New recommendations issued for instrument care and cleaning

New recommendations developed from evidence-based research have been added to AORN’s Guideline for Care and Cleaning of Surgical Instruments. Several of these changes will have an impact on the quality of processing in sterile processing (SP) areas. This latest version, released on October 12, 2020, includes industry changes that have occurred since the last revision of this guideline. This article highlights some of the major changes that sterile processing professionals need to follow to ensure they are using best practices.

The recommendations in this guideline are intended to be achievable and represent what is believed to be an optimal level of practice. They provide guidance for cleaning surgical instruments, including point-of-use treatment, transport, decontamination, inspection, and general care of reusable medical devices.

Guidance is also provided for:
- selection of cleaning chemicals such as detergent, enzymatic, disinfectant
- selection of decontamination equipment
- monitoring and controlling water quality
- the use of personal protective equipment (PPE) that must be worn during cleaning and care of instruments

Specific types of instrumentation that require special attention—such as ophthalmic and laryngoscope blades and handles—and precautions that will minimize the risk for transmitting prion diseases from contaminated reusable medical devices are also discussed.

One change pertains to the SP environment’s heating, ventilation, and air conditioning (HVAC) parameters. The revised guidelines recommend that the HVAC system be designed in accordance with the American Society of Heating, Refrigerating and Air-Conditioning Engineers and local regulatory requirements to reduce the number of environmental contaminants and to provide a comfortable environment for occupants in the area. Other changes throughout this guideline include replacing the recommendation for “medical-grade compressed air” with “instrument air,” and replacing the recommendation for “treated water” with “critical water.” The glossary was also changed to reflect the new terms, along with their definitions and requirements.

The previous version provided specific recommendations for the design of the SP area. These design features are now described in the AORN Guideline for Design and Maintenance of the Surgical Suite.

Purchasing considerations

The first major addition to the Guideline for Care and Cleaning of Surgical Instruments addresses pre-purchase evaluation. Before buying new instrumentation, it is important to ensure that the healthcare facility is equipped to process the proposed instrumentation. Some instruments are complex, requiring numerous time-consuming processing steps as well as a higher skill level of the SP technician (and a longer processing time). This is now addressed under Recommendation 1.3. Pre-Purchase Evaluation.

There is also a new recommendation that before the purchase and use of reusable surgical instruments and other medical devices, the manufacturer’s written instructions for use (IFU) should be evaluated to determine whether requirements for performing the processing methods provided in the manufacturer’s validated IFU can be performed. The updated guidelines also now address personnel education and competency needs, as well as assurance that the time required for all processing can be allocated.

The need for proper resources to safely and effectively process instrumentation continues to be addressed under 1.3: “Before purchase and use of reusable surgical instruments and other medical devices, determine whether the resources are available to perform the processing methods provided in the manufacturer’s validated IFU, including a listing of necessary resources and equipment needed for transport methods to the decontamination area and environmental conditions required for handling and storage.” Previously, this recommendation stated: “Some instruments may require special cleaning, packaging, sterilization, or maintenance procedures that cannot be provided by the facility without modifications to processes and equipment.” The revised recommendation now includes the consideration of a need to modify space.

Decontamination steps

A key addition to the Sterile Processing Area section under Recommendation 2 is consideration of the sinks used in the decontamination area. According to the new recommendation, the decontamination area should be equipped with the appropriate number, size, and configuration of sinks. The sinks should be at a height that is ergonomically correct for those who perform manual cleaning, in accordance with the manufacturer’s IFU for items that will be processed. Additionally, the sink should be marked at the water level needed for cleaning solution measurement.

Water quality is an important part of instrument processing because it comprises the majority of the cleaning solution. Recommendation 4, Cleaning Products and Equipment, provides guidance on the type of water to use. The revised version added a recommendation for the organization to have a...
Safe transport

Sharp instruments must be separated from other instruments and confined in a puncture-resistant container before transport to the decontamination area. Disposable sharps such as scalpel blades and suture needles must be removed and discarded into a closeable, puncture-resistant container that is leak-proof on its sides and bottom and is labeled or color coded as “biohazardous.”

Instrumentation can be damaged during transport. Delicate instruments such as endoscopes, microsurgical instruments, and robotic instruments should be protected during transport to a decontamination area by segregating them into different containers or placing them on top of heavier instruments. Instruments should be kept moist until they are cleaned by using either saturation with an enzymatic pretreatment product or a towel moistened with water placed over the instruments, not saline.

Fluids are often used during a surgical procedure, and they need to be discarded, in accordance with local, state and federal regulations, before transporting. There may be a circumstance where fluids cannot be discarded and must be transported; in that case, they must be transported in a leak-proof, puncture-resistant container to the disposal area, and in strict accordance with regulatory requirements.

Cleaning solutions

During the instrument manual cleaning process, it is recommended that the cleaning solution be changed per the cleaning solution manufacturer’s IFU or between each use (if the manufacturer’s IFU does not make a recommendation). Bioburden is deposited in the cleaning solution during the cleaning process and can interfere with cleaning process effectiveness. Frequent changes of the cleaning solution can help minimize bioburden. In addition, the cleaning solution should be changed when the temperature of the solution does not meet the temperature specified in the manufacturer’s IFU. It is not recommended to add water to the existing solution to increase the temperature because that would dilute the cleaning solution concentration, which is not permissible.

The updated guidelines also now include the recommendation to use cycles that exclude the use of lubricants in mechanical washers for instruments and devices that are not compatible with lubricants, such as orthopedic implants.

Recommendations related to ultrasonic cleaners have been expanded and include using accessories that are compatible with the ultrasonic cleaner, such as a metal open weave basket. This recommendation is based on the fact that porous materials, such as silicone mats, can absorb the cavitation, thereby negating the effect of the cavitation.

Degassing the ultrasonic unit is recommended when required in the ultrasonic cleaning device manufacturer’s IFU; some ultrasonic cleaners that have this cycle built in. Degassing of the cleaning solution should be performed before instrument processing. Degassing removes air bubbles that can interfere with the cavitation process.

Other information

Updates to Recommendation 12, Laryngoscope Blades and Handles, in continued on page 25

A close-up of attaching an instrument with a flush port to a sonic washer flushing mechanism. Photos courtesy of Susan Klacik.

A close-up of attaching an instrument with a flush port to a sonic washer flushing mechanism. Photos courtesy of Susan Klacik.

Loading flat-hinged instrumentation into a sonic washer. All hinged instrumentation is in the open position.
Sterilization & infection prevention

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clude the recommendation to convene an interdisciplinary team to establish and implement standardized procedures for processing laryngoscope blades and handles.

Recommendation 13, Prion Disease Transmission Precautions, addresses the use of a washer-disinfector for decontaminating instruments used during a confirmed or suspected prion case. The recommendation is to consult the mechanical washer-disinfector manufacturer for instructions on decontaminating the mechanical washer-disinfector after processing instruments that may have been contaminated with prions.

Borescopes are a relatively new inspection tool for use in healthcare instrument processing, and the use of borescopes has been added to this updated guideline. Their use is recommended because it is difficult and even impossible to visualize the inner walls of lumened devices, and an endoscopic camera or borescope can facilitate identification of soil. Borescopes are recommended for use during the inspection phase of surgical instrumentation for lumened devices.

Processing eye instrumentation requires special methods to prevent toxic anterior segment syndrome (TASS), which appears to be related to instrument processing. TASS is a non-infectious acute postoperative anterior segment inflammation that is caused by a noninfectious substance that enters the anterior segment, resulting in toxic damage to intraocular tissues.

Previous editions of the Guideline for Care and Cleaning of Surgical Instruments included recommendations to care for eye instrumentation to prevent TASS. Based on recent research, an additional support for processing eye instrumentation has been added to the Intraocular Ophthalmic Instruments section.

The added content recommends keeping the ophthalmic viscoelastic and organic material moist to aid in their removal. This reinforces the continued recommendation to wipe ophthalmic instruments with sterile water and a clean, lint-free sponge or cloth and to flush or immerse them in sterile water according to the manufacturer’s written IFU. This should be done immediately after use during the procedure. Another change that may need to be implemented when processing eye instrumentation is that some intraocular instrument manufacturers’ IFUs may require dedicated ultrasonic cleaners that are not used for other types of instruments.

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Data analytics may sound like a high-tech strategy, but it is equally a “high-touch” process that demands the active involvement of all stakeholders.

It is important to develop a leadership team of surgeons, anesthesiologists, nurse managers, and senior administrators to regularly review OR data and analytics.

A multidisciplinary team is essential to monitoring utilization to identify the full range of issues that lead to wasted capacity. A team approach is also required to improve surgeon access to the OR in a way that predictably optimizes productivity of expensive surgical services. The ultimate goal is to balance the needs of all stakeholders and build a more productive access model that minimizes waste, achieves high OR utilization, and drives strong OR revenue.

OR business

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department visualize demand for services holistically.

Once demand for services is well understood, anesthesiology can streamline its operations by refining coverage based on day-of-week and hour-of-day demand. Additionally, advanced analytics can provide recommendations for optimal shifts.

Knowing the optimal mix of 8-, 10-, and 12-hour shifts allows anesthesiology departments to better manage daily staffing, provide more effective coverage across departments, and recruit and retain talent more effectively. Using analytics to improve anesthesiology productivity can greatly reduce the need for a hospital stipend.

The benefits of data analytics are clear. Advanced analytic tools can help OR leaders drive down cost per case. In addition, a more granular view of utilization across the schedule can help the leadership team identify many opportunities to accommodate additional cases.

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