Objectives

- Verbalize the recommended guidelines for endoscope reprocessing in the outpatient ENT office
- Discuss the Society of Otolaryngology-Head & Neck Nurses, Inc. (SOHN) protocol for Endoscope Reprocessing in the ENT Office
- Participate in an interactive discussion of endoscope reprocessing in the ENT office

High Level Disinfection......

In 1997 two SOHN members, Karen Baker and Linda McCullagh wrote an article for ORL-Head and Neck Nursing about endoscope reprocessing. They identified that this is a continued area of controversy for many ORL nurses. That controversy continues annually at this meeting as we meet to discuss common issues in ORL Nursing.

In late 2008 SOHN and the Association of periOperative Registered Nurses (AORN) partnered to adopt their guidelines for endoscope reprocessing.


What is Required?

- According to Centers for Disease Control (CDC) ORL office instruments such as ear speculums, nasal speculums, laryngeal mirrors, and flexible endoscopes are considered semi-critical. This means they contact mucous membranes during use. Therefore, these items require high level disinfection using chemical disinfectants.
- High Level Disinfection (HLD) provides complete elimination of organisms except bacterial spores.
- The CDC (2008) recommends the use of glutaraldehyde or ortho-phthaldehyde (OPA).
Recommended Practice for Cleaning Endoscopes


Endoscope Cleaning in the Office

- Three techniques are available to achieve high-level disinfection:
  - manual disinfection with a liquid disinfectant/sterilant,
  - use of an automated endoscope reprocessor,
  - use of a disposable sheath.

Standard I.

Flexible endoscopes should be cleaned and stored in accordance with the manufacturer’s instructions.

- The manufacturer’s instructions should be followed regarding cleaning, selection of cleaning product, use of disinfectants/sterilization/alcohol on the endoscope.

Standard II

Precleaning of flexible endoscopes and accessories should occur at the point of use, before organic material has dried on the surface or in the channels of the endoscope, and before transport to the decontamination area.

Standard III

After precleaning, contaminated flexible endoscopes and accessories should be transported to the decontamination area before any remaining organic material dries on the surface in the channels of the endoscope.

Standard IV

In the decontamination area and before cleaning, pressure tests should be performed on flexible endoscopes with leak test capabilities.
Standard V
Following leak testing and before HLD using manual processing (soak) or automatic reprocessors endoscopes and all endoscope accessories should be manually cleaned to remove organic material from the surface of the endoscope.

Standard VI
After cleaning, flexible endoscopes and accessories should be high level disinfected or sterilized.

Standard VII
After high-level disinfection, flexible endoscopes should be rinsed with water (e.g. sterile water, filtered or unfiltered tap water) followed by a 70%-90% ethyl or isopropyl alcohol rinse, unless contraindicated by the manufacturer's written instructions.

Standard VIII
Flexible endoscopes, accessories, and associated equipment should be inspected for integrity, function, and cleanliness: Before use, during the procedure, after the procedure, immediately after decontamination, before disinfection or sterilization.

Standard IX
Flexible endoscopes should be stored in a manner that protects the device from damage and minimizes microbial contamination.
Standard X
- Any accessories used with a flexible endoscope should be decontaminated after use and inspected for damage.

Standard XI
- Flexible endoscopes should be decontaminated in an area physically separated from locations where clean items are handled and patient care activities are performed.

Standard XII
- Personnel handling contaminated endoscopic equipment must wear Personal Protective Equipment (PPE).

Standard XIII
- Personnel should demonstrate competency in the use, care and reprocessing of flexible endoscopes.

Standard XIV
- Cleaning and processing of endoscopes should be documented to enable the identification of trends and demonstrate compliance with regulatory and accrediting agency requirements.

Standard XV
- Policies and procedures for cleaning and processing of endoscopes should be developed, reviewed regularly, revised as necessary, and readily available in the practice setting.
Standard XVI

- The healthcare organization’s quality management program should evaluate the cleaning and processing of flexible endoscope and accessories.

<table>
<thead>
<tr>
<th>Products</th>
<th>Glutaraldehyde &gt; 2%</th>
<th>Ortho-phthaldehyde 0.55% (OPA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High level disinfection</td>
<td>20-90 min @ 20-25°C</td>
<td>1min @ 20°C, 1min @ 25°C, 1min @ 30°C</td>
</tr>
<tr>
<td>Sterilization</td>
<td>10 hr. @ 20-25°C</td>
<td>None</td>
</tr>
<tr>
<td>Activation required</td>
<td>yes (alkaline glutaraldehyde)</td>
<td>No</td>
</tr>
<tr>
<td>Reuse life</td>
<td>14 - 30 days</td>
<td>14 days</td>
</tr>
<tr>
<td>Safety</td>
<td>Respiratory, eye irritant</td>
<td>eye irritant, stains skin</td>
</tr>
<tr>
<td>Processors</td>
<td>Manual or Automated</td>
<td>Manual or automated</td>
</tr>
<tr>
<td>OSHA exposure limit</td>
<td>0.05 ppm</td>
<td>None</td>
</tr>
</tbody>
</table>

Glutaraldehyde

- >2% solutions, Temp conditions, exposure time
- Antimicrobial activity – age and use: testing required
- Activation required with shelf life varying – testing
- Personnel Side effects – asthma, respiratory irritation, breathing difficulties, skin irritations, mucous membrane irritation (eye, nose, mouth),
- Patient side effects – colitis, keratopathy, corneal decompensation
- Vapor testing necessary
- PPE

Ortho-phthaldehyde 0.55%

- No activation, no testing
- 12min @ 20°C (60°F)
- 14 day maximum use
- Cost
- No odor, mucous membrane irritation, no exposure monitoring, no solution testing necessary, no activation
- Side effect – staining, anaphylaxis
- Rinse thoroughly - 250ml water per channel

Processors & Sheaths

- Automated endoscope reproprocessors (AER)
- Sheaths

References

- [www.osha.gov/Publications/glutaradehyde.pdf](http://www.osha.gov/Publications/glutaradehyde.pdf)
- [www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/ReprocessingofSingleUseDevices/ucm133514.htm](http://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/ReprocessingofSingleUseDevices/ucm133514.htm)
- AORNs 2010 Perioperative Standards and Recommended Practices
- ORL – Head and Neck Nursing Journal, Spring 2010, Volume 28, No. 2
Questions