

# The Real Deal on EMR Implementations

**With ROI for large-scale IT projects still questionable, it's important to focus on quality improvements, not dollars and cents.**

by **Vince Ciotti and Barry Mathis**

There is tremendous interest lately in electronic medical record (EMR) systems, with many hospitals seeking to acquire an EMR in conjunction with computerized physician order entry (CPOE), to both reduce paperwork and clerical effort.

Although this trend started with large medical centers, then spread to mid-sized community hospitals, today even small hospitals under 100 beds in size and critical access (under 25-bed) facilities are seeking such systems to stay competitive. Interest in EMRs and CPOE has been fueled by claims in the media of huge potential cost savings, such as the Rand Corporation's claim of \$41.8 billion per year savings if 90 percent of providers embraced an EMR. Even presidential candidates are jumping on the EMR bandwagon, with both red and blue politicians extolling EMRs as the panacea for most of the ills in our healthcare "system."

Interestingly, most of the articles and speeches touting potential return on investment (ROI) from EMRs have been given by vendors, often through their surrogate "pilot site" hospitals, and consulting firms that stand to earn millions in the sale and implementation of each system. The oft-quoted Rand study was itself funded by vendors like Cerner, GE, HP and Xerox, causing some to question the objectivity and attainability of these large ROI claims.

The risk to hospitals and CIOs who believe these claims and promise such ROI to their CEOs and boards is that if cost savings are not accomplished in "X" years, not only is financial survival at risk in these days of decreasing reimburse-



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ment, but even careers are in jeopardy if implementations fail or cost savings are not met.

This article will attempt to present the other "ROI" of EMR and CPOE systems: Real Obstacles to Implementation, that is, challenges that must be met to implement even basic functions of an EMR, let alone achieve the claims of greatly reduced costs. Since we might be running for president ourselves some day and have to jump on the EMR bandwagon as well, for each of the obstacles given, we will list ways to overcome them or at least mitigate their effects.

Hopefully, this single article in the face of the media frenzy encouraging adoption of EMRs might temper the claims you make to your senior management and board of directors, so that if (when?) your EMR implementation experiences difficulties, you can quote how you warned them in advance and tried to lower their expectations.

## EMR expectations

The primary assumption with EMRs is that physicians will use them in lieu of paper charts and obtain many benefits such as:

- ◆ Reducing duplicate tests by seeing what other providers have ordered
- ◆ Viewing patient history from past visits to improve patient care
- ◆ Avoiding legibility problems with M.D.s' notoriously poor handwriting
- ◆ Medical alerts popping up to remind physicians of contra-indications

A secondary assumption with EMRs is that nurses will obtain such benefits such as:

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- ◆ Eliminating duplicate order entry of M.D. scribbles on order sheets
- ◆ More legible progress notes for nurses on succeeding shifts
- ◆ Less time documenting to increase time at the bed side
- ◆ More structured and organized notes for greater clarity

All of these expectations are admirable in that, if accomplished, they truly would improve things for hospitals, care givers and patients. And the theoretical ROI can be quickly seen:

- ◆ Duplicate tests cost many thousands of dollars
- ◆ Nursing overtime costs can be reduced
- ◆ Lower malpractice rates, etc.

So why doesn't every hospital have an EMR installed? Why aren't those that do have them installed out-perform all others in productivity and quality?

### Obstacles

During our work experience (see bios at the end of this article), we have assessed over a hundred hospitals with EMRs installed or in the throes of an implementation, and have observed first hand many obstacles to their adoption, such as:

**Time** — Physicians are experiencing the same dwindling reimbursement hospitals face, and they only have so many hours in a hectic day to make rounds at their hospitals and then see patients in their offices. Indeed, most M.D.s earn far more at the office than at the hospital due to complex professional fee billing via CPT codes, so they want to minimize their time at the hospital and maximize it at the office. Give these time-harried physicians the choice of scribbling an order on an order sheet in a chart, or spending several minutes signing-on (“What is my password at this hospital?”), navigating through multiple screens (“Don't these programmers know how a doctor thinks?”), clicking past repetitive alerts (“When are they going to fix this message?”), etc., and which would you chose?

**Typing Skills** — Few medical schools offer courses in touch-typing and most doctors rely on their administrative staff in their office to handle data entry. Granted, the advent of GUIs and the Internet has made everyone fairly facile at using mice and navigating screens, but to enter free-form text via a QWERTY keyboard is an acquired skill, and only a sub-set of physicians can afford the time to master typing. Worse, a typo in a medical setting can have drastic consequences (the same malpractice suits EMRs were supposed to reduce) so physicians are naturally loathe to take over the clerical typing tasks that unit secretaries used to do for them before CPOE.

**Teaching Hospitals** — Most of the success stories of high usage of EMRs have historically been at teaching facilities where residents can be ordered to use an EMR and perform CPOE if they want to graduate. Try to order your admitting physicians, who are independent practitioners with admitting privileges at several community hospitals, and you may understand what befell Cedars Sinai Hospital in Los Angeles a few years back. Unless learning an EMR and using CPOE directly benefits a physician, why should they bother to go through all of the grief? Even at teaching hospitals, the faculty are usually the one exception to using highly-touted EMRs: they leave it to the students.

**Computer “Errors”** — Have you ever clicked a wrong button on Amazon and bought the wrong book? Ever get stumped by the “Help” screen in an application? Ever pay the wrong merchant or wrong amount via Quicken? Sent an (embarrassing) e-mail to the wrong person? We are all human, and a computer is simply a new tool for us to accomplish our work/errors. As the famous NIH study was entitled, “To Err Is Human,” and computers now let us make those errors in nanoseconds.

**System Design** — Few programmers or systems analysts are practicing physicians – the pay differential is drastic, with M.D.s making several orders of magnitude more. Vendors face harsh economics designing and building an EMR: programmer/analysts earn five-figure salaries, while physicians earn six-figure salaries. Which would you hire if you were a for-profit company? Most compromise, and hire a few M.D.s to design their systems (and give sales demos for the majority of their time), and have scores of techies do the actual programming. Worse, some firms use “offshore” (read: third world) program-



mers, adding the cultural gap to system design. We have heard far too many physicians exclaim incredulously, "Who designed that screen?" to believe the ratio of M.D.s to programmers in anything like it should be, and screens designed by programmers in a cube will not be used by doctors in the real world.

**Quality** — EMRs improve patient care you say? Ask your physicians whether they feel safer ordering via time-honored order sheets followed up by live questions from real nurses and pharmacists, versus typing onto a screen and clicking "OK" automatically to the plethora of bothersome alerts? As old-fashioned as it may seem, humans talking to humans is a very effective means of communications, especially compared to one-way e-mails or mindless error messages. EMRs foster the isolation of care givers, where M.D.s, R.N.s and Med Techs "do their thing" one-way via a typed message with far less face-to-face interaction (wide eyes), emotion ("I'm worried about Mrs. Smith"), hand gestures (shoulder shrugs), head scratching, etc. Might this be why malpractice rates aren't lower for hospitals with EMR/CPOE installed?

**"Visionware"** — Every vendor, not just most, but every, starts to sell a system while it is still in the design and programming stages, in order to fund the development. It is not a question of morality, but of reality: it happens. The first thing vendors create are slide shows in Powerpoint, glossy brochures, updated proposals, and revised contracts. Concurrently, programmers are trying to finish release one for the pilot site, which requests dozens of changes to the specs while they are coding. When release one is finished, it is replete with bugs and gaps, which are to be addressed in release two, ad infinitum. EMRs and CPOE are decidedly in this early stage of release at most vendors and hence, systems delivered are incomplete, making ROI rather difficult to achieve.

### Recommendations

No, we're not Luddites calling for the abolition of IT in healthcare, but rather HIS veterans worried about the

hyper-hyping of a technology that impacts human lives, including ours. To offer hope for the future, all of our concerns can be mitigated to some extent by following these recommendations:

**Time** — Invite representatives of your medical staff to join in the selection committee for an EMR/CPOE system, and have them validate first-hand how much time it takes to use versus your old paper charts. Value their time, and don't put them through an endless RFP feature checklist with thousands of questions for vendors to say "yes" to. Rather let them telephone peers at user hospitals, visit nearby facilities, and/or receive personalized one-on-one demos from vendor physicians (not sales reps) in a "physician fair" at your hospital. This "buy-in" by the medical staff can go a long way toward actual use of an EMR/CPOE, rather than resistance.

**Typing** — Let your medical staff evaluate how much typing each system requires via the first-hand steps listed above. They'll favor the system that has the most point-and-click menus for entry, the most helpful glossaries in pull-down menus, and the least typing. Look for systems that employ optional voice recognition (not all doctors like it), and, worse case, keep dictation/transcription systems in reserve for the most recalcitrant.

**Teaching** — No, you don't need to become an AMC and have residents to order system usage to, but there is a growing body of physicians who do spend the bulk of their time at hospitals, not their office: Hospitalists. These individuals live at your hospital most of the day and are eager to learn every policy, procedure and device you have, so engage them as the "pilot" group. Over time, these in-house specialists will see more and more of your inpatients, so jump early on this bandwagon and you'll find these M.D.s actually eager to use an EMR.

**Computer "Errors"** — They're inevitable. To minimize errors from physicians, automate their partners in patient care first: the nursing staff. Before ever allowing a single M.D. to inquire into an EMR or enter an order, first automate nursing paperwork (assessments,

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vital signs, I&O, care plans, etc.) in "Phase I" of your project. Once the nurses have learned (and debugged) the system, they will be at your physicians elbows when it's time for the medical staff to use the system and prevent errors. After all, who does an M.D. ask for on the floor whenever they have a question or problem? Nurses. Make them your "front line" allies in the battle against screwing up via computer.

**System Design** — Most modern EMRs are actually built by the hospital through "tools" like screen-painters, workflow engines, report writers, user-defined fields, etc. When you build your EMR, enlist nurses and physicians in the design, not just "experts" in IT, no matter their clinical experience. Only R.N.s and M.D.s from your floors working with your policies know what to put where on which screen. Swallow your ego, IT, be a facilitator, not a designer, and they'll only have themselves to blame if they're unhappy when it goes live. A great idea for those repetitious medical alerts (from a physician at Johns Hopkins): instead of the ubiquitous "OK" button at the bottom of an alert, place two buttons: green = this was a good alert, red = this was a waste of time. Over time, use the statistics on each to improve the quality of your alerting.

**Quality** — Forget all the cost-saving promises you've heard from vendors and consultants: lay off "X" nurses, eliminate "Y" file clerks, etc. In truth, you'll hire far more people throughout the hospital to care and feed the new system than you'll ever lay off. We may all be retired or expired before any ROI equals vendor and consultant fees. Make quality the mantra for the new system, not fictitious cost saving, and you'll focus your implementation team on what matters most: improving patient care. Stress things like improved patient safety, better medical staff relations, competitive position among local hospitals, and easier physician/nurse recruiting, and you might actually achieve them.

**"Visionware"** — Don't buy based on an RFP: "Request For Prevarication." Also, don't buy solely from demos, whether at your hospital or (worse) at overly impressive vendor headquarters. Rather, have your

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key users in nursing, ancillary departments and the medical staff ascertain real-world functionality through peer-to-peer telephone reference checking and site visits (nurse-to-nurse, M.D.-to-M.D., etc.), at hospitals of your size and complexity. Verify how features work in the real world.

#### Conclusion

EMRs and CPOE are becoming just like document imaging, PACS, and other breakthroughs before them. You can't stem the tide of automation, but at least learn from the lessons of early adopters. Be a realist about EMR and CPOE systems: they have many pluses, but also many minuses. Don't promise the moon to your executive team and finance committee, especially in terms of economic ROI. Exuberant promises of staff reductions may only result in yours. Lower expectations among users and executives and they'll more likely be met.

**Vince Ciotti** — Co-founder and principal with HIS Professionals, LLC, has over 38 years experience in the healthcare IT industry working for both vendor and consulting firms. Working with The Hunter Group and Navigant Consulting, he has assessed over 100 EMRs and CPOE systems from dozens of vendors. He can be reached with comments or questions at [vcioti@hispros.com](mailto:vcioti@hispros.com). Or check out Ciotti's blog on the HCI Web site.

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