

## Issue Stories

# Caught in the Middle

by C.A. Wolski

**Integrated devices with multiple vendors can mean multiple headaches, but good communication and planning can help you find your way through the maze**

The days when a single vendor provided all the pieces of a monitoring system, radiology solution, or any of the other myriad technical needs of the hospital enterprise are over—if they ever existed in the first place.



Among biomed's biggest challenges in today's highly integrated world is trying to reconcile the needs and safety of their hospitals with the realities of working with different vendors. The result is that biomed's are often caught in the middle between competing vendors unwilling or unable to cooperate in solving the problems caused by trying to integrate different solutions into a comprehensive, safe, and workable technological system.

While it is certainly inevitable that biomed's will be caught in the middle of vendors unwilling to cooperate with a competitor or to share proprietary information, the reality is that this will continue to be an ongoing issue for the entire health care system. And it will require that biomed's be part troubleshooter, part traffic cop, and part diplomat to negotiate a satisfactory, workable solution. Unfortunately, there is not a "magic bullet" answer that will erase this problem or stop it before it arises.

### **Historical Problem**

Ken Olbrish, MSBE, enterprise imaging system administrator at Main Line Health System in suburban Philadelphia, sees the problem as historic, compounded by the fact that more and more equipment is being networked and required to interface with one another.

"Typically, what happens is that information is not successfully passed between the devices, or more likely information is exchanged but it is not formatted as expected or is missing certain pieces of necessary information," Olbrish says. "In some cases, one vendor has customized data to allow data, waveforms, images, et cetera to appear optimized on their systems. However, when they transmit this information to other systems, either this information is not provided or is provided, but not in a way that the

second system can use the information. As a result, the information doesn't appear in the same way on the second device [or as the way end users want to see it]."

The upshot is frustrated clinicians who want the system "fixed," and competing vendors who blame one another. When this occurs, the biomed as diplomat must step in. "Handling these issues is very tricky," Olbrish says. "The key point is to try to get the vendors to stop the finger pointing and agree to have a constructive discussion. Ultimately, the customer needs to specify what they need and challenge both vendors to work with one another to develop a solution. As both vendors are partners with the customer, the customer needs to leverage this relationship to bring both vendors to the table and start the discussion."

The common way Olbrish deals with this issue is by sitting the vendors down together and putting them on the spot. Olbrish has found that it is harder for vendors to blame one another if they are in the same room together.

The meeting might not net an easy answer—even if all the parties agree there is a problem and that they will work together to fix it—but it will start moving the process in the right direction.

From his years purchasing imaging equipment for the four-hospital Main Line Health System, Olbrish has found some surprising things when dealing with vendors. For instance, the DICOM standard is not uniformly adhered to or interpreted by each vendor. This can be a source of the interface problem for the enterprise.

"Vendors often customize standards to meet their own needs, so even this isn't a guarantee that this type of issue won't occur," Olbrish says. "Certainly, implementing standards-based systems helps, but even these systems still have issues exchanging information."

Occasionally, a vendor will be unwilling to work with a competitor. Unless the second vendor is willing to work with the biomedical department, it may be impossible to solve the problem. However, because of the current economic situation, Olbrish does acknowledge that clients have a lot more leverage than they may have had before last year's financial meltdown. There are a number of ways to deal with any potential problems like this ahead of time, such as making sure there is appropriate language in the vendor's contract that addresses the issue of integrating its system with another's. In an extreme case, it may also be necessary to not work with an uncooperative vendor in the future.

Fundamentally, the problem of integrating systems revolves around the sheer number of items being networked and is not confined to competing vendors. "I've implemented numerous systems that have exchanged data with other clinical systems and have never had a problem," Olbrish says. "I've also implemented systems from a single vendor that have problems successfully exchanging data, so I don't know that this is always a better solution."

Since a health care system typically consults with multiple vendors to build a system, Olbrish recommends assuming that there will be a problem and bringing it up with the vendor. Find out how the vendor integrated the system for another customer, and ask to speak with that customer. However, if the system is a new technology, it will not be possible to speak to a customer. "You have to account for the fact that you'll have issues and plan for the time, costs, and resources to deal with it before you go live," he says. Planning ahead is good advice, and it can be implemented as part of the equipment assessment procedure.

## **Assessing Needs**

At Childrens Hospital Los Angeles, a thorough assessment of a system is made before it is installed. According to George Panyarachun, MS, BME, GNG, manager, biomedical engineering department, the key to success is thinking ahead.

During the hospital's assessment process—which Panyarachun admits is "very time consuming"—the biomedical department, physicians, engineers, and nursing staff look at all potential problems, ask questions, and find solutions. "It's a good process," he says. As part of this process, the vendors are given a detailed survey designed to detect problems ahead of time.

The upshot is that most of the kinks are worked out before the system is implemented. Because the system has been so effective, oftentimes the hospital is willing to increase the funding of the system if it has found that the more workable solution will cost more. "The administration supports it because the process solves problems ahead of time," Panyarachun says.

The system is particularly crucial at the moment because the hospital is currently finishing the construction of a \$600 million facility and all of its systems need to be integrated in the new 317-bed hospital.

One of the biggest challenges Panyarachun and his staff are facing is working with the hospital's IT staff, making them understand that systems have to be effectively integrated. This has involved quite a bit of staff education, giving the computer technicians a different perspective on the issues involved. "IT approaches their job as mission critical, and we approach it as life critical," he says. The challenge is to make sure that both sides of this coin—meeting the needs of the IT staff and the needs of patient safety—are complementary.

Even with the assessment process in place, there are times when Panyarachun must work with a vendor to solve an interface problem. First, the biomed staff troubleshoots the problem to see if they can solve it. If it is an obvious, systemic issue, then the staff determines the cause of the problem, its clinical impact, and how long it should take to fix. The vendor will then be contacted and a plan of action worked out.

The hospital has a very detailed reporting process, including reporting problems to the FDA—although Panyarachun does encourage the vendor to self-report any problems. This helps Childrens Hospital leverage its position with the vendor.

## **Hoping for the Best, Expecting the Worst**

No matter the assessment procedure or the expectations, even the simplest of needs can cause the biggest headaches, as the biomedical engineering staff at Community Health Network in Indianapolis recently found out.

In 2008, Technical Site Leader Steve Erdosy and Senior Biomedical Technician Kelly VanDeWalker received a request from a clinician to add a temperature monitoring system to the hospital's cryostorage tanks and CO<sub>2</sub> incubators.

It was a simple enough request, and it looked like both would work fairly easily—that is, until they implemented the system. VanDeWalker says that it became apparent fairly quickly that the cryostorage monitoring system was not working properly. He contacted the vendor—a small, local company—and outlined the problem. The vendor was extremely cooperative, taking the blame and concluding that the unit was faulty, so it sent out a new one. Unfortunately, that did not solve the problem.

"This was a somewhat unusual situation," VanDeWalker says. "It seemed to be a lot simpler than it was."

So Erdosy and VanDeWalker had the two vendors come in to certify their equipment. Both found that their equipment worked, but they just were not interfacing. The problem was fixed by the end of 2008, but VanDeWalker says that he's still running a redundant, less sophisticated monitoring system in parallel to the newer temperature monitor. He says he'll do so until he has confidence that it is going to be reliable.

Going forward, Erdosy and VanDeWalker are taking a page from Panyarachun's book and figuring out any interface problems ahead of time. VanDeWalker notes that he expects to have fewer problems with larger vendors who are used to working with competitors.

Because of the political realities facing health care today, biomedics can expect a future where they will get caught in the middle on a regular basis.

## **What's Next: EMR**

President Barack Obama's plan to have every health care practice implement electronic medical records (EMRs) by 2014 will mean that system integration will become the norm.

During his State of the Union address, Obama noted that the investment in EMRs and other new technology "will reduce errors, bring down costs, ensure privacy, and save lives." According a 2005 RAND study, EMRs will save about \$80 billion per year.

And health care organizations across the spectrum will have a huge incentive—\$19 billion in promised stimulus cash—to implement EMRs.

Because of the rush and comprehensive implementation of EMRs, Olbrish sees that the demands on vendor resources will mean that there will be less resources available to biomedes to help correct problems of integration of disparate systems.

Adding to this is that the increased market demand will mean that there will be a number of new, inexperienced vendors or systems in the mix, adding to the complexities of implementing the EMRs.

EMR implementation will undoubtedly put biomedes' increasingly common dilemma in the spotlight, but it will not stop it. Olbrish believes there are things that the industry can do to at least minimize the problem. "Partnerships and standards may help to alleviate this to some degree, but even this doesn't help to resolve all the problems," he says.

No matter the situation—multiple vendors, single vendors, conflicts between the clinical and the technical, being caught in the middle will likely remain the typical position of most biomedes, meaning that their traditional role as health care's technical problem solvers will be needed more than ever.