Sterile Processing



Infection Prevention/Control within SPD

Infection Concerns

- There are many ways in which reprocessing instrumentation occurs that can lead to infection concerns with our patients.
  - OR – Instrument processing begins in the OR
  - Decontamination
  - Inspection
  - Packaging
  - Sterilization
  - Handling
  - Vendors

OR Education and Compliance
Before the Case

- Leaving the shelves – scan if possible
  - Scanning trays allows for tracking to the patient that can help investigate Surgical Site Infections
    - Equipment
    - Individual trays/instruments
    - Decontamination
    - Assembly Tech

OR Education and Compliance
Before the Case

- External and internal inspection of trays.
  - Check all external indicators
  - Check for holes in wrap and peel packs
  - Check for lids fitting correctly and filters in place
  - Make sure all internal indicators have passed sterilization
- Instrument Counts and Inspection
  - Use count sheet to verify proper instrument match
  - Inspect instruments for cleanliness and function

OR Education and Compliance Cont.

During the Case

- The cleaning of instruments should begin during the surgical procedure to prevent drying of blood, soil and debris on the surface and within lumens.
- The CST in the first scrub role should keep the instruments free of debris and blood during the surgical procedure.
- The instruments should be wiped clean using a sterile, water-moistened sponge.
- Instruments with lumens should be flushed with a sterile, water-filled syringe to remove blood and debris and prevent drying of the gross soil.

OR Education and Compliance Cont.

During the Case

- Instruments that may not be used for the remainder of procedure, e.g., acetabular reamers used during a total hip arthroplasty, may be placed into a basin containing sterile water to soak.
- If scopes are set aside to be used again, sterile water should flush them every 30 minutes until completion of case when bedside pre-cleaning should occur.
- Saline must not be used, since the chloride ions can cause pitting and deterioration of the finish on the surface of the instruments.
- Do not use hot water, alcohol, or chemical antiseptics or disinfectants intraoperatively. Utilizing these can cause coagulation onto the metal surface.

OR Education and Compliance Cont.

After the Case

- The cleaning of instruments should continue at the point of use post-procedure, including sorting and disassembly of instruments, containment and transportation to the decontamination room.
- Remove instruments that have been soaking during the duration of the case. It is recommended not to clean the instruments within a water-filled basin in order to prevent splashing of the fluid on the floor or other surfaces of the OR.
- All instruments that were on the sterile field, whether used or not used, are considered contaminated, and a possible source of microorganisms that could cause an infection in health care workers and patients.

OR Education and Compliance Cont.

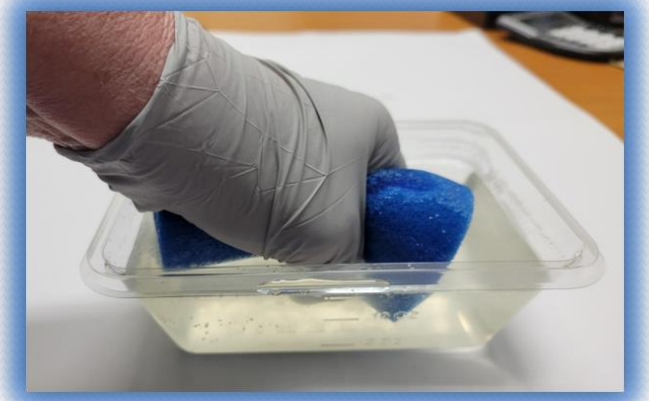
After the Case

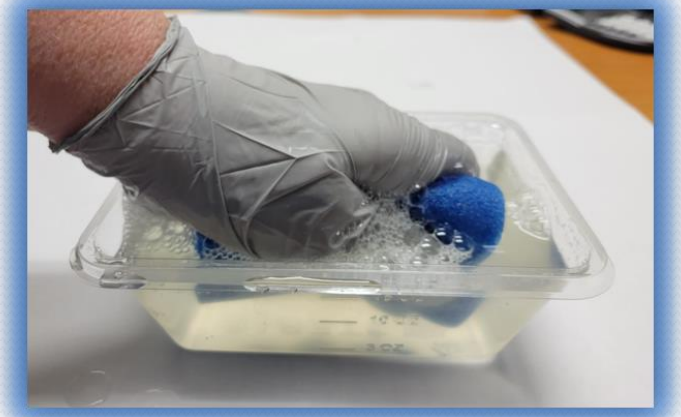
- Separation is best done in the OR by the CST who is familiar with the back table set up, including location of the sharps container, as well as other sharps such as trocars in order to prevent injury to other surgical team members. Separation includes the following
  - Removal of trocars from cannulas
  - Removal of blades from handles
  - Removal of Bits and Burrs
  - Drill attachments
  - Unsheathe any scopes
  - If unsure about separation of Vendor instrumentation, ask rep for instruction. The rep should be present until the end of the case.
- Once separated and placed in trays where no damage can come to any instrument or staff, a copious amount of enzymatic pre-clean on All surfaces including inside lumens, trocar cannulas, and on unused instrumentation.

OR Education and Compliance Cont.

After the Case

- Point of Use Scope Care – all Flexible scopes should have point of use care performed prior to transport to Decontamination. This can be done by many methods the following is the most used utilizing a kit.
  - Open sponge package by tearing along serrated edge.
  - Remove unwrapped sponge and place in provided container.
  - Squeeze the sponge 5-7 times in the water container to activate the Enzymatic Detergent.





OR Education and Compliance Cont.

After the Case

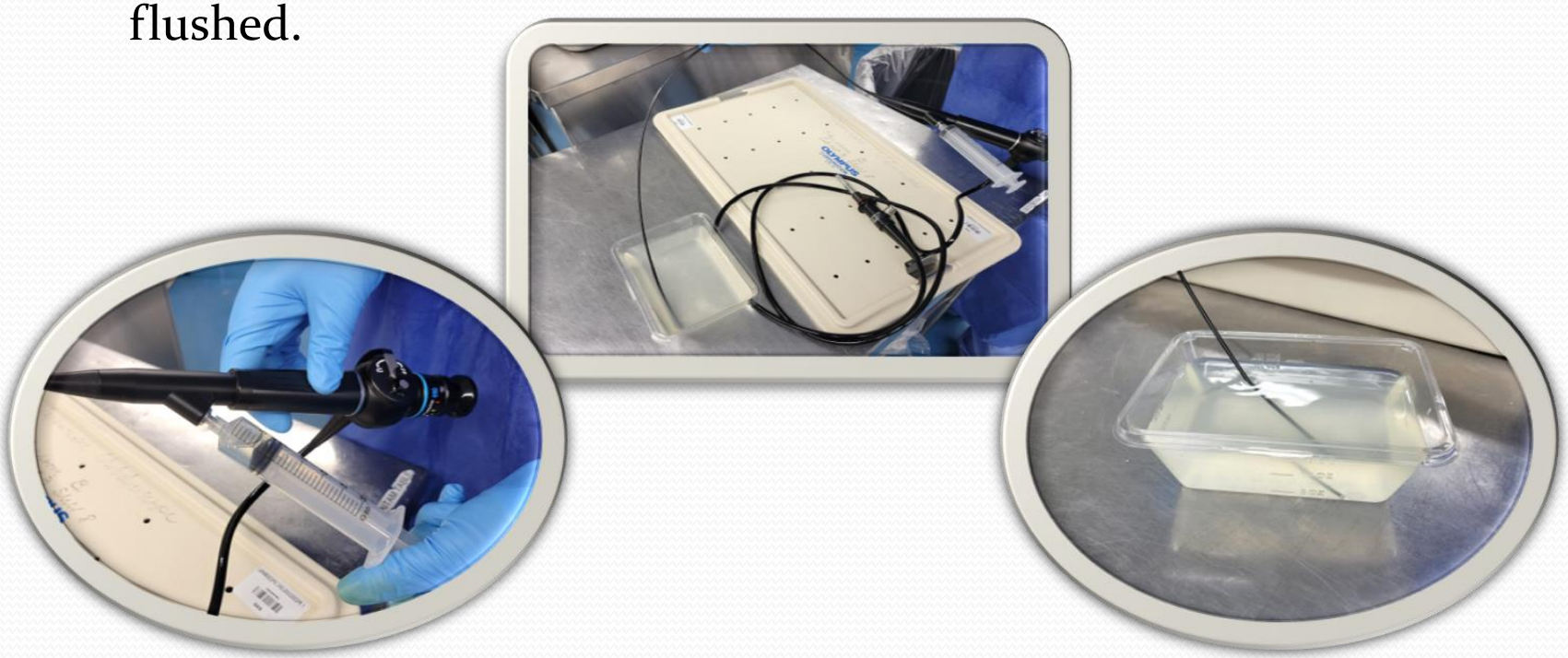
- **POU Treatment of the Exterior of the Scope**
  - Squeeze and remove the sponge from the container, then use the sponge to wipe down the exterior of the endoscope.



OR Education and Compliance Cont.

After the Case

- **Cleaning Interior Channels**
  - Place the distal end of the scope in the container of freshly made Enzymatic Detergent solution and cycle the fluid through the instrument using syringe. – if multiple lumens, each one must be flushed.



OR Education and Compliance Cont.

After the Case

- **Containment and Transporting**
  - **Instruments should be placed in a leak-proof and puncture resistant container.**
    - **This container should be clearly marked biohazard.**
  - **Many facilities do not have a closed case cart system.**
    - **Develop a policy and procedure.**
    - **Educate staff on this procedure.**
    - **Regardless, it should be leak-proof and puncture resistant.**

Decontamination

- **Metal Instrumentation** – Each instrument, regardless if it was used, is inspected to be sure it is free debris.
- Soaked in enzymatic cleanser
- Gross material is removed by hand washing each instrument.
- Items are rinsed and placed into an ultrasonic cleaner
- Instruments are rinsed
- Instruments are placed in washer/decontaminator

Decontamination Cont.

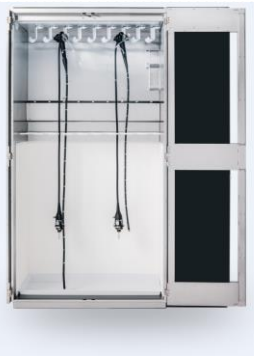
- **Hand Wash Items** – each item is inspected to be sure it is free of debris. These items include surgical equipment that are liquid or heat sensitive.
- If it is able to be submerged it is soaked in enzymatic cleaner.
- Gross material is removed by hand & all items are washed using a cleanser and non-abrasive sponge.
- Leak test are performed on flexible scopes.
- All items are rinsed thoroughly, dried, and passed through to the Clean/Packaging area.

Decontamination Cont.

- **Flexible Scopes**
  - Check for Pre-treatment. Examinate thoroughly to be sure it is free of debris.
  - Leak test are performed.
  - If Scope has not been pre-treated it will have to have an extended scope per manufacturer IFUs. (scopes' parameters for extended soak could be 30 minutes up to 10 hours according to IFU)
  - Gross material is removed by hand & all scopes are washed using a cleanser and non-abrasive sponge as well as channel brushes, and water and air.
  - Scopes are rinsed thoroughly, dried (drying cabinet or by hand), and allowing access for the Clean/Packaging techs.



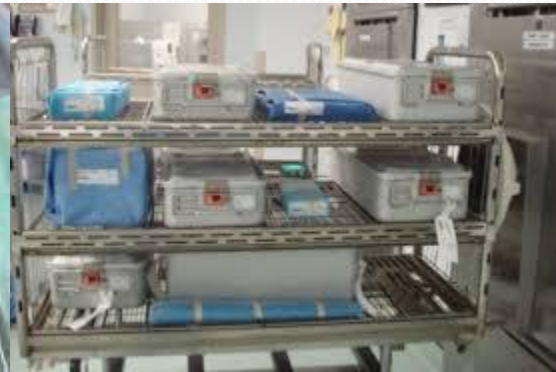




Inspection Prep and Packaging

- Instrumentation is taken from Washer or Pass-through window and scanned into department
- Brought to a Tech station and scanned
- Count-sheet is displayed on computer to process set
- Each item is individually inspected for cleanliness and functionality



Inspection Prep and Packaging

- Check for bioburden and functionality
  - Use visual inspection
    - Looking with naked eye (loose screws, alignment, bioburden, visible damage)
    - Looking with borescope (rust, gouges, bioburden)
    - Inspection with magnifying glass (small cracks, item #s, bioburden)
  - Physical inspection with aids
    - Pipe cleaners and gauze (bioburden)
    - Eraser (stain or Rust)
    - Check for sharpness with latex free bands (scissors)
    - Punch cards (rongeurs and bone cutters)
    - Wooden dowel rod (osteotomes and chisels)

Inspection Prep and Packaging

- Protein Residue Testing
  - Can be done in both Decontamination and Prep and Pack.
    - Decon testing would be after scopes and hand held items are cleaned right before they enter the prep and pack area.
    - Testing in Prep and Pack
      - Used for instruments at stations
      - This can be a swab of instruments that came out of the washer or handwashed instruments for a final assurance of biological cleanliness level.

Inspection Prep and Packaging

- Assemble Sets
  - Scan tray for count sheet
  - Assemble by count sheet in an orderly fashion
  - Continue to do inspections while assembling
  - Pay attention to all notes on count sheets and popup instructions in tracking system.
- Contained as specified (Wrap, container, peel pouch)
  - Each tray or individual instrument should have directions on how to contain. Some items it may not matter but others require an exact method.

Care and Handling

- How we handle trays effect infection possibilities.
  - When we carry trays inappropriately, we have the possibility of reducing efficacy of the sterile packaging.
    - At an angel
    - By the handle
    - Tucked under your arm.
    - Shaken
    - Cart with no bottom liner.

Care and Handling

- Stacking wrap and container outside of MIFU.
  - Containers no more than three high (most containers)
  - Wrap, the total weight of all trays in the stack should not exceed the weight requirements of the wrap. (Most Wrap)
- Lowering, bumping, dragging wrap items
  - Lowering tray onto shelf or case cart
  - Bumping into another item
  - Dragging tray across shelf or other surfaces

Vendor/Rep Behavior

- Sets will be delivered 24 hours or time designated by specific Sterile Processing Department (SPD) in advance of the scheduled procedure and will be removed from SPD within three business days.
  - Delivered by the vendor rep with the IFU to SPD, pictures will be taken before processing by SPD staff to validate what was brought in.
  - SPD cannot guarantee timely sterilization if sets are delivered in less than 24 hours from time of the procedure.
  - Instrumentation for an “add on” surgical case should be brought to SPD in time to complete the required cleaning and sterilization process. Recommendation is 6 hours prior to the anticipated case start time.
  - Vendor trays will be decontaminated and sterilized per IFU.

Vendor/Rep Behavior

- Loaner instrumentation containing implants will be quarantined until a negative Biological Indicator (BI) result is obtained for the sterilization cycle.
  - A biological test will be placed on every implant load.
  - When the load ends, the test pack can be taken out and processed.
  - Depending on type and brand of test, these results could take from 5 minutes to 3 hours.
  - No set should be released to the OR until this test has had a negative result.

Vendor/Rep Behavior

- All loaner instrumentation must be delivered clean, free of blood, tissue, bone or body fluids and safe for handling.
  - **Department of Transportation (DOT) & PHMSA Rules (49 CFR Parts 171–180):** If the contaminated instruments or regulated medical waste/infectious substances travel over public roadways, the transport must comply with DOT hazardous materials and packaging laws.
  - Though the facility holds the responsibility for any outcomes cause by bioburden being found in trays. In that responsibility, actions should be taken to reduce and hopefully eliminate occurrences.
  - Vendors should hold part of responsible for any remaining bioburden that may contaminate a case and it should be tracked.
    - Vendors are the experts at their trays and are usually the ones who assemble the tray.

Vendor/Rep Behavior

- It is the responsibility of the Vendor rep to provide complete and clean loaner instrument sets.
  - Local tech do not know what individual surgeons need. They cannot know what an outside set looks like complete.
  - No trays should have paint or tape flaking
  - All trays and instruments should be rust free.
  - If the SPD team notice this prior to processing, the vendor and OR should be notified that the tray will not be processed.

Vendor/Rep Behavior

- After the surgical procedure is completed, all loaner instrumentation will be transported to the decontamination area for terminal cleaning by SPD.
  - Vendors reps should not reassemble trays in the Operating Room (OR) or prior to them going through the decontamination process.
- Liabilities of Vendor Processing Prior to Decontamination
  - Vendor Representatives have not all gone through facility regulated competencies. (required by The Joint Commission)
  - Facility can be liable for any injury caused to the Rep.
  - Bioburden can be missed in decontamination. When the items are not completely disassembled prior to decontamination, the knowledge of that item may not be apparent to the decontamination team.
  - Contaminated instruments can be completely missed.

Vendor/Rep Behavior

- When the decontamination tech is unable or unknowing of performing the proper cleaning methods, bioburden is going to be present in the tray leading to many issues.
  - Case delays that can be a dissatisfaction to the OR team and patient, especially if the patient has already been brought into the OR. Every minute counts in the OR; from cost to patient outcome.
  - Case cancellations leading to the patient having a postponed treatment.
  - Contamination of the surgery that can cause a negative outcome to the patient leading to Surgical Site Infections.
  - Exposure to the OR and Sterile Processing team.

Additional Talking Points

- Certification – learn the whys not just the hows.
- Continuing education – keep up to date on new regulations and recommendations by the governing bodies as well as the manufacturers
- Relationship – Sterile Processing and the departments they interact with should have a mutual respect and open communication.
- Utilize all tools – stay up to date on new features the tracking system supplies.

Questions?



References:
AAMI
The Joint Commission
AORN
IAHCSMM
Infection Control Today
AST
Department of Transportation