Central reprocessing

Is it time to add instrument tracking?

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Rs probably have as much money tied up in their instrument inventory as in surgical supplies, from $1 million to $5 million. Yet automation for instrument tracking is much less common than other materials management technologies. (See related article.)

The need for keeping track of your instrument dollars is “similar to keeping track of your supply dollars,” says Jean Sargent, CRCST, CMRP, FAHRMM, who implemented instrument tracking for 6 surgical sites at UCLA Medical Center.

Managers who use tracking systems say the systems help improve instrument utilization and service to the OR. But the systems take time to implement, and it can be difficult to demonstrate a return on investment, particularly in medium-sized and small ORs. To be able to make a good decision, managers need to be clear about what they expect a system to achieve (sidebar).

Benefits of tracking

Typically, in an instrument tracking system, instrument sets are bar coded. Technicians then scan the sets as they move through the reprocessing cycle and back to the OR. Here are some benefits a tracking system can provide.

Finding trays quickly
When trays are scanned, any tray can be found quickly, saving frantic, time-consuming searches.

“If we don’t find a tray on the shelf, we can look in the system and find out where it is,” says Aaron O’Neill, OR business manager at the University of Washington, Seattle, with 21 ORs, which has had a system for 6 or 7 years.

In an emergency, finding trays quickly can be a patient safety issue, particularly if an OR has only 1 or 2 trays of a specific type, adds Sargent, who is currently director of materials management for University of Kentucky Healthcare, Lexington.

Reducing loss of damaged instruments
The staff can keep track of instruments essential to a particular tray.

“You can set up the system so when you scan a set into decontam, it will give you a popup that says, ‘Look for X instrument,’” Sargent notes. If the instrument is missing, the staff can immediately go to the OR to retrieve it before the trash and linen are dumped.

Sets can also be flagged for maintenance.

“We are able to determine when to send a set out for maintenance rather than just saying, ‘Oh, these have been used enough,’ or waiting for a doctor to complain,” says Susan Nielsen, RN, MSA, CNOR, director of central processing at William Beaumont Hospital, Royal Oak, Michigan. Nielsen says the system has been a boon for managing the myriad sets needed to serve Beaumont’s huge volume of more than 55,000 cases a year, which are heavily orthopedics.

UCLA included endoscopes in its tracking system, Sargent notes, enabling managers to see which scopes were being broken the most often and how. Then they could educate the staff or take other steps to avoid expensive repairs.

Easier updating of count sheets

In an automated system, set contents can be updated easily, enabling the system
to produce accurate count sheets. That, in turn, means more accurate tray assembly and better service to the OR.

Producing reports

Tracking systems can produce a variety of reports that aid in instrument management.

“You can run reports on your tray utilization,” says O’Neill. “If you have duplicates or unused trays, the reports will show you that.”

Those trays can then be broken down and instruments distributed among trays that are used more often.

Nielsen uses reports to monitor unit and individual productivity, set utilization, and set error rates, among others.

Avoiding scheduling conflicts

Increasingly, managers want a tracking system to interface with the OR information system. Then a manager could find out, for example, how often cases had to be rescheduled because there weren’t enough instruments. The system could also flag conflicts. Say you have 5 major sets, and 5 cases are scheduled. When the sixth case is scheduled, an alert would pop up to say there are not enough instruments.

Anticipating regulatory requirements

Sargent says she expects regulators in the future to require instrument trays to be traced to individual patients.

The Association for the Advancement of Medical Instrumentation (AAMI) currently recommends, “Ideally, every reprocessed medical device, especially an implant, should be fully traceable to the patient.”

If an implant is flash sterilized—a practice AAMI does not recommend—the load should be full traceable to the patient (Comprehensive Guide to Steam Sterilization, ST79, 2006, 10.3.1, p 79). At present, most ORs keep these records manually.

Beaumont’s system has a module that allows the staff to scan information on loads with biological indicators (BIs) into the computer.

Rather than reviewing a handwritten log or stacks of sterilizer printouts, “all we have to do is print a report,” Nielsen says. “It shows you all of the BIs, when you did them, and what the results were. That’s one of the reasons the staff likes it—it has reduced the amount of handwriting they have to do.”

Monitoring employee productivity

Beaumont uses its systems to monitor employee productivity, a feature that requires management sensitivity and time to implement.

“I caution people about this,” Nielsen says. “My employees were very aware there was a productivity module, and they were nervous about us using it.

“You have to understand it’s a tool,” she adds. “You can’t use it as the only measure of employee performance.” The productivity goal is 70%, which she and her team thought was doable.

If an employee is severely under the goal, a supervisor can review the individual scans to see what the issue might be. The system provides documentation in case there’s a need for discipline or termination.

Productivity measurement is also useful during orientation to see how a new employee is progressing, which sets the person has processed, and which he or she still needs experience with.

Implementation

The implementation curve for a tracking system can run from a couple of months to a year or more, depending on the size of the facility and number of functions selected.

A major factor is how complete and accurate the hospital’s instrument database is to begin with.

“If you have good information, your implementation will go much quicker,” Sargent says.

Beaumont’s implementation took about a year. A time-consuming aspect was
developing the labor standards for the productivity system. To set a labor standard for each set, the system must know how long it takes on average to reprocess each major type of set. This required each employee to process and scan each set several times.

“That part was tedious,” Nielsen says. “We had to make sure people did that. We kept telling them, ‘It’s going to get better.’”

Nielsen’s tip for success is to involve CS employees in the process long before the tracking system is introduced.

“We asked for their input about what activities we should scan, where we should put the workstations, and so forth,” she says.

“We tried to include them as much as we could so by the time the system was ready, they were prepared for it and had already done some scanning.”

### Justifying the cost

Though a tracking system may have benefits, the CFO will probably want you to pin down the potential savings to offset the investment, says Michael Frisina, PhD, administrative director at Tuomey Healthcare System, Sumter, South Carolina. He says he evaluated systems a couple of years ago but wasn’t able to justify the cost, which was about $150,000. Toumey has a volume of 8,500 to 9,000 cases a year.

The problem is that most ORs and CS departments don’t have good baseline data on the costs of instrument problems, Frisina notes. How much OR time is wasted, for example, from delays caused by missing or broken instruments? How much was spent on repairs that could have been avoided if a tracking system were able to flag sets for preventive maintenance? These costs can be hard to quantify.

“We tried to factor savings per year but never could get it to a break-even point,” Frisina says. Instead, he and his team looked for ways to achieve the same objectives without a tracking system.

From another perspective, Nielsen, in her high-volume facility, has found the reports she is able to get alone have made it worth purchasing the system.

“Originally, we thought, ‘We will know where our trays are,’ and that’s true, but there’s more to it than that,” she says. “For example, you have data for making decisions about purchasing instruments or sets. You’re not making decisions based on gut feelings.”

She was also able to use the system’s data to justify her budget request for CS staff and instruments several years ago when Beaumont opened a new 16-OR tower that has a high orthopedic volume. From the tracking system, she knew how many sets on average orthopedic cases use (9 then and up to 14 now), and she knew from the labor standard how long it took to reprocess a set.

Though it might be difficult in the beginning to prove that an instrument tracking system will save money, she says in the long term, she believes it does.

### Instrument tracking issues

Issues to consider if you’re considering an instrument tracking system.

- **Determine what functions you want the system to perform.** Do you want only to locate trays? Do you want any individual instruments to be tracked? Do you want to monitor employee productivity?
- **What reports do you want from the system?** Most systems produce standard reports. Will you need custom reports? Will there be a charge for these?
- **Look at 2 or 3 systems.** Have the companies provide demonstrations.
- **Go on site visits.** “That is really the only way to get a handle on how a system is used,” says Susan Nielsen, RN, MSA, CNOR, director of central processing at William Beaumont Hospital, Royal Oak, Michigan.
- **What is the cost of the software?** If you are paying for a license, what is the charge for upgrades? Is there an additional charge if you implement the system at more than one location?
• What hardware will you need? Will the vendor provide that, or will you buy it separately?

• Who will maintain the hardware, including the bar code scanners and printers?

• What is the availability of tech support? What is the cost?

• What shape is your instrument database in? How much work will be needed to clean it and update it? If the vendor does that, what is the charge?

• If you are purchasing several modules, how will the implementation be phased?

• Does the system interface with your OR information system? If so, what is the cost of writing and maintaining the interface?