Improve OR Communications, Cut Costs, and Promote Patient Safety with Collaborative OR Software

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Abstract

Today's increased emphasis on operating room (OR) cost-effectiveness is forcing hospitals to be far more efficient in how they schedule and perform surgeries. This requires timely, up-to-the-minute communications between surgeons, hospital administrators, sterilization departments, and vendors so that everything is available at the time of the surgery.

Communications between these parties is only available through phone, fax, email, paper, and whiteboard. This outdated system requires multiple communications to confirm that each party knows what is needed of them before the surgery.

Online collaborative OR software is designed to make this process fast, accurate, and efficient, with much less staff time required. Each party can log into a shared online database to see the date and nature of the surgery, implants needed, sterilization requirements, and other data. Details of the process are stored for later analysis and research. Patient privacy and security are preserved throughout the process and are in compliance with HIPAA and HITECH requirements.

In summary, collaborative OR software improves communication flow, increases safety, improves sterilization lead time, provides immediate access to patient records and implements accountability. This type of system also consolidates data for tracking of implants and outcomes, regulatory compliance, efficiency analysis, quality control, reduced errors, and improved inventory management and ordering.

A tough balancing act

We live in an era where controlling and reducing hospital expenses are critical.

Across the U.S., hospitals are seeking ways to improve efficiency and lower costs while delivering the best care possible to their patients. This is especially true in the operating room (OR) setting, where demands are increasing each year as the population ages.

All health care data must now be compliant with the Health Insurance Portability and Accountability Act (HIPAA) of 1996, which (1) protects the privacy of individual health information, and (2) sets national standards for the security of electronic health information

And in 2009, the Health Information Technology for Economic and Clinical Health (HITECH) Act, a component of the American Recovery and Reinvestment Act (ARRA) of 2009, came into effect. Under HITECH, business associates must now employ the same privacy and security measures for patient records as any entity covered by HIPAA.

It's difficult to balance these three imperatives: to control costs, to maintain OR efficiency, and to comply with increasing regulations.

OR scheduling and records management is inefficient

Despite this drive towards increased efficiency and data security, surgical OR scheduling systems have not kept up and currently lack compliance set forth by HIPPA and the HITECH act.

OR schedules are still largely maintained by hand, using some combination of handwritten notes, white board, fax and email. Entries are commonly done by office staff who lack detailed knowledge of surgical procedures and are not in compliance.

Yet these manual entries form the basis for critical communications between hospital administration departments, surgeons, nurses, vendors, sterilization personnel, and anyone else involved in the planning and execution of surgical surgeries where medical devices are used.

This outdated system has a high potential for increased costs, errors, and delays. This inefficiency can be measured in terms of (1) excessive financial outlays, (2) waste of professional and staff time and added work stress, and (3) lack of accountability in the OR preparation process, especially in the sterilization of surgical equipment.

(1) Excessive costs

Shippert reported that time in the OR costs about $62 per minute, not including anesthesia fees.[1] So each minute of delay over a week-long period can add up to a significant cost. With the new "pay for performance" model being implemented by the health insurance industry, hospitals need to emphasize quality and efficiency in the OR.[2] Scheduling efficiency is a cornerstone of this approach. Yet current OR scheduling methods are highly inefficient.

(2) Wasted staff time

In a Scandinavian study, "operation room efficiency" was defined by OR nurses as "knowing what needs to be done and being able to do it without obstacles" and indicated to be closely linked with job satisfaction.[3] OR efficiency is dependent on clear, unambiguous communication and scheduling. Yet communication systems currently in place often require staff to spend inordinate time to make sure that everything is in place before a surgical procedure. This is a waste of valuable staff time and creates unneeded stress.

(3) Lack of accountability

Sterile processing is a vital component in the surgical preparation process. When done improperly, it risks patient safety and increases costs. In 2009, the Joint Commission, (formerly JCAHO) updated its position on steam sterilization and implemented a survey to ensure the integrity of the process. Accountability is a key component of this process. A comprehensive, accurate, and timely OR communication system can ensure that the sterilization process complies with Joint Commission standards. Yet current OR communication systems are fragmented, error-prone, and slow. These processes are compliant with Joint Commission, but lack HIPPA and HITECH act compliance.

Scenario 1: Typical orthopedic surgery using current communication systems

The following is a brief scenario of how surgeries are scheduled in a typical busy OR setting using today's fragmented communications systems.

First, a patient visits a surgeon who determines the patient is a candidate for surgery that requires a medical device. The surgeon's office then calls the vendor to order the implant, and the OR department to schedule the surgery. The OR department must then notify the sterilization department about the upcoming surgery, and the sterilization department must call the vendor to ask what trays are needed and when.

One day before the surgery, the OR coordinator must call the vendor to ensure the implants will be ready.
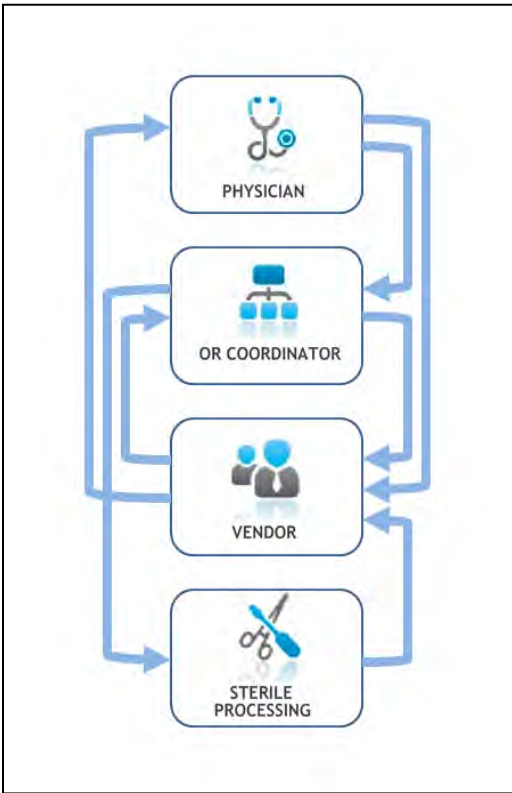
Figure 1: The Current OR Communication Process

On the day of surgery, the sterile trays are sent to the OR and the surgical procedure is completed.

During follow-up, the surgeon records his observations in the patient's record, but they remain separate from the information generated by the hospital, the sterilization department, and the vendor.

As shown in Figure 1, there are at least seven separate communications required for each surgery:

1. Surgeon contacts hospital OR department to schedule the surgery.

2. Surgeon contacts vendor to order the implant.

3. Vendor contacts surgeon to confirm implant order.

4. Hospital OR department contacts vendor to ensure implant availability on the day of surgery.

5. Vendor contacts hospital OR department to confirm that the implant will be available.

6. Sterile processing department contacts vendor to inquire about the needed trays.

7. Hospital OR department contacts sterile processing department to ensure trays are available.

In addition, the vendor usually must visit the physician's office before the surgery to make sure everything is coordinated and in order.

Summary of scenario 1

Repeated phone calls, faxes, and emails are the order of the day, since every party is maintaining their own calendars and synchronizing them manually. Extra efforts must be taken to ensure everyone is on the same page with respect to the timing and equipment needs for the surgery. Any delay or confusion wastes time, and potentially ripples through to the OR, where time is especially expensive.

And this is all for a single surgical procedure. In real life, every OR hosts numerous surgeries every day. Trying to schedule multiple surgeries through such an inefficient process wastes significant time, introduces a high margin for error, and puts patient safety at higher risk.

A better approach: A collaborative OR system

An emerging genre of software aims to modernize the typical OR scheduling and communication system. Collaborative OR software provides automated communications and alert services to all four significant players in the OR process: hospital OR managers, surgeons, sterile processing departments, and vendors. This software can prevent communication breakdowns, streamline OR scheduling, save direct costs, promote patient safety, and help comply with HIPAA and HITECH regulations.

Scenario 2: Typical surgery using collaborative OR software

The following is a scenario that shows how the scheduling and preparation of surgical procedures that can be streamlined using collaborative OR software.

First, a patient visits a surgeon who determines the patient is a candidate for surgery that requires a medical device. Hospital staff or physician office staff enters the details of the surgery into a secure online portal through any web browser. All parties involved in the surgery, including the surgeon's office, the hospital OR department, the vendor, and the sterilization department automatically receive an alert (SMS text/email or both) about the upcoming surgery. Each party does what is required of them, enters updates into the system, and confirms action requests when completed. Whenever a change is made in the system, it is immediately available to all parties instantly.

For example, on any given day, the **hospital OR coordinator** can log in, view the schedule of surgical procedures for the coming day or two and ensure that the vendor has confirmed all of them. The **vendor** can see exactly what implants are needed and when they need to be delivered to the hospital. The **sterilization department** can immediately discern what trays are needed for the OR and when they should be delivered.

After the surgery, if the surgeon or hospital chooses, pertinent implant data can be recorded using the same system. Each step of the operation is easily traced, from the first scheduling entry to discharge. This information is especially important in revision surgery.

Summary of scenario 2

As shown in Figure 2, the collaborative OR system provides automated and seamless communications between all parties. There is a remarkable gain in efficiency. No handwritten notes, white boards, fax, phone calls or emails are required. Costs are minimized. Patient safety is assured, and all patient data is handled and stored in compliance with HIPAA and HITECH regulations.
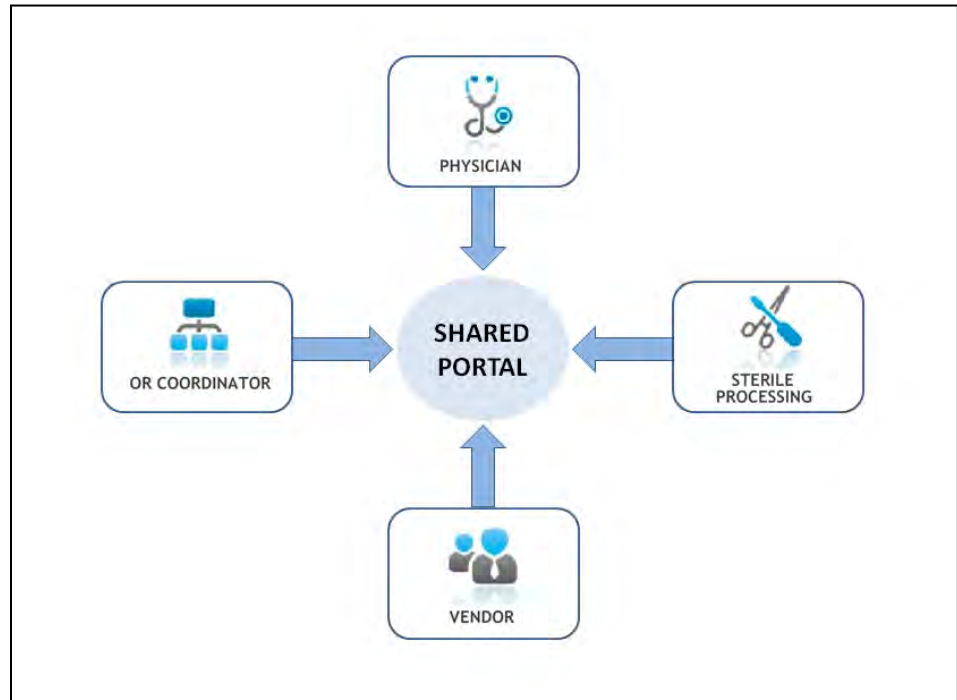
Figure 2: Communications Streamlined through OR Collaborative Software

What an ideal collaborative OR system looks like

Here are the characteristics of an ideal collaborative OR system:

- Provides an online portal, easily accessible by all key personnel

- Alerts are provided through SMS text, email or both

- Supports secure, real-time data storage and retrieval

- Features easy-to-use interface available 24/7 to physicians, hospital staff and administrators, and medical vendors

- Automates processes currently done manually

- Allows approved personnel to enter, store, and access patient data about the surgical process, beginning from pre-op appointment through instrument preparation, sterilization, surgery, and post-op follow-up questionnaires

- Tracks implantable devices and stores patient feedback

- Enables smooth information flow between OR staff and vendors while providing a safe, secure repository of patient information

- Enables patients to track medical devices, recalled implants, and provide feedback

- All data meets privacy and security requirements of HIPAA and HITECH

- All patient information is encrypted

Moving to collaborative OR software

Here are some necessary steps or best practices in the process of evolving from today's inefficient communication practices to collaborative OR software.

- Provide a single repository of information, easily accessible online by all participants in the surgical process

- Get rid of outdated manual record-keeping and communications

- Provide a structured data-entry system, using codes and language familiar to all parties

- Provide a data storage system which can be accessed for future analyses

- Provide a standardized data storage system compliant with current regulatory requirements and easily adaptable to foreseeable requirements in the future

Conclusions

Many ORs in the U.S. currently use a costly, inefficient, and error-prone process to schedule surgeries with vendors that supply medical devices. Many hospitals have a pressing need for a new approach.

Collaborative OR software provides these benefits: improved communication flow, increased safety, improved sterilization lead time, immediate access to patient records, data consolidation for tracking of implants and outcomes, regulatory compliance, efficiency analysis, quality control, reduced errors, and improved inventory management and ordering.

Fortunately, such a system is available from UniteOR Inc., a healthcare technology firm co-founded by a neurosurgeon and a medical device distributor.

To find out more about how to improve OR communications, cut costs, and promote patient safety with UniteOR, visit www.UniteOR.com and sign up for a free 30-day trial.

References

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2: Archer T. Macario A. The drive for operating room efficiency will increase quality of patient care. Current Opinion in Anaethesiology. 2006;19:171-176.

3: Arakelian E, et al. Job satisfaction or production? How staff and leadership understand operating room efficiency: a qualitative study. Acta Anaesthesiologica Scandinavica. 2008;52:1423–1428

About UniteOR

UniteOR, LLC is a healthcare technology company that assists physicians, hospital/surgical staff, and medical device vendors by improving patient safety and quality of care while advancing clinical, operational, and financial outcomes. UniteOR also provides value directly to patients by allowing them to track their medical implants and expedite their revisions. UniteOR encompasses the experience and expertise of medical industry veterans who recognized the industry need for a better way of handling OR protocol.

UniteOR is currently conducting case studies on its OR collaborative software system. To obtain documents concerning these studies, please contact us via the information listed below.

UniteOR is a privately-held fully funded company based in Solana Beach, CA. For more information, visit www.uniteor.com

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