

# RECOMMENDED PRACTICES FOR SPONGE, SHARP, AND INSTRUMENT COUNTS

Mursidi HA

# AORN

- The **Association of periOperative Registered Nurses** (AORN) is the national association committed to improving patient safety in the surgical setting.
- AORN promotes safe patient care and is recognized as an authority for safe operating room practices and a definitive source for information and guiding principles that support day-to-day perioperative nursing practice.

# AORN recommendations

- In 1976, AORN has formulated a recommended practice in counting the sponge, instruments and sharps within operating theatre practice.
- These recommendation provides guidelines to assist perioperative personnel in performing sponge, sharp, and instrument counts in their practice settings

# Purpose of Counting

- To account for all surgical and non-surgical items.
- To ensure that the patient is not injured as a result of a retained foreign body.
- To promote an optimal perioperative patient care outcome..

# Recommended Practice I

- ◎ Sponges should be counted on all procedures in which the possibility exists that a sponge could be retained.
  
- ◎ Sponge counts should be performed:
  - *before the procedure to establish a baseline,*
  - *before closure of a cavity within a cavity,*
  - *before wound closure begins,*
  - *at skin closure or end of procedure, and*
  - *at the time of permanent relief of either the scrub person or the circulating nurse.*

- Sponges should **be separated, counted audibly, and concurrently viewed** during the count procedure by two individuals, one of whom should be a registered nurse circulator.
- Concurrent verification of counts by two individuals lessens the risk of inaccurate counts.
- Separating sponges during the baseline count helps to determine whether a sponge has been added to or deleted from a sterilized package.
- Separating sponges after use minimizes errors caused by sponges sticking together.

# Sponge count



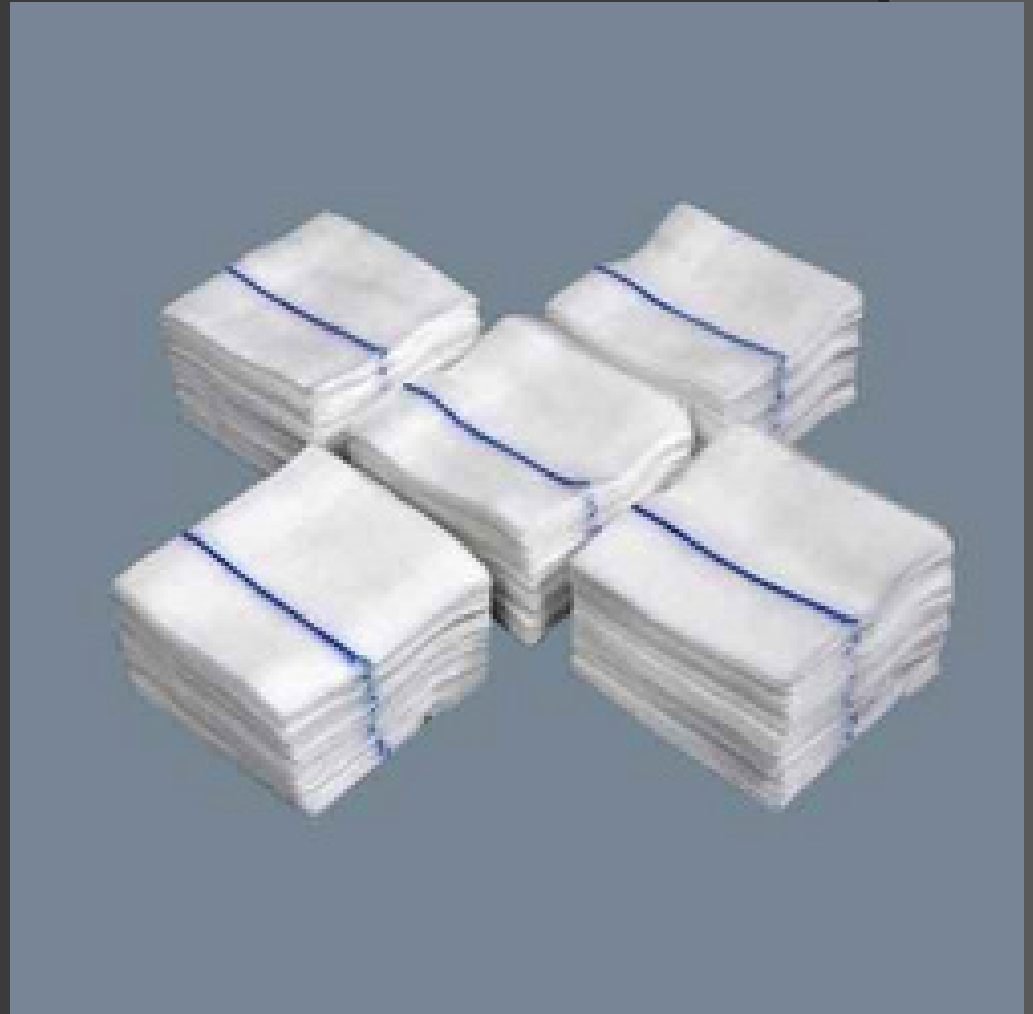
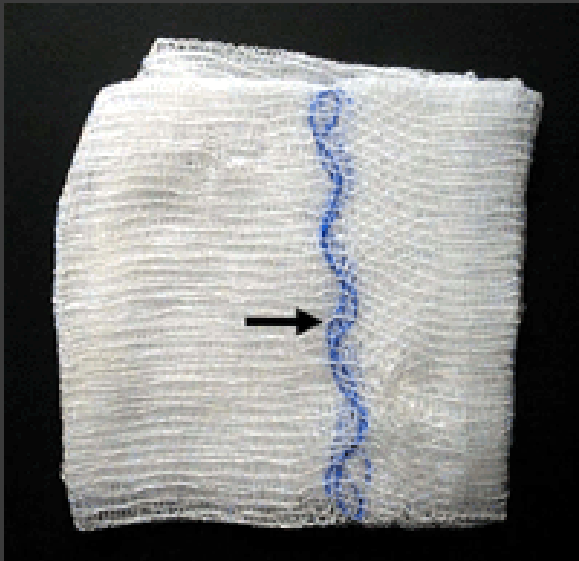
- When **additional sponges** are added to the field, they should be counted at that time and recorded as part of the count documentation to keep the count current and accurate.
- Any package containing an incorrect number of sponges should be removed from the field, bagged, labeled, and **isolated** from the rest of the sponges in the OR.
- Containing and isolating the entire package helps reduce the potential for error in subsequent counts.



- Sponge counts should be conducted in the same sequence each time as defined by the facility.
- The counting sequence should be in a logical progression, (eg, from large to small or from proximal to distal).
- A standardized count procedure, following the same sequence, assists in achieving accuracy, efficiency, and continuity among perioperative team members.
- Studies in human error have shown that all errors involve some kind of deviation from routine practice.

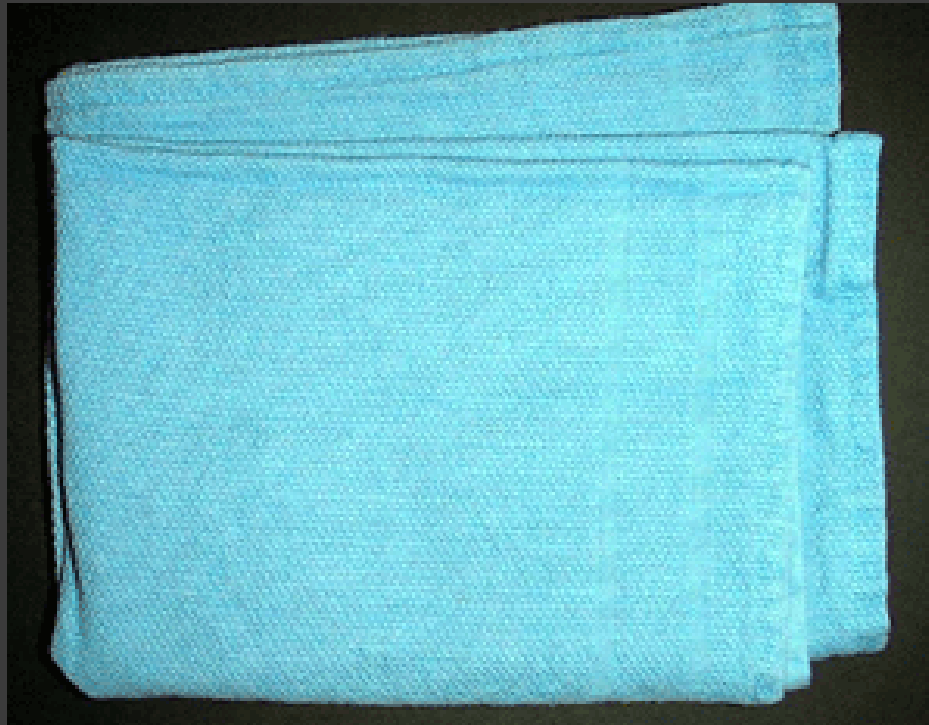
- All sponges used during a surgical procedure should be **x-ray detectable**.
- **Radiopaque indicators** facilitate locating an item presumed lost or left in the surgical field when a count discrepancy occurs.
- X-ray detectable sponges **should not be used** as dressings. The use of x-ray-detectable sponges as surface dressings may invalidate subsequent counts if the patient is returned to the OR.
- X-ray-detectable sponges used as dressings may appear as foreign bodies on postoperative x-ray studies.

# Radio-opaque Gauze



- Towels without radiopaque markers should not be used in the wound.
- If towels are used in the open wound, they should be included in the count as a miscellaneous item, and should be easily distinguishable from other towels on the sterile field.
- Sponges should be left in their **original configuration** and should not be cut.
- Altering a sponge invalidates subsequent counts and increases the risk of a portion being retained in the wound.

# Surgical Towel



- **Non-radiopaque gauze** dressing materials should be withheld from the field until the **wound is closed** or the case is completed.
- Keeping dressing materials separated from the actual counted sponges will help prevent intermingling with the sponges used in the procedure.
- All counted sponges should **remain** within the OR or sterile field during the procedure.
- Linen and waste containers should **not be removed** from the room until counts are completed and resolved.
- Confinement of all counted sponges to the OR helps eliminate the possibility of an incorrect count.

- Counted sponges **should not** be used as postoperative packing; however, when counted sponges are intentionally used as packing and the patient leaves the OR with this packing in place (eg, damage control procedures), the number and type of sponges retained and reason for the variation should be **documented** in the intraoperative record and confirmed by the surgeon.
- When the packed sponges are removed, the number and type should be recorded in the patient's record.

# Wound Packing





- Sponges should be **removed** from the OR at the end of the procedure. Removing sponges from the OR at the end of the procedure helps prevent potential incorrect counts on subsequent procedures.
- Contaminated sponges must be handled and disposed properly.
  - *Occupational Safety and Health Administration (OSHA) Bloodborne Pathogens Final Rule; AORN's "Recommended practices for environmental cleaning in the surgical practice setting," and "Recommended practices for standard and transmission-based precautions".*
- The use of leak proof, tear-resistant containers and personal protective equipment (PPE) can help prevent environmental contamination and reduce the risk of personnel exposure to potentially infectious material.

# Retained gauze



# Recommended Practice II

- ◎ Sharps and other miscellaneous items should be counted on all procedures.
- ◎ Sharps and miscellaneous item counts should be done;
  - *before the procedure to establish a baseline,*
  - *before closure of a cavity within a cavity,*
  - *before wound closure begins,*
  - *at skin closure or end of procedure, and*
  - *at the time of permanent relief of either the scrub person or the circulating nurse.*

- Initial sharps counts should be performed and recorded on all procedures.
- Performing counts constitutes a primary and proactive **injury-prevention strategy**.
- Counting sharps and miscellaneous items is not only important in preventing foreign body retention; the continuous accounting for these items can **lessen injuries** to those scrubbed in the sterile field.
- Data have shown that 78 percent of reported needlestick exposures are to surgeons and scrubbed personnel in the OR.

- Sharps and miscellaneous items should be counted **audibly and viewed concurrently** by two individuals, one of whom should be a registered nurse circulator.
- Concurrent verification of counts by two individuals lessens the risk for inaccurate counts.
- Accurately accounting for sharps during a surgical procedure is a primary responsibility of the perioperative nurse and the surgical team members.
- **Additional sharps and miscellaneous items** added to the field, should be counted when added and recorded as part of the count documentation.

# Counting sharp & needles



- ④ **Suture needles** should be counted and recorded according to the number marked on the outer package and verified by the scrub person when the package is opened.
- ④ Opening all packages during the initial needle count is **not recommended** and would result in needles being exposed during the entire surgical procedure.
- ④ This creates an additional opportunity for lost or retained needles during the procedure.

- The **scrub person should be able** to account for all sharps on the sterile field.
- Sharps remaining unconfined on the sterile field may be **unintentionally introduced** into the incision or dropped on the floor or may penetrate barriers.
- Whenever possible, sharps must be handed to and from the surgeon on an exchange basis using a “neutral zone” or “hands free” technique.
- Passing sharps to the surgeon on an **exchange basis** will lessen the possibility of a lost sharp item.



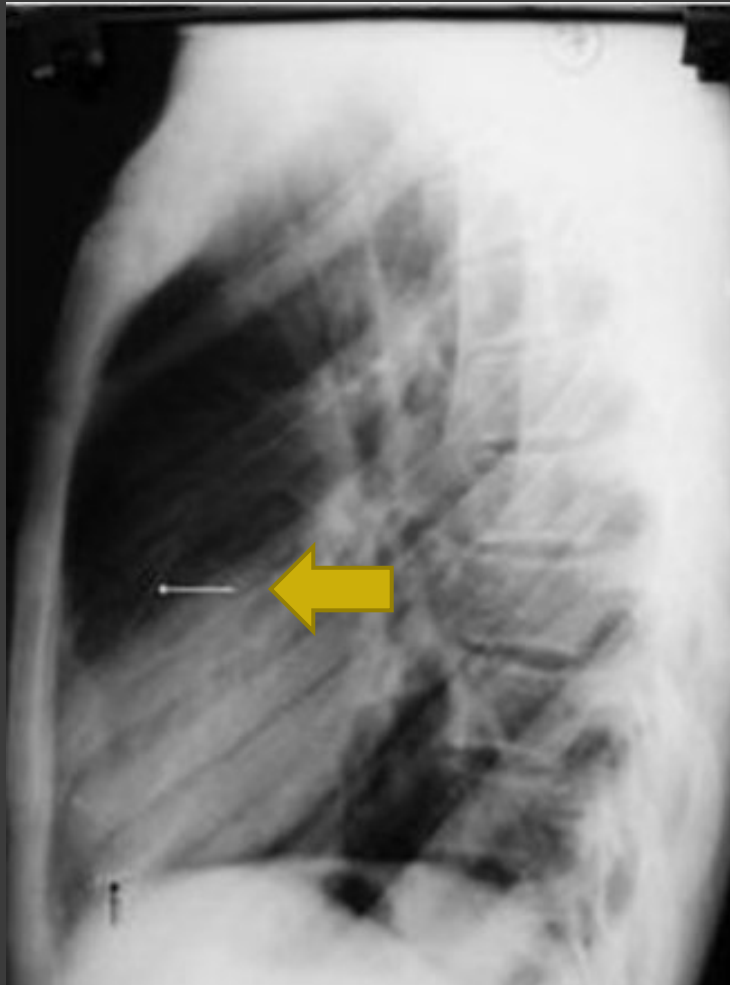
# Hand's free technique



## Neutral Zone

- Sharps counts should be conducted in the same sequence each time as defined by the facility.
- The counting sequence should be in a logical progression (eg, from large to small item size or from proximal to distal from the wound).
- A standardized count procedure, following the same sequence, assists in achieving accuracy, efficiency, and continuity among perioperative team members.

# Retained needle



## A Needle Algorithm



- Keep numbers of needles on back table low ( $\leq 40$ ), use needle counter boxes
- Separate small from large ( $>15\text{mm}$ ) needles
- If a MISCOUNT occurs: look for needle then depending on operative site:
  - If large needle ( $>15\text{mm}$ ) get xray
  - If small needle no xray:
    - unlikely will see needle on xray, unlikely will be able to find it, unlikely to result in injury
- Document the incorrect needle count and decisions if the needle isn't found
- Disclose to the patient

- Members of the surgical team should account for sharps or other miscellaneous items that may have been broken or become separated within the confines of the surgical site in their entirety.
- **Breakage and/or separation** of parts can occur during open surgery as well as minimally invasive surgical procedures.
- Verification that all broken parts are present or accounted to prevent unintentional retention of a foreign body within the patient.

- Used sharps on the sterile field should be kept in a disposable, puncture-resistant container.
- Collecting used needles in a container helps ensure their containment on the sterile field and lessens the risk of injury to personnel at the sterile field.
- Disposing of sharps in designated sharps containers helps lessen the potential for personnel injury and/or exposure to potentially infectious material.
- Accounting for and disposing of all sharps and related items at **end-of-procedure** cleanup helps avoid potential incorrect counts on subsequent procedures.



# Sharp Disposal



- All counted sharps should **remain** within the OR and/or sterile field during the procedure.
- If a sharp is **passed or dropped off** the sterile field, the circulating nurse should retrieve it in a safe manner, show it to the scrub person, and isolate it from the field to be included in the final count.
- Linen or waste containers should not be removed from the OR until all counts are completed and resolved and the patient has been taken from the room.
- Confinement of all sharps to the OR helps minimize the possibility of an incorrect count.

- Sharps must be handled according to OSHA Bloodborne Pathogen Standards.
- Proper use, handling, and disposal of contaminated sharps helps minimize the risk of exposure to bloodborne pathogens from patient to health care worker and from health care worker to patient.
- AORN's "Recommended practices for standard and transmission-based precautions in the perioperative practice setting." Sharps should be disposed of according to AORN's "Recommended practices for environmental cleaning in the surgical practice setting."



# Sharp Disposal Box

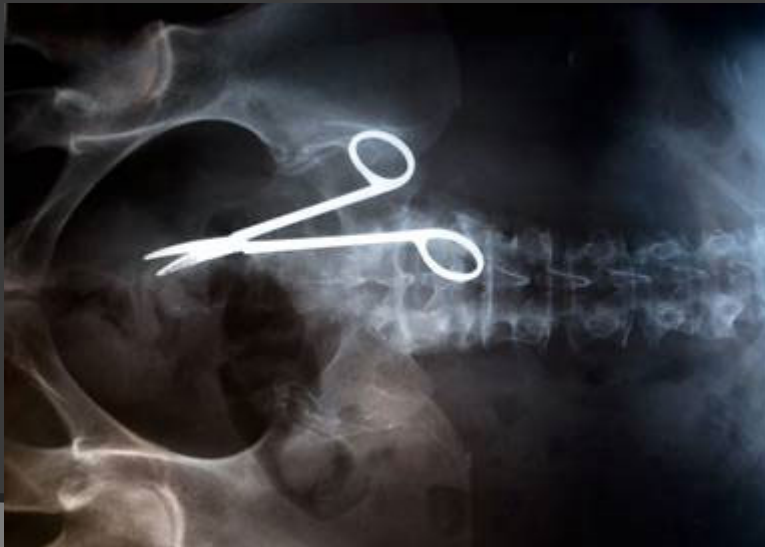


# Recommended Practice III

- Instruments should be counted for all procedures in which the likelihood exists that an instrument could be retained.
- Instrument counts should be performed;
  - before the procedure to establish a baseline,
  - before wound closure, and
  - when feasible, at the time of permanent relief of the scrub person and/or circulating nurse

- Instrument counts protect the patient by reducing the likelihood that an instrument will be **retained** in the patient.
- Instrument counts are a proactive injury-prevention strategy.
- Retention of surgical instruments accounts for approximately **one third of retained item case reports**.
  - C Smith, "Surgical tools left in five patients", [http://seattlepi.nwsourc.com/local/49883\\_error08.shtml](http://seattlepi.nwsourc.com/local/49883_error08.shtml). Accessed 5/24/04 .
- Case studies demonstrate that many types and sizes of instruments have been found, ranging from small clamps to moderately-sized hemostats (ie, six to 10 inches) to 13-inch long retractors.

# Retained Instruments



## Retained Instrument

- Most common retained instrument is a malleable retractor
- Retention is usually the result of two process errors
  - ✦ Loss of focus
  - ✦ No count



- ⦿ Instruments should be counted when sets are assembled for sterilization.
- ⦿ This assembly count provides a basic reference for the instrument set and is not to be considered the initial count before the surgical procedure.
- ⦿ A count performed outside the OR that is considered an initial count increases the number of variables that can contribute to an inaccurate count and unnecessarily extends.



- Initial counts in the OR establish a baseline for subsequent counts, particularly with the increase in minimally invasive surgery and the potential for additional procedures.
- The possibility of any incision being extended to allow for a more extensive procedure than anticipated supports the practice of performing an initial count for all procedures.
- Established policies in the facility may define when additional counts should be performed or may be deleted from procedures according to the likelihood of an instrument being retained.

- Individual pieces of assembled instruments (eg, suction tips, wing nuts, blades, sheathes) should be accounted for separately on the count sheet.
- Removable instrument parts can be purposefully removed or become loose and fall into the wound or onto or off the sterile field.
- When additional instruments are added to the field, they should be counted when added and recorded as part of the count documentation.



- Instruments should be **counted audibly and viewed concurrently** by two individuals, one of whom should be a registered nurse circulator.
- Concurrent verification of counts by two individuals assists in ensuring accurate counts .
- Instrument counts should be conducted in the same sequence each time .
- The counting sequence should be in a logical progression (eg, from large to small item size or from proximal to distal from the wound).

- All counted instruments should **remain** within the OR during the procedure until all counts are completed and resolved.
- If a counted instrument is passed or **inadvertently dropped off** the sterile field, the circulating nurse should retrieve it, show it to the scrub person, and **isolate it** from the field to be included in the final count.
- Confinement of all counted instruments to the OR helps eliminate the possibility of an incorrect count.

- ⦿ All instruments should be accounted for and removed from the room during end-of-procedure cleanup only.
- ⦿ Accounting for all instruments facilitates inventory control and patient safety.
- ⦿ Removing all instruments from the room helps avoid potential incorrect counts on subsequent procedures.

- Instrument sets should be standardized with the minimum types and numbers of instruments needed for the procedure.
- Instruments that are not routinely used on procedures should be deleted from sets.
- Reducing the number and types of instruments and streamlining standardized sets improves ease and efficiency of counting.
- Specialty instruments, if needed, can be opened and added to the count at the time of the procedure.

- Preprinted count sheets that are identical to the standardized sets should be used to record the counted items.
- Preprinted count sheets provide organization and efficiency, which are key to preventing unnecessary delays.
- The circulating nurse should record only the number of instruments opened for the procedure.
- Additional instruments requested by the surgeon should be counted and added to the preprinted count sheet separately.



- Contaminated instruments must be handled according to OSHA Bloodborne Pathogen Standards.
- Proper use and handling of contaminated instruments help minimize the risk of exposure to bloodborne pathogens from patient to health care worker and from health care worker to patient.
- Contaminated instruments should be handled according to AORN's "Recommended practices for cleaning and caring for surgical instruments and powered equipment," and "Recommended practices for cleaning and processing endoscopes and endoscope accessories," as well as the institution's policies and procedures.
- Contaminated instruments may expose personnel to harmful pathogens.

# Recommended Practice IV

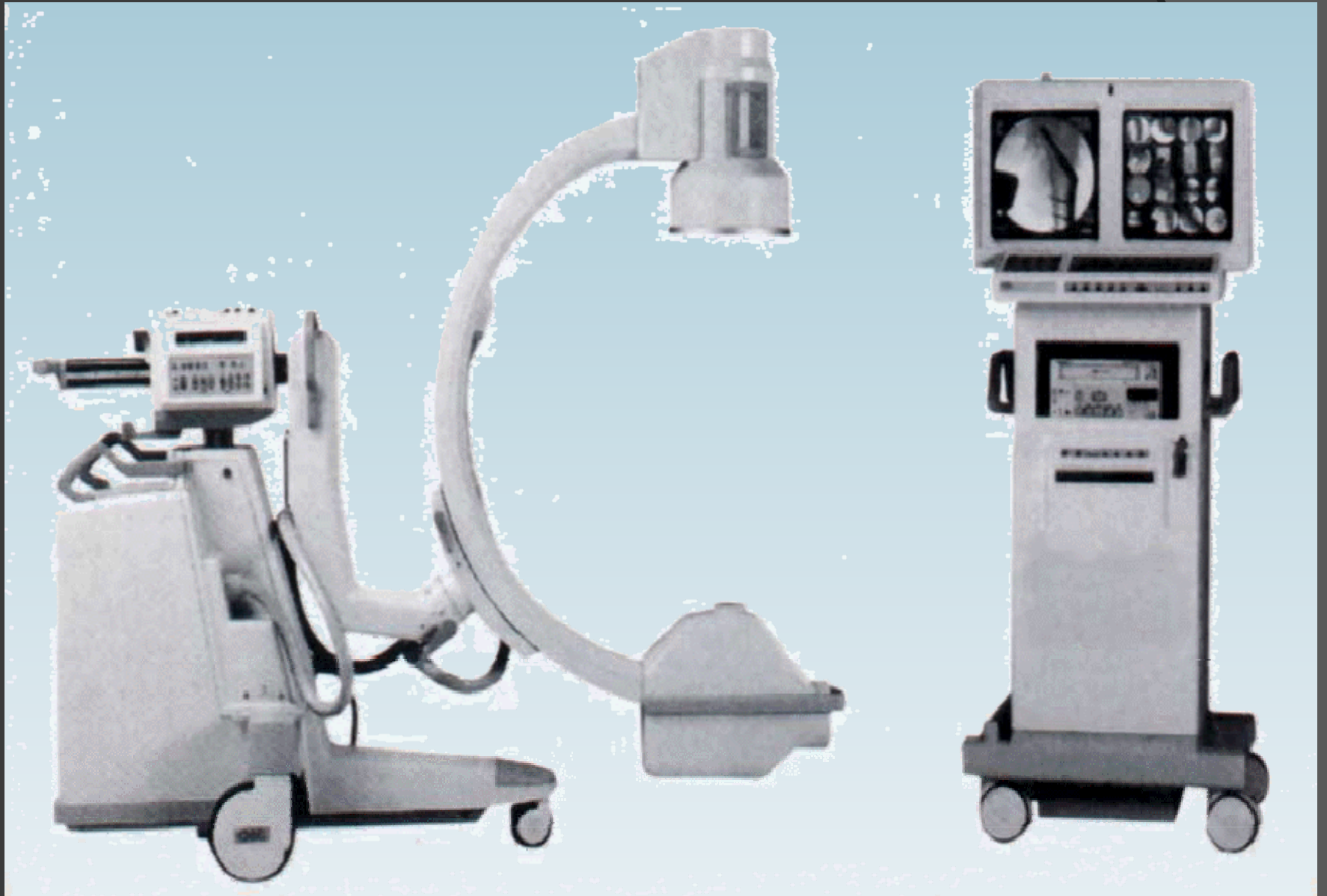
- When a **discrepancy in the count(s)** is identified, the surgical team is responsible for carrying out steps to locate the missing item.
- Procedural steps include, but are not limited to;
  1. count discrepancy reported to surgeon;
  2. procedure suspended, if patient's condition permits;
  3. manual inspection of the operative site;
  4. visual inspection of the area surrounding the surgical field, including floor, kick buckets, and linen and trash receptacles;



5. intraoperative x-ray taken and read before patient leaves the OR, if the patient's condition permits;
6. documentation of all measures taken on patient's record;
7. reporting of incident (occurrence) following facility policy; and
8. review of incident or near miss for cause, effect, and prevention.

- The circulating registered nurse should **inform and receive an acknowledgment** from the surgeon as soon as it is known that any part of the surgical count (ie, sponge, sharp, instrument) is incorrect.
- The perioperative registered nurse circulator and scrubbed person should **ask the surgeon** to conduct a manual search of the wound to locate the missing item(s).
- The scrubbed person and circulator should do a **manual and visual search**, respectively, of the sterile area surrounding the wound and the remainder of the sterile field.
- The **circulator** should conduct a search of the nonsterile areas of the room in an attempt to locate the item(s).

- If missing item recovered, recount all sponges, instruments and needles.
- If the item is not recovered, an **intraoperative x-ray** should be taken and read prior to the final closure of the wound.
- The purpose of the x-ray should be specified to rule out retained foreign body (eg, needle, sponge, instrument).
- Studies show greater accuracy when x-rays are read by a radiologist.



- In one study, three of 29 x-rays were read as negative when a foreign body actually was present. Therefore, x-ray alone may be insufficient to detect a retained item.
  - JK Cherry, "Surgery: Foreign Object Retention", The Doctors Company 2002. <http://www.thedoctors.com>.
- In the case of missing needles, there is no definitive evidence as to how effective x-rays are in detecting small suture needles.
- Studies done in recent years have demonstrated that needles 17 mm and smaller may not be consistently visible on x-ray.
  - MD Macilquham, RG Riley, P Gossberg, "Identifying Lost Surgical Needles Using Radiologic Techniques", AORN Journal 78 (1) (July 2003), 73-77.

- Following institutional policy, documentation of an incorrect count should include all the measures taken to recover the missing item and communications made regarding the outcome.
- This is considered a sound professional practice and demonstrates that all reasonable efforts were made to protect the patient's safety.

# Risk factors for retain surgical items

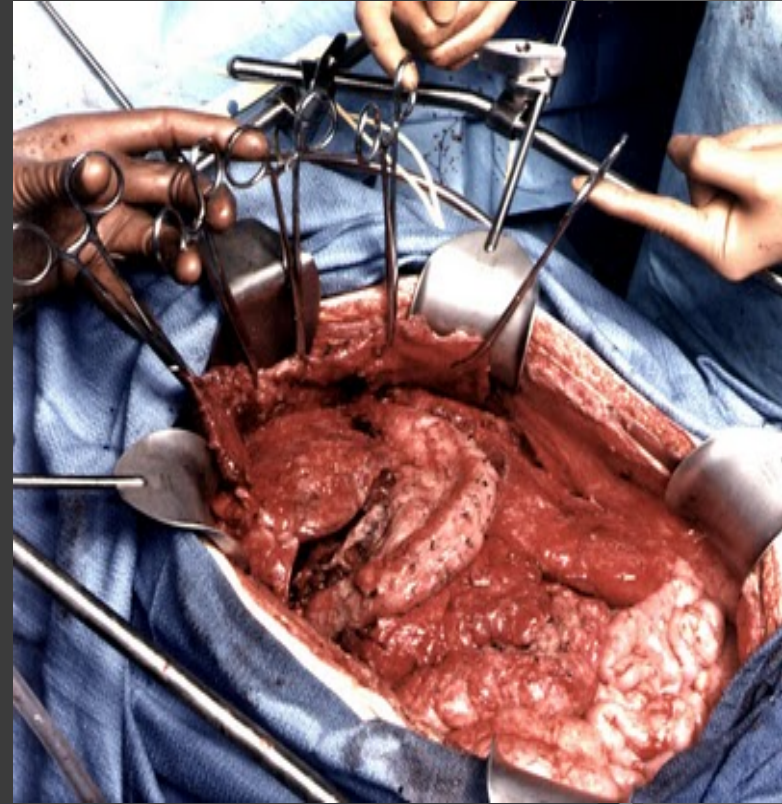
- ◎ The distraction-prone environment of the OR means that performing routine tasks, such as counts can be considered at risk for error.
- ◎ Errors can be divided into two categories;
  - Those at human interface in a complex system
  - Those representing fail system design

# Risk factors may include, but are not limited to;

- ⦿ The emergent nature of a procedure,
  - ⦿ Emergency cases;
    - ⦿ Count may be hurried
    - ⦿ Sponges not separated
- ⦿ An unexpected change in the procedure,
  - ⦿ Laparoscopic to open approach



# Open surgery



# Laparoscopic surgery

- ⦿ **Complicated procedures with multiple sets,**
- ⦿ **Multiple procedures,**
  - ⦿ Traumatic injuries
  - ⦿ Lengthy procedure
- ⦿ **Multiple teams,**
  - ⦿ Shift changes
  - ⦿ Multiple order
- ⦿ **Incompetent staff,**
- ⦿ **Obese patient.**

# Multiple sets





# Bariatric Surgery



# Recommended Practice V

- Sponge, sharp, and instrument counts should be **documented** on the patient's intraoperative record.
- Documentation of counts should include, but not be limited to,
  - types of counts (ie, sponges, sharps, instruments, miscellaneous items) and number of counts;
  - names and titles of personnel performing the counts;

- results of surgical item counts;
  - notification of the surgeon;
  - instruments intentionally remaining with the patient or sponges intentionally retained as packing;
  - actions taken if count discrepancies occur; and
  - rationale if counts are not performed or completed as prescribed by policy.
- Accurate documentation serves several purposes, including evidence of the patient's treatment, the basis of the plan of care, communication to all caregivers, protection from liability, and a link to reimbursement.
  - Documentation of nursing activities related to the patient's perioperative care provides an accurate picture of the nursing care administered and provides a mechanism for comparing actual versus expected outcomes.

**NEGARA BRUNEI DARUSSALAM**

## Time : .....

Surgeon : .....	Anaesthetist : .....	Instrument Nurse : .....
Assistant : .....	Assistant : .....	Scout Nurse : .....

[illegible]

Count Correct :  YES  NO

Surgeon notified : ☐ YES ☐ NO

Detail of items : .....

Surgeon notified : ☐ YES ☐ NO

X-Ray taken

Re-opened

Position

### Diathermy

Specimen

Supine

Bipolar

Frozen Sea

Prone

Monopolar

## Histology

### Lithotomy

Mirco

## Culture

Lateral

Pt's plate : .....

Blood

Others : .....

Others : .....

### Irrigation/Washout

Providine Iodine ☐

Normal Saline

Others ☐

Chlohexidine in spirit

Hydrogen Peroxide

Chlohexidine in water

### Glycine Solution

Specify :

Normal Saline

Hydrogen Peroxide with Normal Saline

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# Exception for not counting

- **Extreme patient emergencies** may necessitate omission of counts to preserve patient life or limb.
- Documenting the omission and reasons for the variation provides a record of the occurrence, and an alert to subsequent caregivers that the patient may be at an increased risk for a retained foreign body.
- Justification for omission of counts in an emergency should be documented



# Emergency surgery



# Recommended Practice VI

- Policies and procedures for sponge, sharp, and instrument counts should be developed, reviewed annually, revised as necessary, and made available in the practice setting.
- These policies and procedures should include, but not be limited to,
  - items to be counted,
  - directions for performing counts,
  - procedures in which baseline and/or subsequent counts may be exempted,
  - alternative or additional safety measures for special circumstances, and
  - nursing actions and procedures for incorrect counts.

- Policies and procedures establish authority, responsibility, and accountability and serve as operational guidelines. Policies and procedures also assist in the development of patient safety, quality assessment, and improvement activities.
- Nurses should collaborate with all members of the surgical team to develop policies that address surgical counts.
- An introduction and review of policies and procedures should be included in **orientation and ongoing education** of perioperative personnel to assist them in obtaining knowledge and developing skills and attitudes that affect patient outcomes.

# Perioperative team roles

- ⦿ All team members should be committed to and involved in establishing meaningful policies and procedures related to surgical counts.
- ⦿ Members of the entire surgical team can be held liable in litigation for retained foreign bodies.
- ⦿ Nurses and surgeons are encouraged to collaborate in writing and adhering to sound count policies and procedures.

# Patient presentation of retained items

- The usual presentation of these missed sponges has the features of acute abdomen.
- Because they are made up of cotton, they will be disintegrated and lead to infection in the area, appearing as wound infection, discharging sinus, localized intro-abdominal abscess, tender abdominal mass or as generalized peritonitis, acute abdomen and generalized peritonitis without diagnosis of the cause.
- Sometimes, these missed sponges presented as intestinal obstruction due to migration of gauze and packs.
- Missed instruments remain silent usually because they are sterile and inert and may be discovered accidentally if radiography of the abdomen was taken

THANK YOU