Electronic Medical Records (EMRs) Reach a Tipping Point

A Case Study for Effective Implementation

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A few months ago, I had a routine visit with my longtime OB/GYN. The exam room was newly outfitted with a computer suspended from the wall. The visit followed a familiar pattern with the usual friendly exchanges, with one exception: Periodically, my doctor tapped visit notes into the computer. I asked how she liked the new electronic medical record system (EMR). My doctor was enthusiastic about the possibilities, despite how different it all was from when she started practice 25 years ago. But then she offered that one of her longtime partners had chosen to retire rather than learn the system.

The rapid implementation of EMRs is being driven by many stakeholders in healthcare. As a result, we’re living through a “storming and norming” period, as doctors face dramatic change in how they access patient information. A particular slice of doctors nearing retirement age sees this as a good time to leave practice; however, many of their contemporaries are also logging on and skilling up. Every year I read thousands of doctor survey comments about what they think needs to be improved in their hospitals and clinics. In the past three years, computerised doctor order entry and EMRs have been a hot topic. Some of the most blistering comments I’ve read have criticised EMRs as endangering patient safety, missing critical information and being highly inefficient.

I’ve seen medical staff in full rebellion, demanding that an EMR with a huge price tag be dumped because of these issues. But things are starting to change out there. I see it in the comments and scores on IT and EMR questions on doctor satisfaction surveys.

Stages of Integration at a Children’s Hospital

What many don’t understand is that EMR adoption is not a single step, but more of an evolution as a system is introduced into various elements of a hospital. I think the experience at Lucile Packard Children’s Hospital in Palo Alto, California, illustrates that point and is a great case study on how to successfully implement a system.

Packard Children’s integration of its EMR into the delivery of care has gone through distinct stages, according to Christopher Longhurst, MD, a clinical assistant professor at the hospital, which is on the Stanford University campus and is associated with Stanford’s medical school. A paediatric physician, Longhurst has been centrally involved in the evolution of clinical informatics at the hospital for seven years. Now chief medical information officer, he leads enhancements to the EMR as well as integrated applications to support performance improvement.

Recalling Packard’s initial approach in 2004 and 2005, Longhurst remembers the emphasis at that time on change management and allaying the early fears of the doctors. Now, he says, “the industry as a whole has moved – there is an expectation rather than a fear that doctors will be working electronically.” He thinks that a second expectation typically emerges after doctors have initial positive experiences. “As we’ve automated some elements, doctors have seen value and want to automate more and more. For example, when we started in 2006 by automating nursing documentation and doctor orders, it was a change management hill to climb.

When we got over the hump, we then automated 95% of our patient beds at once. We left only the ICU, the most complex care, on paper to make sure we didn’t disrupt care. The doctors there got antsy and it was a sigh of relief when we implemented those modules.” One of the more recent challenges Packard has faced has been related to disparate systems. A few years ago, Packard had multiple systems for the pathology, radiology, outpatient care and other departments. In a pattern that is common in numerous hospitals, many departments had chosen “best of breed” software that was highly customised to each department’s specialised needs and workflow, but was expensive and difficult to integrate with other systems.

In many facilities, convincing these departments to give up their niche software for applications that are fully integrated becomes a major battleground. Packard overcame these issues by emphasising its mission of being a family-centred children’s hospital. The value and heightened safety of having all the data for a child in one place became clear. In the process, many attending doctors voiced their dismay at having to access multiple computers with various software systems to gather the information needed to make clinical decisions.

Ultimately, the departments with specialised software reversed course, asking to migrate to the enterprise-wide system. Although there are still areas yet to be integrated, particularly ambulatory care, there is agreement to advance to full integration as quickly as possible.

Challenges ... and Means to Overcome Them

One major challenge at this point is for doctors who practice at both Packard Children’s Hospital and Stanford Hospital and Clinics, adjacent hospitals that use different software platforms. With all orders, documentation and practice now electronic, the doctors have to learn the functionality of two systems.
As is common at most facilities in the middle of the transition from paper to automated medical records, Packard has had its challenges. Mid-course, doctors have the inconvenience of trying to straddle two systems, with some information computerised and other critical data still in a paper format.

This mid-point is seldom efficient and commonly frustrating to providers. Longhurst has this advice:

- **First**, fractured workflow is difficult to address so continuing the journey to automation helps to address their issues.

  In other words, when you’re in the middle of the river, get to the other side as quickly as you can.

- **Second**, Longhurst cautions that implementing an EMR “is not just a capital purchase; it’s increasing the IT department budget to support ongoing operational investments.”

  At Packard, that meant the creation of a clinical informatics department which includes both nurses and doctors. Through this they have integrated clinical IT and performance improvement to heighten the value of clinical computerisation.

- **Third**, Longhurst describes the importance of a highly transparent IT governance and acquisition process. He indicates that administration, including himself as CMIO, should not be seen as the sole decision-makers in determining what clinical IT projects are approved. Instead, Packard has chosen a highly collaborative approach. Longhurst describes its process as an annual gathering of 60 leaders from the hospital and doctor leadership team. Their task is to refresh the organisation’s three-year clinical IT plan by matching their organisational priorities to the IT priorities.

  Jointly they rank order a wide range of IT requests – including nursing, dietary, integration with VMOs and clinical needs – while referencing their broader goals as a hospital.

  The IT prioritisation process is funneled through five teams, each representing different needs within Lucile Packard – infrastructure, patient care, community, business and analytic.

  Each team links and ranks the IT priorities in its area to its larger goals. Acting as one overall decision-making body, the combined teams then rank all the priorities. They balance clinical and business priorities for implementing EMRs.

Most of the nurses and doctors are active practitioners who have a certain percentage of their time dedicated to clinical informatics. Their role is to improve the functionality of the EMR for nurses and doctors. These three full-time nurses and eight part-time doctors have been critical in rapidly improving efficiency and adoption of enhancements.

The hospital executive team draws the bar on how many of the requests Packard can fund. Longhurst summarises, “It’s not an IT strategic plan; it’s a hospital strategic plan for leveraging technology.” In approaching the pragmatics of daily IT issues encountered by doctors, Longhurst notes that the “old school IT help desk” isn’t adequate for today’s doctor needs.
Packard uses a dedicated hot line and super users on the units and, as a particular resource, the nurses and doctors who are part of the clinical informatics department. These clinical informatics experts have become the first point of contact for doctors.

**Advice for Other Hospitals**

Longhurst’s advice to other hospitals is to create high levels of communication about what’s happening in clinical IT. In responding to numerous doctor requests for EMR enhancements, Packard began providing monthly updates on improvements. They worked closely with their vendor to ensure that there was continuous progress, not a fix “next year.”

Longhurst counsels: “You can do all the improvements in the world, but if doctors don’t know, (you’ll never get acknowledgement). We tell our doctors monthly what the benefits of the system have been, what’s coming down the pipe (for example, iPad access), how clinical priorities are being implemented.”

Longhurst cites another critical success factor. “It might be self-evident, but you’d be surprised at how many hospitals try to roll out these EMRs without involving doctors at a truly meaningful level. I don’t mean a monthly meeting, I mean funded, part-time positions. It’s the workflow and processes that are the hard part, not the technology. The interdisciplinary nature of this can’t be over-stressed.” Longhurst continues, “It’s not realistic to ask doctors to volunteer their time to come to frequent meetings.” He recommends contracting multiple practicing doctors for 10-20% protected time for their clinical informatics role, and at least one identified doctor who is primarily accountable for managing the others. These individuals then become champions with their doctor colleagues. “They can then explain to the rest of the medical staff why it’s important to compromise on some things in order to achieve the end goal of improving patient care,” he says.

A common doctor complaint as EMRs begin to be implemented is that it takes more time to complete the same work. Longhurst comments that this is a balance, that it’s reasonable to expect better interfaces for users from vendors. However, he also takes the position that at times it’s better care when there is a little more work. “You used to be able to scribble a script in 30 seconds, but it took much longer for the pharmacist to try to read the handwriting and there was a risk to patient safety and errors. When a doctor enters a prescription electronically now, it’s readable and more likely to be right even if it takes a little longer. What may be perceived as additional work may be appropriate.”

Longhurst believes that when doctors are struggling with a new EMR, there are usually opportunities to improve their workflow. “Sometimes it’s a function of fractured workflow or not using shortcuts in the system. We’re not always good about training end users.” As an example of highly specific training, he points to another organisation spending 2% of its IT budget on working with each individual practitioner to optimise his or her workflow.

Longhurst disputes that EMR implementation inevitably results in productivity loss. “When you first go live, there is a J-curve effect where productivity drops. It takes a while for people to learn a new system. We see that within six months, it goes back to same level or even better productivity.”

Longhurst notes that for computerised order entry, most doctors are actually faster entering orders than when they were handwriting them. He does acknowledge that there is still a cohort of doctors who are highly frustrated, particularly among doctors who have practiced for 20 or 30 years. “Yet from a patient-centred perspective, it’s the right thing to do.

The more junior doctors, within 10 to 15 years of training, are much more amenable to practicing in a technology-enhanced way.” In the past year, I’ve read far fewer comments about EMR failings on doctor satisfaction surveys. I suspect it’s due to multiple evolutions:

- vendors doing a better job of providing more functional, efficient products;
- more integration of previously separate systems; and
- a critical mass of doctors who’ve become proficient users and advocates.

These days I hear more doctors asking for EMRs to be deployed more rapidly at their hospital and practice. I even see electronic records appearing as a “greatest strength” of a hospital or clinic rather than an obstacle to good care.