High Level Disinfection (HLD) Toolkit Checklist

Staff completed educational module in CareLearning upon hire and annually.

Review IP Manual Policies
  2.13 High Level Disinfection
  2.13-1 High-Level Disinfection (HLD) of GI Endoscopes
  2.13-2 Efficacy Testing of Glutaraldehyde
  2.13-3 Guidelines for the Safe Handling of Glutaraldehyde
  2.13-4 Revital Ox Resert
  2.14 Reprocessing Laryngoscope Blades
  2.16 Trophon

Select appropriate forms (Appendix A)

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<td>High Level Disinfection Log Sheet</td>
<td>Any manual HLD</td>
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<tr>
<td>High Level Disinfection Automatic Reprocessor Log Sheet</td>
<td>Only for automatic HLD</td>
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<tr>
<td>Rapicide/Cidex OPA Test Strip Quality Control</td>
<td>Only when using Rapicide or another disinfectant/sterilant</td>
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<td>Trophon Log</td>
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Review SDS (Safety Data Sheets) information
Policy

The following guidelines/criteria are specific to Endoscopes and Accessories:

Endoscopes (and accessories) that come in contact with mucous membranes are classified as semi critical items and should receive a minimum of high-level disinfection (HLD) after each patient use.

1. The exposure time and temperature for disinfecting semi critical patient care equipment vary among the FDA-cleared high-level disinfectants. Follow the FDA label claim for high-level disinfection.

2. Select a disinfectant/sterilant that is compatible with the endoscope. If the endoscope manufacturer warns against use because of functional damage (with or without cosmetic damage), the use of that specific high-level disinfectant/sterilant on an endoscope should be avoided.

3. Reusable HLD/sterilants must be changed whenever the minimum effective concentration (MEC) fails or the reuse life expires, whichever comes first. MEC should be monitored according to the manufacturer’s instructions and a log of test results must be maintained through the use of the appropriate High Level Disinfection Log Sheet (see HLD toolkit) With AER many reprocessors are equipped with a print out that includes all of the information that is included on the HLD Log Sheet.

I. Pre-Cleaning and Cleaning Process

1. Initial pre-cleaning (e.g. upon scope withdrawal) is to be performed at the bedside per manufacturer’s recommendation and/or guidelines established by governing bodies such as AORN, SGNA etc.. These guidelines should be documented in the departmental policy. This includes wiping down the insertion tube with an enzymatic cleaner to wipe off any debris regardless of the type of scope. Scopes with a suction channel require suctioning that channel with water, followed by suctioning with an enzymatic cleaner. Scopes with an Air Water Channel require the use of an AW Cleaning adapter to properly clean this channel of any debris. Scopes with an Auxiliary Water channel also need to be purged with water, regardless of the channel’s use during the procedure.
2. Perform pressure/leak testing after each use according to manufacturer guidelines.

   a. If the scope contains a leak, the scope CANNOT be placed in the Automatic Endoscopic Reprocessor (AER). In this situation, the scope must be manually cleaned and HLD with the Leak tester remaining on. (See section on Manual Disinfection for further Instructions)

3. Disconnect and disassemble endoscope components (e.g. air/water and suction valves) as far as possible and completely immerse the endoscope and components in an enzymatic detergent. (Follow manufacturer’s instructions for diluting the solution) Regardless of the solution used, the solution must completely cover the entire endoscope in the cleaning basin.

4. Meticulous cleaning is essential prior to manual or automated disinfection. Meticulously clean the entire endoscope, including valves, channels, connectors, and all detachable parts with an enzymatic detergent compatible with the endoscope immediately after use, according to the manufacturer’s instructions. Repeatedly actuate the disconnected/disassembled valves during cleaning to facilitate access to all surfaces. Clean the external surfaces and components of the endoscope using a soft cloth, a sponge, or brushes. Brush all accessible channels to remove all organic matter (e.g. blood or tissue) and other residues. Use brushes appropriate for the size of the endoscope channel, parts, connectors, and orifices (e.g., bristles should contact all surfaces) for cleaning. Cleaning items should be disposable or thoroughly cleaned and disinfected/sterilized between use. Duodenoscopes require two person validation of cleaning.

Important Notation:

A. **AER that requires pre cleaning** - Purge the channels with an enzymatic cleaner, water and air either manually or with an automatic all channel irrigator to clean the internal scope channels, before placing endoscope in AER. Discard enzymatic detergents after each use.

B. **AER that INCLUDES pre cleaning** - Leak testing, and automatic enzymatic purging are done in the reprocessor prior to HLD cycle.
II. High Level Disinfection of Endoscopes

A. Automatic Endoscopic Reprocessor

1. When an AER is used, ensure that the endoscope and endoscope components can be effectively reprocessed in the AER (e.g., the elevator wire channel of duodenoscopes and the auxiliary water channel) If the AER does not accommodate this, those channels must be manually disinfected. Users should obtain and review model specific reprocessing protocols from both the endoscope and the AER manufacturer and check for compatibility.

2. Place the endoscope and endoscope components, including the disconnected/disassembled valves, caps, etc., in the reprocessor and attach all channel connectors according to the AER and endoscope manufacturers’ instructions to ensure exposure of all internal surfaces to the high-level disinfectant/chemical sterilant.

3. Depending on the type of AER, cycle interruption may or may not ensure high level disinfection. Always refer to the manufacturer’s instructions.

4. Logging of pertinent information such as the scope type, serial number, solution temperature, and operator’s ID # is a necessary step for patient safety and quality assurance. AER will have an automatic print out of data that is recorded. The High Level Disinfection Automatic Reprocessor Log Sheet can also be used to maintain an accounting of this important data for each procedure.

5. Upon Completion of the disinfection cycle, a purge of alcohol and air is done to ensure adequate drying of the scope.

B. Manual Disinfection

1. To HLD the endoscope manually, the following instructions must be followed. Completely immerse the endoscope and its components in the high-level disinfectant/sterilant with the all channel irrigator attached. Ensure that all channels are purged with disinfectant. Soak time will vary with the type of disinfectant used. Always check manufacturer’s instructions.
a. Scopes with a leak must still be HLD before it can be sent out for a repair. The same steps are followed when manually cleaning with the enzymatic cleaner with the leak tester constantly on to pressurize the scope to prevent fluid invasion.

2. Once disinfection is complete, the endoscope is submerged in water and the channels are purged with water to remove the disinfectant/sterilant. This is followed by purging air and lastly alcohol to facilitate the drying process. The final drying steps greatly reduce the possibility of recontamination of the endoscope by waterborne microorganisms.

3. Logging of pertinent information such as the scope type, serial number, solution temperature, and operator’s ID # is a necessary step for patient safety and quality assurance. The GUS-Soak Basin/Cylinder Daily Log for High Level Disinfection Solution should be used to maintain a log with this important data for each procedure

III. Storage

1. Store the endoscope by hanging it vertically in a clean well ventilated storage area to facilitate drying (with ETO caps, valves, and other detachable components removed as per manufacturer’s instructions).

2. The storage cabinet should have sufficient space to allow the scopes to hang without touching the bottom of the cabinet. Removable components must remain detached and are stored separately.

3. Scopes should be stored in a manner that protects them from contamination and damage.

4. The CDC and the American Society for Gastrointestinal Endoscopy make no recommendation about the interval of storage after which endoscopes should be reprocessed before use, commonly referred to as “hang time.” Based upon the risk assessment Highland Hospital has determined that the organization will reprocess scopes at a minimum of every 30 days. Based upon the unique design and complexity of some scopes, the organization may determine that a more frequent time frame is required. This
time frame is applicable to all scopes of that particular complexity regardless of where the HLD is performed.

IV. Accessories

1. Reusable endoscopic accessories (e.g., biopsy forceps or other cutting instruments) that break the mucosal barrier should be mechanically cleaned as described above and then sterilized between each patient use. High-level disinfection is not appropriate.

2. If disposable water bottles are not used, 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 water bottle. Follow your departmental policy for sterilizing reusable bottles.

V. Education

1. Personnel assigned to reprocess endoscopes should receive device-specific reprocessing instruction (i.e., endoscope and/or AER manufacturer, as needed) to ensure proper cleaning and high-level disinfection or sterilization. Competency testing of personnel reprocessing endoscopes is be done at commencement of employment and annually. Personnel should not be allowed to reprocess endoscopes until competency has been demonstrated and documented.

References:

Association for Professionals in Infection Control and Epidemiology, Inc. (APIC). APIC Text of Infection Control and Epidemiology, 3rd ed. 2009.


I. POLICY STATEMENT:

The reuse life of Glutaraldehyde solution is based on an Environmental Protection Agency (EPA) approved reuse protocol which includes three uses per day in a system of manual cleaning. Therefore, since unintentional dilution or heavy contamination with organic soil can occur, the efficacy of the solution should be monitored with test strips before each use. Glutaraldehyde solutions are good for 2 weeks and there is no limit to the amount of times the solution can be used.

<table>
<thead>
<tr>
<th>PROCEDURE</th>
<th>KEY POINTS</th>
</tr>
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<tbody>
<tr>
<td>1. Dip indicating pad of the test strip into Glutaraldehyde solution.</td>
<td>Use test strips only with Cidex solution.</td>
</tr>
<tr>
<td>2. Remove excess solution from indicating pad.</td>
<td>By touching side of pad to a paper towel.</td>
</tr>
<tr>
<td>3. Wait 3 - 8 minutes. Per our test strips for both Cidex and Rapicide, after dipping in the solution you wait 75 seconds and read the results.</td>
<td>DO NOT read too long after 8 minutes.</td>
</tr>
<tr>
<td>4. Read result.</td>
<td>Pad turning completely yellow indicates effective solution. See visual standard or bottle for easy interpretation.</td>
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</tbody>
</table>
Policy

IV. Guidelines For Safe Handling of Glutaraldehyde

From an infection prevention standpoint there are two acceptable methods for processing scopes; sterilization and high level disinfection. According to the CDC, sterilization is the preferred method.

High level disinfection can be accomplished by soaking scopes in a glutaraldehyde solution for a minimum of 20 minutes or other approved disinfectant agents. Following are the safety issues, which must be addressed prior to using glutaraldehyde:

- Staff must use extensive protective garb when pre-cleaning the scopes. (Goggles or face shields, water repellent gown and Nitrile gloves are required.)

- There must be an appropriate room available for cleaning and soaking. It should be designated as a “dirty” room (a procedure room is not the best choice). It must be fairly large and have a deep sink. Clean or sterile patient care items must not be stored in the same room.

- The room must have adequate air handling/ventilation due to the irritating fumes of the chemical. (10 air exchanges per hour). If there are fewer than 10 air exchanges, then a fume hood directed to the outside should be in place or a Glutaraldehyde User Station (G.U.S.) system should be used. This is a self-contained closed system. If a G.U.S. is used it should be kept in a dirty utility room.

- There must be a detailed procedure posted for staff to follow (graphics are helpful).

- Training and competency testing of staff must be documented, initially and then annually.

- Efficacy testing for the glutaraldehyde solution must be done daily no later than after the 5th day of use, and then documented. If it fails, a new solution must be prepared.

- An SDS sheet on glutaraldehyde must be readily available.

- Keep a lid on the disinfecting tray at all times, except when transferring instruments into or out of the solution.
I. PURPOSE:
To establish a procedure for the appropriate use of Revital-Ox Resert XL HLD High Level Disinfectant (Revital-Ox Resert XL HLD).

Revital-Ox Resert’s active ingredient Accelerated Hydrogen Peroxide (AHP) at a reduced level of 2%. At this level, Revital-Ox Resert requires no special ventilation under normal use conditions, and has no irritating odor.

II. SCOPE:
This work instruction applies to all locations within Highland Hospital and its practices and clinics making use of a Revital-Ox Resert XL HLD.

III. CROSS REFERENCES:
The following references apply to the work instruction:
- Revital-Ox Resert XL HLD – Instructions for Use (IFU)
- Revital-Ox Resert XL HLD – Technical Data Monograph
- VERIFY® Chemical Monitoring Strip for Resert Solutions
- Current ANSI/AAMI/ISO Standard
- Current AORN Recommended Practice & Standard
- Current FDA Guidance Documents
- Current OSHA Guidelines
- Current SGNA Guidelines
- Device Manufacturer’s Instructions for Use
- AER Manufacturer’s Instructions for Use

IV. DEFINITIONS:
- HLD – High-level Disinfectant: Disinfection is a process that reduces the level of microorganisms on a device or surface and a high level disinfectant is expected to inactivate most forms of microbial life, including mycobacteria and some bacterial spores (although this may require extended time).
- AER – Automated Endoscope Reprocessor: Automated equipment designed to reprocess flexible endoscopes. The minimum process should include disinfection and rinsing, but some AERs may also include cleaning prior to disinfection.
- MRC – Minimum Recommended Concentration: Minimum concentration at which the manufacturer tested the product and validated its performance.

V. POLICY STATEMENTS:
- All reusable devices shall be compatible for disinfection with Revital-Ox Resert XL HLD.
b. All reusable devices shall be cleaned in preparation for further processing in Revital-Ox Resert XL HLD.

c. All reusable devices shall be rinsed, handled and stored in compliance to written departmental guidelines and the HCF’s Infection Prevention Manual.

d. Written departmental guidelines and/or manufacturers’ written instructions regarding the care and cleaning of medical devices must be available and followed.

e. Personnel will demonstrate competency and knowledge in the safe and proper use of all cleaning equipment and chemicals and must adhere to established dress codes and the Standard Precautions policy in HH Infection Prevention Manual

VI. PROCEDURE(s):

1. Preparation for Disinfection
   a. Follow instrument manufacturer’s instructions for disassembly and leak testing (if appropriate) as prescribed by the instrument manufacturer.
   b. Clean the device as prescribed by the instrument manufacturer.
   c. Rinse instruments thoroughly as prescribed by the instrument and/or cleaning chemistry manufacturer.
   d. Remove excess rinse water (in particular from device lumens) prior to immersion in Revital-Ox Resert XL HLD solution to reduce the dilution of the solution concentration.

2. Preparation of the Disinfectant
   a. Ensure the room temperature is ≥20°C /68°F (note: room temperature is typically 18-24°C /64-75°F).
   b. Verify expiration date on disinfectant bottle.
   c. Open bottle and write new expiration date on the bottle or in a log book for 90 days from the date the bottle is opened if it does not exceed labeled expiration date.
   d. Pour the desired amount of Revital-Ox Resert XL HLD solution from its original container into a secondary container e.g. soaking sink, covered basin, or AER reservoir.
   e. If there is solution remaining in the original container, date the bottle with date opened and expiration date of 90 days, provided the 90 days does not extend past the expiration date on the container. Store remaining solution in its original container.
   f. Label and record the product’s name, date dispensed, and expiration date of the solution in the secondary container of 21 days provided the 90 days does not extend past the expiration date on the container.
   g. Ensure the secondary container is covered to prevent spillage or extraneous contamination of the solution.
   h. Discard the solution on the 21st day or sooner as determined by a failed Chemical Monitoring Strip.
i. Verify the minimum recommended concentration (MRC) of the Revital-Ox Resort XL HLD using a Chemical Monitoring Strip prior to every use (see section 3).

3. Use of VERIFY Chemical Monitoring Strip for Resort Solutions
   a. Ensure that a quality control procedure has been conducted with the lot/bottle of the Chemical Monitoring Strips (see section 8).
   b. Remove one Chemical Monitoring Strip from the bottle.
   c. Ensure the disinfectant solution temperature is between 20°C /68°F and 24°C /75°F during testing.
   d. Manual Soaking:
      i. Dip the strip in the solution in the container for 2 seconds.
      ii. Remove the indicator strip and start 90 second timer.
      iii. Remove excess fluid by touching the short edge of the indicator to a paper towel.
      iv. Lay the strip on the paper towel with the indicator facing up.
      v. After 90 seconds compare the indicator pad to the color references on the bottle.
      vi. Identify the color change as “PASS” if the indicator ink has changed from yellow to black indicating the solution is ready for use.
      vii. Identify the color change is “FAIL” if the indicator ink demonstrates any color other than black remaining after processing.
      viii. If failed result achieved, do not use the solution and dispose of solutions per instructions for use.
      ix. Record indicator results on record keeping log.
   e. MRC Confirmation in an AER:
      i. If solution cannot be reached manually remove a small amount of Revital-Ox Resort XL HLD solution per the AER instructions into a ~30ml specimen bottle and test as described for manual soaking. If solution can be reached, test solution manually following same procedure for manual soaking. Note: Ensure the disinfectant temperature is ≥20°C /68°F and does not exceed 24°C /75°F when tested.

4. Manual Disinfection with Revital-Ox Resort XL HLD solution
   a. Verify and record that the Revital-Ox Resort XL HLD is within expiration date.
   b. Verify the minimum recommended concentration (MRC) of the Revital-Ox Resort XL HLD using a Chemical Monitoring Strip prior to every use and record the result (see section 3). During testing the disinfectant solution temperature must be between 20°C /68°F and 24°C /75°F. Record the temperature and the result of the test.
   c. Place the instrument to be disinfected in the solution, ensuring complete immersion including all channels/lumens.
   d. Set a timer for 8 minutes and allow the device to be immersed in the solution for the entire 8 minute period of time.
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SECTION 2: General Infection Prevention Information

SUBJECT: 2.13-4 Hydrogen Peroxide High Level Disinfection (Revital-Ox Resort)

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E. Upon completion of 8 minutes immersion, remove the instrument from the secondary container, following the instrument manufacturer’s instructions for purging the lumens of disinfectant prior to rinsing.

5. Manual Rinsing
   a. Thoroughly rinse the medical device by immersing it completely in sterile, distilled or potable water, whichever is appropriate for the device being processed.
   b. Keep the instrument or medical device immersed for a minimum of one minute unless a longer time is specified by the instrument manufacturer.
   c. Remove device aseptically and discard the rinse water.

6. AER Reprocessing (if applicable)
   a. Verify and record that the Revital-Ox Resort XL HLD is within expiration date.
   b. Verify the minimum recommended concentration (MRC) of the Revital-Ox Resort XL HLD using a Chemical Monitoring Strip prior to every use and record the result (see section 3). During testing the disinfectant solution temperature must be between 20°C /68°F and 24°C /75°F. Record the temperature and the result of the test.
   c. Position and connect the device per manufacturer’s instructions to ensure all required surfaces and lumens are contacted.
   d. Conduct a reprocessing cycle per manufacturer’s instruction for use and including rinsing.
   e. Verify and record any quality control requirements specified by the AER manufacturer.

7. Following Disinfection
   a. Remove the device aseptically for use in patient care or storage.
   b. Perform any recommended drying (e.g., alcohol and/or medical air purging) in accordance to device manufacturer instructions and HCF Infection Prevention Manual/policies.

8. Quality Control Procedure for VERIFY Chemical Monitoring Strips
   a. Verify and record expiration dates for each lot of Revital-Ox Resort XL HLD and Chemical Monitoring Strips.
   b. Verify that the disinfectant solution temperature is between 20°C /68°F and 24°C /75°F when tested.
   c. Perform a Positive and Negative Control on every new bottle of Chemical Monitoring Strips for Resort Solutions.
   d. Positive Control:
      i. Dispense ~30ml Revital-Ox Resort XL HLD solution from an unopened bottle into a clean plastic container (polyethylene or polypropylene).
      ii. Dip the strip in the solutions container for 2 seconds.
      iii. Remove the indicator strip and start a 90 second timer.
      iv. Remove excess fluid by touching the edge of the indicator to a paper towel.
v. Lay the strip on the paper towel with the indicator facing up.

vi. After 90 seconds, compare the indicator pad to the color references on the bottle.

vii. Identify the color change as “PASS” if the indicator ink has changed from yellow to black.

viii. Identify the color change as “FAIL” if the indicator ink demonstrates any color other than black remaining after processing.

ix. Identify any failures and dispose of all strips in bottle as normal waste.

x. Repeat procedure for a total of 3 strips.

xi. All strips must demonstrate “PASS” results. If one strip fails, DO NOT USE any strips from the bottle and dispose of as normal waste.

xii. Record indicator results on record keeping log.

e. Negative Control:

i. Dispense ~15ml of Revital-Ox Resert XL HLD solution from an unopened bottle into a clean plastic container (polyethylene or polypropylene), add ~15ml of tap water to the bottle, and gently mix.

ii. Dip the strip in the solutions container for 2 seconds.

iii. Remove the indicator strip and start a 90 second timer.

iv. Remove excess fluid by touching the edge of the indicator to a paper towel.

v. Lay the strip on the paper towel with the indicator facing up.

vi. After 90 seconds, compare the indicator pad to the color references on the bottle.

vii. Identify the color change as “PASS” if the indicator ink has changed from yellow to black, indicating the solution is ready for use.

viii. Identify the color change as “FAIL” if the indicator ink demonstrates any color other than black remaining after processing.

ix. Dispose of all strips in bottle as normal waste.

x. Repeat procedure for a total of 3 strips.

xi. All strips must demonstrate “FAIL” results. If one strip passes, DO NOT USE any strips from the bottle. Dispose of as normal waste.

xii. Record indicator results on record keeping log.

9. Record Keeping

a. Complete documentation including but not limited to:

i. Date/Time

ii. Patient Name/ID Medical Record Number or Load Number

iii. Item description including model and serial number

iv. Exposure Time

v. Expiration Date of Chemical Indicator

vi. Chemical Indicator Results (Pass or Fail)

vii. Operator’s Signature

10. Disposal

a. At 21 days or failed Chemical Test Strip discard solution into drain, in accordance
with facility policy.

b. Flush drain thoroughly with water.

VII. RESPONSIBILITY:
The department manager and or the clinical educator is responsible for ensuring that proper training is conducted with all employees responsible for use and application of this product in compliance with this work instruction.

The department management team is responsible for developing and or revising this work instruction in accordance with manufacturer’s recommendations, recommended practices, and regulatory standards.
VIII. APPROVAL BODY:  

*Infection Prevention Committee*

IX. APPROVAL SIGNATURES:

Name: ___________________________________

Title: ____________________________________

Date:_____________________________________

X. DATE(s):

Approval Date:  
Effective Date:  
Review/Revision Date:  

References:

FDA Cleared sterilants with HLD Claim  

[http://www.cdc.gov/hicpac/Disinfection_Sterilization/6_0disinfection.html](http://www.cdc.gov/hicpac/Disinfection_Sterilization/6_0disinfection.html)

COMPETENCY VALIDATION GUIDE

Revital-Ox\textsuperscript{®} Resort\textsuperscript{®} XL HLD High Level Disinfectant

Name: ____________________________ Date: _____ Employee# ________ Unit/dept __________

Competency Statement: Demonstrate Appropriate Use of Revital-Ox Resort XL HLD High Level Disinfectant (Revital-Ox Resort XL HLD).

Competency Focus: ☐ Knowledge ☐ Skills ☐ Behavior ☐ New equipment

<table>
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<th>Performance Criteria:</th>
<th>Met</th>
<th>Not Met</th>
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<tr>
<td>1. Demonstrate Background Knowledge of Indications for Use:</td>
<td></td>
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<tr>
<td>a. Medical devices reprocessed in Revital-Ox Resort XL HLD solution must first be cleaned according to device manufacturer’s cleaning procedure or standard.</td>
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<tr>
<td>b. High level disinfection is achieved when surfaces have been contacted for eight minutes at ≥20°C /68°F (note: room temperature is typically ~18-24°C /64-75°F) and minimum concentration of 1.5% hydrogen peroxide.</td>
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<tr>
<td>c. Revital-Ox Resort XL HLD may be reused up to a maximum of 21 days, provided the required conditions of hydrogen peroxide concentration and temperature exist based upon monitoring protocol. This does not rely solely on days in use.</td>
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<tr>
<td>d. The concentration of the Revital-Ox Resort XL HLD solution must be verified with a VERIFY\textsuperscript{®} Chemical Monitoring Strip for Resort Solutions prior to every use, indicating that the Minimum Recommended Concentration (MRC) of 1.5% hydrogen peroxide</td>
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</table>
2. Demonstrate Understanding of Precautionary Statements:
   a. Availability and use of appropriate PPE; chemical resistant nitrile gloves, and eye/face protection and avoids contact with skin and eyes. Note: Do not use latex gloves.
   b. Ensures the instruments, equipment or device material to be disinfected are compatible with Revital-Ox Resort XL HLD.
   c. Identifies Revital-Ox Resort XL HLD should not be used on copper, brass, tungsten carbide, Monel S, silver, chromium-plated brass and nickel-plated steel, and may be corrosive to aluminum under prolonged immersion.

3. Demonstrate a Quality Control Procedure for the VERIFY Chemical Monitoring Strips:
   a. Verifies expiration dates for each lot of Revital-Ox Resort XL HLD and VERIFY Chemical Monitoring Strips.
   b. Confirms prior to testing that the solution in the container or sample being tested is at a temperature between 20 and 24°C (68 - 75°F).
   c. Performs a Positive and Negative Control on every new bottle of VERIFY Chemical Monitoring Strips for Resort Solutions.
   d. Positive Control:
      1) Dispenses ~30ml Revital-Ox Resort XL HLD solution from an unopened bottle into a clean plastic container (polyethylene or polypropylene).
      2) Dips the strip in the solution container for 2 seconds.
      3) Removes the indicator strip and starts 90 second timer.
      4) Removes excess fluid by touching the edge of the indicator to a paper towel.
      5) Lays the strip on the paper towel with the indicator facing up.
      6) After 90 seconds compares the indicator pad to the color references on the bottle.
      7) Identifies the color change as “PASS” if the indicator ink has changed from yellow to black, indicating the solution is ready for use.
8) Identifies the color change is “FAIL” if the indicator ink demonstrates any color other than black remaining after processing.

9) Disposes of all strips in bottle as normal waste.

10) Repeats procedure for a total of 3 strips.

11) Understands that all 3 strips must demonstrate “PASS” results. If one strip fails, DO NOT USE any strips from the bottle and dispose of as normal waste.

12) Records indicator results on record keeping log.

e. Negative Control:

1) Dispenses ~15ml of Revital-Ox Resort XL HLD solution from an unopened bottle into a clean plastic container (polyethylene or polypropylene), adds ~15ml of tap water to the bottle, and gently mixes.

2) Dips the strip in the solution container for 2 seconds.

3) Removes the indicator strip and starts 90 second timer.

4) Removes excess fluid by touching the edge of the indicator to a paper towel.

5) Lays the strip on the paper towel with the indicator facing up.

6) After 90 seconds compares the indicator pad to the color references on the bottle.

7) Identifies the color change as “PASS” if the indicator ink has changed from yellow to black, indicating the solution is ready for use.

8) Identifies the color change as “FAIL” if the indicator ink demonstrates any color other than black remaining after processing.

9) Disposes of all strips in bottle as normal waste.

10) Repeats procedure for a total of 3 strips.

11) Understands that all 3 strips must demonstrate “FAIL” results. If one strip passes, DO NOT USE any strips from the bottle. Dispose of as normal waste.

12) Records indicator results on record keeping log.
4. Demonstrate Preparation of Revital-Ox Resort XL HLD and device processing:
   a. Understands that no activation or dilution is required.
   b. Ensures Revital-Ox Resort XL HLD Solution is within expiration date.
   c. Pours the desired amount of Revital-Ox Resort XL HLD solution from its original container into a secondary container e.g. soak container or AER.
   d. Labels and records the date Revital-Ox Resort XL HLD was dispensed and expiration date of the solution on the container or log form (see VERDOC® Revital-Ox Resort XL HLD Solutions log form).
      • Revital-Ox Resort XL HLD in secondary container can be reused for up to 21 days after first use or until the MRC falls below 1.5% as indicated by the failing result of the indicator strip (whichever happens first).
   e. Ensures appropriate solution temperature ≥20°C /68°F (note: room temperature is typically ~18-24°C /64-75°F)
   f. Prior to each use of Revital-Ox Resort XL HLD, verifies the minimum required concentration (MRC) with VERIFY Chemical Monitoring strips for Resort Solutions (Please see VERIFY Chemical Monitoring Strips for Resort Solutions wall chart/instructions for use). Document monitoring using log form.
   g. Sets a timer for 8 minutes and allows the device to be immersed in the solution for the entire 8 minute period of time.
   h. Ensures the secondary container is covered to prevent spillage or extraneous contamination of the solution.
   i. Upon completion of 8 minutes immersion, removes the instrument from the secondary container, following the instrument manufacturer’s instructions for purging the lumens prior to rinsing.
   j. Completes at least one rinse of the device by immersion and lumen flushing.
   k. Understands the solution in the secondary container can be used for a maximum period up to 21 days.
   l. Discards the solution on the 21st day or sooner as determined by the VERIFY Chemical Monitoring Strip for Resort Solutions.
m. Knows that the expiration date of Revital-Ox Resort XL HLD cannot be extended even if the test strip indicates passing results.

For AER reprocessing

a. Positions and connects the device per manufacturer’s instructions to ensure all required surfaces and lumens are contacted.

b. Ensures Revital-Ox Resort XL HLD parameters are set on AER per label instructions.

c. Verifies the minimum required concentration (MRC) with VERIFY Chemical Monitoring strips for Resort Solutions. Document and records test results on log form.

d. Conducts reprocessing cycle per manufacturer’s instruction for use and includes rinsing.

If Revital-Ox Resort XL HLD is stored in the original container:

a. Records the date the original container was opened on the Revital-Ox Resort XL HLD container label, or in a log book.

b. Understands the solution remaining in the original container may be stored for up to 90 days until used, provided the 90 days does not extend past the expiration date on the container.

5. Demonstrate Use of VERIFY Chemical Monitoring Strip for monitoring the minimum recommended concentration (MRC) of Revital-Ox Resort XL HLD before each use in processing devices:

a. Verifies expiration date on bottle.

b. Opens bottle and writes new expiration date on bottle for 3 months from the date the bottle is opened if it does not exceed labeled expiration date.

c. Removes one VERIFY Chemical Monitoring Strip for Resort Solutions from the bottle.

d. Ensures appropriate solution temperature of between 20°C /68°F and 24°C /75°F (note: solution temperature ceiling of 24°C /75°F applies during the chemical monitoring strip testing ONLY).
### Manual Soaking:

1. Dips the strip in the solution container for 2 seconds.
2. Removes the indicator strip and starts 90 second timer.
3. Removes excess fluid by touching the short edge of the indicator to a paper towel.
4. After 90 seconds compares the indicator pad to the color references on the bottle.
5. Identifies the color change as "PASS" if the indicator ink has changed from yellow to black indicating the solution is ready for use.
6. Identifies the color change is "FAIL" if the indicator ink demonstrates any color other than black remaining after processing.
7. If failed result achieved, do not use the solution and dispose of solutions per instructions for use.
8. Records indicator results on record keeping log.

### MRC Confirmation in an AER:

1. If solution cannot be sampled manually, removes a small amount of Revital-Ox Resert XL HLD solution per the AER instructions into a ~30ml specimen bottle and proceeds to perform test of 20 - 24°C solution using VERIFY Chemical Monitoring Strip. If solution can be reached, tests solution manually following same procedure for manual soaking.
2. If the test indicates "PASS", processes the devices per the AER instructions.
3. Disposes of the solution per AER and Revital-Ox Resert XL HLD solutions instructions for use.
<table>
<thead>
<tr>
<th>6. Demonstrate Directions for Use, Rinsing/Drying:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Follows instrument manufacturer’s instructions for disassembly and cleaning.</td>
</tr>
<tr>
<td>b. Performs all necessary leak tests (if applicable) and cleaning as prescribed by the</td>
</tr>
<tr>
<td>instrument manufacturer prior to immersion in the Revital-Ox Resert XL HLD Solution.</td>
</tr>
<tr>
<td>c. Ensures instruments are rinsed/flushed thoroughly prior to immersion in Revital-Ox</td>
</tr>
<tr>
<td>Resert XL HLD Solution to reduce the dilution of the solution concentration.</td>
</tr>
<tr>
<td>d. Following disinfection in Revital-Ox Resert XL HLD, thoroughly rinses the medical</td>
</tr>
<tr>
<td>device by immersing it completely in sterile, distilled or potable water, whichever is</td>
</tr>
<tr>
<td>appropriate for the device being processed.</td>
</tr>
<tr>
<td>1) Consults instrument manufacturer’s instructions for recommended rinsing and drying</td>
</tr>
<tr>
<td>procedure.</td>
</tr>
<tr>
<td>2) Keeps the instrument or medical device immersed for a minimum of one minute unless a</td>
</tr>
<tr>
<td>longer time is specified by the instrument manufacturer.</td>
</tr>
<tr>
<td>3) All lumens are flushed with rinse water, per manufacturer’s instructions.</td>
</tr>
<tr>
<td>4) Removes device aseptically for use in patient care or storage and discards the rinse</td>
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<td>water, ensuring water is not reused.</td>
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<tr>
<td>5) Consults instrument manufacturer’s instructions for recommended drying (e.g., using</td>
</tr>
<tr>
<td>alcohol and/or medical air purging of each lumen) prior to the intended use of the device</td>
</tr>
<tr>
<td>or storage.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7. Demonstrate Post-processing Handling and Storage of Reusable Devices:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Immediately uses disinfected reusable devices.</td>
</tr>
<tr>
<td>b. Stores disinfected reusable devices in a manner to minimize re-contamination.</td>
</tr>
<tr>
<td>c. Refers to the reusable device manufacturer’s labeling for additional storage and/or</td>
</tr>
<tr>
<td>handling instructions.</td>
</tr>
</tbody>
</table>

| 8. Demonstrates Knowledge for Recordkeeping                                          |
### 2.13-4 Hydrogen Peroxide High Level Disinfection (Revital-Ox Resort)

- **a.** Understands Recordkeeping Log is maintained for verification of reprocessing of medical device(s) with Revital-Ox Resort XL HLD.

- **b.** Upon completion of the reprocessing steps, employee records data on log sheets as outlined: Date/Time; Patient Name, ID Medical Record Number or Load Number; Item Description (model and serial number, if available); Exposure Time; Expiration Date of CI; CI Results (Pass/Fail); Operator’s Signature. Item(s) may be released for usage or storage if log is completed in its entirety. Note: CI test is done prior to placing device(s) in Revital-Ox Resort XL HLD. If CI fails, DO NOT use solution, refer to Demonstrate Use of VERIFY Chemical Monitoring Strip for Resert Solution.

#### 9. Demonstrate Appropriate Disposal:
- **a.** Checks state and local disposal regulations.
- **b.** Discards residual solution into drain.
- **c.** Flushes drain thoroughly with water.

**PLAN:** This section to be completed only if an improvement plan is needed.

- Needs additional supervised experience
- Needs further review
- Limit scope of practice
- Initiate disciplinary action

Review Date:_______________  Employee Signature:__________________

_________________________    ___________________________
Staff Signature      Validator Signature

---

Developed: 8/15, Approved IPC: 9/15

2.13-4
Purpose
Provide guidance for the handling and reprocessing of laryngoscope blades.

Policy
All laryngoscope blades are sent to SPD for cleaning and reprocessing.

Procedure
1. After use, laryngoscope blades are placed in biohazard bag or a covered container and sent to SPD.
2. SPD will decontaminate blades according to manufacturer recommendations.
3. Once cleaned, blades are packaged in protective sheaths and placed in the Sterrad for final processing.
4. SPD will sort reprocessed blades to be returned to the appropriate areas.
5. Staff in the receiving unit will check for light and blade function.
6. Blades are stored in a clean, dry area.
7. Blades may be tested before clinical use by attaching the handle without removing the blade from the sheath.
8. Once the blade is taken out of the protective sheath, the sheath must be discarded immediately and blade must be sent to SPD for reprocessing.
**Procedure:**

Personal Protective Equipment, gloves, must be worn during the cleaning process to protect against exposure to infectious agents or toxic chemicals.

1. The probe must be pre-cleaned and dried BEFORE the High Level Disinfection process can commence in the Trophon EPR.
2. When the device is ready, screen message will say: **LOAD PROBE AND INDICATOR**
3. Open the chamber door and ensure the probe is straight and not touching the walls or the bottom. The tip of the probe must be above the embossed line.
4. After correctly loading the probe into the chamber, a chemical indicator shall be placed into the holder on the floor of the device chamber.
5. A Chemical Indicator must be used for each disinfection cycle and can only be used once.
6. Close the door to the chamber.
   * If the door is not properly closed, screen message will say: **CLOSE CHAMBER DOOR**
7. The next screen message will say: **IS THE PROBE CLEAN AND DRY?** Respond **YES** if the probe has been pre-cleaned and dried.
8. When the cycle has been successfully completed, the device will sound an audible alarm. The next screen message will say: **CYCLE COMPLETE REMOVE AND WIPE PROBE.**
9. Remove the used Chemical Indicator from the device and verify the chemical Indicator color change from red to orange or lighter to validate successful high-level disinfection before discarding.
10. Document the chemical indicator results on the log after each use.
11. Remove the probe after the cycle is complete. Wipe the probe with an absorbent, single-use, dry, lint-free cloth. Visually inspect the probe and ensure any peroxide residue is removed

The following information should be recorded for the quality control testing of the Trophon EPR.

1. Date
2. Trophon LCD Indicator Status (pass or fail)
3. Chemical Indicator Status (pass or fail)
4. Cycle number
5. Operator initials

**Chemical Indicators:**

1. Chemical Indicators should be stored at room temperature 59 degrees F – 86 degrees F.
2. Store in a dry and clean environment out of direct heat.
3. Do not store near chemicals such as sterilizing agents, acids, bases, bleaches and other disinfectants.

Developed: 6/15
Trophon SONEX-HL Cartridge:

Storage
1. Cartridges should be stored at temperatures between 59 degrees F and 77 degrees F.
2. Store cartridge in all original packaging in correct directional orientation until use.
3. Keep away from excessive heat.

Removing and Installing the Disinfectant Cartridge
1. The device will automatically prompt you to run a purge cycle if the cartridge has been in the device too long and has expired.
2. Screen message will say: REPLACE THE CARTRIDGE AND CLOSE CARTRIDGE DOOR
3. Cartridge door opens automatically. Do NOT use excessive force to pull down the cartridge door.
4. Lift the cartridge out by touching the areas exposed while the bottle is in the holder and avoid touching pierced areas.
5. Empty used cartridges should be disposed of in the nearest waste receptacle.
6. Verify the expiration date before inserting a new SONEX-HL cartridge.
7. Remove the cap from the new cartridge and place the cartridge neck first into the holder.
8. Once the cartridge is in place close the cartridge door and the device is ready for use.
9. Document the replacement of the cartridge on the daily log sheet

Contingency Plans
1) Each department will maintain a back-up plan to be used if any critical component of the high-level disinfection process is not available. For Trophon EPR service issues and/or concerns contact 1-800-437-1171 option 5.
2) Acceptable alternatives to the Trophon EPR process are as follows:
   a) Sterilize instruments that will tolerate processes such as gas, steam or liquid sterilization.
   b) Temporarily suspend or postpone procedures.

Yearly competencies will be completed for each staff member that uses the Trophon EPR and kept in the employee file.
PURPOSE: Properly and safely transport any ultrasound probe that comes into direct contact or (or has the possibility) with bodily fluids. To also prevent cross contamination of any area by a dirty instrument.

POLICY: Cavi Wipes will be used on all ultrasound transducers that come in contact with patients in accordance with the policy for Probe Disinfection. In addition, when an ultrasound transducer needs to be High Level Disinfected (HLD) the following procedure must be adhered to when transporting probes from the exam room to the dirty utility room for the HLD process. **Please note a glove must be worn at all times while using Cavi wipes.**

PROCEDURE:

- Immediately following a procedure where a transducer did or could have potentially come into contact with bodily fluids the probe needs to be pre-cleaned and wiped down of any excess gel or bodily fluids while at the bedside. Use of any probe covers need to be removed and disposed of prior to this step.
- The probe then needs to be placed in a clear bag to prevent any contact with the cord of the transducer or with the main probe port during transportation.
- Place the covered, pre-cleaned probe in the clean, designated “Bio-hazard” transport container and proceed to the dirty utility room.
- Remove the probe completely from the transport container and dispose of the plastic bag used during transportation.
- Thoroughly wet the entire probe and cord surfaces with a Cavi wipe and ensure the surfaces stay visibly wet for 3 minutes.
- Once sufficient time has elapsed in the pre-cleaning process dry the probe with a clean wash cloth and place in the Trophon unit for disinfection. (Please refer to Infection Prevention policy 2.16, Procedure for Trophon Use and Disinfection).
PURPOSE: To limit the transmission of bacteria and infection during ultrasound procedures by properly disinfecting probes between patients and pre-cleaning before use in the Trophon disinfectant unit.

POLICY: Cavi Wipes will be used on all ultrasound transducers that come in contact with patients. All transabdominal and transvaginal probes will need to be sufficiently wiped down between patients and in accordance to manufacturer recommendations. **Please note a glove must be worn at all times while using Cavi wipes.**

PROCEDURE:
- When a patient presents for an ultrasound in any of our locations, immediately following the procedure the probe will need to be disinfected in the following steps:
  - **Disinfecting Transabdominal probes:** please pre-clean the probe by wiping off all excess gel and debris with a Cavi wipe (note this DOES NOT start the disinfectant process) at point of use.
    - Use a Cavi wipe to completely and thoroughly wipe down the head, body, and cord of the probe being sure to cover all surfaces.
    - Use a second Cavi wipe to start the disinfecting process.
    - Thoroughly wet the probe with the Cavi wipe. Repeated use of additional Cavi wipes may be required to ensure the surface remains visibly wet for 3 minutes.
  - **Pre-cleaning Transvaginal probes:** When a transvaginal exam is performed on a patient at any of our locations, the following procedure will need to be followed to pre-clean the probe before the High Level Disinfection cycle in the Trophon unit.
    - Remove transducer cover and dispose in trash.
    - Wipe excess gel off of probe using a Cavi wipe.
    - Prepare probe for transportation to dirty utility room for disinfection. (Please reference Infection Prevention Policy and Procedure for Dirty Probe Transportation).
    - While in the dirty utility room, prepare to pre-clean the transvaginal probe with a new Cavi wipe. Ensure the probe stays visibly wet for 3 minutes.
    - Once sufficient time has elapsed to provide the pre-cleaning step of disinfection, wipe the probe dry with a clean wash cloth and then place in Trophon unit. (Please reference Infection Prevention Policy and Procedure 2.16 for Trophon Disinfection Use and Operation).
<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clean probes are transported to room in plastic bag or bin. If probes are stored in the Trophon room they are stored with a single use, clear cover in a manner to prevent damage and recontamination</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Point of use preparation is completed appropriately. Remove excess gel with 4x4 and clean entire probe with hospital approved disinfectant. (do not place in hand washing sink)</td>
<td>Y N</td>
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<tr>
<td></td>
<td><strong>Note:</strong> Contact time for CAVI wipe is 3 minutes. CAVI wipe 1 is 1 minute.</td>
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<tr>
<td>3</td>
<td>Dirty probes are placed entirely within biohazard bag and in a rigid container for transport to processing room</td>
<td>Y N</td>
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<tr>
<td>4</td>
<td>The chemical indicator is used for each disinfection cycle. The color of the chemical indicator falls within the pass criteria</td>
<td>Y N</td>
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<tr>
<td>5</td>
<td>The expiration date of the chemical indicator is current</td>
<td>Y N</td>
</tr>
<tr>
<td>6</td>
<td>The expiration date of the disinfectant cartridge is current</td>
<td>Y N</td>
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<tr>
<td>7</td>
<td>The Trophon device displays Cycle Complete. (display indicates failure if failed)</td>
<td>Y N</td>
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<tr>
<td>8</td>
<td>Clean probes are stored with a single use, clear cover in a manner to prevent damage and recontamination. Patient ready tape is used in areas where the probe could potentially have multiple users.</td>
<td>Y N</td>
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<tr>
<td>9</td>
<td>Unit is using the correct log sheets</td>
<td>Y N</td>
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<td></td>
<td>Verify HLD log sheet documentation completed in full and accurate.</td>
<td>Y N</td>
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<td>10</td>
<td>Verify patient ID is trackable to probe used.</td>
<td>Y N</td>
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<td>11</td>
<td>If any quality check fails, verify probe reprocessing information documented and action taken</td>
<td>Y N N/A</td>
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<td></td>
<td>Name of staff interviewed</td>
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</tbody>
</table>

**PERCENT COMPLIANCE**

\[ \text{Number of correct responses} \times 100 = \% \text{ compliance} \]

\[ \text{Total number of responses} \]
<table>
<thead>
<tr>
<th>Test Date:</th>
<th>Tested By:</th>
<th>Patient Initials/Chart #</th>
<th>Device serial #</th>
<th>Preclean, rinsed &amp; dried</th>
<th>Solution Exp. Date 1</th>
<th>Test Strip Exp. Date</th>
<th>MRC Test Results 2</th>
<th>Leak Test Results (+) Pass (-) Fail</th>
<th>Solution Temp 3</th>
<th>Device Soaking 4</th>
<th>Water Soak, Rinse &amp; Dry 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>MM/DD/YY</td>
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</table>

1 Revital-Ox Resort XL HLD may be reused for up to 21 days, unless the solution falls below its MRC as indicated by a failing result on the indicator strip.

2 Minimum Required Concentration (MRC) is tested using Verify® Chemical Monitoring Strips.

3 Temperature, during use of Revital-Ox Resort XL HLD solution, is kept at a minimum of 20°C (68°F).

4 Soaking the device for a minimum of 8 minutes is required to achieve high-level disinfection.

5 Immerse device completely in a large volume of water for 1 minute in duration. Remove the device and discard water. Rinse all areas with large volume of water. Dry device with lint-free cloth, and store in manner to minimize recontamination.

IPC/HLD Toolkit/Revital-Ox HLD Disinfection Log
Step by Step Trophon Use:

1. At Point of Use: Clean probe cord and transducer base with Cavi-Wipe. It should remain wet for three minutes.
2. Make sure machine is on and not “sleeping”. Press the “restart” soft key to wake it up.

<table>
<thead>
<tr>
<th>Device Off Time</th>
<th>Warm-up Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleep Mode</td>
<td>6-10 minutes</td>
</tr>
<tr>
<td>1-2 days</td>
<td>15-25 minutes</td>
</tr>
<tr>
<td>3-6 days</td>
<td>25 minutes</td>
</tr>
<tr>
<td>7-13 days</td>
<td>45 minutes</td>
</tr>
<tr>
<td>14+ days</td>
<td>60 minutes</td>
</tr>
</tbody>
</table>

3. When the machine is ready, it will prompt you by saying, “Load indicator and probe.”
4. Ensure probe is completely dry before placing in Trophon.
5. Place probe in chamber EXACTLY AS INDICATED.

6. Place “bingo chip” indicator in the holder on the door.
7. Close door and follow on-screen instructions.
8. Disinfection cycle takes 7 minutes.
9. PLEASE REMOVE THE PROBE PROMPTLY WHEN FINISHED!
10. Check the indicator strip for color verification of a passed cycle.
11. In case of failure:
    a. Re-clean probe making sure it is free of all debris and dry. Repeat cleaning in same Trophon unit.
    b. If unit fails a second time; call Clinical Engineering at 275-5501. DO NOT USE PROBE UNTIL IT HAS BEEN HIGH LEVEL DISINFECTED.
    c. Take probe to second Trophon unit and follow steps to clean transducer.
    d. If there is still a failure with second Trophon unit, REPEAT step A. If there is a second failure with the second Trophon unit, call second unit into Clinical Engineering 275-5501 and DO NOT USE PROBE UNTIL IT HAS BEEN HIGH LEVEL DISINFECTED.
    e. If both Trophon units fail twice then call or page Family Maternity Ultrasound 341-6734 to use their Trophon Unit or Sterile Processing 341-0114 for HLD cleaning. DO NOT USE PROBE UNTIL IT HAS BEEN HIGH LEVEL DISINFECTED.

12. Place one Trophon printed label in the log and fill out information. Each patient needs to be identified for each transducer used, Place corresponding patient label on the log next to the Trophon label.
13. The second Trophon label is placed on clean plastic bag. Cover the transducer with the labeled clean plastic bag and sealed with the “ready for patient use” tape. Store appropriately.
14. Extra supplies are located on the counter and/or in the cabinets above the Trophon units.
15. The machine will prompt you when the cartridge needs to be changed. Just accept the task of “yes” to change the cartridge. The door will pop open on the side. Dispose of
used cartridge and remove cap from new one and place upside down in the trap door.
Push closed.

16. If you are prompted to empty the “waste bin”, pull out the small white tray on the
    bottom right of the machine and dispose of the water in the sink.

17. SUPPLIES TAKE ABOUT A WEEK TO ORDER.
SDS Links

Common cleaners and low level disinfectants:

CaviWipes1:


CaviWipes:


CaviCide:


CaviCide1:


MetriClean 2:


High Level Disinfectants

SDS for Cidex Activated Dialdehyde Solution (glutaraldehyde containing):


SDS for Cidex Plus 28 Day Solution:

SDS for Cidex OPA:

SDS for Rapicide PA Part A:

SDS for Rapicide PA Part B:

Rapicide PA Spill Procedure:

MetriCide 28:

MetriCide 28 Liquid Activator:

MetriCide OPA Plus:

MetriCide Plus 30 Liquid Activator:

MetriCide Plus 30:

MetriCide Powder Activator: