Endoscope Reprocessing

Policies and Procedures
Disclaimer

This presentation is for your general knowledge and background only. Information presented represent reprocessing guidelines for most Olympus endoscopes. Please consult the Reprocessing Manual in the Instructions For Use (IFU) for the respective scope to obtain detailed reprocessing instructions.

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Objectives

- Discuss reprocessing standards and resources

- Identify important evidence based practices to clean, disinfect, sterilize, store and transport endoscopes

- Explain the significance of infection control and the relationship to endoscope reprocessing principles
It is the responsibility of healthcare professionals to provide a patient-ready endoscope for every procedure.
2015 National Patient Safety Goals

• Reduce the risks of healthcare-acquired infections

✓ This goal is also recognized by Accreditation Association for Ambulatory Healthcare (AAAHC)
Background

- Endoscopes reprocessed appropriately pose virtually no risk of patient-borne or environmental microorganisms
- Transmission of GI infections has been associated with breaches in reprocessing protocols or defective / damaged equipment
- Reprocessing must be in accordance with infection control guidelines and manufacturer’s validated instructions for use
## Current Reprocessing Practices Based on Spaulding Classification

<table>
<thead>
<tr>
<th>Level of risk</th>
<th>Application</th>
<th>Process</th>
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</thead>
<tbody>
<tr>
<td>Critical</td>
<td>Entry or penetration into sterile tissue, cavity or bloodstream</td>
<td>Sterilization necessary (Spaulding classification)</td>
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<tr>
<td>Semi-critical</td>
<td>Contact with intact non sterile mucosa or non intact skin</td>
<td>Sterilization preferred where possible, cleaning and disinfection required</td>
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<tr>
<td>Non-critical</td>
<td>Contact with intact skin</td>
<td>Clean as necessary with detergent and water</td>
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Flexible GI endoscopes generally are considered “semi-critical” devices that do not break the mucosal barrier.
Reprocessing Overview for HLD

• Pre-cleaning (point of use)
• Leak testing
• Manual cleaning
• Rinsing after manual cleaning
• High-level disinfection
• Rinsing after high-level disinfection
• Alcohol flush
• Air purge
• Storage
Precleaning

- Immediately following procedure
- Performed at point of use (i.e. patient examination room)
- Removal of gross debris
Precleaning

Wipe insertion tube from the boot to the distal end using a moist, lint-free cloth or sponge.

Avoid excessive force when wiping.
Precleaning Steps

- Use special cleaning adapters and steps as required by IFU (Instructions for Use)
- Aspirate **clean** water / detergent through the instrument channel
- Flush **clean** water / detergent through all channels (use special adapters if applicable)
- Discard single use valves
- Remove and soak reusable valves and removable parts
Precleaning Steps

- Inspect, then attach water-resistant cap (if applicable)
- Transport in covered container
- Isolate the electrical connector from the insertion tube to prevent damage
- Do not include other items in the container
- Decontaminate reusable transport trays between uses
Precleaning Steps Review

**PRECLEANING – Immediately After Use**

1. **Wipe down insertion tube with a water-soaked cloth.**
2. **Aspirate water, then air through the suction channel.**
3. **Attach AW channel-cleaning adapter. Flush water, then air, through air/water channels.**
4. **Flush water, then air, into elevator-wire channel/auxiliary-water channel. (Alternatively, the auxiliary-water channel may be flushed using the OFP pump.) The auxiliary water tube should remain attached during transport to reprocessing room.**
5. **Disconnect all detachable parts.**

6. **Attach water-resistant cap. This step is omitted for 190 endoscopes. Transport to the reprocessing room in a covered container.**

**NOTE:** Ensure that the ETO cap is removed prior to leak testing 190 generation scopes.
Leak Testing

- Wear appropriate PPE
- Leak testing is performed in the decontamination room prior to reprocessing each endoscope
- Verify that the endoscope has no leaks to minimize the risk of fluid invasion
- Fluid invasion can increase the risk of cross contamination and increase the cost of repair
Leak Tester Inspection

• Inspect that the connector is not deformed
• Inspect the coiled tube for cracks, cuts and holes
• Inspect connector cap for missing or broken pin or deformity
• Confirm connector cap is dry
• Check the leak tester unit to ensure air is being emitted
Wet Leak Test Preparation

- Basin / sink deep enough for complete endoscope immersion
- Use fresh clean water
- Verify that the angulation locks are in the free position
- Verify variable stiffness control is in the neutral position (if applicable)
Leak Test

• Confirm leak tester is locked onto a **dry** venting connector

• Pressurize endoscope
  - Allow indicated time per IFU

• Immerse the entire endoscope in clean, fresh water and wipe the entire surface to remove residual bubbles

• Observe for at least 30 seconds
  - Manipulate angulation control knobs
  - Confirm no continuous bubbles
Leak Test

• Remove the endoscope from the water
  ➢ Turn off leak tester unit
  ➢ Depressurize endoscope
  ➢ Disconnect the leak tester from the venting connector
Dry Leak Test Preparation

- Dry leak test process **eliminates the need for scope submersion**
- No need to continuously fill basins of water
- No need to monitor for air bubbles
- No distal tip angulations required for certain dry leak tester (e.g. ALT-Pro)
- Automated scope depressurization
- **Reduce human error** by removing the human elements of manual endoscope leak testing
Bubbles! Now What?

- Do not turn off the air supply while submerged as this will depressurize the endoscope
- Remove endoscope from water
- Know and follow specific *OEM protocols
- Olympus mandates reprocessing the endoscope prior to returning for repair

* Original Equipment Manufacturer
Reprocessing the Leaking Endoscope

• Manually reprocess with leak tester attached
  - Tape the leak if possible

• ETO – Depending on the model
  - Remove water resistant cap
  - Add the ETO cap
Manual Cleaning

- Manual cleaning removes most microbial bioburden
- Requires thorough cleaning of exterior and interior surfaces of the endoscope by manually
  - Wiping
  - Brushing
  - Suctioning
  - Flushing
  - Rinsing all channels and surfaces
Manual Cleaning Preparation

- Performed after leak test
- Inspect cleaning equipment prior to manual cleaning
- Must use freshly prepared detergent according to manufacturer’s instructions
- Ensure appropriate cleaning adapters are available and functioning properly
Manual Cleaning Steps

**MANUAL CLEANING**

8. **While immersed:**
   - Immerse in freshly prepared detergent solution. Clean all external surfaces. Brush endoscope distal tip and, if applicable, brush and flush forceps-elevator.

9. **While immersed:**
   - Brush the insertion tube portion of the suction channel. Repeat until all debris is removed.

10. **While immersed:**
    - Brush the universal cord portion of the suction channel. Repeat until all debris is removed.

11. **While immersed:**
    - Brush the suction cylinder and instrument channel port. Repeat until all debris is removed.

12. **Suction Cleaning Adapter**
    - Aspirate detergent solution into suction channel.

13. **Injection Tube**
    - Attach injection tube and channel plug. Flush detergent solution into the air and water channels. Flush the forceps-elevator, if applicable.

14. **Auxiliary-Water Tube**
    - For endoscopes with elevators or auxiliary-water feeding only:
    - Flush detergent solution into auxiliary-water / elevator-wire channel.

15. **Wipe all external surfaces of endoscope and cleaning accessories,** then soak in detergent solution for the time recommended by the detergent manufacturer.
Manual Cleaning Steps

**RINSING**

1. Immerse the entire instrument in clean water and gently agitate to rinse.

2. Flush clean water through all channels (including auxiliary-water/elevator-wire, if applicable). Remove from water, then flush air through all channels.

**IMPORTANT**

- Wear all appropriate personal protective equipment.
- Meticulous cleaning is essential for effective disinfection/sterilization.
- Be sure to reprocess all removable parts (e.g., valves) according to the reprocessing manual.
- Visually inspect the equipment after cleaning. If debris remains, repeat the procedure.
- Inspect the MB-155 (Leakage Test Connector) for signs of damage prior to use.

3. Use a soft, lint-free cloth to remove excess moisture from endoscope and cleaning accessories in preparation for disinfection.
Valves and Accessories

- Manually brush, flush, soak and rinse valves and accessories
- HLD (High Level Disinfection) or steam sterilize according to OEM guidelines
- Inspect for integrity and cleanliness
- Removed damaged or permanently soiled items from service
Statements - True or False?

Manually clean all channels whether or not the channel was used during the patient procedure
• True or False?

Brush and flush the endoscope channels with detergent solution with the endoscope completely immersed
• True or False?

The same water can be used to leak test the endoscope and rinse the endoscope
• True or False?
Automated Endoscope Reprocessor (AER)

- Ensure proper placement of endoscope in AER
- Record MEC
- Follow AER OEM recommendations
  - Use adapters as per OEM recommendations
- Manually complete reprocessing steps that are not supported by the AER (ie: alcohol flush)
Reprocessing Reusable Cleaning Accessories

• Majority of facilities use AERs
  ➢ Just placing cleaning accessories in AER will disinfect outside, but not necessarily inside
  
  ➢ Check with OEM for specific instructions
    ▪ Check to determine if each accessory may be steam sterilized
Endoscope Storage

- Well-ventilated cabinet
- Locked endoscope cabinet
- Control body well-supported
- Hang scopes vertically
- Distal tips hang freely
- Avoid crowding
- Position away from doors, hinges, other endoscopes
Endoscope Storage

- Do not attach removable accessories
- Control knobs in free position
- Variable stiffness in neutral position
Endoscope Storage – Which is the proper way to store endoscopes?
Proper Storage

• How long can you store an endoscope?
  ➢ AORN position – 5 days
  ➢ APIC position – 7 days
  ➢ Consult your infection control department to put a policy in place.
  ➢ Depends upon environmental conditions
    ▪ Temperature
    ▪ Humidity
    ▪ Cleanliness
Microbiological Surveillance of Endoscopes

- Purpose of microbiological surveillance is Quality Control
- Routine monitoring is not a recommended practice
- Monitoring as part of an infection control investigation is justified
- Infection Control should be involved in the design and approval of any endoscope surveillance program
Reprocessing Verification Tools

• Commercial products are available to monitor and verify that the cleaning process has been performed adequately

• Some state and health systems require routine monitoring
Delayed Reprocessing

• General rule: Anything beyond 60 minutes delay prior to manual cleaning
  ➢ Precleaning must always be performed immediately
  ➢ Bioburden dries and hardens
  ➢ Potential for biofilm formation when delays follow precleaning or manual cleaning

• Ensure the timely reprocessing of endoscopes for emergency procedures at night and on weekends

• If unavoidable, extended soak in detergent required
Questions?