Why Accept Tradeoffs?
Have Both Your Enterprise EMR and Complementary, Functionally-rich Department Software

By Lisa Fratt

Healthcare providers across the globe are contending with multiple, unprecedented challenges. The incentives to deploy an enterprise electronic medical record (EMR) system are enticing, while impending penalties represent the proverbial stick. Patient safety, provider efficiency and cost-effectiveness also have taken on a new sense of urgency. Finally, evolving reimbursement and practice models, such as value-based purchasing and accountable care organizations, pose another previously unfamiliar variable.

Many feel that the EMR is central to the health of the enterprise and promises to meet many needs. However, as stakeholders drill down into individual departments, there are areas where the EMR may fail to address the specific workflow of the caregivers in those specialties. That’s why many healthcare leaders long for a hybrid IT solution that meets the goals of the enterprise while still addressing the specific needs of the caregivers throughout the organization. A survey conducted within a CIO focus group in 2013 found that 78 percent of the respondents indicated that their organization’s IT deployment strategy over the next 3-5 years included a mixed approach of an enterprise EMR balanced with specialty departmental software. The CIOs in the focus group also rated “enhancing interoperability/clinical integration” (as well as “accountable care organization alignment”) highest among their IT priorities over the next two years.

Consider:

• A one-size-fits-all healthcare IT solution may not be designed to meet the different needs of all users. The need for a streamlined workflow solution is particularly acute in critical and complex care areas, such as perioperative. “We shouldn’t be asked to go backwards from a clinical decision support perspective for the sole purpose of integration, especially given that the strongest argument in favor of integration is to enhance our ability to make sound decisions and enhance patient care,” says Kevin Wethington, MD, associate professor of anesthesiology at University of Utah School of Medicine in Salt Lake City.

• When data are scattered across disparate systems, clinicians may be constrained in their ability to deliver optimal patient care. When a medical device vendor released a therapy for patients with aortic stenosis who underwent a specific surgical procedure, clinicians at Bon Secours Health System in Richmond, Va., were challenged to identify appropriate candidates. Aortic stenosis data were housed in the cardiovascular information system (CVIS), while surgical data were located in the EMR. Without a way to query both sources, the answer required manual, time-consuming comparisons.

• “At times, the combination of an EMR plus a robust departmental solution meets the needs of all involved,” says Jenny Dougal, director of women’s services at Parkview Health in Fort Wayne, Indiana. Parkview Health employed a ‘best-of-both-worlds’ model by pairing GE Healthcare’s Centricity™ Perinatal-Connect module with the Epic® EMR. “The combination enabled labor and delivery nurses to simultaneously monitor the health of our babies using fetal surveillance and streamline documentation to help enhance patient care, productivity and reporting.”

The connected difference
The aim of an enterprise EMR is powerful—enhanced quality of care. However, some departments have developed robust clinical workflows that meet many of the efficiency needs of end users and patient safety goals. In these cases, it is important that depart-
mentary interests and workflow be considered. Take for example, labor and delivery nursing at Parkview Health. For six years, the organization relied on GE Healthcare’s Centricity Perinatal for fetal surveillance and documentation in the perinatal setting. “We were very happy with the system,” recalls Dougal.

However, in 2011, Parkview analyzed its needs and opted to deploy Epic® EMR for system-wide documentation. Thus, all departments, including labor and delivery, would need to adopt Epic® for documentation. Since labor and delivery has unique documentation needs and fetal surveillance components, Parkview wanted to review this workflow. And since they would also continue to use Centricity Perinatal for fetal surveillance, the department wanted to ensure that their workflow would remain streamlined and productivity would remain high.

“Labor and delivery nurses document in two ways. They use a flow sheet, like any nurse in med-surg or the OR. However, when the nurse is at the bedside with the patient and the fetal monitor is capturing fetal heart rate and contractions, the nurse completes a lot of documentation, or annotations, directly on the fetal strip,” explains Dougal.

The need to monitor and observe the second patient—the unborn infant—in labor and delivery is critical. “The mother can talk to nurses. They can take her blood pressure and see if she looks healthy. In contrast, the only way to monitor the infant is via the fetal heart rate monitor,” says Dougal. “We need systems that allow us to monitor both of our patients simultaneously.”

Equally important, documentation has to be quick and efficient. The organization could have chosen to move forward with a duplicate documentation workflow with nurses documenting in both the perinatal system and the EMR but the Parkview team "searched for an alternative path to optimize productivity and help enhance patient care”, says Dougal.

“We want nurses to be active with patients and annotating on the fetal strip,” explains Dougal. In addition, the annotation needs to be carried over into the permanent record.

Exacerbating the challenge is the specialized workflow in labor and delivery in comparison to the EMR deployments. In some organizations, nurses view the live paper strip from the fetal monitor in the room. Others rely on the EMR. Finally, some, including Parkview Health, leverage the best-of-both-worlds strategy by pairing an enterprise EMR with clinically tailored EMR-integrated solutions like Centricity Perinatal—Connect to integrate perinatal information in context with other clinical data.

**Teamwork pays**

As Dougal and the rest of the Parkview team contemplated the pending transition to Epic® for documentation, Parkview approached GE Healthcare and shared the organization’s plans to implement the enterprise EMR with the vendor. Essentially, the labor and delivery nurses requested a streamlined documentation model that enables documentation in the EMR, annotation on the fetal strip and transfer of annotations to the EMR.

GE Healthcare demonstrated its Centricity Perinatal—Connect offering that was developed to complement all major EMRs. A healthcare organization can tailor its enterprise EMR experience with a solution designed for the perinatal unit. The hospital and vendor agreed on a September 2012 date for test server install in advance of the February 2013 go-live date for deployment of the Epic® EMR and clinical use of the Centricity Perinatal-Connect module.

The players hit the deadline and the mark for both the organization and the clinicians. In the new workflow, labor and delivery nurses document on a standard flow sheet in Epic®. Nurses can view fetal strips for up to four patients as well as the Epic® EMR on a single screen, enabling visibility and virtual presence that helps clinicians enhance care and efficiency as nurses are quickly alerted to potential issues. With the Centricity Perinatal—Connect solution, nurses also can annotate directly onto the fetal strips. The system is designed to map the annotations directly into the hospital’s EMR, and that data flows into the EMR. Data can flow directly into the EMR from the strip annotation documentation, and data can be sent out of the EMR through EMR flowsheet charting.

This enhanced workflow interoperability provides physicians and nurses the ability to correlate information from different systems to help assess how the baby is reacting to labor and help enhance care for the mother and baby. Centricity Perinatal—Connect complements the EMR, enabling the clinicians to benefit from a workflow customized for their specific needs, while supporting the organization to implement the enterprise EMR of its choice as part of its IT strategy.

“We met our organization’s goals and maintained nurses’ workflow and productivity,” sums Dougal.

**Productivity across the enterprise**

Most stakeholders recognize that physicians are experiencing unprecedented stress due to multiple demands and increased reliance on integrated enterprise technology. Consider the patient who presents to a general inpatient clinic with a condition that requires foot surgery. The physician documents the visit along with the patient’s history in the outpatient EMR. However, when the patient is referred to an orthopedic surgeon, the specialist cannot access the patient data in the outpatient record because he or she is licensed in the separate inpatient EMR and not on the outpatient system.

“This is a common frustration at a lot of institutions,” confirms Kevin Wethington, MD, at University of Utah School of Medicine. Physician frustration represents the mere tip of the iceberg regarding problems related to lack of integration. “Everything we do requires information, and with almost every decision we make, we wish we had more information. More information at our fingertips translates into more informed decisions.”

In contrast, the all-too-common lack of information can translate into escalating healthcare costs and patient care challenges. Lab tests and imaging exams are often repeated as physicians struggle to access patient data from disparate systems.

University of Utah addressed the issue and in doing so, Wethington believes they have enhanced patient care and physician satisfaction and established a solid foundation for its institutional strategy to wed inpatient and outpatient systems.

The solution is centered around its GE Healthcare Anesthesia Information Management System (AIMS) technology. Wethington collaborated with the internal IT department, the health science center’s chief medical informatics officer and GE Healthcare to develop a portal in its AIMS that opens a view into its inpatient Cerner® PowerChart EMR. This serves as a gateway into most of the data physicians need to deliver patient care. They can view documents in Cerner® and open another web view into the Epic® EMR to view the outpatient record. The user log-on and patient context are carried through so the physician...
does not need to log in twice or search for the patient a second time, explains Wethington. In addition to viewing documents through the portal, physicians can access systems that feed into Epic®, including PACS, laboratory and pharmacy. This solution is now available to any customer who purchases or upgrades to the most recent version of GE Healthcare Centricity Perioperative Anesthesia®.

The impetus for this innovative connectivity stemmed from two pain points. The model helps support Meaningful Use metrics and also helps enhance patient care.

The reality in medicine is healthcare IT can be a powerful tool, but it must enable the specific workflows of the clinicians. Consider the trauma patient who requires intubation. An anesthesiologist might be required to complete multiple log-ons to access information about the patient. “Take for example the trauma patient brought up emergently from the ED with only a few minutes’ notice. By that time, the patient would be up from the ED. We need information very fast,” says Wethington.

Now, Wethington and his colleagues may log in to the AIMS to review the radiology reports or open the PACS web viewer to see neck images prior to intubation. “Even though the patient can’t communicate, I can see what is known about him or her—the patient history, allergies and medication list.” Wethington notes that “the enhanced access to the relevant information helps clinicians enhance patient care and increases physician satisfaction.”

The approach offers a blueprint for healthcare delivery systems and health IT as the success of accountable care organizations and quality improvement hinge on the number of smaller systems and can cut efficiency generates cost savings,” says Smith. These systems reduce the number of smaller systems and can cut the number of vendors, support contracts and system analysts while also streamlining data access for the clinicians.

The path forward
The connected strategy in which an enterprise EMR is paired with complementary, functionally rich department software represents a model that better meets both enterprise and specialty departmental needs. Navigating in the right direction requires organizations to ask strategic questions, such as:

- How does this investment meet enterprise and departmental needs?
- What productivity gains can the enterprise expect to realize?
- How does the system address the specific needs of departments across the enterprise?
- How is the healthcare organization actively collaborating with other vendors and healthcare partners to better meet care provider needs?
- How do you ensure that you’re not sacrificing patient care and clinician productivity for an enterprise EMR?

Integration & informed decision making
At the same time, the complete integration that is suggested by some systems can leave some wanting more. “Many products advertise themselves as integrated. I have yet to see one that does everything for everyone well,” says Wethington.

Like perinatal care and many other departments across the enterprise, anesthesia employs a handful of distinctive processes. No other specialty regularly orders intrathecal narcotics, a subset of spinal anesthesia that requires lower dosage limits. The enterprise decision support systems are often configured for more generic doses of narcotics like fentanyl. “When I bring up fentanyl in an enterprise system, depending on the sophistication of the product, it might give me a maximum or even minimum dose that could be lethal to my patient if administered intrathecally. Some systems do not allow us to adjust our limits separately from the rest of the institution,” he notes.

In cases such as these, it is necessary for specific departments to electronically isolate themselves from the rest of the institutions. It’s a fine line, admits Wethington, as physicians and patients benefit from the single longitudinal system, but many specialties or departments require controls that allow physicians to practice with decision support or other tools appropriate for the venue. This issue is frequently not appreciated until after the implementation of a single system and build, which may not accommodate the required level of autonomy.

At University of Utah, Wethington controls drugs and formularies in the AIMS and has set fentanyl as an intrathecal route with appropriate dosing limits so that incorrect information is not shared.

The disparate data conundrum
The healthcare reality is based on data stored in multiple disparate IT systems. Unfortunately, this may represent a significant pain point for clinicians. “Cardiologists’ top pain points revolve around the complications of disparate data,” confirms Jason E. Smith, enterprise clinical imaging manager at Bon Secours Health System.

That is, they often require information that is housed in disparate systems. A cardiologist may consider a patient a candidate for an intervention through the sternum and require chest x-ray images. These studies are housed in the radiology PACS, not the cardiology PACS. Accessing the data requires logging in to a separate system.

Thus, Smith and his colleagues at Bon Secours have focused on several key principles as they evaluate new IT investments: seamless access to data, mobility and productivity.

A web-based Centricity Cardiology solution by GE Healthcare that uses video streaming technology offered a great fit. The system has been configured to share patient data and images across systems, and it reduces the need for a separate workstation with thick client software and dedicated hardware. Consequently, cardiologists can access the data they need while on rounds, in their offices or from their homes.

“[With every IT investment], we try to understand the productivity improvement for clinicians. Bumping up clinicians’ efficiency generates cost savings,” says Smith. Another way to multiply the cost-savings, continues Smith, is to consider multi-department solutions.

Consider Centricity Cardiology solutions, which can provide an umbrella solution because they incorporate vascular reporting. “The payback on umbrella solutions is greater,” confirms Smith. These systems reduce the number of smaller systems and can cut the number of vendors, support contracts and system analysts while also streamlining data access for the clinicians.

REFERENCES:
1. Based on results of survey done at CHIME focus group conducted by GE Healthcare, March 5, 2013; New Orleans, Louisiana
2. Service hour costs may apply

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