**ADMINISTRATIVE APPROVAL**

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**Purpose**

To provide guidance to perioperative personnel for preventing retained surgical items (RSIs) during operative or other invasive procedures. The expected outcome is that the patient is free from unintended retained foreign objects.

Policy

It is the policy of **[insert name of facility]** that:

* All perioperative team members will engage in safe practices that support prevention of RSIs.
  + The RN circulator will:
* perform a room survey for open countable items from a previous procedure before conducting an initial count;
* verify that the count board (eg, whiteboard) and count sheets do not contain information from a previous procedure;
* initiate the count;
* view the surgical items being counted;
* record the counts of soft goods, sharps, miscellaneous items, and items placed in the wound
  + immediately after each type of item is counted (eg, laparotomy sponges, suture needles); or
  + if unable to immediately record the count and concurrently visualize the items being counted, the RN circulator may document the number of counted items on a standardized count sheet and then transfer the information to the count board;
  + on a standardized template;
  + in a location that is visible to the surgical team (eg, the count board); and
  + in agreement with the scrub person;
* record instrument counts on pre-printed count sheets;
* observe for items dropped from the sterile field;
* consult with the team about whether any supplies will be needed before initiating the closing count;
* participate in count reconciliation activities;
* report any count discrepancy; and
* document count activities.
* The scrub person will:
* maintain an organized sterile field according to the standardized sterile setup for the procedure type with minimal variation between scrub persons;
* maintain awareness of the location of soft goods (eg, radiopaque sponges, towels, textiles), sharps, and instruments on the sterile field and in the wound during the course of the procedure;
* know the character and configuration of items that are used by the surgeons and assistants;
* verify the integrity and completeness of items when they are returned from the surgical site;
* consult with the surgeon about whether any supplies will be needed before performing the closing count;
* count surgical items in a manner that allows the RN circulator to see the surgical items being counted;
* speak up when a discrepancy exists; and
* participate in count reconciliation activities.
* The surgeon and first assistant will
  + - use only radiopaque surgical items (eg, soft goods) in the wound;
    - maintain awareness of the location of items in the surgical wound during the course of the procedure;
    - communicate placement of surgical items in the wound to the perioperative team for notation in a visible location (eg, the count board);
    - acknowledge awareness of the start of the count process;
    - notify the team if any supplies will be needed on the sterile field before the start of the closing count;
    - remove unneeded counted items from the surgical field at the initiation of the count process;
    - perform a methodical wound exploration before closing the wound, using both visualization and touch when feasible;
    - notify the scrub person and RN circulator about surgical items returned to the surgical field to complete the final count;
    - communicate and document items left intentionally as packing;
    - participate in count reconciliation activities;
    - document actions taken to resolve count discrepancies; and
    - verify and document results of the final count.
* The anesthesia professional will
* plan anesthetic milestone actions (eg, emergence from anesthesia) so that these actions do not pressure the perioperative team to circumvent safe accounting practices;
* not use counted items;
* communicate to the perioperative team when throat packs, bite blocks, and other similar devices are inserted in the oropharynx; and
* verify that throat packs, and other similar devices are removed from the oropharynx and communicate to the perioperative team when these items are removed.
* All perioperative team members will
* immediately inform the RN circulator and other members of the perioperative team if they observe an item dropped from the surgical field;
* promptly inform the RN circulator about what was added when assisting the surgical team by opening countable items onto the sterile field;
* verbally verify the final count as part of a checklist;
* participate in team training as a measure to prevent RSIs;
* minimize distractions, noise, and interruptions during the surgical count;
* create a no-interruption zone that prohibits nonessential conversation and activities and prohibits rushing the count;
* not perform counts during critical phases of the procedure, including
* time-out periods,
* critical dissections,
* confirming and opening implants,
* induction of and the patient’s emergence from anesthesia, and
* care and handling of specimens.
* A count may be requested by any member of the perioperative team involved in the counting process.
* The initial count will be conducted before the patient enters the OR or procedure room when possible.
  + When conducting the initial count before the patient enters the room is not possible, a second RN circulator may assist the primary RN circulator.
* Counts of sponges, sharps, instruments, and other miscellaneous items will be performed in order from **[facility-specific preference (eg, large to small item size, small to large item size, proximal to distal from the wound, distal to proximal from wound)]**.
* Items being counted will be counted audibly and viewed concurrently by two individuals, one of whom is the RN circulator.
  + When possible, counts during a procedure will be performed by the same two individuals.
* Items will be separated and pointed out while being audibly counted by the scrub person when counting items on the sterile field and by the RN circulator when counting items off the sterile field.
* Packaged items will be counted according to the number that the item is packaged in.
  + Packages containing an incorrect number of items or items with a manufacturing defect will be
    - excluded from the count,
    - removed from the field,
    - isolated from the rest of the countable items in the OR, and
    - labeled.

These may be removed from the room before the patient’s entry.

* If the count is interrupted, the count for the type of item being counted during the interruption (eg, laparotomy sponge) will be restarted.
* For multiple procedures or sterile fields, all items will be counted together at the final count while sterile technique is maintained.
* Countable items added to the field after the initial count will be counted immediately, recorded on the count board in a standardized format, and verified with the scrub person.
* The count running total will be maintained in one location.
* If an item is passed or dropped from the sterile field, the RN circulator will retrieve it using standard precautions, show the scrub person, isolate it from the field, and include it in the final count.
* Items will not be subtracted or removed from the count.
* All counted items will remain within the OR or procedure room until the counts are completed and reconciled.
  + Linen and waste containers will not be removed from the OR or procedure room until the counts are completed and reconciled and the patient has been transferred out of the room.
* The final count will not be considered complete until all items (eg, sponges, malleable retractors, needle holders, scissors) used in closing the wound are removed from the wound and returned to the scrub person.
* Used or open counted items will be removed from the OR or procedure room at the end of the procedure after the patient has left the room.
* A structured hand-over communication of accounting procedures will be performed at times of relief of the RN circulator or scrub person.
* A complete count will be performed when there is a permanent relief of the RN circulator or scrub person.
  + All items will be accounted for, although direct visualization of all items may not be possible.
  + Counted items in use will be accounted for when there is relief of the RN circulator or scrub person for short durations (eg, a break).
* Instrument counts may be waived for surgical invasive procedures in which accurate instrument counts may not be achievable or practical, including:
  + complex procedures involving large numbers of instruments (eg, anterior-posterior spinal procedures),
  + trauma procedures,
  + procedures that require complex instruments with numerous small parts, and
  + procedures for which the width and depth of the incision is too small to retain an instrument.
* When instrument counts are waived, unless the patient’s safety is at risk, intraoperative imaging will be performed before the patient is transferred from the OR.
* A variance report will be completed for any incorrect count or adverse event.
* A critical investigation will be conducted regarding any adverse event or near miss related to RSIs.

Procedure Interventions

*Surgical Soft Goods*

* Use only soft goods that are radiopaque and easily differentiated from non-radiopaque soft goods (eg, sponges, towels) in the surgical wound.
  + Isolate non-radiopaque gauze sponges used for skin antisepsis that have a similar appearance to counted radiopaque sponges before the procedure begins to avoid possible confusion with the counted radiopaque sponges.
  + If gauze sponges are used for vaginal antisepsis, use radiopaque, counted sponges.
  + Do not use radiopaque sponges as postoperative dressings.
  + Do not use non-radiopaque sponges in the surgical wound. If use of towels in the surgical wound is necessary, use towels with radiopaque markers.
  + Withhold non-radiopaque dressing materials from the field until the surgical wound is closed.
  + Keep dressing sponges included in custom packs sealed and isolated on the field until the surgical wound is closed.
* Count soft goods
  + before the procedure to establish a baseline (ie, initial count);
  + when new items are added to the field;
  + before closure of a cavity within a cavity (eg, the uterus);
  + when wound closure begins;
  + when skin closure begins or at the end of the procedure when counted items are no longer in use (ie, final count);
  + at the time of permanent relief of either the scrub person or the RN circulator, although direct visualization of all items may not be possible; and
  + any time a discrepancy is suspected.
* Do not consider the final count complete until all surgical soft goods used in closing the wound have been removed from the wound and returned to the scrub person.
* When counting radiopaque surgical soft goods,
  + remove the band surrounding surgical sponges and discard it;
  + completely separate each item;
  + count audibly;
  + count packaged radiopaque sponges to the number that the item is packaged in (eg, five, 10);
  + if an incorrect number of radiopaque sponges or a manufacturing defect (eg, marker, tag, or chip) is discovered in a package during the initial count,
    - exclude them from the count;
    - remove the items from the sterile field;
    - isolate these items from the rest of the countable items in the OR; and
    - label them.
  + Remove these items from the room before the patient’s entry.
* Leave radiopaque surgical soft goods in their original configuration and do not cut or alter them in any way.
* Audibly communicate and record in a visible location (eg, count board) all radiopaque surgical soft goods placed in the surgical wound or other cavities (eg, throat, vagina) on placement and removal.
* If feasible, leave a portion of the surgical soft goods placed in the surgical wound or cavity outside the wound so that the item remains visible.
* Before closing the wound, the surgeon should perform a methodical wound exploration (eg, top to bottom, quadrant to quadrant) for radiopaque surgical soft goods before closing the wound, using both visualization and touch when feasible.
  + For minimally invasive surgery, the surgeon should perform a methodical wound exploration before camera removal.

***Pocketed sponge bag system***

* Organize radiopaque surgical soft goods (eg, 4 x 4 gauze, laparotomy sponges) using a pocketed sponge bag or similar system.
* Place used sponges in a standard location (eg, kick bucket) until transferred to a pocketed bag system.
  + If a sponge is dropped from the sterile field, retrieve it using standard precautions, show it to the scrub person, and place it in the pocketed bag system.
* Use standard precautions to retrieve sponges, then completely open and separate each sponge before placing it in a pocketed bag system.
* Do not drape sponges over the sides of the kick bucket.
* Place only one sponge in each pocket of the pocketed sponge bag system.
* Place the radiopaque marker of the sponge facing forward so that it is readily visible in the pocketed bag system.
* Fill the pocketed bag system from the bottom to the top.
* Place unused sponges in the pocketed sponge bag system to confirm that the sponges are not in the patient.

***Therapeutic packing***

* When radiopaque surgical soft goods are intentionally used as therapeutic packing and the patient leaves the OR with this packing in place,
  + - document the number and types of items placed in the surgical wound in the medical record
      * as reconciled and confirmed by the surgeon when this information is known with certainty, or
      * as incorrect if the number and the type of sponges used for the therapeutic packing is not known with certainty.
    - communicate the number and types of radiopaque surgical soft goods used for therapeutic packing as part of the transfer of patient care information and document in the patient’s intraoperative record.
* When the patient is returned to the OR for a subsequent procedure or to remove therapeutic packing,
* determine from the intraoperative record of the surgery during which the packing was placed the number and type of radiopaque soft goods to be removed,
* document in the medical record the number and type of radiopaque soft goods removed,
* isolate the radiopaque sponges removed and do not include them in the counts for the removal procedure,
* the surgeon should perform a methodical wound examination and order an intraoperative radiograph, and
* document the count for the removal procedure as reconciled if all radiopaque soft goods have been accounted for.
* The surgeon should inform the patient or patient’s representative of any surgical soft goods purposely left in the wound at the end of the procedure and the plan for removing these items.

*Sharps and Miscellaneous Items*

* Count sharps and miscellaneous items
  + before the procedure to establish a baseline (ie, initial count);
  + when new items are added to the field;
  + before closure of a cavity within a cavity (eg, the uterus);
  + when wound closure begins;
  + when skin closure begins or at the end of the procedure when counted items are no longer in use (ie, final count);
  + at the time of permanent relief of either the scrub person or the RN circulator, although direct visualization of all items may not be possible; and
  + any time a discrepancy is suspected.
* Count all suture needles, regardless of size, for all surgical procedures.
* Account for miscellaneous items including **[facility-specific preference (eg, electrosurgery scratch pads)]**.
* Do not consider the final count complete until all sharps used in closing the wound have been removed from the wound and returned to the scrub person.
* Count sharps and miscellaneous items audibly and have two individuals, one of whom is the RN circulator, view items concurrently.
* The scrub person should account for and confine all sharps on the sterile field until the final count is reconciled.
  + Confine and contain sharps in specified areas of the sterile field or within a sharps containment device.
  + Use sharps containment devices that are puncture resistant, labeled or color coded in accordance with the bloodborne pathogens standard, and leakproof on the sides and bottom.
  + Use a new container when a sharps container on the sterile field is full.
    - Include the full container in the count and do not remove from the OR until the final count reconciliation is completed and the patient has been taken from the room.
  + Securely close sharps containers before disposal.
* Account for sharps and miscellaneous items in their entirety immediately on removal from the surgical site.
  + If a broken or separated item is returned from the surgical site, the scrub person should immediately notify the perioperative team.
* In the event that a needle or miscellaneous item is lost during a minimally invasive procedure, the surgeon should weigh the risks and benefits of retrieving the item.
  + Depending on the clinical situation, make an attempt to locate and retrieve the item.
* Remove free clips (eg, open staples) from the abdominal cavity when possible.
* If a sharp or miscellaneous item is passed or dropped from the sterile field, retrieve it using standard precautions, show it to the scrub person, isolate it from the field, and include it in the final count.
  + Handle sharp items with an instrument and place in a sharps/needle counting device that is separate from the sterile field.
* Do not attach (eg, with tape) counted sharps or miscellaneous items to the count board.
* The surgeon should confirm removal of implants in their entirety.
* When miscellaneous items (eg, pacing wire, drain) are intentionally left in the surgical wound for postoperative removal,
  + communicate as part of the transfer of patient care information and document in the patient’s intraoperative record the location and plan for eventual removal of the item and the number and types of miscellaneous surgical items, and
  + the surgeon should inform the patient or patient’s representative of any miscellaneous surgical items purposely left in the wound at the end of the procedure and the plan for removing these items.

*Foam Pieces*

* + Follows the manufacturer’s instructions for use when using foam pieces from negative-pressure wound therapy devices.
  + Cuts the foam pieces only when necessary to fit in the wound.
  + The number of foam pieces placed in the patient’s wound is documented.
  + The number of foam pieces in the patient’s wound is communicated during transfer of patient care information.
  + When the patient returns to the OR the medical record is used to determine the number of foam pieces to be removed and the number removed from the patient’s wound is documented.

*Instruments*

* Count instruments for all procedures in which a body cavity (eg, thorax, abdomen, pelvis) is entered.
* Count instruments
  + before the procedure to establish a baseline (ie, initial count);
  + when new instruments are added to the field;
  + when wound closure begins or at the end of the procedure when counted items are no longer in use (ie, final count);
  + at the time of permanent relief of either the scrub person or the RN circulator, although direct visualization of all items may not be possible; and
  + any time a discrepancy is suspected.
* Count instruments when sets are assembled for sterilization.
* Do not consider the final instrument count complete until all the instruments used in closing the wound (eg, malleable retractors, needle holders, scissors) are removed from the wound and returned to the scrub person.
* Count audibly, and have two individuals, one of whom is the RN circulator, view the items concurrently.
  + Account for individual pieces of assembled instruments (eg, suction tips, wing nuts, blades, sheaths) separately and document on the count sheet.
* Use preprinted count sheets to record instruments as the count is conducted.
  + Record only the number of instruments opened for the procedure.
* Account for instruments used in the surgical wound in their entirety, including any instrument labels, by inspecting for breakage or fragmentation immediately on the instrument’s removal from the surgical site.
* Keep all counted instruments within the OR or procedure room during the procedure until all counts are completed and reconciled.
* If an instrument is passed or dropped from the sterile field, retrieve it using standard precautions, show it to the scrub person, isolate it from the field, and include it in the final count.
* Standardize instrument sets and count sheets with the minimum number and variety of instruments needed for the procedure.
  + Remove instruments that are not routinely used in procedures from sets.

*Measures to Prevent Retention of Device Fragments*

* Use instruments in accordance with the manufacturer’s instructions for use (IFU).
* Inspect instruments and attached labels before use to identify any defects that may increase the likelihood of fragmentation.
* Maintain and service instruments, including instrument labels, in accordance with the manufacturer’s IFU.
* Account for items used in the surgical wound in their entirely by inspection for breakage or fragmentation immediately on removal from the surgical site.
  + If a broken item is returned from the surgical site, the scrub person should immediately notify the perioperative team.
* If a broken instrument with a missing fragment is identified during reprocessing, sterile processing personnel should notify the perioperative team immediately.
  + When notified of a missing device fragment, the perioperative team should immediately investigate and follow established count reconciliation procedures.
* Take measures to prevent intravascular device (ie, catheter, guidewire, sheath) fragments.
  + Insert and remove intravascular devices in accordance with the manufacturer’s IFU.
  + Inspect intravascular devices before use to identify any defects that may increase the likelihood of fragmentation.
  + Minimizes distractions during insertion and removal of guidewires (ie, critical phase of procedure).
  + Uses a standardized checklist with two-person verbal verification that the device is removed and intact.
  + Do not withdraw catheters and guidewires through a needle.
    - If the catheter or guidewire is replaced, withdraw it simultaneously with the needle.
  + Immediately replace bent guidewires.
  + Account for intravascular devices in their entirety by inspecting for breakage immediately on removal from the patient.
* In the event that a device fragment is retained, the surgeon should weigh the risks and benefits of retrieving the fragment.
  + Depending on the clinical situation, attempt to locate and retrieve the device fragment.
* In the event that an unretrieved device fragment is left in the surgical wound,
  + the surgeon should inform the patient or patient’s representative of the nature of the item and the risks associated with leaving it in the wound and should provide the following information to the patient:
    - risks and benefits of leaving the device fragment in the wound;
    - material composition of the fragment (if known);
    - size of the fragment (if known);
    - location of the fragment;
    - potential mechanisms for injury (eg, migration, infection); and
    - procedures or treatments that should be avoided, such as MRI examinations in the case of metal fragments.
  + The unretrieved device must be recorded in the patient’s record, including
    - material composition of the fragment (if known),
    - size of the fragment (if known),
    - location (if known),
    - manufacturer,
    - measures taken to recover the fragment, and
    - patient notification.
* Report any deaths and serious adverse events associated with device fragments to the US Food and Drug Administration.
* Retain the device and fragment for investigation.

***Hypodermic needle fragments***

* Take measures to prevent retention of hypodermic needle fragments.
  + Do not use thin, (ie, 30-gauge) or short (ie, 20-mm) needles unless clinically necessary.
  + Inspect hypodermic needles for defects that may increase the likelihood of fragmentation before use.
    - Do not use defective hypodermic needles.
  + Do not insert hypodermic needles to the hub.
  + Do not change the direction of the hypodermic needle during the injection.
    - If changing the needle angle is necessary, remove the needle from the tissue and reposition.
  + Advise patients undergoing local or moderate sedation about possible pain before giving an injection.
  + Do not reuse thin (ie, 30-gauge) hypodermic needles on the same patient.

*Count Discrepancy*

* All perioperative team members should take immediate action to resolve a count discrepancy.
  + RN circulator
    - Inform the perioperative team and receive verbal acknowledgement from the surgeon of the type and number of items missing as soon as a discrepancy in a surgical count is identified.
    - Call for assistance, search the room, including the area near the sterile field, floor, kick buckets, and linen and trash receptacles, and recount with the scrub person.
  + Scrub person
    - Organize the sterile field, search the sterile field, including the drapes and tables, and recount with the RN circulator.
  + Surgeon and surgical first assistant
    - Suspend closure of the wound if the patient’s condition permits.
    - Perform a methodical wound examination while actively looking for the missing item.
    - Participate in the attainment of intraoperative radiographs or other imaging modalities as indicated to find the missing item.
    - Remain in the OR until the item is found or it is determined not to be in the patient.
  + Anesthesia professional
    - Plan anesthetic milestone actions (eg, emergence from anesthesia) so that these actions do not pressure the perioperative team to perform insufficient count reconciliation practices.
* Do not permit nonessential personnel changes (eg, break, relief) to occur until the count is resolved.
* Do not use empty packages to reconcile count discrepancies.
* Recount the item type (eg, laparotomy sponges, suture needles) when the missing item is found.
* If the missing item is not recovered, perform intraoperative imaging to rule out a retained item before final closure of the wound, if the patient’s condition permits.
  + If the patient’s condition is unstable, take the radiograph as soon as possible in the next phase of care.
* When accurate accounting of surgical items is not possible, perform intraoperative imaging before the patient is transferred from the OR.
* Ensure complete and detailed communication among the perioperative team, radiology technologists, and radiologists during requests for radiological support to prevent an RSI.
* Include the following information about the missing surgical item in the radiology request:
  + the room in which the procedure is being performed or the patient is located,
  + the patient’s status,
  + the type of radiograph and views needed,
  + a description of the missing surgical item,
  + the procedure being performed, and
  + the surgical site, including involvement of any body cavities (eg, the abdomen).
* Call the radiology technologist promptly.
  + The radiology technologist should respond expeditiously when an incorrect count occurs in the OR.
* Perform intraoperative imaging that provides full coverage of the surgical site and include any views deemed necessary by the surgeon and radiologist to maximize the opportunity to identify a missing surgical item, which may include
  + using portable or fixed radiographic equipment,
  + taking portable anterior and posterior oblique views,
  + taking multiple images for full coverage of the surgical site or body cavity as confirmed by the surgeon,
  + using fluoroscopy,
  + taking a sample image of an item similar to the missing object in addition to imaging the surgical site, and
  + using computed tomography (CT) intraoperatively or postoperatively when previous radiographic images are negative and a high suspicion remains for an RSI.
* The radiologist and surgeon should simultaneously review and interpret intraoperative imaging for RSIs.
  + When the radiologist is not immediately available, the surgeon should conduct a preliminary interpretation of the image.
* Do not use radiographs for needles less than [facility-specific preference (eg, 10 mm)].
* Document unresolved count discrepancies in the patient’s record, including all measures taken to recover the missing items, description and location of the item (if known), patient notification and consultation, and the plan for follow-up care.
  + Notify environmental services personnel and the next perioperative team in the room about items reported missing in an unresolved count discrepancy.

*Adjunct Technology*

* + Adjunct technology is used to detect the location of soft goods or to verify the outcome of manual counting procedures for surgical soft goods.
  + The manufacturer’s instructions for use for the device used are followed.
  + Adjunct technology is used even when the count is stated to be correct.
  + Adjunct technology devices with RF and RFID are used with caution in patients with pacemakers, implantable cardioverter defibrillators (ICDs), and other electronic devices by
    - Notifying the team members before use of the device and receiving verbal acknowledgement of the notification,
    - Delaying programing of pacemakers or ICDs until after use of the adjunct technology device, and
    - Setting temporary pacemakers to asynchronous mode before using adjunct technology devices with RF or RFID.

Documentation

The RN circulator will document soft good, sharp, miscellaneous item, and instrument counts, and measures taken to prevent RSIs on the patient’s intraoperative record, including

* + the types of counts (eg, radiopaque sponges, sharps, instruments, miscellaneous items);
  + the number of counts;
  + the names and titles of personnel performing the counts;
  + the results of surgical item counts (ie, correct, incorrect);
  + surgeon notification of the count results;
  + any adjunct technology that was used and any associated records;
  + an explanation for any waived counts;
  + the number and location of any instruments intentionally remaining within the patient or radiopaque sponges intentionally retained as therapeutic packing;
  + actions taken if count discrepancies occurred, including all measures taken to recover the missing item or device fragment and any patient communication regarding the outcome;
  + a rationale if counts were not performed or completed as prescribed by policy; and
  + the outcome of actions taken.

Competency

Perioperative personnel will receive education and complete competency verification activities on the principles and processes for prevention of RSIs and corrective actions that should be implemented when a process failure occurs.

Quality

Perioperative personnel will participate in quality assurance and performance improvement activities related to prevention of RSIs.

**References**

Petersen C, ed. Retained foreign object. In: *Perioperative Nursing Data Set*. 3rd ed. Denver, CO: AORN, Inc; 2011:146-149.

Guideline for prevention of retained surgical items. In: *Guidelines for Perioperative Practice.* Denver, CO: AORN, Inc; 2016:369-414.