State of Kuwait
Ministry of Health
Infection Control Directorate

Reprocessing Policy for Flexible Endoscopes

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Approved by: Infection Control Directorate, Ministry of Health

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Reprocessing Policy for Flexible Endoscopes

A. Recommended reprocessing of flexible endoscopes

- **As a rule**: Endoscopes or accessories that contact sterile tissue (e.g.,laparoscopes, arthroscopes and other scopes) should be **sterilized** and that contact intact mucous membranes(e.g.,respiratory and gastrointestinal tracts) undergo at least **high-level disinfection** before each use.
- All heat-sensitive endoscopes (e.g.gastrointestinal endoscope, bronchoscope, nasopharygoscope) must be at a minimum, subjected to high-level disinfection after each use.

B.Training

- All health care personnel in the endoscopy suite should be trained in and adhere to standard precautions and safety measures regarding the biological and chemical hazards.
- Personnel assigned to reprocess endoscopes should receive device-specific reprocessing instructions ie, endoscope and/or automatic endoscope reprocessor (AER).

C.PPE

- Personal protective equipment PPE (eg, gloves, gowns, mask, eyewear, respiratory protection) should be readily available and should be used during handling of the endoscopes, as appropriate.
- HCPs working in the 'clean' area (inspection, drying and storage) should wear a clean, single-use, surgical hat that confines all hair and laundered scrub suit.
- HCPs working in the 'decontamination' area should wear plastic aprons or impermeable gowns with long cuffed sleeves and tuck-inside-gloves and goggles, masks or face shields.

D. Recommended disinfectants

- Use an approved high-level disinfectant/sterilant:
  - 2 % glutaraldehyde
  - 7.35% hydrogen peroxide with 0.23% peracetic acid
  - 0.95% glutaraldehyde with 1.64% phenol/phenate
  - 0.55% *ortho*-phthalaldehyde (OPA)
  - 7.5% hydrogen peroxide .
  - 0.2% peracetic acid (50-56°C)
- Disinfectants that are **not FDA-cleared** and should be strongly discouraged because of lack of proven efficacy against all microorganisms or materials incompatibility are:
  - Iodophors
  - chlorine solutions
  - quaternary ammonium compounds
  - alcohols
  - phenolic

STEPS OF REPROCESSING OF FLEXIBLE ENDOSCOPES

Step 1: Pre-cleaning

- Pre-cleaning is preliminary cleaning that should be performed at the point of use without causing splash. While thorough proper cleaning is performed at designated separate reprocessing unit.
- Wipe the exterior of the endoscope with soft cloth/sponge soaked in freshly prepared enzymatic detergent and aspiration of a large volume of detergent solution through the air/water and biopsy channels.
- Remove all detachable parts e.g.valves/buttons/caps and clean with enzymatic detergent.
- Correctly dispose of parts designated as single use.

Step 2: transportation

- Transport the soiled endoscope and accessories to the reprocessing area immediately before remaining soil dries.
- A fully enclosed and labeled container should be used for transportation endoscope and accessories to reprocessing unit. .

Step 3: Leak testing

- Perform pressure/leak testing after each use and before reprocessing, according to manufacturer guidelines to verify the integrity of the endoscope.
- Even if the Automated endoscope reprocessor (AER) has leak testing capacity, manual leak testing should still be performed prior to manual cleaning.
- If leak detected, send for repair.

Step 4: Manual Washing

- Disassemble removable parts e.g. all buttons/valves/caps as far as possible and reprocess (step 5)
- Completely immerse the endoscope in enzymatic detergent solution. Wipe exterior of the endoscope with a soft cloth, sponge, or brushes.
- Brush all channels until there is no debris visible. Discard brush appropriately after use.
- Use brushes appropriate for the size of endoscope channel, connectors and orifices. Cleaning items should be disposable or thoroughly cleaned and disinfected/sterilized between uses.
- Drain water from the sink.
- Curl endoscope for transfer to a separate sink.
- Immerse endoscope in another sink filled with clean tap water to remove residual detergent.
- Flush all channels with water and thoroughly rinse the endoscope.
- Discard enzymatic detergents after each use.

Step 5: Disinfection/sterilization of endoscopic accessories and removable parts

- Reusable endoscopic accessories (eg, biopsy forceps, snares, sphincterotomes, and other cutting instruments) and endoscopes removable parts (e.g. buttons/valves/caps) should be **mechanically cleaned** and then **sterilized** between each patient use (high-level disinfection is not appropriate).
- Ultrasonic cleaning of reusable endoscopic accessories and endoscope components may be used to remove soil and organic material from hard-to-clean areas.
- High-level disinfect or sterilize the water bottle (used for cleaning the lens and irrigation during the

procedure) and its connecting tube at least daily. Sterile water should be used to fill the bottle.

Step 6: Disinfection/sterilization of endoscopes

A. Automated disinfection

- Automated endoscope reprocessors (AERs) are of two principle types; endoscope washer-disinfectors (EWD) and liquid chemical disinfectors (LCD).
- The use of an endoscope washer-disinfector (EWD) is strongly recommended as the best method (refer to approved specifications of Infection Control Directorate).
- EWD can be used for all types of endoscopes while LCD cannot be used for gastroendoscopes or any endoscope with more than three channels.
- LCDs preferably should provide:
  - A leak test facility
  - A purging stage after the post-disinfection rinse to ensure that channels are cleared of water.
  - A drying stage to dry the channels and the outer surfaces of the endoscopes.
- Ensure that the endoscope and endoscope components can be effectively reprocessed with the AER (eg, the elevator wire channel of duodenoscopes is not effectively disinfected by most AERs and this step should be performed manually).
- Users should obtain and review model-specific reprocessing protocols from both the endoscope and the AER manufacturers and check for compatibility
- If an AER cycle is interrupted, the cycle should be repeated.
- Maintain a log for each procedure indicating the patient's name and ID of the endoscope and AER to assist in an outbreak investigation.

B. Sterilization

- After the previous step of automated disinfection, flexible endoscope that contact sterile tissue should undergo sterilization by: Gas plasma or Ethylene oxide (ETO).
- After this step proceed directly to step 9.

Step 7: rinsing

- Rinse the endoscope and flush the channels with sterile or bacteria-free filtered water to remove the disinfectant solution. AER cycle should include this step.

Step 8: Drying

- Dry the endoscope by flushing the channels with 70% to 90% ethyl or isopropyl alcohol and dry by using forced air. AER cycle may include this step.

Step 9: Visual inspection

- Visually inspect both endoscopes and reusable accessories frequently in the course of their use and reprocessing, **before, during and after use**, as well after cleaning and before disinfection.
- Damaged endoscopes and accessories should be removed from use for repair or disposal.

Step 10: Storage

- Store the disinfected endoscope in approved drying cabinet (refer to approved specifications by Infection Control Directorate). Hang it in a vertical position to facilitate drying. Caps, valves and other detachable components removed, per manufacturer's instructions.
- Reuse of endoscopes within 10 to 14 days of high-level disinfection appears to be safe although shorter period is recommended**.**
- Sterilized endoscopes must be stored sealed in the container or packaging in which they were sterilized.