What Should You Say?

Your Hospital Administrator Wants Your Group to Adopt an Automated Anesthesia Information System

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Even though anesthesiologists would never dream of spurning a hospital's offer of new monitoring technology, the offer of computer technology aimed at replacing our tried-and-true handwritten anesthesia records often is responded to with a hell-no-we-won't-go response. This seems a bit odd, since anesthesiologists fancy themselves as the most technology-savvy of all physicians. Are there legitimate reasons to say "***no***"? Why should we instead say "**yes**"?

Why would a hospital be willing to spend hundreds of thousands of dollars on an information system intended to document anesthesia care? There are several reasons. First, most hospital CEOs have heard the clarion call for electronic medical records. They are already spending tens of millions of dollars on "integrated" hospital information systems that provide not only demographic, charging, and laboratory data, but now data from every hospital department, complete electronic nursing and physician documentation and computerized provider order entry (CPOE). The anesthesia record and associated perioperative documentation are a key part of that electronic medical record.

In addition to producing an electronic version of the patient's chart, the database created provides a huge opportunity to collect data automatically and to use it to improve patient care and regulatory compliance, increase hospital revenue, and reduce hospital costs. For example, the administration of preoperative prophylactic antibiotics, when appropriate, within 60 minutes of incision has been shown to significantly reduce surgical site infections. This is also a Joint Commission Patient Safety Goal that requires attention to and documentation of compliance and improvement efforts. If you've ever tried reviewing handwritten anesthesia records to extract this type of data to prove you're giving the antibiotic prior to incision, you'll understand why the hospital would prefer an electronic version. Also, the Operating Room is the source of significant revenues and significant costs. Any way to improve revenue while reducing costs would be extremely advantageous to the hospital and more than pay for an information technology solution.

Should we be paranoid that the hospitals' electronic information systems will be used against us in some way? I would propose that the more efficient we can

be, the more surgeries we do, the fewer patient complications we produce, and the more money we can save the hospital will only benefit us in the long run.

Is there a specific reason related to the anesthesia information management systems (AIMS) themselves that should prevent our adoption? AIMS have been around more than 20 years, and there are mature products on the market that are currently used in various types of practices. Some are more user-friendly and intuitive than others. Many of these systems have been purchased by large monitoring companies (Phillips and GE) and anesthesia machine manufacturers (Draeger), or are part of a total OR solution (PICIS). Unfortunately, many of the systems now being pushed by hospitals as part of large "integrated" IT solutions are either still being developed (Epic) or have only been around for a few years (Cerner). So a first concern is whether or not the product being pushed by your hospital is mature enough for adoption, or whether you will have to suffer the growing pains of a brand-new system. In the ideal world, you will be participating in a process where you define your needs and submit a request for proposal to several manufacturers, and you'll be able to select the best product. Unfortunately, this is less and less the case. You may not be able to choose which system, only when you are going to adopt it.

The implementation of any of these systems will take a lot of time and effort from the anesthesiologists. Most implementations require one anesthesiologist spending about half of his/her time for six months or more. The hospital has to be willing to pay for this time, as well as ongoing time for troubleshooting, monitoring, and implementing incremental improvements in the system. Inevitably, efficiency drops when a new system is implemented. Turnaround times between cases rise, as it takes longer to check your patient into recovery. Initial frustration will ensue for short cases where it seems longer to do the documentation than the case itself. Surgeons will complain (what else is new?) about this increased time.

Anesthesiologists worry about medico-legal issues. Will the imported blood pressure value occur exactly when a surgeon is leaning on a blood pressure cuff and produce an erroneous result that some trial attorney will take advantage of? Most systems allow correction of erroneous entries, so this shouldn't be a problem. All entries are now time-stamped and have an audit trail. This was difficult to track in a paper record. One hopes that this protects us more than it harms us. Many members of your group are just computer-phobic, and worry about their ability to use such a system. They just want to retire doing things the same way they've done them for the past 30 years. Change is difficult.

So with all these issues, why should you say yes and adopt an AIMS? Perhaps foremost is the fact that this is the future of anesthesia documentation, and eventually you'll have to adopt an automated system. Say "**yes**" and enjoy the associated benefits now.

What are the benefits? Believe it or not, automated entry of vital signs makes charting easier, not harder, especially for longer cases. Most people who have used an AIMS never want to go back to manual charting and enter all those checks, dots and circles. Records are now legible and support more accurate and timely billing. All of the systems will produce electronic billing reports, and some even interface with your billing system, ensuring the speediest billing possible. Regulatory compliance is easier to document, especially for academic departments working with residents or CRNAs. In addition to billing, data obtained from the system can enhance everything from Quality Assurance activities to staffing efficiency and can improve OR throughput, helping both your group and the hospital.

There are several good and recent articles on the subject to which you may want to refer. Here are a few, most recent first:

Muravchick S et al. "Anesthesia Information Management System Implementation: A Practical Guide." *Anesthesia and Analgesia* 2008; 107:1598-1608.

Halbeis C et al. "Adoption of Anesthesia Information Management Systems by Academic Departments in the United States." *Anesthesia and Analgesia* 2008; 107:1323-29.

Sandberg W. "Anesthesia Information Management Systems: Almost There." *Anesthesia and Analgesia* 2008; 107:1100-02.

Epstein R et al. "Anesthesia Information Management Systems: A survey of Current Implementation Policies and Practices." *Anesthesia and Analgesia* 2007; 105:405-11.

Vigoda M et al. "Changing Medical Group Behaviors: Increasing the Rate of Documentation of Quality Assurance Events Using an Anesthesia Information System." *Anesthesia and Analgesia* 2006; 103:391-5.

Vigoda M, Lubarsky D. "The Medico-legal Importance of Enhancing Timeliness of Documentation When Using an Anesthesia Information System and Response to Automated Feedback in an Academic Practice." *Anesthesia and Analgesia* 2006; 103:131-6.