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Patient Safety Tip of the Week

September 6, 2022

AORN and Others on Retained Surgical Items

Cynthia Saver authored 3 articles on retained surgical items in a recent issue of AORN Journal. The first (Saver 2022a) was an overview on the challenges that contribute to RSI's as a persistent problem. She notes that 609 respondents to a recent AORN survey identified the top 4 obstacles to preventing RSI's at their facilities:

1. not following policy (whether nurses, physicians, or other staff)
2. distractions due to factors such as multi-tasking
3. communication issues such as not being comfortable with speaking up
4. insufficient staffing

While surgical sponges remain the most frequent source of RSI's, survey respondents also noted that packing materials and needles are the next most frequent known RSI's. And, while the OR is still the most frequent location where RSI's happen, they are also occurring in other areas, such as labor and delivery and procedure rooms (eg, endoscopy units).

In the second article (Saver 2022b) she addresses the human factors contributing to RSI's. She begins by summarizing results of a study published on Mayo Clinic's incredible performance improvement regarding RSI's over a 10-year period (Cima 2022). Between January 2009 and December 2019, the RSI rate improved from 1 per 5500 operations to 1 per 26,704 operations, a 486% performance improvement! (Note that Cima et al. found that retained surgical sponges remained the most frequent RSI despite use of sponge-counting technology.) Saver points out that a large part of that organization's success can be attributed to addressing human factors issues related to RSI's, which personnel identified as:

- cognitive limitations,
- lack of knowledge,
- failure to follow policy or procedure,
- inattention
- sensorimotor errors (counts not performed both verbally and visually)

Saver points out how "**normalization of deviance**" often slips into organizations and can be a factor contributing to RSI's. Because counting is a routine, it gets pushed down the priority list by busy clinicians. It becomes easier for them to cut corners and, when

nothing happens (RSI's are not common occurrences), there is no motivation to return to the "correct" way. Thus, the deviation from the desired standard becomes "normalized" as a new, unofficial standard.

Savor notes that **productivity pressures** may contribute to RSI's.

But she also notes that **complacency**, because RSI's are still relatively rare, is a contributing factor.

Interestingly, she notes how **social pressures** may come into play. Nurses may feel ostracized and experience incivility when they try to follow safety procedures exactly. She also notes that all the training a new nurse gets during orientation may fall by the wayside when their subsequent mentors do something different.

Saver also notes that **inattentional blindness** may be a contributory factor. An example she gives is when RN circulators and surgical techs count needles at the end of a procedure, they expect a used needle to be present in each sequential space of the needle counter and may overlook an empty space. She notes that environmental factors, such as noise level and the physical layout of the OR, can contribute to RSI's, including increasing staff members' inattentional blindness.

Saver has a good discussion on the **culture of safety**, communication, and team dynamics, stressing "Everyone has to **respect other people's roles**" and the importance of **speaking up**. We cannot overemphasize the importance of speaking up when anyone feels something is amiss. A recent review on preventing RSI's (Weston 2022) had an excellent example of using **the ARCC approach** (ask a question; make a request; voice a concern; and if all else fails, seek help from the chain of command). Weston gives the following scenario: when performing the final count during an abdominal hysterectomy, the RN circulator notes that a sponge is missing and observes that the surgeon and resident are having a personal conversation while closing the abdomen. She uses ARCC to speak up and addresses the issue as follows.

1. Asks a question: "How many sponges are on the field?"
   The surgeon and resident reply that they have two sponges.
2. Makes a request: "Please show us all sponges on the field."
   The surgeon holds up one sponge in each hand.
3. Voices a concern: "I have a safety concern; we are missing a sponge from the count."
   The surgeon replies that all sponges have been removed and continues to close the abdomen.
4. Seeks help from the chain of command: The RN circulator escalates the issue and notifies the charge nurse that there is an incorrect count in her OR and the surgeon is proceeding with incision closure.

Note the similarity of the ARCC approach to another example of escalating assertive communication we often recommend: the CUSS tool.

C "I'm concerned and need clarification"
U "I am uncomfortable and don't understand"
S "I'm seriously worried here"
S "Stop"

Saver has a good discussion of the **work environment**, including fatigue and impact of overtime and long shifts. And, of course, the impact of **distractions** in the work environment is critical.

Timing the count appropriately is one way to help avoid distractions. Ensuring that the surgeons are ready for the count is important. Timing is also important when completing the initial count before the beginning of surgery.

Process standardization helps avoid deviation. **Checklists** may help. She notes the Johns Hopkins checklist of 14 steps to follow when there is a discrepancy or when a portion of a device breaks off and needs to be retrieved (The Johns Hopkins Hospital Unintentional Retained Foreign Object [URFO] Procedure Checklist).

Saver notes that **setting expectations** is a key part of standardization. Examples:

- staff members should give their full attention to the counting process and avoid multitasking
- surgeons should perform a visual and manual check of the wound before closing.

Saver's third article (Saver 2022c) focuses on developing a program to prevent RSI's. It's really a refresher course on doing almost any performance improvement project. She notes three key recommendations in the AORN "Guideline for prevention of unintentionally retained surgical items":

- promoting interdisciplinary teamwork
- creating and following standardized procedures
- implementing processes that mitigate breakdowns in standardization and communication

A multidisciplinary team must involve the key stakeholders, including clinical leaders, frontline staff, supply chain personnel, and others such as radiology technologists and radiologists. Support from organization executives is critical. Developing policies and procedures and standardization is an important function of the multidisciplinary team.

Saver mentions use of **tools** to help prevent RSI's, including checklists, posters, count sheets, whiteboards, needle counters, sponge-counting bags, and adjunct technology for detection of items. However, as in virtually all other resources on RSI's, it's important to recognize that **technology is an adjunct and does not replace the need for the manual count**. The detection technologies are pretty good at detecting "soft goods" RSI's but don't pick up the "sharp" items that have been becoming increasingly more important.

Johns Hopkins uses a nice poster to remind the nurses, surgeons, anesthesia personnel, and radiology techs of their individual roles in preventing RSI's.

Saver has a good discussion on educational efforts. **Standardization** may be important. For example, it is recommended that counts should be performed in the same order each time—surgical sponges first, needles second, miscellaneous items third. She also notes that efficient organization of items on the sterile back table and Mayo stand can promote accurate counting.

Another, often overlooked, item is acknowledging when a situation is high risk, such as when team members are not accustomed to working together.

Saver further emphasizes the importance of **sharing data**, not only of actual RSI's but also any **near-misses**. RCA's (root cause analyses) should be done on any RSI or near-miss. Also, don't wait for an RSI or near-miss to occur – do **periodic audits** to help ensure adherence to policies and procedures.

Kaplan et al. (Kaplan 2022) recently reported on a quality improvement project at several New York State hospitals. TeamSTEPPS® training was provided to all perioperative staff at each site, and use of RF detection became required in all procedures. After the interventions, the incidence of RSI's decreased from 11.66 to 5.80 events per 100,000 operations. The frequency of RSI's involving RF-detectable items decreased from 5.21 to 1.35 events per 100,000 operations but the difference in RSI's involving non-RF-detectable surgical items was not statistically significant. This is reassuring that use of technology does reduce retention of RF-detectable items but again points out that items in the "sharps" category (as opposed to soft goods) have remained problematic. We're sorry to see the authors concluded that the benefit of TeamSTEPPS® training alone may not result in a reduction of RSI's. We've always been strong advocates of TeamSTEPPS® training, particularly since it helps build team cooperation and communication and improves the culture of safety. Two of the organizations mentioned in Saver's articles, Johns Hopkins Hospital and MedStar Health, both stressed the importance of TeamSTEPPS® in their programs.

The articles by Cima et al. and Kaplan et al. should serve to show organizations that significant reduction of RSI's is possible. Those articles plus the excellent ones from AORN should provide a sound basis for those hospitals and surgical facilities that are still struggling with RSI's.

In addition to the AORN guideline and our many prior columns on RSI's/RFO's listed below, there are many good resources available to help prevent these. NoThing Left Behind® (NoThing Left Behind®) is the preeminent resource. Others include AORN (AORN 2022b), the American College of Surgeons (ACS 2016), The Joint Commission (TJC 2017, TJC 2013), Pennsylvania Patient Safety Authority (Wallace 2017). Verna Gibbs, founder and director of NoThing Left Behind®, also has provided some great tips for surgeons, nurses, and all OR staff for avoiding RSI's (Gibbs 2019). And Victoria Steelman, author of so many publications on RSI's, and her colleagues have also published recent articles on RSI's (Steelman 2018, Steelman 2019, Steelman 2019b).

Our prior columns on retained surgical items/retained foreign objects (RSI's/RFO's):

- June 12, 2012 "Lessons Learned from the CDPH: Retained Foreign Bodies"
- November 2012 "More on Retained Surgical Items"
- January 8, 2013 "More Lessons Learned on Retained Surgical Items"
- November 5, 2013 "Joint Commission Sentinel Event Alert: Unintended Retained Foreign Objects"
- August 19, 2014 "Some More Lessons Learned on Retained Surgical Items"
- October 28, 2014 "RF Systems for Retained Surgical Items"
- February 2016 "AORN Updates Guideline to Prevent Retained Surgical Items"
- February 7, 2017 "Maternal Safety Bundles"
- August 20, 2019 "Yet Another (Not So) Unusual RSI"
- June 16, 2020 "Tracking Technologies"
- October 27, 2020 "Conflicting Studies on Technology to Reduce RSI's"
- March 8, 2022 "Update on Retained Surgical Items"

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