Oral and maxillofacial surgeons utilize medical devices, surgical instruments, and specialized tools, some of which require diligent care and scrutiny, on a daily basis to deliver treatment to their patients. To ensure functionality and cleanliness of these practice essentials, maintenance is oftentimes mandated by the manufacturer and heavily regulated by governmental agencies. Reprocessing critical devices is complex and requires competency and attention to detail in order to ensure sterility. Failure to follow precise procedures could put your patients and office at risk. Therefore it is important that the person(s) performing reprocessing be trained appropriately.

As a general rule, items labeled for single use should not be reprocessed. Reprocessing single use items could distort their functionality. When a facility reprocesses a single use device they assume the liability of a manufacturer.

To achieve sterilization in your office, consider

• providing the optimal environment to store sterilization equipment,
• establishing and enforcing clear and concise policies and procedures,
• providing training and continuing education, and
• ensuring quality controls are in place.

Reprocessing Categorizations Based on Risk of Infection

See page 4 for a helpful chart categorizing items to be reprocessed based on risk of infection.

Physical Environment

Physical space should minimize the risk of cross contamination and should make it possible for staff and instruments to be protected during the decontamination process. Furthermore, adequate space allows for instruments to be taken through a one-way flow from dirty to clean and permits proper disinfection, sterilization, and storage.

Most OMS offices do not have separate rooms for each of the following functional areas:

• Receiving, cleaning, and decontamination
• Inspection, preparation, and packaging
• Sterilization
• Storage

Therefore, if a multi-functional reprocessing area is used, there should be clear separation of these functional areas to ensure that cross contamination of items is not possible. Clearly identifying and labeling each area should be sufficient, if staff is adequately trained and the process is monitored to ensure compliance. Good lighting is also essential.

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Sterilization Practices in the OMS Office

Policies and Procedures
Staff should follow a combination of instructions from the instrument manufacturer, the chemical manufacturer, the reprocessing equipment manufacturer, and best practices outlined in AAMI ST79. Instructions should include physical inspection steps for cleanliness, as well as surface and functional integrity.

Transportation of Soiled instruments
Items should be transported to the decontamination area in a container with a solid bottom and sides and a removable lid. Instruments should be processed as soon as possible and should not be held overnight or over a weekend. Manufacturer's instructions should be followed to identify the appropriate holding instructions of used instruments. Soaking instruments in lactated ringers, saline, hand soap, antiseptics, or sodium hypochlorite (bleach) solutions is not recommended, because damage to the instruments may occur.

Rinse
Instruments should be rinsed to remove any liquid or debris. Lukewarm water and detergent solutions will prevent coagulation and thus assist in the removal of protein substances. Tap water can be used to rinse instruments thoroughly, but to protect instruments from staining or deterioration, the final rinse should be done with treated water such as, deionized, distilled, or reverse osmosis.

Clean
All items must be cleaned before they can be disinfected or sterilized. This cleaning must be done in accordance with manufacturer's instructions. Care should be taken to ensure that all lumens and cavities are cleaned and rinsed. If brushes are reusable, there should be a routine schedule for cleaning, disinfecting, and inspecting them. The decision to reuse a brush should always be made in accordance with manufacturer's instructions.

Lubrication
Some instruments require lubrication to prevent stains and corrosion and to keep the moving parts from rubbing and sticking. Targeted application of non-silicone based and water-soluble lubricant is usually recommended because the lubricant can be penetrated by steam. However, the lubricant used on each specific piece of equipment, as well as the process for applying the lubricant, should be based on the manufacturer's instructions. Immersion baths are not recommended because of the risk of microbial contamination.

Inspection
Before packaging, all instruments should be visually checked for cleanliness, damage, and functionality.

Package
When being packaged, all items must be clean, fully disassembled, and in the open position in accordance with manufacturer's instructions. This is necessary to allow the sterilizer to reach all surfaces of the items. Failure to do so can result in sterilization failure.

Labeling should not compromise the barrier. For example, mark the plastic side of a peel pouch
Sterilization Practices in the OMS Office

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instead of the paper side and write on sterilization tape rather than on the wrap. Every pack should include the contents, the date sterilized, as well as an identifier that allows the item to be tracked back to the sterilization load.

Chemical indicators should be placed inside and outside of the package in the location and manner recommended by the chemical indicator manufacturer. Class 5 chemical indicators, also called integrators, react over a specific range of steam sterilization cycles. These indicators correlate with a biological indicator under labeled use conditions and can detect failures when the required temperature is not reached. In general, internal chemical indicators are placed where the sterilizer is least likely to penetrate. This is usually on the middle of the pack. External indicators should not be layered over each other or placed in a manner that does not allow diffusion of the sterilizer through a layer of porous material, such as a synthetic paper pouch.

Sterilization

Choice of sterilization method is based on manufacturer's instructions. If your office is not capable of sterilizing an item following the manufacturer's instructions, the manufacturer should be consulted to determine if an alternative method can be used. If the manufacturer indicates that no alternative method is compatible, you should not attempt sterilization of the item.

If items are steam sterilized, they should not be touched during the cooling process. However, depending on sterilizer instructions, the door may be opened slightly at the end of the cycle and items left inside to reduce the potential for formation of condensation. The cool down period should take into account the design of the device being sterilized, the temperature and humidity of the ambient environment, and the type of packaging used. In all cases, it is recommended that you follow the equipment manufacturer's instructions.

Release of Sterilized Items

Biological indicators should be used at least weekly and with any implant load.

In conclusion, as a dental health care provider, ensuring infection prevention in the OMS office not only improves patient safety, but also provides a safe working environment for you and your staff.

Visit the CDC Division of Oral Health website for a variety of resources related to infection prevention in the dental office.

• Summary of Infection Prevention Practices
• Infection Prevention Checklist
• Recommendations

References

Critical vs. Semi-Critical vs. Non-Critical Reprocessing

The most common approach to disinfection and sterilization was described by Spaulding more than thirty years ago. With some exceptions for more recent discovery, Spaulding’s approach still applies today.\(^1\) Spaulding categorized medical devices to be reprocessed as critical, semi-critical, and non-critical according to risk of infection.

Spaulding states, “critical items require sterilization, semi-critical items require at least high-level disinfection, and non-critical items require cleaning.”

The table below categorizes items to be reprocessed based on risk of infection. Because most surfaces in the healthcare setting could have contamination with potentially pathogenic organisms, the table represents a conservative approach. In all cases, however, it is recommended that you follow the product manufacturer’s instructions.

<table>
<thead>
<tr>
<th>Level</th>
<th>Risk of Infection</th>
<th>Description</th>
<th>Example of Items</th>
<th>Reprocessing Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical</td>
<td>High</td>
<td>Item comes in contact with or enters sterile tissue, sterile body cavity, or the vascular system</td>
<td>Surgical and dental instruments, burs, biopsy forceps, implants, and needles</td>
<td>Sterilization</td>
</tr>
<tr>
<td>Semi-Critical</td>
<td>Moderate</td>
<td>Item comes in contact with mucous membrane or non-intact skin</td>
<td>Impression trays, dental tweezers and probes, mouth mirrors</td>
<td>High Level Disinfection</td>
</tr>
<tr>
<td>Non-Critical</td>
<td>Low</td>
<td>Item comes in contact intact skin</td>
<td>Environmental Surfaces: bed rails, bedside tables, patient furniture, counters, and floor</td>
<td>Decontamination</td>
</tr>
</tbody>
</table>
