GUIDELINES FOR THE PREVENTION OF RETAINED SURGICAL ITEMS

PURPOSE
To ensure the prevention of retained surgical items in patients undergoing surgical and other invasive procedures. Implementation of accurate count procedures and active, closed-loop communication between surgical team members help promote optimal perioperative patient outcomes.

SCOPE
This policy applies to all operating rooms, procedure rooms, and any other patient care area where a surgical wound is created or procedures are performed and surgical items are used in or on a patient.

POLICY STATEMENT
The following actions should be performed to meet policy compliance:

- Sponge counts are performed for every operative or invasive procedure. Sharps, instruments, and miscellaneous items are counted for procedures in which an item could be retained.
- Team may waive counts in an emergency and require a completion radiograph.
- Full undivided attention of the team is required during all counts: avoid any distraction or interruption.
- The attending provider/designee performs a methodical wound exploration before closure of the procedural site.
- Nurse (RN) and/or scrub person do not relieve each other during closing counts or during critical portions of the procedure.
- Any count initiated by a team is completed by the same team in its entirety without interruption.
- During complex procedures, team members may call for additional help to facilitate the count process.
- Staff involved in the procedure:
  - Two individuals - one of whom is an RN and the second being a scrub person - count audibly and concurrently viewing all counted items.
  - Orientees count with a preceptor until count competencies are met.
  - Students are not responsible for performing counts.
- Include in the count any sponge, sharp, instrument, or other miscellaneous item placed in a body cavity or orifice during a procedure.
- Maintain a record of counted items added to the sterile field throughout the procedure.
- Any team member (e.g., anesthesia care provider, float RN) who assists the procedural team by opening sterile items, such as extra sutures or radiopaque sponges:
  - Counts the items with the scrub person, and
• Promptly informs the circulating nurse about items added, for documentation.

• Document the full name of one circulating nurse and one scrub person who verify the counts in the patient’s record.

• Members of the procedural team account for all surgical items (e.g., sharps, instruments, wires, disposable items) in their entirety that may have broken or become separated within the confines of the surgical site.

• In the event that a surgical item (e.g., broken instrument tip, microneedle, broken screw) is intentionally left in a patient when the risk of removal exceeds the risk of retention the provider informs the patient/family of the nature of the item and the risks associated with leaving it in the wound and documents this information in the patient’s record.

• Avoid altering countable miscellaneous items when possible.

  NOTE: The provider communicates alteration of countable items to the team. Altered items are accounted for in their entirety during the final count. If item has been cut in multiple pieces, compare with an identical, intact item.

• Additional counts may be done at the discretion or request of any member of the team.

• Final count results are verbalized to the entire team and documented by the circulating nurse in the intraoperative record.

### DEFINITIONS

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Verbal Communication</td>
<td>Verbal acknowledgement by two or more team members.</td>
</tr>
<tr>
<td>Circulating Nurse</td>
<td>A registered nurse role.</td>
</tr>
<tr>
<td>Scrub Person</td>
<td>A registered nurse, surgical technician, cath lab technician, interventional radiology technician, OB technician role.</td>
</tr>
<tr>
<td>Initial Count</td>
<td>Indicates count completed prior to incision or start of procedure.</td>
</tr>
<tr>
<td>Closing Count</td>
<td>Indicates all closing counts and may include any cavity within a cavity when applicable. There may be multiple closing counts.</td>
</tr>
<tr>
<td>Final Count</td>
<td>Indicates all counts are complete, all counted items are accounted for and visualized by the scrub and circulating nurse. Team acknowledges closing count status.</td>
</tr>
<tr>
<td>Correct</td>
<td>All items are visualized and accounted for.</td>
</tr>
<tr>
<td>Incorrect</td>
<td>Counted items are not accounted for (see process for incorrect count).</td>
</tr>
<tr>
<td>N/A</td>
<td>Count not required.</td>
</tr>
<tr>
<td>Deferred</td>
<td>Nursing judgment during change-over count based on clinical situation. For example: relief occurs in the middle of a procedure and multiple instruments and other countable items are in use on the field. The team agrees it would be difficult to do an accurate count and disruptive to the surgical team.</td>
</tr>
<tr>
<td>Surgical Item</td>
<td>Material used in or around a surgical incision or wound to aid in the performance of an operation or procedure.</td>
</tr>
<tr>
<td>Retained Surgical Item</td>
<td>A surgical item that was not intended to remain in the patient and is found in the patient’s body after all incisions and procedural access routes have been closed, devices have been removed, and final surgical counts have concluded.</td>
</tr>
</tbody>
</table>
RESOURCES

Miscellaneous Countable Surgical Items

All staff should maintain awareness of the potential risk of any item on the sterile field that could be retained. Examples of miscellaneous countable items include, but are not limited to the following:

<table>
<thead>
<tr>
<th>Adaptors (X-mas tree/Foley)</th>
<th>Disposable refills</th>
<th>Penrose drains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angiocaths</td>
<td>Elastics</td>
<td>Cotton tipped swabs</td>
</tr>
<tr>
<td>Backgrounds</td>
<td>Endoscopic detachable tips</td>
<td>Rectal/vaginal packing</td>
</tr>
<tr>
<td>Blades</td>
<td>Fish</td>
<td>Retention suture bolsters</td>
</tr>
<tr>
<td>Bovie tip</td>
<td>Fishhooks</td>
<td>Safety pins</td>
</tr>
<tr>
<td>Bovie scratch pad</td>
<td>Guidewires</td>
<td>Spheres</td>
</tr>
<tr>
<td>Bulldog clamps</td>
<td>Fogarty inserts</td>
<td>Sponges 4”x4”</td>
</tr>
<tr>
<td>Catheter plug</td>
<td>Fired/Robot lube</td>
<td>Sponges 4”x8”</td>
</tr>
<tr>
<td>Central line sharps</td>
<td>Hypo/blunt needles</td>
<td>Suture booties/shods</td>
</tr>
<tr>
<td>Corneal shield</td>
<td>Lacrimal duct probes</td>
<td>Suture needles (all sizes)</td>
</tr>
<tr>
<td>Cotton balls</td>
<td>Lap pads 12”x12”</td>
<td>Suture reels</td>
</tr>
<tr>
<td>Dental brushes</td>
<td>Lap pads 18”x18”</td>
<td>Throat pack</td>
</tr>
<tr>
<td>Dental burs</td>
<td>Ligaclip cassettes</td>
<td>Tonsil sponges</td>
</tr>
<tr>
<td>Dental pins</td>
<td>Lone star hooks</td>
<td>Tooth guard (white)</td>
</tr>
<tr>
<td>Dental rolls</td>
<td>Microvascular clips</td>
<td>Tourniquet (Rommel)</td>
</tr>
<tr>
<td>Dental wood wedges</td>
<td>Mouth guards</td>
<td>Umbilical tape</td>
</tr>
<tr>
<td>Disposable instruments</td>
<td>Neuro patties</td>
<td>Vessel loops</td>
</tr>
<tr>
<td></td>
<td>Peanuts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pens</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Raney Clips</td>
<td></td>
</tr>
</tbody>
</table>

PROCEDURES

Sponges/Miscellaneous Countable Items

1. Sponges/miscellaneous items are counted audibly and viewed concurrently as they are separated.
   - All sponges/miscellaneous items are counted for every case.
   - Tails of sponges are clearly visible when counting and are not cut from sponges.
   - Keep sponges in their original configuration; do not cut.
   - Break all tapes on each sponge pack; separate and count each sponge individually.

2. If the package contains an incorrect number of sponges, bag, label and isolate the entire pack from the rest of the sponges in the room.

3. All counted sponges/miscellaneous items remain within the OR room/sterile field during the procedure. Linen or waste containers from the OR room remain in place until all counts are completed and resolved.

4. Maintain an ongoing tally of sponges and counted items used throughout the procedure.
   - Visualize and count-off used items audibly and concurrently.
5. Withhold non-radiopaque gauze dressing materials from the field until the wound is closed and the final count is complete. Use only non-radiopaque x-ray detectable sponges as dressings.

6. Sponge(s) placed in the pharynx are radiopaque. They can be placed by the proceduralist or anesthesiologist.
   - The throat pack is tagged with a suture.
   - The suture tag for the throat pack is outside of the mouth and is visible at all times during the surgery, except in rare instances in which it substantially interferes with the surgical procedure.
   - Additional mouth packs added during the procedure are not required to be tagged, provided at least one tag is visible.
   - Using active verbal communication, the team verifies the placement of the throat pack.
   - The circulating nurse documents the placement and removal of the throat pack.
   - Using active communication, the team verifies when the throat pack is removed.

7. Circulating nurse maintains documentation throughout the case of any counted item placed in an orifice during the procedure.
   
   **NOTE:** The provider placing or removing a counted item in an orifice uses active verbal communication to notify the team. Such items may include, but are not limited to, corneal shield, vaginal or rectal packs, and Hagar dilator. The team verifies these items. The circulating nurse documents when the item is placed and when the item is removed.

8. Account for and properly dispose of all sponges and miscellaneous items according to OSHA Bloodborne Pathogens Standards during end-of-case cleanup.

**Intentionally Retained Counted Sponges/Items**

In the event that counted sponges or additional items are intentionally used as packing and the patient leaves the procedure room with this packing in place, and the case was not an emergency where this information may/may not be available, do the following.

1. Document the number and type of intentionally retained sponges or additional items on the patient’s record and relay this information in verbal reports to subsequent caregivers.
2. Document the number and type of intentionally retained sponges or additional items removed in the patient’s current intraoperative record.
3. Isolate the packing materials; do not include in counts for the subsequent procedure.
4. Upon final closure, a radiograph should be completed to rule out any unintentionally retained sponges/items or surgical packing.

**Sharps**

1. Sharp safety is maintained.
2. Initial needle count is verified by the scrub person and circulating nurse.
3. Members of the team account for sharps in their entirely.
4. All counted sharps remain within the procedure room and/or sterile field during the procedure.
5. Account for and properly dispose of all sharps and miscellaneous items according to OSHA Bloodborne Pathogens Standard during end of case cleanup.
Instruments

1. The circulating nurse and scrub person reconcile count totals to the standardized set count sheets included with the instrument set.

2. The circulating nurse and scrub person count instruments as follows:
   - Instruments in the set
   - Multipart-instruments: Count all disassembled instrument parts
   - All disposable instruments
   - Any instruments added after procedure has begun

3. All counted instruments remain in the procedure room until all counts are completed and resolved.

4. Record any counted instrument placed by the provider in an orifice during the procedure on the count sheet.
   - Using active verbal communication, the team verifies the placement of the instrument.
   - The circulating nurse documents the placement of the instrument.
   - Using active verbal communication, the team verifies when the instrument is removed.
   - An instrument count is not complete until all instruments placed in an orifice are removed from the patient and visualized by the team.
   - The circulating nurse verbalizes the final count to the team using active communication, and completes documentation.

5. Instruments with multiple parts are counted in their entirety during the final count.

6. The team accounts for instruments in their entirety that may have broken or become separated within the confines of the surgical site.

Exceptions to Instrument Counts

1. Orthopedic procedures: anterior spinal procedures with implants. At the time of closure a plain radiograph is taken and read by the surgeon to determine if any unintended items have been retained.

2. Cardiac procedures: sternotomy and thoracotomy/video-assisted thoracoscopic surgery (VATS) in patients less than 10Kg.

3. If the final incision is less than 8cm x 8cm, a closing count is not required for patients having abdominal, retroperitoneal or thoracic cavity surgery.

4. If the patient is not opened during a laparoscopic, thoracoscopic, or robotic procedure, a closing count is not required.

Counting Guidance: Instrumentation/Tools/Devices

1. Anything that is introduced into the operative site as a guidance tool that is not visually observed via direct continuous visualization or fluoroscopy should be measured unless the size of the item would make measurement impossible to maintain sterility.

2. Items that require measurement include, but are not limited to:
   - K-wires
   - Guidewires
   - Steinman pins
3. Before use of the guidance tool/device, the OR scrub personnel will inspect for damage, defects, signs of breakage or fragmentation.

4. Following inspection, measurement should occur as follows:
   - If there are multiple guidewires in a tray, all should be measured against each other or measured against at least one wire in the tray if all are the same length and size, when removed and returned from the operative site.
   - If there is only one guidewire, the wire should be measured before and after using either a ruler or by marking on the back table.
   - If at any point the scrub person cannot accurately measure after removal due to the wire being cut or there are too many wires on the field, the surgeon will be notified immediately.

5. If a broken or separated item is returned from the operative site, the scrub person should immediately notify the surgeon and the team to verify measurement and measure again.

6. If a missing item is not recovered, the procedure for an incorrect count should be followed, including intraoperative imaging to rule out a retained item prior to final closure of the patient's wound.

**Timing and Sequence of Counts**

1. Perform sponge/sharp/miscellaneous item/instrument counts when applicable:
   - Before the procedure to establish a baseline.
   - When additional counted items are added to the sterile field.
   - Prior to closure of a cavity within a cavity.
   - At the time wound closure begins.
   - At skin closure or end of the procedure but prior to final closure of the patient’s wound.

2. Change-over counts occur at the time of permanent relief of either the scrub person or the circulating nurse. All incoming and outgoing scrub persons and circulating nurses:
   - Visualize counted items together.
   - Use closed loop communication to verify counted items and their location.

   **Note:** Although direct visualization of all items may not always be possible or feasible, documentation reflects practice.

3. Perform closing sponge/sharp/miscellaneous item/instrument counts in the same sequence:
   - Begin the count at the surgical site and immediate surrounding area.
   - Proceed to the mayo stand and back table.
   - End with counted items that have been discarded from the field.

4. Perform instrument count for:
   - All patients having abdominal, retroperitoneal or thoracic cavity surgery. The initial instrument count is completed regardless of expected initial incision size. If the final incision is less than 8cm x 8cm, a closing count is not required (for details, see Exceptions to Instrument Counts section).
   - All laparoscopic, thoracoscopic and robotic procedures to establish a baseline. If the patient is not opened during the procedure, a closing count is not required.
   - All procedures done in the Medical Radiologic Technology (MRT) suite.
Count Discrepancy/Incorrect Counts Procedure

If a count discrepancy occurs, follow these steps:

1. Notify the provider and the team of count discrepancy.
2. Suspend closure of the wound if the patient’s condition permits. The provider should remove enough sutures to allow for visual and tactile exploration if wound closure has begun.
3. The provider re-explores the procedure site for the missing item.
4. The team performs an extensive search of the procedural field, surrounding area, trash, and linen for the missing item.
5. Recount all previously counted items.
6. When item is not accounted for, intraoperative plain radiograph is performed to rule out a retained item before final closure of the wound if the patient’s condition permits.
   - Clearly describe the missing surgical item on the radiology requisition.
   - Obtain a plain radiograph that includes a complete view of the surgical site to confirm the item is not in the patient.
   - If the patient’s condition is too unstable for a plain radiograph in the OR, complete the plain radiograph post-operatively, document and communicate plan in clinical hand-off.

Note: Plain radiograph is not required for incorrect needle count when the needle is known to be 10mm or less.
   - Call attending radiologist/designee to read the film. In the event that a radiologist is not available in house, the provider will determine if a radiologist must read the radiograph. The attending provider/designee in the procedure room and radiologist/designee simultaneously review the film.
   - The attending provider/designee in the procedure room and the attending radiologist/designee confirm and document that the radiograph view is adequate and determine if further films are needed.
   - Telephone confirmation and agreement of findings of the film occurs. If there is a discrepancy, a subsequent film is taken.
7. A provider cannot refuse to take a plain radiograph unless the item is listed as a known exception. If the provider refuses a plain radiograph, the circulating nurse initiates communication up the chain of command.
8. Whenever patient’s condition permits, remain in the procedure room until the item is found or it is determined with certainty not to be in the patient.
10. An incident/occurrence report for an incorrect count is entered with a description of the steps taken to resolve the incorrect count.
11. An attending radiologist performs the final read and documents it in a film report that is placed in the patient’s medical record.
Waiving Count for Emergencies Only

1. When the team waives a count in an emergency, document the omission and rationale in the patient’s record.

2. In the event of an emergency or if a radiologist is not readily available, the attending provider can review the film and make an independent decision on whether to proceed with closing or waiting for radiologist availability.

3. If the patient’s condition is unstable, the plain radiograph is taken as soon as possible.

Evaluation

All sponges, sharps, miscellaneous items, and instruments are accounted for and the results documented on every surgical procedure.

Documentation

Complete patient care documentation as described in hospital policy. In addition, document specific Counts Policy information as follows.

Intraoperative Record

Document sponge, sharps, miscellaneous items, and instrument counts. Documentation of counts includes, but is not limited to:

- Procedure site identification.
- Full names of personnel performing the counts.
- Count results indicating correct or incorrect.
- Sponges, sharps, miscellaneous items, or instrument remaining with the patient intentionally.
- Actions taken if count discrepancies occur.
- Outcome of count discrepancy.
- Rationale if counts are not performed or completed per policy.

References


Document Attributes

<table>
<thead>
<tr>
<th>Title</th>
<th>GUIDELINES FOR THE PREVENTION OF RETAINED SURGICAL ITEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author</td>
<td>Children's Hospital, Boston Elizabeth Norton BSN, RN, CNOR Anne Micheli RN, MS, CNAA-BC</td>
</tr>
<tr>
<td>Date of Origin</td>
<td>June 2008</td>
</tr>
<tr>
<td>Reviewed/Revised by</td>
<td>Luann Joy, Valley Children's Healthcare Janet Berry, Nationwide Children's Hospital Karen Norton, Children's Health, Dallas Susan Mecklenburg, Children's Mercy Kansas City Carolyn Domina, Nicklaus Children's Hospital</td>
</tr>
<tr>
<td>Date</td>
<td>April 2011</td>
</tr>
<tr>
<td>Reviewed/Revised by</td>
<td>Lisa Kerrick, Johns Hopkins All Children's Hospital Tammy Woolley, Children's Hospital Colorado</td>
</tr>
<tr>
<td>Date</td>
<td>September 2017</td>
</tr>
<tr>
<td>Approved</td>
<td>CHA Operating Room Directors Forum</td>
</tr>
<tr>
<td>Date</td>
<td>October 2017</td>
</tr>
<tr>
<td>Copyright</td>
<td>©CHA</td>
</tr>
<tr>
<td>Last Modified</td>
<td>November 2017</td>
</tr>
</tbody>
</table>
Optional Appendix 1

Team Roles

**Physician Performing Procedure**
- The provider maintains awareness of all soft goods, instruments, and sharps used in the surgical wound during the course of the procedure.
- The provider does not perform the count, but facilitates the count process, by:
  - Using (whenever possible) only radiopaque surgical items in the wound.
  - Avoiding altering countable items (e.g., cutting vessel loops, sponges). If the physician does alter an item, he/she communicates this to the team.
  - Communicating placement of surgical items in the wound to the perioperative team for notation (e.g., on whiteboard).
  - Understanding that completion of proper count procedure is the responsibility of the entire perioperative team.

**Anesthesia Care Provider**
The anesthesia provider does not perform the count, but facilitates the count process by:
- Maintaining situational awareness to support the prevention of retained surgical items.
- Using active communication with the team when items are placed in and out of the oral pharynx.
- Understanding that completion of proper count procedure is the responsibility of the entire perioperative team.
Optional Appendix 2

Wound Closure Time Out

1. Provider or nurse announces “closing time out” with team using active verbal communication to acknowledge that closing has begun.
2. The provider removes counted items and instrumentation from the surgical wound and field at the initiation of the closing count process when feasible.
3. The attending provider/designee performs a methodical wound exploration before closure of the surgical site.
4. The team gives full undivided attention during closing count, and interruptions and distractions are avoided.
5. Nursing team performs closing count.
6. Team acknowledges final count status.
Radio Frequency Technology

Radio frequency (RF) technology will be utilized as an adjunct to manual sponge counts for the following:

1. All procedures that enter a body cavity, where incision is greater than 8cm x 8cm and whenever an instrument count is required.
2. Any time RF sponges are placed in or through an orifice.
3. At the request of any team member.
4. To facilitate any count discrepancy.

When RF technology is required and added, verification of the final count status will be performed after the final count and prior to final wound closure.
Optional Appendix 4

Incorrect Count Decision Tree

Incorrect counts: Discrepancy (more or less) in needles, sponges, instruments, or miscellaneous items between the sterile field and the white board/tally sheet.**

- Recount
- **DO NOT** reconcile with packages; this could lead to a false correct count
- **STOP:** Closure of wound DOES NOT begin
- Call radiology: "We need a film in (location) to rule out a retained surgical item"
  - Complete an order in EMR
  - Perform wound exploration, search procedure room, including linen/garbage and recount
  - Call charge nurse, coordinator, manager or director if additional assistance is needed
  - Radiologist must read the film and call back to the procedure room
  - Attending physician also reviews the film simultaneously and communicates with the radiologist
  - **ITEM NOT FOUND**
    - RN documents an incorrect count in patient record
    - RN completes an incident/occurrence report as: "Incorrect count, provider notified, X-ray taken. Negative for retained foreign body. Film read by: ____"
  - **ITEM FOUND**
    - Remove item and recount
    - Document correct count in patient’s record

**An exception may occur when the primary attending decides that any delay required for an x-ray or removal of the retained surgical item(s) will cause harm to the patient due to his or her emergent medical condition. X-ray should be taken in ICU and return, if necessary, when the patient is stable."