Implementing AORN Recommended Practices for Prevention of Retained Surgical Items

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ABSTRACT

Retention of a surgical item is a preventable event that can result in patient injury. AORN's "Recommended practices for prevention of retained surgical items" emphasizes the importance of using a multidisciplinary approach for prevention. Procedures should include counts of soft goods, needles, miscellaneous items, and instruments, and efforts should be made to prevent retention of fragments of broken devices. If a count discrepancy occurs, the perioperative team should follow procedures to locate the missing item. Perioperative leaders may consider the use of adjunct technologies such as bar-code scanning, radio-frequency detection, and radio-frequency identification. Ambulatory and hospital patient scenarios are included to exemplify appropriate strategies for preventing retained surgical items. *AORN J* 95 (February 2012) 205-216. © AORN, Inc, 2012. doi: 10.1016/j.aorn.2011.11.010

Key words: *recommended practices, retained surgical items, sponge count, surgical count, unretrieved device fragments, adjunct technology.*

The revised "Recommended practices for prevention of retained surgical items" was published electronically in July 2010 and in the 2011 edition of the AORN *Perioperative Standards and Recommended Practices*. The purpose of the recommended practices (RP) document is to "provide guidance to perioperative registered nurses (RNs) in preventing retained surgical items (RSIs) in patients undergoing surgical and other invasive procedures."[1(p263)] There are 11 recommendations that will help perioperative RNs to better identify and minimize the risks of RSIs while developing an optimal level of practice.

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WHAT'S NEW?

The revised RP document replaces the "Recommended practices for sponge, sharp, and instrument counts."[2] The title was updated to reflect the full scope of preventing RSIs, which includes counting sponges, sharps, and instruments, as well as the additional actions that should be taken beyond counting to prevent RSIs. The revised RP document emphasizes the role of the entire surgical team in preventing RSIs, discusses unretrieved device fragments, contains further suggestions regarding the role of imaging, and briefly mentions the role of adjunct technologies.

RATIONALE

The National Quality Forum includes RSIs on its list of serious reportable events,[3] the Centers for Medicare & Medicaid Services has referred to an RSI as a "never event," and RSI is on the list of hospital-acquired conditions that could reasonably have been prevented.[4] The Joint Commission considers an RSI to be a "sentinel event" that requires investigation.[5] In addition, preventing injuries that result from care that is intended to help patients is one of six Institute of Medicine goals to achieve a better health care system.[1]

A review of the literature indicates that the reported rate of occurrence of RSIs varies greatly. However, the literature does indicate that emergency surgery, an unplanned change in the surgical procedure, a patient with a high mean body mass index, incorrect counts of sponges and instruments, multiple surgical teams, and breakdowns in communication are all factors that can lead to an increased risk of an RSI.[6-8]

Counts are performed to decrease the potential for harm to the patient and to account for all items on the surgical field. Developing "standardized, transparent, verifiable, reliable practices"[1(p263)] is the responsibility of the health care organization. In addition to manual counts, the use of adjunct technologies provides additional support in the prevention of RSIs. Because the entire surgical team may be held legally responsible for RSIs, it is crucial that changes in behavior and organizational culture occur to reduce risk. In addition, many third-party payers will no longer reimburse for treatment performed as a result of an RSI, which makes RSI prevention important to the facility's bottom line.

For reporting purposes, many entities have defined the end of the surgical procedure as the point when the incision is closed, even if the patient is still under anesthesia and still in the OR. The National Quality Forum (NQF) recently proposed a new definition of when surgery ends as after ". . . final surgical counts confirming accuracy of counts and resolving any discrepancies have concluded and the patient has been taken from the operating/procedure room."[9] Some states use NQF definitions as part of their adverse event reporting,[10] so if the updated NQF definition is approved, these states may adopt this definition as well. Perioperative RN leaders should consult with their risk management staff members

Educational Resources

AORN provides a number of educational resources on the topics of performing surgical counts and preventing retained surgical items:

- AORN Video Library: *Preventing Retained Surgical Items* (Ciné-Med, 2011). *http://cine-med.com/index.php?nav=aorn.*
- Clinical Answers: Counts/Retained Surgical Items. *http://www.aorn.org/Clinical_Practice/Clinical_Answers/Clinical_Answers.aspx.*
- Confidence-Based Learning Module: Retained Surgical Items. *http://www.aorn.org/Education/Curriculum/Confidence_Based_Learning/Retained_Surgical_Items.aspx.*

Web site access verified December 22, 2011.

to assess their state regulatory agency requirements, so they know when they have to report an RSI and so they can petition their states to change the definition if it is currently when the wound is closed. The updated NQF definition should be widely adopted because this would encourage perioperative staff members to use all available methods of preventing RSIs, some of which cannot be used most reliably until the incision has been closed completely. Additionally, adoption of one standard definition will provide consistency and standardization across the country.

Nursing and surgical leaders should develop guidelines that delineate when counts should take place, with the goal of avoiding interrupting the surgeon during critical portions of the procedure or nurses during the surgical count.

DISCUSSION

The following discussion examines AORN's recommendations for preventing RSIs and offers suggestions for implementing each recommendation. Perhaps the most important recommendation for the prevention of RSIs is the focus on a multidisciplinary approach that involves all members of the perioperative team. In addition, AORN provides recommendations about the types of items that should be counted and what to do in the event of a count discrepancy. Adjunct technologies are available to supplement manual counting practices. Ambulatory and hospital patient scenarios are included to exemplify appropriate RSI-prevention strategies. The perioperative nurse plays a key role in advocating for the patient and in preventing RSIs.

Recommendation I

A key element to successful implementation of the recommended practices for prevention of RSIs in an organization is a "consistent multidisciplinary approach during all surgical and invasive procedures."[1(p264)] Perioperative team members, including the RN circulator, scrub person, surgeon, anesthesia professionals, and others assisting in the procedure, share responsibility for preventing RSIs. Environmental services staff members and other support personnel also play a role in preventing RSIs because they may discover items under a bed or elsewhere during room turnover.

One injury-prevention strategy is to create a system that accounts for all items used during a procedure. A successful RSI-prevention program requires input and participation from all perioperative team members, including the perioperative nurse, surgeon, scrub person, anesthesia professionals, and risk management personnel. Using the recommended practices as the foundation, a standardized system should be developed and implemented in each organization. Standardizing the process will reduce the potential for errors and RSIs.

Unnecessary activity and distractions should be avoided during the counting process, and counts or events that would require a count (eg, relief of the RN circulator or scrub person) should not be performed during critical portions of the surgery. A good strategy would be to have nursing and surgical leaders work together to develop enforceable guidelines that clearly delineate when counts should and should not take place, with the goal of avoiding interrupting the surgeon during critical portions of the procedure or interrupting nurses during the surgical count. The RN circulator and scrub person should follow a standardized procedure for counting, as indicated by the health care organization's policy, because errors typically result from a deviation in routine practice.[1,11] Standardizing the procedure for counting reduces risk and allows for continuity and efficiency within the perioperative team. Standardizing the count procedure includes the timing of when counts should occur, including initial and closing counts, relief counts, and counts when new items are added to the field.

The RN circulator should be an active participant in the counting process and should be observant of activities at the sterile field throughout the procedure. The RN circulator should initiate counts in collaboration with the perioperative team and provide documentation of the resolution and any discrepancies. In some instances, other team members may be asked to open supplies while the RN circulator is occupied with other patient care activities. Any perioperative team member who assists the surgical team by opening sterile items, such as extra sutures or radiopaque sponges, onto the sterile field should count the items with the scrub person, add the counted items to the count documentation, and promptly inform the RN circulator about what was added.[12,13] Opening extra supplies without properly adding them to the count sheet or whiteboard may lead to a discrepancy at the end of the procedure. The RN should prioritize what tasks are assigned to others and consider delegating lower-priority tasks than opening counted items; however, the urgency of a situation might necessitate this delegation when patient safety is at risk.

Counts should be conducted when packages of miscellaneous items are opened onto sterile field, and items should be viewed by both the RN circulator and scrub person to ensure that any packaging errors are recognized.

Surgeons and first assistants also should take all possible measures to prevent an RSI by

- maintaining awareness of items used,
- using only radiopaque soft goods,
- communicating when placing items in the wound,
- acknowledging the start of the count process,
- performing a methodical exploration of the wound at the initiation of the first closing count, and
- notifying the perioperative team when items have been returned to the field after counts are completed.

Anesthesia professionals "should maintain situational awareness"[1(p266)] during surgical procedures. This includes planning actions so they do not interfere with the count process. Anesthesia professionals should not use counted items, and they should verify with the perioperative team that items used in the oropharynx have been inserted or removed. Radiologists and radiologic technologists also have a critical role to play in the prevention of RSIs when imaging is needed. Perioperative staff members should communicate with radiology staff members regarding the best type of imaging, the most appropriate views, and what specifically is being looked for, including providing a sample of the item (eg, suture needle, compressed rayon cotton pledget).

Recommendation II

Any soft goods opened onto the sterile field, such as towels and sponges, should be counted and added to the count documentation. Initial counts should be performed and recorded to establish a baseline. Some recommended actions are to

- use only radiopaque soft goods, including towels, in the wound;
- completely separate sponges;
- view sponges concurrently;
- count out loud;
- confirm that each item has a radiopaque tag;
- break bands before counting takes place;
- avoid altering sponges;
- count in the same sequence every time; and
- dispense dressing sponges only after the final count has been completed.

Organizational policy should be developed to support the use of pocketed sponge bags by the RN circulator. Using pocketed sponge bags during all procedures in which soft goods will be counted increases visibility through separation of each sponge, reducing the potential for an inaccurate

count. There are several varieties of sponge counter bags available. Before a purchasing decision is made, the different types of bags should be evaluated, and the perioperative RNs should actively participate in the evaluation process and selection of the product.

Because soft goods may be used for therapeutic packing and the patient may leave the OR with the packing in place, health care organizations should establish policies and procedures to standardize processes for communicating about these items and the plan for removal. The perioperative RN should be involved in policy and procedure development and implementation of this recommendation. Considerations for the standardized plan include when and how to communicate about therapeutic packing, documentation requirements, and confirmation with the physician. Radiopaque sponges that are removed should not be included in the count for the removal procedure but should be isolated and identified as being from the original procedure. The surgeon should conduct a methodical wound exploration and possibly order an intraoperative radiograph to confirm that all items are removed. The count for the removal procedure should be documented as reconciled if all soft goods have been accounted for. The patient and the patient's family members should be informed of any items purposely left in the wound and the plan for their removal.

Recommendation III

"Sharps and other miscellaneous items that are opened onto the sterile field should be accounted for during all procedures for which sharps and miscellaneous item are used."[1(p268)] Many miscellaneous items are used on the sterile field and may not be radiopaque, which can lead to RSIs. Counts should be conducted when packages are opened, and package contents (eg, suture needles, blades, soft goods) should be viewed by both the RN circulator and scrub person because packaging errors can occur and, if not recognized, can lead to incorrect counts at the conclusion of the procedure.

Multiple studies have examined what size needles might lead to injury when left in a patient.[14-17] Any needle has the potential to cause injury, although injury is less likely with very small needles that also may not be visible radiographically when there is a potential retention situation.[12,15,17] It is critical for staff members who handle needles to carefully track which needles are in the surgical field so that if the needle counts are incorrect it is easy to identify exactly what type of needle is missing. In those facilities where procedures requiring the frequent use of small needles (ie, heart surgery, microvascular surgery) are performed, the radiology and perioperative staff members should work together to develop a clear and concise policy. The policy should specify what types of needles should be looked for on a radiograph and who should be reading the films, and it should clearly delineate who is responsible for informing the patient should this occur. This will make it easy for the staff to make decisions about how to respond to a potentially retained needle.

AORN recommends the use of containment devices for sharps as a risk-reduction strategy to prevent or reduce needle-stick injuries for anyone who might come in contact with the linens or trash from the room, as well as to prevent miscounts.[18] The potential also exists for items to break or separate. The scrub person should verify that items returned from the surgical field are intact to prevent retention of item fragments. When a broken item is returned, the entire team should be made aware and the wound explored.

Recommendation IV

An initial count of instruments should be performed when the sets are being assembled before sterilization to provide an inventory, but this count should not be considered the initial surgical count. An instrument count should be performed in the OR by the scrub person and RN circulator. "Instruments

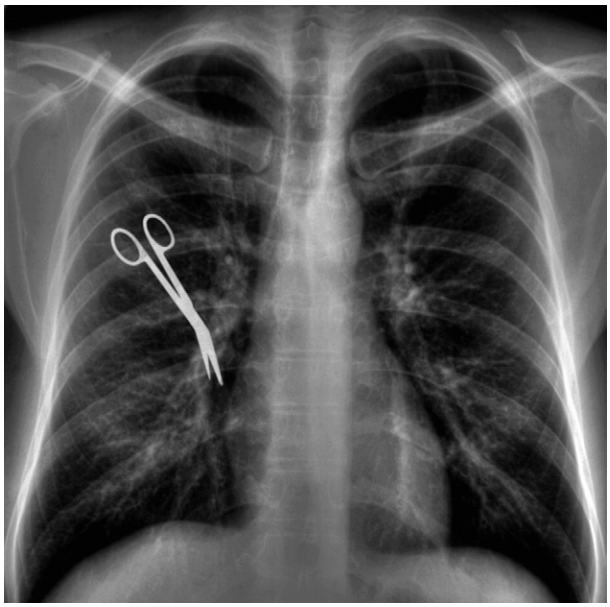

Figure 1. X-ray of retained Potts-Smith scissors in the thoracic cavity.

should be accounted for on all procedures in which the likelihood exists that an instrument could be retained."[1(p270)] Retention of instruments of all shapes and sizes (Figure 1) has been reported in the literature.[12,19] Instruments can be retained during open or minimally invasive procedures; therefore, initial instrument counts should be performed during minimally invasive procedures such as laparoscopy and thoracoscopy.

There may be instances in which instrument counts may be waived. The instances in which counts may be waived should be established by the health care organization and clearly defined in policy and procedures.

When instruments have multiple pieces, the pieces should be counted separately and documented on the count sheet. A final count of instruments should occur after all instruments have been removed from the wound and returned to the sterile field.

The use of preprinted count sheets (Figure 2) helps to increase efficiency and provide a detailed inventory of what is in the instrument set. It is helpful to streamline instrument sets to include a minimum number and type of instruments. This will also increase the ease of counting.

Recommendation V

Measures should be taken to identify and reduce the risks associated with unretrieved device fragments.

> *Each year, the US Food and Drug Administration (FDA) Center for Devices and Radiological Health receives nearly 1,000 adverse event reports related to unretrieved device fragments . . . . The FDA defines an unretrieved device fragment as "a fragment of a medical device that has separated unintentionally and remains in the patient after a procedure.*[1(p272-273),20]

One possible way to reduce the incidence of an unretrieved device fragment would be to add this item to the final time-out checklist that is reviewed before surgery so that the team members would all be aware of the possibility. As an example, during the time out, the surgeon might say, "just so everyone knows, we are removing a lap band and it is possible that a small piece may come detached, so let's be sure we check for this before we close." When device fragments are left in a surgical wound, the surgeon should inform the patient and explain the risks involved with leaving the object in the wound.[21] Some measures that the perioperative team can take to reduce the potential risks of an unretrieved device fragment to a patient include talking with the patient and his or her family members about how the device could migrate over time, the potential it has for leading to an infection, the types of future procedures that might need to be avoided (eg, magnetic resonance imaging), and the risks and benefits of leaving the fragment in rather than attempting to remove it.[1]

Recommendation VI

Closing counts require standardization to reduce the potential for discrepancies. If a discrepancy is identified, the perioperative nurse should collaborate with the other surgical team members to initiate

11/3/2011 4:36 pm

Minor Set

Prepared Date Set | Set ID: MinorSet-000 | Set Set Was | General | Bar Code: 10015-000 | Date Prepared: 11/03/2011 | ____Satisfactory _____Not

Sub Add Qt	CPD	Qty	Description: Sterilization Method: **Steam**	Manufacturer	Product #	Medtech	Comment
2 ___			**KNIFE HANDLES**				
	____	2	Handle, Knife #3	Manuf XYZ	458-270	11006397	_____
8 ___			**FORCEPS**				
	____	2	Forcep,Smooth	Manuf XYZ	465110	11005759	_____
	____	2	Forcep, Mousetooth	Manuf XYZ	476-460	11014199	_____
	____	2	Forcep, Adson, Brown	Manuf XYZ	57-250	11005757	_____
	____	1	Forcep, Adson	Manuf XYZ	57-210	10800590	_____
	____	1	Forcep, Long Smooth	Manuf XYZ	465125	10805775	_____
4 ___			**SCISSORS**				
	____	1	Scissors, Mayo, Dissecting, Straight, 6 1/2"	Manuf XYZ	460460	11005760	_____
	____	1	Scissors, Mayo, Curved	Manuf XYZ	460430	11009687	_____
	____	1	Scissors, Metzenbaum, Curved, 7"	Manuf XYZ	460871	11006765	_____
	____	1	Scissors, Suture, Straight, 5 1/2"	Manuf XYZ	460-110	11005983	_____
8 ___			**HEMOSTATS**				
	____	8	Clamp, Hemostat, Crile, Curved, 5 3/4"	Manuf XYZ	475311	11005758	_____
8 ___			**KELLYS**				
	____	8	Clamp, Kelly, Curved, 6 1/2"	Manuf XYZ	476155	10800598	_____
2 ___			**ALLIS**				
	____	2	Clamp, Allis, Tissue, 6"	Manuf XYZ	500311	11006398	_____
4 ___			**BABCOCKS**				
	____	4	Clamp, Babcock, Tissue, 6 1/2"	Manuf XYZ	500400	10805756	_____
2 ___			**CLAMP, TONSIL**				
	____	2	Clamp, Tonsil 7.25"	Manuf XYZ	075120		_____
6 ___			**NEEDLEHOLDERS**				
	____	2	Needleholder, Blunt,	Manuf XYZ	510-101	10800605	_____
	____	2	Needleholder, Crile Wood, Bulldog Jaw, 6 1/4" (FRENCH)	Manuf XYZ	510-201	10800797	_____
	____	2	Needleholder, Long, Blunt	Manuf XYZ	510111	11006767	_____
4 ___			**KOCHERS**				
	____	4	Clamp, Kocher, Straight	Manuf XYZ	476-215	11009690	_____
2 ___			**RIGHT ANGLES**				
	____	2	Clamp, Lahey, Right Angle, 7 3/4"	Manuf XYZ	496111	11009692	_____
2 ___			**SPONGE STICKS**				
	____	2	Spongestick, Regular	Manuf XYZ	454100	11007826	_____
2 ___			**TOWEL CLIPS**				
	____	2	Towel Clip, Backhaus, 5 1/2	Manuf XYZ	454-300		_____
2 ___			**STRINGERS**				
	____	2	Stringers, 8"	Manuf XYZ	US899	11033066	_____
10 ___			**RETRACTORS**				
	____	2	Retractor, Richardson	Manuf XYZ	480-125		_____
	____	2	Retractor, Army Navy	Manuf XYZ	480-190		_____
	____	1	Retractor, Weitlaner, Dull	Manuf XYZ			_____
	____	1	Retractor, Weitlaner, Sharp	Manuf XYZ	485-325		_____
	____	2	Retractor, Vein	Manuf XYZ		1007030	_____
	____	1	Retractor, Roux, Large	Manuf XYZ	480-145	10805846	_____
	____	1	Retractor, Roux	Manuf XYZ	480140	11009697	_____
	____		INTEGRATOR NOTE Steam sterilize @ 270deg for 4 minutes.				

Container

Total Instruments: 66 Creation Date: 08/03/04 Date of Last 10/13/11 Number of Changes: 15

Central Processing QA Monitor Y N COMMENTS

Set Contained Dirty Instruments
Set Incomplete
Hole in Wrapper
No indicator
Labeled
Count Sheet Missing
Comments

Tech/RN:_____

Figure 2. Preprinted count sheet.

the organization's investigation and reconciliation process.[22,23] Early detection allows time for further wound exploration and can reduce the amount of time a patient is anesthetized. When discrepancies in counts are identified early, there is also a reduction in reopening of wounds and the need for radiographs.[24]

It is the ethical responsibility of the RN circulator to notify the rest of the perioperative team as soon as a discrepancy is noted and receive verbal acknowledgment from the surgeon and other team members so that multiple actions can be initiated, including inspecting the field, floor, and trash buckets. When it is safe for the patient, wound closure should be suspended to allow for a thorough wound examination and possibly for radiographs. Taking radiographs before wound closure can prevent the need to reopen a wound. It might also prevent having to report the incident to regulatory or accrediting bodies. If the radiograph indicates an RSI, the wound can be further explored and the item retrieved before closure to prevent an RSI and, therefore, the need to report the incident.

In some instances, a health care facility may not have intraoperative radiograph capabilities. When this is the case, detailed policies and procedures should provide step-by-step instructions for the perioperative team to follow when there is a potential RSI, including transfer of the patient to a facility where the radiograph can be taken. Radiographs may also be waived in certain instances, such as when the potential RSI is a small needle or if the patient is so unstable that the risk of waiting in the OR outweighs the risk of a potential RSI. These situations should be defined in policy and procedures.

When radiographs are ordered, there should be thorough communication between the radiology technologists and the perioperative team.[1(p274),25,26] Staff members should take care to use language in the request that can be understood by non-OR personnel (eg, instead of "peanut," use "small, tightly rolled gauze"). When necessary, early consultation with the radiologist can decrease time by helping him or her select the most appropriate radiograph method. Portable and image intensifier technology both provide acceptable images. Staff members in the OR also should discuss optimal imaging with the radiology technician when an RSI is suspected; this may include additional views (eg, oblique views), especially for patients who are obese.

One way to implement more effective communication between perioperative and radiology team members is to create an educational board with common retained items for the radiology department to use as a comparison. For example, perioperative team members can work with radiologists to create accurate pictures of what radiologists would look for in the event of a suspected RSI by taping an assortment of sponges to a board and then taking a radiograph. When the requisition goes through to determine whether a "peanut" was left in the wound, the radiologist will have an actual peanut sponge and a radiograph of that sponge to help him or her identify the RSI. This will also prevent misunderstandings by radiologists who might be looking for an actual peanut rather than a sponge.

Reporting of radiograph results should be timely and by direct report, including a read-back verbal confirmation.[25,26] When the potential RSI is a needle, the organization should have established criteria for radiographs based on the size of the needle.

Recommendation VII

Perioperative nurses and surgeon leaders, in collaboration with risk managers, may consider the use of adjunct technologies to supplement manual count procedures. Several adjunct technologies are now available to supplement manual counts; these can be classified as count, detect, or count and detect technologies.[1,27-34]

Bar-code scanning systems involve a unique data matrix symbology tag annealed to the gauze. Sponges are scanned with a handheld bar-code

reader as they are added to the sterile field and again as they are removed. The system is able to count sponges but cannot detect a sponge that is missing because bar-code detection requires that the sponge be in direct visual proximity to the bar-code reader, much like the bar codes used to scan groceries in a supermarket.

Visual proximity is not required with radio-frequency (RF) systems, which use a passive RF tag that is embedded in sponges and can be detected when a wand is within 16 to 24 inches of the tag. The wand is connected to a detection console that generates an audible and visual alarm when an RF sponge is detected. Similar to an electronic article surveillance system used in many department stores, each tag contains no specific information so the system cannot distinguish one sponge from another; rather, it can only detect a sponge either in a patient or anywhere else in the OR where the wand can be used.

An RF identification (RFID) system is able to both count and detect. Like the bar-coding system, the RFID tag for each sponge contains unique data for that specific sponge that can be identified when scanned by a handheld wand. Similar to the RF system, RFID does not require visual proximity. Thus, sponges can be counted as they are added and then again as they are removed from the field and they can be detected with the use of a wand that is waved over the patient.

The limited nature of available data regarding new technologies and continuously changing costs pose a significant problem for perioperative decision makers who must justify an additional expense to prudent institutional financial officers in a resource-poor hospital environment. When determining which, if any, of these new technologies they should adopt, these leaders should consider the costs involved in an RSI case that is not covered by insurers and legal costs, in addition to the training of staff members, the impact on OR time, ease of use, and public relations effects. Perioperative leaders also should develop a multidisciplinary process to evaluate and select from adjunct technologies as part of their patient safety programs. These technologies may provide added safety in the verification of counts or in identifying a falsely correct count and should always be used in conjunction with standard count procedures.

The Final Four

The final four recommendations in each AORN RP document discuss education/competency, documentation, policies and procedures, and quality assurance/performance improvement. These four topics are integral to the implementation of AORN practice recommendations. Personnel should receive initial and ongoing education and competency validation as applicable to their roles. Implementing new and updated recommended practices affords an excellent opportunity to create or update competency materials and validation tools. AORN's perioperative competencies team has developed the AORN *Perioperative Job Descriptions and Competency Evaluation Tools*[35] to assist perioperative personnel in developing competency evaluation tools and position descriptions.

Documentation of nursing care should include patient assessment, plan of care, nursing diagnosis, and identification of desired outcomes and interventions, as well as an evaluation of the patient's response to care. Implementing new or updated recommended practices may warrant a review or revision of the relevant documentation being used in the facility.

Policies and procedures should be developed, reviewed periodically, revised as necessary, and readily available in the practice setting. New or updated recommended practices may present an opportunity for collaborative efforts with nurses and personnel from other departments in the facility to develop organization-wide policies and procedures that support the recommended practices. The AORN *Policy and Procedure Templates,* 2nd edition,[36] provides a collection of 15 sample policies and customizable templates based on

AORN's *Perioperative Standards and Recommended Practices*. Regular quality improvement projects are necessary to improve patient safety and to ensure safe, quality care. For details on the final four practice recommendations that are specific to the RP document discussed in this article, please refer to the full text of the RP document.

AMBULATORY PATIENT SCENARIO

A 45-year-old man is undergoing excision of a 2-cm basal cell carcinoma on his back under local anesthesia in an ambulatory surgery center. The preference card for the surgeon performing the procedure calls for a 5-0 nylon suture with an 11-mm needle, which has been opened on the field. As the procedure is concluding, Nurse L notes that her sharps count is incorrect. What is her next step?

Nurse L should first recount her sharps to confirm that the count is incorrect. She should simultaneously inform the surgeon of the incorrect count and ask for the surgical team to explore the wound and its environs.

The count remains incorrect, and Nurse L informs the surgeon. She has been diligent about recording exactly which needles are being used and feels with a degree of certainty that it is the 5-0 nylon needle that is missing. The surgeon states that there is no reason to worry because he has explored the wound and did not find the needle, and besides that the needle is too small to cause a problem. Should Nurse L insist that a radiograph be performed?

The answer depends on the policy of the facility. An 11-mm needle may be deemed by certain institutions to be too small to require a radiograph. If the policy of the facility requires a radiograph for this size needle, and there are radiograph capabilities available, Nurse L should insist that a radiograph be performed. Regardless of whether a radiograph is performed, if the count remains unresolved (even if a radiograph is negative), Nurse L should carefully document what has occurred and the reasons why, and the surgeon should inform the patient regarding potential risks and document this in the surgical report.

HOSPITAL PATIENT SCENARIO

Mr H is brought to the holding area for repair of what appears to be a rupturing abdominal aortic aneurysm. The preoperative area staff members, including nurses, anesthesiologists, and members of the surgical team, quickly assess and identify the patient with the help of his family members and note blood pressures that are 100/60 mm Hg and stable. He is brought to the OR where, after appropriate vital sign monitors are placed on him, anesthesia is induced and the surgery is rapidly begun. Should Nurse B, who is assigned to circulate, perform a count of instruments, sponges, and sharps?

Nurse B should not take time away from caring for

Resources for Implementation

- AORN Nurse Consult Line. 800-755-2676 or 303-755-6300, option 1.
- AORN SYNTEGRITY™ Standardized Perioperative Framework. *http://www.aorn.org/Clinical_Practice/EHR_Periop_Framework/EHR_Perioperative_Framework.aspx.*
- OR Nurse Link *http://www.aorn.org/ORNurseLink/.*
- *Perioperative Job Descriptions and Competency Evaluation Tools. http://www.aorn.org/Books_and_Publications/AORN_Publications/Perioperative_Job_Descriptions_and_Competency_Evaluations_Tools.aspx.*
- *Policy and Procedure Templates*, 2nd edition [CD-ROM] (AORN, 2010). *http://www.aorn.org/Books_and_Publications/AORN_Publications/Policy_and_Procedure_Templates.aspx.*

Web site access verified December 22, 2011.

this critically ill patient who is undergoing an emergency surgery to perform a count. If possible, the circulator and scrub person should attempt to count the sponges as they are opened and handed to the surgeon to validate there are the correct number of sponges in each bundle. Regardless of whether the team is able to conduct a full or partial count, Nurse B should be sure that all of the soft goods given to the surgical team are radiopaque.

The surgery goes well, and the surgical team is able to repair the aneurysm using a traditional open technique with a tubed graft. As the team is closing the abdomen, the anesthesiologist notes that the patient is stable and asks that a bed be made available in the intensive care unit. This is confirmed by the circulating nurse, who has spoken with the charge nurse in the intensive care unit. Should Nurse B ask for a portable radiograph to be sure no radiopaque surgical items have been left in the patient?

If Nurse B has been able to a perform a full and complete count according to the institution's policy, and all final counts are correct, no radiograph is needed. However, in the more likely event that this is not the case, she should discuss the appropriateness of taking a radiograph in the OR—which will delay the patient's transport to the intensive care unit—with the attending surgeon and attending anesthesiologist. If they agree that the patient is stable and that there is, therefore, adequate time, a radiograph should be ordered. Nurse B and the surgical team should then insist that the radiograph be read in a timely fashion and the results be communicated by the attending radiologist reading the film directly to the attending surgeon.

If the patient is unstable, Nurse B should communicate directly with the intensive care unit staff members to be sure that a radiograph is performed there as soon as possible. In either case, Nurse B should clearly document in her notes exactly what transpired and why, and the surgeon should do the same in the surgical report.

CONCLUSION

Implementing the recommended practices for prevention of RSI presents a unique opportunity to build collaboration within and beyond the perioperative setting and to make certain that evidence-based practices are understood and followed by all clinical practitioners. As with other low-frequency events that have potentially severe outcomes for patients, teamwork is a critical component in the prevention of RSIs. Perioperative RNs can take an active role in preventing RSIs by providing an accurate accounting of items that are dispensed before and during a surgical or invasive procedure, using appropriate adjunct technology, and advocating for patients through collaboration with professional colleagues. AORN

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This RP Implementation Guide is intended to be an adjunct to the complete recommended practices document upon which it is based and is not intended to be a replacement for that document. Individuals who are developing and updating organizational policies and procedures should review and reference the full recommended practices document.

EXAMINATION

CONTINUING EDUCATION PROGRAM

2.7 CE

www.aorn.org/CE

Implementing AORN Recommended Practices for Prevention of Retained Surgical Items

PURPOSE/GOAL

To educate perioperative nurses about how to implement the AORN "Recommended practices for prevention of retained surgical items [RSIs]" in inpatient and ambulatory settings.

OBJECTIVES

1. Identify the purpose of AORN's "Recommended practices for prevention of retained surgical items."
2. Discuss AORN's recommendations for preventing RSIs.
3. Explain factors that can increase the risk of an RSI.
4. Recognize the types of costs associated with treating an RSI.
5. Discuss considerations that should be included in a count policy.

The Examination and Learner Evaluation are printed here for your convenience. To receive continuing education credit, you must complete the Examination and Learner Evaluation online at *http://www.aorn.org/CE*.

QUESTIONS

1. The purpose of AORN's "Recommended practices for prevention of retained surgical items" is to provide guidance to perioperative nurses in preventing RSIs in patients undergoing surgical and other invasive procedures.
   a. true *b.* false

2. Changes to the revised recommended practices document include
   1. a title change to reflect the full scope of preventing RSIs.
   2. discussion of unretrieved device fragments.
   3. emphasis on the role of the entire surgical team in preventing RSIs.
   4. mention of the role of adjunct technologies.
   5. suggestions regarding the role of imaging.

   a. 1, 3, and 5 *b.* 2 and 4
   c. 2, 3, 4, and 5 *d.* 1, 2, 3, 4, and 5

3. Factors that can lead to increased risk of an RSI include
   1. a patient with a low body mass index.
   2. an unplanned change in the surgical procedure.
   3. breakdowns in communication.
   4. emergency surgery.
   5. incorrect counts of sponges and instruments.
   6. multiple surgical teams.

   a. 1, 3, and 4 *b.* 2, 4, and 5
   c. 2, 3, 4, 5, and 6 *d.* 1, 2, 3, 4, 5, and 6

4. Many third-party payers will no longer reimburse for treatment performed as a result of an RSI, which makes RSI prevention important to the facility's bottom line.
a. true *b.* false

5. Team members who share responsibility for preventing RSIs include
1. anesthesia professionals.
2. environmental services staff members.
3. RN circulators.
4. scrub persons.
5. surgeons.
a. 1 and 2 *b.* 3, 4, and 5
c. 1, 2, 4, and 5 *d.* 1, 2, 3, 4, and 5

6. In facilities where procedures requiring the frequent use of small needles are performed, the count policy should
a. be developed by the circulating RN.
b. clearly delineate who is responsible for informing the patient should a needle be retained.
c. give general suggestions for what types of needles should be looked for on a radiograph.
d. allow flexibility in who should read radiograph films.

7. Considerations to take regarding unretrieved device fragments include
1. adding this item to the final time-out checklist that is reviewed before surgery.
2. assuring the patient and his or her family members that the retained device fragment will not migrate over time.
3. explaining the types of procedures the patient should avoid in the future if a retained device fragment is not removed.
4. informing the patient and explaining the risks involved if a device fragment is left in the wound.
a. 1 and 2 *b.* 3 and 4
c. 1, 3, and 4 *d.* 1, 2, 3, and 4

8. When a discrepancy in the count is identified,
a. the RN circulator should notify the perioperative team as soon as there is an appropriate break in surgical activity.
b. team members should inspect the surgical field, the floor, and trash buckets.
c. wound closure should continue on schedule to prevent the next procedure from starting late.
d. it is preferable to perform radiographs after wound closure if they are deemed necessary.

9. Perioperative nurses can implement more effective communication between perioperative and radiology team members by
1. creating an educational board with common retained items for radiology personnel to use as a comparison.
2. helping to establish criteria for radiographs based on needle sizes.
3. using common OR terminology like "peanut" when describing retained items to radiology personnel.
4. working with radiologists to create accurate pictures of what radiologists would look for.
a. 1 and 2 *b.* 3 and 4
c. 1, 2, and 4 *d.* 1, 2, 3, and 4

10. When determining whether adjunct technologies should be adopted, perioperative leaders should
1. consider the various costs associated with an RSI case.
2. develop a multidisciplinary process to evaluate and select from technologies as part of a patient safety program.
3. ensure that adjunct technologies are always used in conjunction with standard count procedures.
a. 1 and 2 *b.* 1 and 3
c. 2 and 3 *d.* 1, 2, and 3

The behavioral objectives and examination for this program were prepared by Kimberly Retzlaff, editor/team lead, with consultation from Rebecca Holm, MSN, RN, CNOR, clinical editor, and Susan Bakewell, MS, RN-BC, director, Perioperative Education. Ms Retzlaff, Ms Holm, and Ms Bakewell have no declared affiliations that could be perceived as potential conflicts of interest in the publication of this article.

LEARNER EVALUATION

CONTINUING EDUCATION PROGRAM

2.7 CE

www.aorn.org/CE

Implementing AORN Recommended Practices for Prevention of Retained Surgical Items

This evaluation is used to determine the extent to which this continuing education program met your learning needs. Rate the items as described below.

OBJECTIVES

To what extent were the following objectives of this continuing education program achieved?

1. Identify the purpose of AORN's "Recommended practices for prevention of retained surgical items [RSIs]." *Low 1. 2. 3. 4. 5. High*
2. Discuss AORN's recommendations for preventing RSIs. *Low 1. 2. 3. 4. 5. High*
3. Explain factors that can increase the risk of an RSI. *Low 1. 2. 3. 4. 5. High*
4. Recognize the types of costs associated with treating an RSI. *Low 1. 2. 3. 4. 5. High*
5. Discuss considerations that should be included in a count policy. *Low 1. 2. 3. 4. 5. High*

CONTENT

6. To what extent did this article increase your knowledge of the subject matter? *Low 1. 2. 3. 4. 5. High*
7. To what extent were your individual objectives met? *Low 1. 2. 3. 4. 5. High*
8. Will you be able to use the information from this article in your work setting? *1. Yes 2. No*
9. Will you change your practice as a result of reading this article? (If yes, answer question #9A. If no, answer question #9B.)

9A. How will you change your practice? *(Select all that apply)*

1. I will provide education to my team regarding why change is needed.
2. I will work with management to change/implement a policy and procedure.
3. I will plan an informational meeting with physicians to seek their input and acceptance of the need for change.
4. I will implement change and evaluate the effect of the change at regular intervals until the change is incorporated as best practice.
5. Other: _____

9B. If you will not change your practice as a result of reading this article, why? *(Select all that apply)*

1. The content of the article is not relevant to my practice.
2. I do not have enough time to teach others about the purpose of the needed change.
3. I do not have management support to make a change.
4. Other: _____

10. Our accrediting body requires that we verify the time you needed to complete the 2.7 continuing education contact hour (162-minute) program: _____

This program meets criteria for CNOR and CRNFA recertification, as well as other continuing education requirements.

AORN is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

AORN recognizes these activities as continuing education for registered nurses. This recognition does not imply that AORN or the American Nurses Credentialing Center approves or endorses products mentioned in the activity.

AORN is provider-approved by the California Board of Registered Nursing, Provider Number CEP 13019. Check with your state board of nursing for acceptance of this activity for relicensure.

Event: #12506; **Session:** #0001; **Fee:** Members $13.50, Nonmembers $27

The deadline for this program is February 28, 2015.

A score of 70% correct on the examination is required for credit. Participants receive feedback on incorrect answers. Each applicant who successfully completes this program can immediately print a certificate of completion.