Adler's prior *FPM* articles on EHR systems on page 37.)

The three T's

Team. Tactics. Technology. I have organized the key dos and don'ts of implementation into these three categories. *Team* refers to people and organizational issues, *tactics* to specific techniques and choices made in design and setup, and *technology* to the software, hardware and network choices you will make. Many implementation issues are common to large and small practices alike. Yet large practices, perhaps due to their complexity, tend to suffer more from team issues, and small practices, perhaps due to their more

limited resources and experience, tend to falter when it comes to technology issues. Any size practice can crash and burn when it comes to tactics.

Team

Everyone in your practice will play some role in the success or failure of your EHR implementation.

Some roles will be bigger than others, but they all need to be acknowledged and understood from the start.

Three types of leaders. Study after study on EHR implementations reports the same thing: People are key, and leadership is one of the biggest issues. An EHR project needs three kinds of leaders: a physician champion (or two or three), a CEO and a skilled project manager. In a small practice, the physician champion and CEO may be the same person. That should help the implementation's chance for success.

The physician champion should be a respected clinician who is a good communicator and a tireless supporter of the project. He or she should be the engine that motivates others. Physician champions are so important that one report stated, "Identify an EMR champion – or don't implement."¹

The CEO and the rest of your practice's senior management team should fully back the project through thick and thin and help provide the needed resources. They should help clear the track of obstacles. ►



Learning how to use an EHR is a lot like learning a musical instrument. You don't just pick it up the first day and expect to be a virtuoso.

■ Your EHR implementation has a better chance for success if you organize it into three categories: team, tactics and technology.

■ Studies have found that a practice's employees are key to an EHR implementation's outcome, with project managers playing a critical role.

■ Everyone involved with the new EHR will need to be open-minded about changing the way the practice operates.

The project manager should not be just any available manager. Rather, he or she should be someone who is trained, skilled and experienced in managing complex information technology (IT) projects with overlapping timelines and multiple stakeholders. Ideally, the project manager will have managed an EHR implementation before. He or she will be the engineer that keeps the train on track and anticipates the stops ahead. Large practices will need to hire a full-time manager, while small practices will likely partner their office manager with an implementation manager assigned by the EHR vendor.

Change management. Not only does an EHR project need good management, but it also needs broad stakeholder involvement, a motivated implementation team and an excellent communication plan. Unfortunately, installing an EHR is not like installing a new program on your home computer. You cannot simply load it, learn how its features work and go on your merry way. EHRs are much more complex.

You will need to understand your EHR's capabilities and determine how it can be used to streamline and improve current paper-based office processes. Using an EHR will require you to change the way you do many things and who does what. EHRs offer an opportunity for you to improve your office efficiency and service level, but that isn't automatic.

This means change, and change is a dirty word to many people. It inspires fear, resistance and sabotage. Understanding and utilizing a good change management process will

help. An excellent book about this is *Leading Change* by John Kotter.²

Expectations and goals. If you buy an EHR expecting it to make you loads of money without any extra work, then you're on your way toward what you'll perceive as a failed implementation. You need to start out with realistic expectations. EHRs *do* require extra work for most users during the first year, and financial break-evens typically don't occur until two to three years from your go-live date.³

Setting specific, measurable goals for what you want to accomplish with the EHR will also help you define what constitutes success or failure. For example, you might decide that all six of your practice's physicians need to be fully utilizing all seven modules of your EHR by a target date. Or you might decide to shoot for a 70-percent reduction in transcription usage practice-wide by a certain date. Goals like these should be determined early in the planning, if not before purchasing your EHR, then certainly before implementing it. Again, be realistic. This is a long-term project. That isn't to say you shouldn't set high expectations. Establishing goals that are ambitious, but achievable, can be motivating. Yet it's important to understand your users' needs, and to make sure they understand and share the stated goals. Otherwise, they might not play along, destroying your implementation plans.

Finally, it's wise to monitor and communicate your progress in terms of achieving your goals. There are many ways to do this, but one easy tactic would be to display an implementation timeline poster in a break room where all staff can see it. This poster should show past and future key implementation dates and accomplishments. This will help keep things on course.

Functional organizations. If your practice is broken, you need to fix it before you try to bring an EHR on board. Dysfunctional organizations are likely to have dysfunctional implementations. Excellent communication, clear lines of authority and an explicit decision-making process promote success.

An implementation team composed of key

About the Author

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stakeholders should design and monitor the implementation process, but one individual alone, the project manager, should direct the actual implementation. Of course, the project manager should do so in a collaborative, rather than a dictatorial, fashion.

Tactics

New questions will pop up almost every day while you're doing an EHR implementation. With the right tactics in place from the beginning, you'll have answers ready – for most of them.

Plan, plan, plan. It can't be said enough. Much of an EHR implementation's eventual outcome depends on the planning you do long before you go live. Write the plan down. Use project management software. Talk to experts and other users. Visit other implemented sites. Do not wing it.

Workflow redesign. A key piece of planning frequently mentioned by EHR implementation experts is "workflow redesign." As mentioned above, an EHR implementation offers you an opportunity to improve some of your less efficient processes through automation and fewer steps.

Ideally, for each major office process, you should review the current paper process, analyze its steps and record them on a flow diagram. You can then determine if the process can be improved by comparing it to a flow diagram you create of an EHR process that accomplishes the same thing. Office processes that you should examine include medication refilling, telephone messaging, appointment requesting, lab reviewing, other test reviewing, prescription writing, patient check-in, health maintenance tracking, referral making, lab and test ordering, communicating test results to patients, interoffice messaging and note charting.

Not all EHR processes will be quicker and more efficient. You shouldn't insist that people switch from an efficient paper process to a less efficient EHR process just for the sake of automation.

Sometimes, though, a slower EHR process can pay off in other ways, making it worthwhile. For example, progress note documentation with an EHR is typically slower than using dictation or even a paper check-box form. However, by documenting directly in an EHR you immediately gain easily readable notes at the end of the



visit. Notes can then be shared with patients or consultants, or the notes can be used for immediate review of those patient-care questions that arise before a dictation would normally return. Direct EHR note entry also commonly allows you to record diagnoses and populate problem lists simultaneously. These computerized problem lists facilitate a wealth of disease management and quality improvement efforts that can only be dreamed of in the paper world.

Scanning strategy. How much of an old paper chart should you scan in when you initiate your EHR, and when should you do it? This is a topic of some debate in the EHR world, and no single answer will suit all users. The strategy my three-physician office chose was to scan in records of patients with scheduled appointments just before they came in. Eventually, as our volume of first EHR visits decreased, we started scanning in charts for any patients that made phone contact with the office. Another strategy would be to spend six months before your go-live date trying to intensively scan in all your charts. This would likely require extra personnel and more than one scanner.

That answers "when," but what about "how much"? One possibility is to scan in as much as possible into one electronic file. For example, with a high-speed scanner that handles 90 pages per minute, you can scan a 200-page record into one file in just over two minutes. But that isn't terribly useful, because to find anything in the old paper record would involve browsing through that entire electronic file. Another possibility is to divide those same 200 scanned pages into subfiles using easily

■ If your EHR implementation team is given unrealistic goals, the project is likely to end as a perceived failure.

■ When it comes to your implementation tactics, spend as much time as possible planning, which should cut down on surprises as the project proceeds.

■ Your strategy for scanning paper charts should balance your physicians' need for easily searchable data with how much staff time you're willing to spend on scanning.

retrievable categories such as “urology consult,” “ECG,” “echo,” “brain MRI,” “chest CT,” “progress note” and “comprehensive exam.” This could conceivably require filing 200 pages in 100 categories, and that isn’t tenable either. It might take a staff member much longer than an hour to scan one chart. At that rate, your staff will quickly fall behind.

The right answer involves a compromise somewhere between these two approaches. You’ll find your answer by balancing your physicians’ need to minimize the time they spend searching for scanned data in an EHR with how much staff time (read: money) you’re willing to spend on scanning. Remember, of course, that physician time spent unproductively also equates to money.

I’ve talked to many EHR users who feel that you shouldn’t try to scan in the whole old chart. I agree with this – but only to a point. In my view, the goal should be to scan in enough of the chart so that you won’t need to pull paper charts for appointments. Your records staff will be busy scanning and filing documents. It’s not reasonable to expect them to continue doing the old process of pulling charts, too.

We found it worked well to discretely scan in the key data we thought we’d need 90 percent of the time and to bulk scan the rest. We then shredded our charts. We ended up with more room in our office and were able to get many old charts out of storage. In some offices, depending on design, old chart rooms can even be converted to productive exam room space.

Data entry. To get value out of an EHR, it’s critical to maintain problem lists,

medication lists and allergy lists. But who enters that data and when? Again this is an issue you’ll need to decide during implementation. In our office, medical assistants entered medications and allergies from the old chart, and physicians entered the problem lists. This was done just before an upcoming appointment, and then the chart went to scanning. That meant that the first time we saw the patient after going live, we had a completely functional electronic chart and no longer needed the paper one. Some offices hire registered nurses to help with problem entry. Others never get around to completing the data entry and thus have less than fully functional EHR systems.

Whatever you do, it’s critical that you have a plan and be consistent. By sticking with our approach, we were able to have about 80 percent of our active patients’ records scanned into our system within a year.

Electronic interfaces. Generally the more options you have to get information into the EHR electronically, the better. A practice management interface is essential if you have a stand-alone EHR product. Otherwise you will have to do double entry of all patient demographics.

Lab interfaces should be a high priority. With them, you will have a much easier time finding the specific lab result you’re looking for than you would if you were using paper, and you might even be able to flowchart or graph trends in specific lab values, like all of a patient’s A1C rates for the last several years. Without a lab interface, you will have to scan in lab reports and be no farther ahead than you were with paper reports, or you or your staff will manually enter lab values, a labor-intensive process.

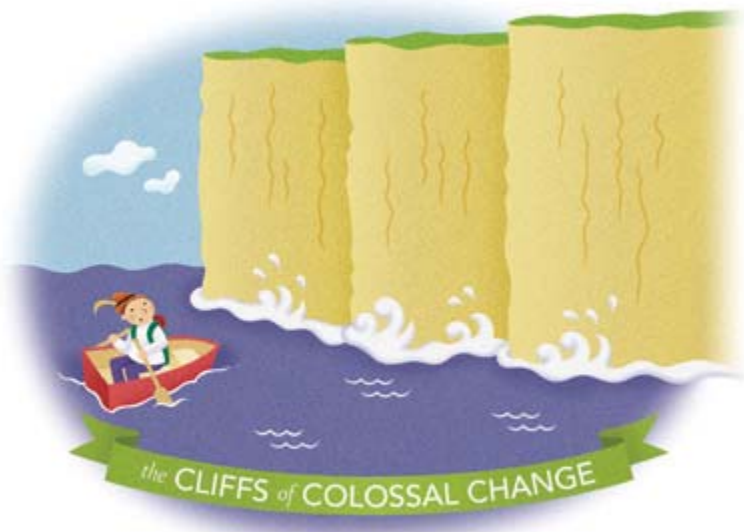
Radiology and hospital interfaces are nice but not as essential. Electronic interfaces will allow you to reduce how much you scan in and will speed your access to information. The problem is that interfaces can break, and they can have errors. They require skilled IT personnel to manage them. Don’t implement one if you can’t skillfully manage it. A broken interface is worse than no interface at all.

Big bang vs. phased implementation. Should all physicians go on the system at once? Should you start all functions at once? Ideally, all physicians in one office should go on the EHR together. Otherwise, the office staff will need to run at least two different sets of processes for paper-based physicians vs. EHR physicians. Not

It’s critical that you maintain a consistent policy on who will handle data entry and which data they will enter.

Among optional EHR interfaces, lab interfaces should be a high priority, while radiology and hospital interfaces are nice but not as essential.

Ideally, all physicians in one office should begin working with the EHR system at the same time.



only is that confusing, but it also is inefficient.

However, if your practice has more than one office, there is no overriding reason that all practices have to go on the EHR at one time. In fact, depending on your practice's resources, you might be wiser to roll out one office at a time.

A few practices have successfully implemented all functions of an EHR at once. This can be called "big bang." The consensus, however, is that success is more likely if you implement functions sequentially in what is known as "phased implementation." Typically you start by introducing less interactive functions first, like scanning and result reviewing, and then move on to more interactive functions, like interoffice messaging, prescription writing and note documentation. A lot of variability exists in this area, partly perhaps due to variation in EHR software. With regard to specific phased implementation strategies, you should pay close attention to your EHR vendor's recommendations.

Training. Many implementations use a train-the-trainer approach, in which a core group of people are trained directly by the vendor. This group in turn trains the rest of the users at their site(s).

Training for end users is best done within two weeks of going live so that new skills aren't quickly forgotten. One initial training session may not be enough. Teaching complex skills, like efficient note documentation for physicians, can be started with the initial training and then advanced with briefer updates.

While some EHR skills apply to all users, distinct user groups, such as receptionists, records personnel, medical assistants/nurses and physicians, will benefit from customized training relevant to them.

Training can be done classroom style, via the Web or one-on-one, depending on your resources and inclinations. Initial training time will vary depending on your software and implementation plan. Our clinic's initial training commitment ranged from four hours for receptionists to 16 hours for physicians.

Note design. Vendors will often supply some standard note templates for your use that their other customers have used. Given the variation in how physicians practice medicine, you will most likely decide to customize these templates to suit your practice style. Some practices develop dozens, even hundreds, of templates for use in a wide variety of clinical situations.

You'll need to consider how much leeway

OTHER FPM ARTICLES BY DR. ADLER

"An EHR User-Satisfaction Survey: Advice from 408 Family Physicians." October 2005:29-35.

"How to Select an Electronic Health Record System." February 2005:55-62.

"Why It's Time to Purchase an Electronic Health Record System." November/December 2004:43-46.

each physician should have on customized templates. For example, should your practice design one common template for the medical group on diabetes? Or would it work better if you allowed each physician or practice site to create a customized variation? If you are using a template for the purpose of disease management, then it makes sense to standardize. Otherwise, allowing individual variations will likely promote higher EHR utilization and efficiency among your physicians.

After you've decided on a template policy, you still need to offer your physicians other ways to document their patient encounters. I've found that if you try to force everyone to use the same method of note documentation, then you won't be able to get everyone to use the system. Choosing an EHR product that allows a variety of ways to document notes will lead to fuller EHR utilization. In addition to templates, other documentation options include free text typing, voice recognition, partial- or full-note dictation using voice files, macro use and handwriting recognition. In some cases, a combination of these can be used to create a note most efficiently.

Going live. If you've prepared well, turning your system on, or "going live," should be uneventful. Given that Mondays are your busiest days, they are a bad choice for a "go live" day. Pick any other day. Make sure your physicians have lighter-than-normal schedules – ideally about a 50-percent workload. Our practice did that for the first two weeks and then resumed our normal schedules. This will vary depending on your implementation's design. Ask your vendor what has worked best for other customers.

It's common to underestimate how long it will take staff and physicians to get up to speed on the EHR. Remember, learning how to use an EHR is a lot like learning a musical instrument. You don't just pick it up the first day

■ Training on the EHR system is best done within two weeks of going live so that new skills are not forgotten.

■ You're likely to get more doctors using the EHR system if they're given some leeway to customize note templates.

■ When you're ready to "go live" with your EHR, try to avoid starting on a Monday, which is already your busiest day.

and expect to be a virtuoso. Depending on the complexity of the product, basic competency can easily take six months. That's why phased implementations are typically recommended.

Support. Adequate vendor support is essential for success. If your vendor fails to respond to your calls for help or responds too slowly, your implementation can be sabotaged. This speaks to the importance of thoroughly investigating your vendor and the product *before* you sign the contract.

A common tip for success is to create one or more "power users" at each clinical site. These will be employees to whom the rest of your staff can turn first for immediate advice on many issues. If the issue is beyond a power user's knowledge, then it is passed up to your internal IT staff or your EHR vendor.

Technology

Many EHR experts say that people problems, or what I call "team" issues, rather than technology problems, lead to nearly all EHR failures or partial implementations. Their favorite examples always involve one practice that succeeded and one practice that failed, even though they bought the same EHR system and used the same hardware. My experience and conversations with other users has led me to the perspective that technology matters, too.

Need for speed and high network availability. Although I agree that people issues are critical, I believe that technological problems can torpedo an implementation, too. Poorly written software that requires numerous clicks to accomplish a process, compared to an alternate product that does the same thing with one click, makes it harder for EHR users to succeed. Inadequate server memory or processing power or poor network design can slow down common EHR tasks to the point of crippling them.

Our group's implementation came perilously close to failing when we ran into problems with our network. All of our EHR sites, and two in particular, had problems with speed. Screen changes often took several seconds. This caused enough consternation among our physicians that some wanted to get their money back and return to paper. After much investigation, we learned that the primary issue was a lack of bandwidth. It would have broken our budget to increase bandwidth enough to solve the problem. Fortunately, we found an affordable solution using network compression hardware.

Large medical groups and hospitals typically have a sophisticated IT infrastructure and more resources to invest in hardware than smaller practices. Thus, they are less likely to suffer from network or server problems. Small practices should be sure to have excellent IT support or consider an application service provider (ASP) model. With an ASP, an outside

Many practices designate in-house EHR "power users" to whom other employees can turn first for advice and support.

Technological problems, such as poorly written software or inadequate server memory, can cripple an EHR implementation.

THE THREE T'S OF A SUCCESSFUL EHR IMPLEMENTATION

Team	Tactics	Technology
<ul style="list-style-type: none"> Identify one or more EHR champions or don't implement. Make sure your organization's senior executive fully supports the EHR. Use an experienced, skilled project manager. Utilize sound change management principles. Have clear, measurable goals. Make sure users share your goals. Establish realistic expectations. Don't try to implement an EHR in a dysfunctional organization. 	<ul style="list-style-type: none"> Plan, plan, plan. Redesign your workflow. Don't automate processes just because you can; make sure the automation improves something. Design a balanced scanning strategy. Consistently enter key data into your new EHR charts. Get data into the EHR electronically when possible. Utilize a phased implementation. Train, train, train. Be flexible in your documentation strategy and allow individual differences in style. Don't "go live" on a Monday. Lighten your workload when you "go live" and for a short period afterward. Don't underestimate how much time and work is involved in becoming "expert" with an EHR. Pick a vendor with an excellent reputation for support. Utilize "power users" at each site. 	<ul style="list-style-type: none"> Don't scrimp on your IT infrastructure. If you're a small practice, consider an application service provider (ASP) model. Make sure that your IT personnel do adequate testing. Utilize expert IT advice when it comes to servers and networks. Make sure your servers and interfaces are maintained on a daily basis. Back up your database at least daily. Have a disaster recovery plan and test it.

entity maintains the servers and backs up your data. You just provide desktops and a broadband Internet connection.

Testing. If you are running your own servers, you should have a “test” environment to mirror your “live” environment. All new software products, upgrades and patches should be thoroughly tested before unleashing them in the live environment. Otherwise, something as simple as installing a new patch could cause your EHR to malfunction during the middle of a busy workday. After that happens a few times, your users will be eager to go back to paper.

Be aware that your IT personnel should perform different types of testing with names like “smoke testing,” “end-to-end testing” and “volume testing” before a new implementation. Although a detailed description of testing techniques is beyond this article’s scope, you should get a list of all the recommended types of testing from your EHR vendor and then ensure that this is done by whoever will be responsible for it in your implementation.

IT support and maintenance. The more complex your server and network environment, the more support and maintenance you will need. Get expert help here or suffer the consequences.

Server and network hardware can be expensive. Because EHR software is also expensive and EHR vendors want to promote sales, they have a stake in quoting you the minimal hardware configurations that will work with their product. Consider getting independent verification on their specifications if possible. Ask for a list of the hardware choices some of their other clients made. Also, don’t go with the minimums. Performance will be enhanced if you have a buffer. Remember, from the end-user’s point of view, speed is everything. Having to wait for the screens to change while you are in the middle of a busy day practicing medicine is not acceptable.

Disaster recovery. You will invest heavily in hardware, software and training. You will reap many rewards for your efforts. Yet there is one more investment you must make that will have no obvious return. You need to back up your data daily and have a working disaster recovery plan. Think of this as an insurance policy. You should test your back-ups and make sure they work. You also should build redundancy into your system to maintain high availability of the EHR. Get some expert IT advice here.



The journey ahead

I’ve put my key points in the list on page 38 (see “The three T’s of a successful EHR implementation”). Undoubtedly, looking at that list and thinking about your EHR implementation is daunting. There’s so much to learn, and so many things can go wrong.

Take it step by step. Plan carefully. Get good advice. Be patient. You will succeed. But remember, implementing an EHR is not a destination but a journey. As one EHR expert put it, “Successful implementations never end – only failures.”⁴ **FPM**

Send comments to fpm@afp.org.

1. Miller RH, Sim I, Newman J. Electronic medical records: lessons from small physician practices. Available at: <http://www.chcf.org/topics/chronicdisease/index.cfm?itemID=21521>. Accessed Oct. 11, 2006.
2. Kotter JP. *Leading Change*. Boston, Mass: Harvard Business School Press; 1996.
3. Miller RH, West C, Brown TM, Sim I, Ganchoff C. The value of electronic health records in solo or small group practices. *Health Affairs*. 2005;24:1127-1137.
4. Carter JH. EHR implementation successes and failures: what have we learned? Available at: <http://www.amia.org/noind/meetings/spring05/jcarter.ppt>. Accessed Oct. 12, 2006.

Line up expert IT support and maintenance, or suffer the consequences.

Your data should be backed up daily.

With careful planning and good advice, your EHR project will succeed.

COMING SOON: EHR USER-SATISFACTION SURVEY

An upcoming issue of *FPM* will include our EHR user-satisfaction survey. Two years have passed since our last survey, and we’re interested to learn and to share how our readers are faring with their EHRs.