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The Top Health Technology Hazards for 2017 Include Surgical Stapler Misuse

Cleaning supplies can be risky

With the ringing in of the New Year, many surgery centers will resolve to improve safety and enhance hazard and infection prevention efforts.

They can prioritize their initiatives by looking to the past: What were the big problems last year and how can surgery sites prevent these from recurring?

For example, inadequate cleaning of reusable instruments and surgical stapler misuse were some of the more predictable health technology challenges outlined in the latest report by ECRI Institute and Health Devices.¹

But there also are some unexpected hazards, including surgery centers failing

to update software and using the wrong cleaning product with certain plastic devices. *(For more information, see top 10 hazards list, page 4.)*

THERE ALSO ARE SOME UNEXPECTED HAZARDS, INCLUDING SURGERY CENTERS FAILING TO UPDATE SOFTWARE.

“One of the things that struck me with the topics on this year’s list — more than in some other years — is these topics show that while doctors and nurses play an important role in the care of a patient, so do the people who help manage healthcare technologies,” says **Rob**

Schluth, senior project officer at ECRI Institute’s Health Devices Group in Plymouth Meeting, PA.

“The people involved in purchasing or installing or servicing or cleaning

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medical devices need to be thought of as members of the care team because they have an impact on how well the patient will be handled within the hospital environment," Schluth says.

Staff education is very important to preventing hazards, he notes.

For example, it's difficult to clean certain instruments such as duodenoscopes, says **Chris Lavanchy**, engineering director of the ECRI Health Devices Group.

"When they're not designed to be effectively cleaned, this presents a problem," Lavanchy says. "What we're trying to do is ask what steps you can take to assure instruments are properly being cleaned after each use."

Lavanchy and Schluth describe the challenges surgery centers face with some of the top health technology hazards, including the following:

- **Inadequate cleaning of complex reusable instruments.**

Complex instruments, such as cannulated drills and endoscopes, have various features that are difficult to access for cleaning, Lavanchy says.

"They're likely to be more prone to this issue of inadequate cleaning," he says.

Hospitals sometimes seek professional help in resolving the problem, Schluth says. "The issue

of reprocessing medical equipment has come up a number of times, and we've done investigations about it for medical facilities."

Inadequate cleaning of instruments is a perennial issue, and it has been known to lead to infections, such as the well-publicized carbapenem-resistant Enterobacteriaceae (CRE) infections, Lavanchy says.²

The report cites outbreaks associated with the use of contaminated duodenoscopes as one example of the problem. Other instruments, including endoscopes, cannulated drills, and arthroscopic shavers, also are difficult to clean, disinfect, and sterilize between uses.¹

"We get reports of failed reprocessing on a fairly regular basis from hospitals," he says. "Once you start digging down, you often find that instruments are of more complex design and the degree of cleaning is not adequate, so that's what brought it to this year's top 10 hazards."

Both visual inspections and manual cleaning of such instruments are big challenges.

"The problem is in reprocessing them because they have features and mechanisms that are extremely difficult to visualize and inspect," Lavanchy explains. "They're tiny and difficult to clean."

The prime solution is education,

EXECUTIVE SUMMARY

Surgery centers can improve safety by prioritizing efforts to reduce some of the more common and troublesome hazards.

- Surgical staplers and inadequate cleaning of reusable instruments are some of the more common hazards.
- Centers also could have safety problems caused by their failure to update equipment software.
- There's a less well-known problem with some cleaning agents causing equipment to degrade and crack.

Schluth suggests.

“You need cooperation between different members of facilities,” he says. “So when cleaning complex instruments and reprocessing, part needs to be done by clinical staff and part by reprocessing staff in another location.”

When both groups understand what the other group is doing and what each group’s pressures are, it can lead to better understanding, cooperation, and more effective performance, Schluth adds.

• **Software management gaps put patients and data at risk.** “So many medical devices these days are software-driven,” Schluth says. “Just like a laptop at home, these may need updates that the manufacturer puts out to improve functionality.”

Medical device manufacturers might issue updates to correct issues related to patient harm, and surgery centers’ patients could be at risk of harm if the center doesn’t install appropriate updates.

“Medical facilities need to know these updates exist, or that there’s a recall out there or some kind of safety problem,” Schluth says. “The problem may be specific to a software version, so the question is, ‘Can I easily find out what software is running on the equipment?’”

Healthcare facilities should have answers to that question in an inventory database, he adds. “Different facilities do things in different ways; it’s important to make sure you have a process for managing that kind of information.”

Software that is out of date can cause unanticipated downtime in medical devices and raise safety concerns. Mismanagement of these updates also can increase cybersecurity vulnerabilities.¹

Another issue to consider is whether the software is operating on a

network, Lavanchy says.

“Any facility that has an electronic medical record [EMR] might use that device to automatically forward data into the EMR, so when there’s a problem with the device or its software, it could have a ripple effect,” Lavanchy explains. “So facilities need good control of software and to manage it appropriately and make it secure.”

Recent headlines have brought attention to cybersecurity breaches in household devices, a problem that highlights the potential harm of someone hacking into a medical device.

“WITH THE AMOUNT OF CYBERCRIME THAT GOES ON AND WITH HACKING, IT’S INEVITABLE THAT WE’LL SEE AN EVENT OF THIS SORT.”

“We don’t know of any hacking instances, but it’s more than a theoretical problem now,” Lavanchy says. “With the amount of cybercrime that goes on and with hacking, it’s inevitable that we’ll see an event of this sort.”

• **Surgical stapler misuse and malfunctions.** “This is the kind of issue we consistently receive reports about, and we’ve investigated a number of issues where patient care was affected,” Schluth says. “Surgical staplers require meticulous technique to operate, and it’s not uncommon to have problems.”

For instance, there are FDA

reports that 8,000-9,000 adverse events related to staplers are filed each year, Schluth says.

Surgical stapler problems can include intraoperative hemorrhaging, tissue damage, unexpected postoperative bleeding, failed anastomoses, and other harm.¹

Surgical staplers typically are used for minimally invasive procedures, so surgeons do not have direct visual access and might be working somewhat blindly, Lavanchy says.

“The surgeon has the camera and views the operative field, but it’s more difficult to have the same visual context, and that’s one of the challenges,” he says. “The other thing is that these staplers are, in general, tricky to use.”

For instance, one common mistake is that the surgeon grabs too much tissue and the staple will not form properly, Lavanchy says.

“It’s like if you are stapling paper and have too many papers — it won’t go through,” he says. “So surgeons may think they’ve stapled the tissue and closed up the patient, but later realize they have not adequately closed off the tissue.”

Surgical stapler problems are reported regularly.

“We have investigated fatalities and other harm that has occurred because of the misuse of staplers,” Schluth explains. “It’s not common to have such severe harm, but incidents do occur.”

A stapler that is directed to the wrong place could harm a patient’s body. Also, a staple line that does not fully close the gap between patient tissues can lead to internal bleeding, Schluth says.

• **Device failures caused by cleaning products and practices.** A new topic on the hazard list, this refers to a particularly tricky and perilous risk: equipment weakened by

particular cleaning agents.

“This is the type of thing that doesn’t come to the front of mind, but it can have a significant effect on how technology is used, patient safety, and cost in a healthcare facility,” Schluth says. “This gets into the issue of cleaning wipes used to clean off the surface of medical devices.”

There have been incidents in which hospitals have problems with devices breaking down. Investigations would find that the cleaning process caused the problems. “Cleaning wipes degraded plastic components of the product, leading to cracking that may not be visible to the naked eye, but which weakened the device to where it failed,” Schluth explains.

The most common event is when the cleaning agent is incompatible with plastic on certain devices, Lavanchy says.

For example, an infusion pump could work with some cleaning agents and not with others. Manufacturers might list which agents work well, but a surgery center could own standardized cleaning agents for the sake of efficiency and cost.

“A lot of different chemical agents are used in cleaning products and some might not be compatible with different plastics,” Schluth says. “There is no one cleaning product that is compatible with all devices within a healthcare facility, so it’s tricky to find out which ones are compatible and get that information to the facility.”

This type of problem can be difficult to identify and expensive to solve. A surgery center might not even realize there’s a problem until after several months of the plastic

breaking down and creating risk, Lavanchy notes.

“You may wipe the infusion pump every day for three or four months, and then all of a sudden you notice a piece of it is cracking and you don’t know why,” he says. “If damage is being done and is not visible, it may be a while before someone determines something is wrong with it, and, meantime, patient safety may be at risk.” ■

REFERENCES

1. Executive Brief: Top 10 Health Technology Hazards for 2017. A report from Health Devices/ECRI Institute; November 2016.
2. O’Horo JC, Farrell A, Sohail MR, et al. Carbapenem-resistant Enterobacteriaceae and endoscopy: An evolving threat. *Am J Infect Contro* 2016;44:1032-1036.

The Top 10 Health Technology Hazards for 2017

The following is the Top 10 Health Technology Hazards for 2017, a report from Health Devices and ECRI Institute.

1. Infusion errors can be deadly if simple safety steps are overlooked. ECRI Institute has investigated incidents of infusion errors involving pump or administration set failures. Other problems have occurred when staff unknowingly defeated a safety mechanism or the infusion programming was incorrect. Errors can lead to patient harm, particularly when they result in uncontrolled flow of medication, which is called “IV free flow.”

Staff could have averted the incidents if they had noticed signs of physical damage to infusion pump components, appropriately used the roller clamp on the IV tubing,

and checked the drip chamber beneath the medication reservoir for unexpected flow.

2. Inadequate cleaning of complex reusable instruments can lead to infections. Outbreaks associated with contaminated duodenoscopes highlight the problem, but ECRI Institute also has received reports involving a variety of contaminated medical instruments that might have been used on patients. Most concerning are complex, reusable instruments such as endoscopes, cannulated drills, and arthroscopic shavers. These are difficult to clean, disinfect, or sterilize, and contamination is difficult to detect. The solution is for healthcare facilities to make reprocessing instructions available to staff and to ensure all steps are followed consistently.

3. Missed ventilator alarms can lead to patient harm. Staff might miss ventilator alarms when they become distracted by or desensitized to the number of alarms that activate. Alarms might not be communicated effectively to staff, leading to alarm notification failures. Preventing missed ventilator alarms poses unique challenges because collecting and analyzing ventilator alarm data can be difficult. Additionally, there are fewer options for supplementing ventilator alarms.

4. Undetected opioid-induced respiratory depression. The risk of giving patients opioids, including morphine, hydromorphone, and fentanyl, includes drug-induced respiratory depression. This condition can lead to anoxic brain injury or death if undetected, so spot checks of a patient’s oxygenation and

ventilation are inadequate. Patients are at high risk if they also receive another drug with a sedating effect, suffer from sleep apnea, or receive more medication than intended. A prevention best practice would be to implement continuous monitoring of patients' ventilation with recently tested and rated monitoring devices.

5. Infection risks with heater-cooler devices used in cardiothoracic surgery. The FDA has issued recommendations for all heater-cooler devices to help prevent and manage device contamination risks and to minimize patient exposure to heater-cooler exhaust air. Heater-cooler systems have been found to be a potential cause of nontuberculous mycobacteria (NTM) infections in heart surgery. Some patients have died from NTM infections. While it's unclear precisely how the devices cause infection, it's theorized that aerosolized water carried by air from the exhaust vents of contaminated heater-coolers is the cause.

6. Software management gaps put patients and patient data at risk. Facilities that fail to keep up with medical device software updates can delay their responses to safety alerts and become vulnerable to cybersecurity problems. For instance, mismanagement of software updates and alerts can affect patient care and safety by causing downtime or otherwise harming the performance of medical devices or interconnected systems. Mismanagement also can delay identification and implementation of key software updates that affect patient safety, and they can lead to lost, stolen, or inaccessible data.

7. Occupational radiation hazards in hybrid operating rooms. OR suites that contain built-in X-ray imaging systems can

place clinicians working in these hybrid ORs at risk of exposure to ionizing radiation unless precautions are followed consistently. The risk is enhanced because employees in these ORs often lack adequate education about the risks of radiation exposure and how to prevent it. Also, the use of these X-ray imaging systems during complex procedures have placed an increasing number of specialists and staff at risk of radiation exposure

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during surgeries. Long-term exposure increases the risk of cancer, so surgery sites must provide OR-specific radiation protection training and take other action to minimize radiation exposure.

8. Automated dispensing cabinet setup and use errors may cause medication mishaps. Mistakes in setting up and using automated dispensing cabinets (ADCs) can create medication errors. ECRI Institute has received reports of incidents of the presence of the wrong drug or dose in an ADC pocket and the availability of high-alert drugs in unsecured areas of the cabinet. Also, needed drugs sometimes are not available. These types of problems can lead to severe patient injury. To prevent

mistakes, surgery centers should plan carefully which medications to make available in a particular care area, where to place medication in a drawer to prevent one drug from being mistaken for another, and whether to restrict access to certain medications through locked pockets or other control mechanisms.

9. Surgical stapler misuse and malfunctions. Intraoperative hemorrhaging, tissue damage, unexpected postoperative bleeding, failed anastomoses, and other forms of patient harm can occur when surgical staplers are misused. Each year, the FDA receives thousands of adverse event reports related to surgical staplers. Severe injuries are infrequent, but do occur. To prevent harm, users should be familiar with the device operation and carefully select the appropriate staple size for the patient.

10. Device failures caused by cleaning products and practices. Devices can malfunction or fail prematurely when they're cleaned with incompatible cleaning agents. For instance, the wrong cleaning agents can damage equipment surfaces and degrade plastics, causing device breakage. Also, improper cleaning techniques can damage seals, degrade lubricants, and cause fluid intrusion, damaging electronics, power supplies, and motors. There is no single ideal cleaner or process, so healthcare facilities should stock and use multiple cleaning products and train staff with device-specific cleaning methods. ■

SOURCE

- Top 10 Health Technology Hazards for 2017, a report from Health Devices and ECRI Institute, November 2016. <http://bit.ly/2efn76>.

Final CMS Policy Released on Global Codes Data Collection

CMS released in November an improved policy on global codes data collection. The changes will affect any surgeon or doctor who provides 10- and 90-day global code services, regardless of the setting.

The changes to the claims-based data process might be burdensome for some physicians, but it's an improvement over the original proposal, says **Vinita Ollapally**, JD, regulatory affairs manager for The American College of Surgeons, headquartered in Chicago. Ollapally is based in Washington, DC.

"Originally, CMS proposed a policy that would have been incredibly burdensome for anyone performing these services," Ollapally says. "What CMS has done is to change the policy quite substantially in the final rule to make it easier for physicians to comply."

The American College of Surgeons pushed very hard, convening a global coalition of all stakeholders to seek a change to the initial proposal, she says. The effort succeeded.

"We pulled together this coalition, made recommendations, and we feel like CMS listened and made adjustments that are going to make this much easier for physicians to comply," Ollapally says. "There also is a higher likelihood of CMS collecting data that's usable."

The organization will keep an eye on the policy as it moves forward, she adds.

CMS had intended to collect data from every single physician who provides 10- or 90-day global code services. But this approach was not in line with the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA), which requires only a

representative number of physicians to submit data, Ollapally says.

In the revised policy, CMS requires physicians who provide 10- or 90-day global codes in only nine states to provide data, she says.

"We consider that a big win, and we're very happy with it," Ollapally says. "CMS is interpreting this policy in line with the MACRA policy."

In addition, CMS has narrowed the requirements even further by only requiring physicians who are in large practices of 10 or more practitioners to provide data, she says.

"They're exempting small practices that may not have the ability to take on this new compliance requirement, so that's something we're very happy with," Ollapally says.

Also, CMS is not requiring that every single 10- and 90-day global code service be reported. The agency focuses on specific codes related to high volume or high Medicare expenditures. These types of codes have to be provided by at least 100 physicians nationwide, she explains.

"The point is they're trying to focus on the codes [and] narrow it down to the codes that provide the most relevant data, instead of requiring all data," Ollapally says. "It reduces the burden on physicians a little bit."

CMS soon will list which codes will be collected. The nine states affected by the initial data reporting include Florida, Kentucky, Louisiana, Nevada, New Jersey, North Dakota, Ohio, Oregon, and Rhode Island.

"CMS divided all of the states into four categories, based on how many Medicare beneficiaries there are per state, and they tried to select states from all four of those categories," Ollapally says. "These are based on

the number of Medicare beneficiaries in the states, and they tried to get states representing all nine census regions."

Another positive change is that the requirement's start date has been pushed back from Jan. 1, 2017, to July 1, 2017.

"It is six months later to give physicians time to understand what was required for reporting purposes," Ollapally says.

The American College of Surgeons also is pleased that CMS did away with its original requirement that data collection use G codes in which physicians would have to capture data in 10-minute increments. "That would have been an incredible burden on physicians because they're not used to carrying around a stopwatch to know when they start and stop," she says. "The G-code proposal was not aligned with clinical workflow."

Also, the G-code proposal likely would not have produced accurate data, she says.

Instead, physicians report only one 99024 code, which is the CBT code for capturing post-op visits within the global code, Ollapally says. "That's going to be so much easier."

Overall, CMS has answered the organization's chief concerns about the policy. CMS also is expected to survey practitioners to obtain even more detailed information.

Meanwhile, The American College of Surgeons will talk with members about how this policy will be implemented.

"We'll want to know more about what the codes are," Ollapally says. "This still will be a burden, an extra thing that some practices are going to have to do." ■

Study: Opioid Analgesics Should Not Be Default Choice to Reduce Post-surgery Pain

Research shows success with alternatives to opioids

A new review suggests that non-opioid analgesic therapies are becoming more important in improving recovery and satisfaction among elderly surgery patients in ambulatory settings.¹ Surgery centers increasingly are seeking alternatives to opioids for pain relief.

Reasons for this shift — albeit a slow one — away from opiates is twofold.

“First, in this country we’re dealing with an opioid/narcotic epidemic,” says **Paul White**, PhD, MD, a researcher and consultant with the department of anesthesiology at Cedars-Sinai Medical Center in Los Angeles.

Secondly, elderly patients demonstrate a higher incidence of constipation and bladder dysfunction as part of the aging process, White says. “Additional opioids are administered postoperatively to the elderly, they’re at very high risk of constipation and, in some cases, ileus may develop.”

The traditional practice of prescribing opioid-containing oral pain medication after surgery must be re-assessed. White offers this example: “When I had a hernia repair under local anesthesia, I was given a prescription for 40 Lortab pills when I was discharged home from the surgicenter,” he says, adding that prescribing excessive quantities of opioid-containing pills can be a problem as the unused pills can be diverted or end up in someone’s medicine cabinet where a child could find them.

“Another problem is that people start taking these highly addicting

drugs after surgery and continue to take them, thereby becoming addicted to the opioid medication,” he explains. “Also, the leftover pain pills are sold on the black market for \$50 to \$100 per pill.”

Clinical research has shown that there are many effective pain-relieving alternatives to opiates for managing post-surgical pain. Non-opioid analgesic therapies have been proven to be highly effective, including infiltration of the incision sites with local anesthetics, as well as single-shot peripheral nerve blocks with local anesthetics. Rapid and short-acting local anesthetics for spinal/epidural anesthesia also can be beneficial for some day-case surgery procedures in older patients. Parenteral ketorolac is an extremely valuable adjunct to the local anesthetics during the perioperative period. IV acetaminophen also can be a useful adjuvant.¹

“By using a combination of non-opioids such as local anesthetics, and non-steroidal anti-inflammatory drugs [NSAIDs] like ketorolac, ibuprofen, naproxen, diclofenac, and COX 2 inhibitors like celecoxib, as well as a variety of other non-opioid analgesics — acetaminophen, ketamine, clonidine, gabapentin — you can minimize the need for opioid medication,” White says. “Opioids should be used only as a rescue drug if pain is not adequately controlled by non-opioids, and the need for long-term opioid use could be eventually eliminated.”

As alien as this viewpoint might seem to many surgeons in the

United States, there are examples of how this approach can work. White recently traveled to Chile to speak to doctors about using non-opioid analgesics for treating post-surgical pain. He found that they do not routinely prescribe oral opioid-containing medications after surgery. Instead, they rely on local anesthesia and NSAIDs, including some generic analgesic medications that are used in Chile and Europe, but are not approved in the United States.

“We’ve done research that has shown that the perioperative use of NSAIDs and COX-2 inhibitors significantly reduces the need for post-discharge opioids and will facilitate the recovery process while also reducing opioid-related side effects,” White says.

Another reason why surgeons should think twice before prescribing opiates to elderly patients is because of a little-understood side effect of opioid-induced hallucination, White says.

This important issue was addressed recently in one of the major anesthesia and analgesia journals, he adds.

“In my own case, my mother had heart surgery about 25 years ago and started seeing devils that she thought were trying to kill her,” White says.

White also has heard from a friend who recently underwent cardiac surgery that three elderly men in the step-down recovery unit, including White’s friend, experienced disturbing hallucinations.

More commonly, use of large doses of opioids in the elderly can lead to excessive sedation and clinically significant cardiovascular and respiratory depression, he notes.

“It’s well-known that perioperative use of opioids produces sedation and has adverse

effects on bladder and bowel function and sedation; however, opioid-induced hallucinations and hyperalgesia have only recently been emphasized,” White says. “The point is that the elderly are at greater risk of adverse side effects of opioid-containing medications. Opioids can affect almost every

major organ system in the body.” ■

REFERENCE

1. Cao X, Elvir-Lazo OL, White PF, et al. An update on pain management for elderly patients undergoing ambulatory surgery. *Curr Opin Anaesthesiol* 2016. Epub ahead of print.

Activity-based Costing Can Save Money for Surgery Centers

With or without the repeal of the Affordable Care Act (ACA), the healthcare industry will continue to shift away from fee-for-service. As the industry pushes for cost-efficiency measures, surgery centers will experience increased pressures to cut costs, as 40% of all hospital and physician spending is related to surgical care, according to a new study.¹

One tool that could help surgery sites improve efficiency is the time-driven activity-based costing (TDABC). It’s a way to measure costs across entire episodes of care, using only the quantity of time and the cost per unit of each resource.¹

“Whether we have the ACA or not, Medicare still has to pay people for delivering care, and fee-for-service is not a feasible long-term solution,” says **Robert S. Kaplan**, PhD, senior fellow and Marvin Bower Professor of Leadership Development, emeritus at Harvard Business School.

Bundled costs or capitated care payment models increasingly will replace the traditional fee-for-service model, and as surgery centers encounter these payment models, they’ll have to find ways to cut costs while maintaining or increasing quality of care.

“How do you measure the cost

of treating a patient’s medical condition? The predominant costing models that healthcare organizations are using are not accurate and are based on charges,” Kaplan says. “If you want to make cost improvements, then you need to understand the existing costs and see where there are opportunities to deliver improvements.”

This should not be a controversial approach, as it simply is a way to measure costs based on the actual clinical and administrative processes used to treat patients, he explains.

“You can measure cost across the entire cycle of care and show that spending more time early in counseling patients and their families can have a big impact downstream,” Kaplan says.

For example, with orthopedic surgery, patient outcomes improve and costs are lower when patients are discharged home quickly to begin physical therapy, he says.

“Patients can have more successful rehab at home rather than in a skilled nursing facility, and it’s much less expensive,” Kaplan says. “But you have to tell patients that because they’re nervous about being able to walk upstairs or getting into a car.”

The solution is for surgeons to spend a little extra time with patients

and their caregivers before the surgery to explain what will happen and what the patient will need to do to recover more quickly. A TDABC costing model can demonstrate how this extra time will benefit surgery centers in a bundled payment environment, Kaplan says.

“So if the methodology shows that a surgeon’s time costs \$5 or \$6 per minute, then a 30-minute conversation with a patient can cost close to \$200,” he explains. “But if the patient is discharged home instead of to a skilled nursing facility, then this can save around \$5,000.

“We just did a study of costs in surgery and found a two-to-one variation in costs between the most expensive and least expensive hospitals doing joint replacement,” Kaplan continues. “They have the same patient population and the same outcomes, but what allowed some to have half the cost was a shorter length of stay in the hospital and discharges to home.”

The more efficient organizations mobilized physical therapists earlier and had patients doing more active physical therapy, which produced positive patient outcomes and lower total costs, he adds.

Often, patients and payers can save surgical costs by using

ambulatory surgery centers (ASCs), which are much less expensive for most patients, Kaplan notes.

“Some hip replacements are being done in ambulatory surgery centers,” he says. “For patients who are obese or have other risk factors, then the surgery might need to be in an academic medical center.”

But even ASCs can become more efficient, and the first step is to understand their costs over a complete cycle of care, he says.

• **Look at each cost and activity separately.** Surgery centers can divide costs into the various steps, including pre-surgical visit, tests, imaging, intervention, and post-anesthesia recovery room, Kaplan suggests.

The way to do this is to measure all time spent per activity and the costs of each activity. Then determine how much time a patient spends with surgery center staff, divided by their discipline: receptionist, nurse, technician, and surgeon. Include the cost of drugs and other items. Then analyze each unit of time for its cost, based on that particular employee’s hourly cost to the center, he explains.

• **Note the costs that can be reduced or eliminated.** Here’s an

example: A physician might need to take notes while meeting or shortly after meeting with a patient. But the surgeon is slow at keypunching the notes, which uses high-cost surgeon time at \$6 a minute when a lower-cost employee could key in notes for the doctor at a cost as low as 35 cents per minute. And the lower-cost employee would do the task just as well or better, he says.

“This leaves more time for the surgeon to do things that only the surgeon can do,” Kaplan says.

• **Use time-driven activity-based costing data to inform operational changes.** Such data might suggest that certain surgical activities could be replaced with lower-cost ones that produce the same outcomes. Data also could demonstrate why it’s more efficient to perform certain surgeries in ambulatory surgery centers rather than in hospital settings, he says.

Collecting efficiency data helps ensure the case for protocol changes.

“Sometimes, doctors are not doing the things they should do because they’re under pressure because of productivity demands,” he says. “We have an example of a severe kidney disease, and the patient goes on

dialysis as the kidney fails,” he says. “Evidence says the patient should go into dialysis with graft/fistula surgery, but it takes 45 days to heal. If the doctor doesn’t do the surgery, then the patient has to have a catheter.”

The catheter might cost \$20,000 over the next six months, a great deal more than the relatively low-cost graft/fistula intervention. But the doctor doesn’t have time to explain the surgery to the patient, so he or she recommends a catheter. A medical conversation with the patient and the patient’s family might take 30 minutes, a very low cost even when factoring in the doctor’s per-minute salary expense, Kaplan says.

“By having a \$200 conversation with the patient to prepare the patient for the next stage of the disease, you could save \$20,000, and the procedure could be done inexpensively on an outpatient basis in an ambulatory surgery center,” he explains. ■

REFERENCE

1. Najjar PA, Strickland M, Kaplan RS. Time-driven activity-based costing for surgical episodes. *JAMA Surg* Nov. 2, 2016. Epub ahead of print.

SDS Manager

How Steady Is Your Vigilance in Safety Efforts?

By Stephen W. Earnhart, MS
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Austin, TX

I have always been fearful of making a big mistake, especially if it could cause harm or injury to others. I’ve had nightmares about it. As a nurse, a CRNA, and a consultant, my fear is probably not pathologically paranoia, but a true understanding of risk.

Safety must be a priority. In my world, I look for three things to be

successful in the OR environment, and it does not make any difference if you are hospital-based, in an ambulatory surgery center, or surgeon’s office. They are:

1. Is this a safe physical environment for my patients and staff?
2. Will we provide a positive

experience for patients and staff?

3. Is it profitable? (Safety is not cheap.)

Increasingly, The Joint Commission, the Accreditation Association for Ambulatory Healthcare (AAAHC), and American Association for Accreditation of Ambulatory Surgery Facilities

(AAAASF) are focusing on patient safety and outcomes, with good reason. Our goal is the betterment of our patients and not adding burden by mistakes or oversight.

What can you do today to protect yourself and your patients while at the same time avoid the nastiness of liability if you don't? Consider the following suggestions:

1. Use common sense.

If it doesn't seem or feel right, go with your gut and question it. If you are working in the surgical environment, you have that sixth sense about what is right or wrong, good or bad — use it. We engage in timeouts to force us to look at the basics before we proceed with the case. You need to extend that to the entire patient experience.

For example, a staff member is wheeling the patient back into the recovery area, and you notice the patient's arm has slipped, is hanging off the stretcher, and the door is closing. Common sense tells you that the arm could get hung in the door and cause injury. Another example: The IV line is snagged on the IV pole that is about to be removed as the patient is transferred. Stop moving, reach out, and free it.

2. Read your policies and procedures.

This is unquestionably boring. Although I write hundreds of them and hate each one, they are there for a reason. As a staffer, you need to have read them and understand them. It's part of your job and continued employment. When was the last time you read them?

As I have discovered over the years, not all staff members understand that P&Ps change and are updated constantly. Ask to see the table of contents, if nothing else, and see if you missed something from the last time you reviewed them.

3. Question things that you don't understand or don't seem to make sense.

Don't be obnoxious and make people roll their eyes every time you open your mouth, but as a member of the staff it is your job to make sure what you are doing is correct. Again, if it doesn't feel right, it probably isn't.

4. Speak up at staff meetings.

In my world, silence at a meeting means acceptance. If you don't understand the item under discussion, speak up and say you don't understand. Too many decisions are made without complete understanding of the implications. If you don't understand it, others do not, either.

5. See patients as family members or friends.

Try to picture your patients as family members, close friends, or someone you interact with. It often is easier to empathize with them and show compassion as well as improve your job skills.

6. Quit your job.

If you don't like your job anymore and are just going through the motions, then quit. There is apathy in every workplace. Re-dedicate yourself to your career, or move on before you burn out.

All our jobs require constant awareness and vigilance. If you can be honest with yourself and admit you have lost your edge, then you need to let someone know and get some guidance.

We are fortunate to work in the healthcare industry. It is a much sought-after place to work. Let's all make it a safer one. ■

(Earnhart & Associates is a consulting firm specializing in all aspects of outpatient surgery development and management. Earnhart & Associates can be reached at 5114 Balcones Woods Drive, Suite 307-203, Austin, TX, 78759. Phone: (512) 297-7575. Fax: (512) 233-2979. Email: searnhart@earnhart.com.)

Delirium Screening Could Be on Surgeons' Pre-op Checklist

Researchers studying postoperative delirium find that it's important to assess patients for possible delirium before surgery, and that exhibiting a higher cognitive reserve can protect patients from delirium.

"We looked at cognitive reserve measures early in life — education and literacy — and we looked at late-life

reserves, such as how many activities you do that are mentally stimulating," says **Joe Verghese**, MBBS, MS, professor of neurology and medicine and chief of the Integrated Divisions of Cognitive & Motor Aging (Neurology) and Geriatrics (Medicine) at Albert Einstein College of Medicine in Bronx, NY. Verghese also is the

director of the Montefiore Einstein Center for the Aging Brain.

Verghese and colleagues found that late-life cognitive reserve was associated with lower delirium incidence and severity in older surgery patients. Researchers theorized that interventions to enhance cognitive reserve by initiating or increasing

participation in cognitive activities could be a delirium prophylaxis strategy.¹

Cognitive Deficits, Dementia Risk

Delirium is a confused mental state associated with altered consciousness and decreased attention. It can affect 20-60% of surgical patients, depending on the type of surgery. It also manifests in two forms: the hypoactive form, in which the patient is quiet, or the hyperactive form, in which patients are agitated physically and pose a potential harm to themselves and others, Verghese says.

“It’s common in older patients admitted to the hospital for surgery or acute infections,” he says.

Patients who experience delirium are more likely to demonstrate cognitive deficits and to develop dementia, and their surgical outcomes often are not as good as patients who do not experience dementia, Verghese adds.

All these factors make it important for surgeons, from a risk assessment perspective, to identify patients’ potential for dementia. One way is to look at a person’s cognitive reserve, indicated by his or her intellectual activities, he suggests.

“Overall, older adults who reported reading books and doing computer games were less likely to have delirium after surgery, and if they had delirium, it was less severe,” Verghese says.

Using email and singing also were associated with lower dementia incidence and severity.¹

Delirium in post-surgery patients typically picks up a day or two after surgery. Earlier confusion likely is related to pain medications, he explains.

“If you are assessing someone for elective surgery and you find out they have low education and are not mentally stimulated, then you could find that the person is at high risk of delirium and monitor them more closely,” Verghese says.

Another new study found that when nurses used delirium-friendly preprinted postoperative orders with hip fracture patients, the intervention patients were less likely to develop delirium than those in a control group.²

Surgery centers might track delirium through follow-up visits.

“Most cases of delirium occur the first week after surgery,” Verghese says. “In this study, we looked at the day after surgery and repeated an exam of the patient a day or two after that to make sure they didn’t have delayed onset of delirium.”

The surgeries studied were elective, in which patients would be in a hospital setting for two to three days after surgery.

“Elective surgeries are becoming increasingly common as more people require hip and knee surgery,” Verghese says. “There’s a push to get patients out of hospitals sooner after surgery, partly for economic reasons, and you don’t want people in hospitals too long because they can pick up infections.”

Delirium typically comes in two forms, either an agitated or quiet form, Verghese says.

“The agitated patients are easier to identify because they are active,” he

explains. “The others are not moving around, but they’re confused.”

Outcomes are the same for either type of delirium, he notes.

Researchers are beginning to imagine the possibility of developing a program of cognitive stimulation that might reduce the risk and severity of delirium. “There usually is a gap between initial assessment and surgery, and it’s possible to do a brain-building program to build up a person’s reserve,” Verghese says.

“We want to apply for a grant to see if this would work,” he says. “We want to show that someone with a low level of mentally stimulating activities would benefit from an intense period of brain game program.”

The theory is that these brain-stimulating activities would reduce delirium and could be incorporated into routine preoperative procedures, Verghese explains.

There especially is interest in researchers developing a way to test cognitive reserve for the purpose of preventing delirium, but that also requires more study, he says. ■

REFERENCES

1. Tow A, Holtzer R, Wang C, et al. Cognitive reserve and postoperative delirium in older adults. *J Am Geriatr Soc* 2016;64:1341-1346.
2. Freter S, Koller K, Dunbar M, et al. Translating delirium prevention strategies for elderly adults with hip fracture into routine clinical care: A pragmatic clinical trial. *J Am Geriatr Soc* 2016. Epub ahead of print.

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CME/CE QUESTIONS

1. **Which type of infection has been linked to inadequate cleaning of reusable instruments, such as endoscopes?**
 - a. Tuberculosis
 - b. AIDS
 - c. Carbapenem-resistant Enterobacteriaceae (CRE)
 - d. All of the above
2. **Surgical stapler mistakes can cause which of the following safety hazards?**
 - a. Intraoperative hemorrhaging
 - b. Tissue damage
 - c. Postoperative bleeding
 - d. All of the above
3. **The Centers for Medicare & Medicaid Services released its policy on global codes data collection in November 2016. Which of the provisions is an improvement over the original policy, according to The American College of Surgeons?**
 - a. CMS narrowed the requirements in part by requiring only physicians who are in large practices of 10 or more practitioners to provide data.
 - b. CMS requires physicians to comply with the reporting requirement once every five years.
 - c. CMS exempts surgeons from the reporting requirements.
 - d. All of the above.
4. **Researchers who have studied postoperative delirium have found that some patients appear to be protected from the condition. Why?**
 - a. Patients who have lower triglycerides and cholesterol experience postoperative delirium less frequently.
 - b. Patients who run marathons or work out at least 10 hours per week are less affected by postoperative delirium.
 - c. Patients who demonstrate a higher cognitive reserve appear to be protected from postoperative delirium.
 - d. All of the above.