Instrument Preparation and Care: Key Considerations for the Processing Specialist

BY NATALIE LIND, CRCST, CHL, FCS, DIRECTOR OF EDUCATION—HSPA

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LEARNING OBJECTIVES

1. Identify the risks associated with inadequate instrument care
2. List steps to help prepare for and introduce new instruments
3. Learn the best sources for vital instrument and processing information

When considering surgical instruments, many people may envision a sterile, controlled environment where medical professionals carefully select and use the specific instruments necessary for a particular procedure. Sterile Processing (SP) professionals see a very different picture. They understand the numerous intricate steps and processes involved in instrument processing. They are also keenly aware of the knowledge, time and effort required to provide clean, sterile, well-functioning instruments that are available when needed for a procedure.

This lesson addresses the dangers of inadequate device care, the essential steps to take when planning for and introducing new instruments, and other critical aspects instrument specialists should consider to ensure devices are safe for patient use.

Objective 1: Identify the risks associated with inadequate instrument care

Improper care and handling of instruments can create numerous challenges and adverse outcomes for the healthcare facility. Inadequate cleaning can lead to sterilization failures, which put patients at risk for infection and other poor outcomes. Insufficient processing steps can also cause device damage, further jeopardizing patient and user safety and contributing to costly repairs or premature instrument replacement.

Although most instruments appear durable, they can be easily compromised by chemicals, rough handling, and numerous other factors. Damaged devices can be the source of instrument shortages, compromising patient care and frustrating customers. They must be promptly identified, removed from service, and, if possible, repaired or refurbished. *Note: While almost every instrument will require refurbishing due to normal wear, some devices require more frequent refurbishment.* Instruments with preventable damage are quite costly for healthcare organizations, both in terms of repair and replacement costs, and potentially the need to cancel procedures due to limited availability of replacement devices.

Improper or inadequate instrument care can negatively impact patient treatment and care in multiple ways. Failure to test instruments as directed in the manufacturer's instructions for use (IFU), for example, increases the risk of damaged or worn instruments making it into the surgical case for use on patients. Additionally, allowing instruments with peeling or cracked tape to be used in a procedure can result in tape fragments being introduced into the surgical site, which poses an infection risk. Devices with confirmed or suspected damage or staining should be promptly flagged, reported and removed from service so the cause can be determined and proper repairs can be made.

Rough handling or inappropriate use is a common cause of instrument damage. For example, using instrument scissors to cut tape or dumping instrument trays into sinks or onto assembly tables can cause device tips and other fragile or delicate components to break, bend, or be crushed. Instruments should only be used for their intended purpose and always be treated with the utmost care. Doing so will contribute to the safe use and proper functioning of surgical instruments during patient care, helping to maximize the investment in surgical instrument inventory.

Every technician should be well-trained and skilled to ensure devices are handled, inspected and processed correctly. Whenever an instrument issue is identified and addressed, the end user, patient and healthcare organization benefit.

Objective 2: List steps to help prepare for and introduce new instruments

Preparing for new instruments requires proper planning and communication. Before acquiring new instruments and introducing them into the system, SP professionals should be consulted to ensure they have the necessary resources available to process the devices. The following crucial questions should be asked:

- Is the IFU available for the instrument(s), and are the instructions understood and able to be followed?
- What training should be provided to ensure proper care, handling, and processing of the new instruments? Who will provide the training?
- Will additional equipment, tools, chemicals or space be required to meet the IFU requirements?
- For which procedures will the instrument(s) be needed, and how frequently will the devices be used? Are back-up instruments necessary?
- Do the instruments utilize disposable components?
- Are specialized supplies or equipment needed for device inspection?

It is imperative that these questions are asked and answers are obtained before new devices are purchased and put into service. When the decision has been made to buy new instruments and introduce them into the system, logistical issues must also be addressed. The instrument information must be entered into the instrument system, along with replacement information, and a storage location must be identified. The IFU should be made available to all who will process the instruments, and instrument count sheets and preference cards must be developed.

Objective 3: Learn the best sources for vital instrument and processing information

Each person working within the instrument system should be well-trained and educated about the instrument's components, function, handling requirements, and any potential hazards. This requires the availability and understanding of a significant amount of information. The primary source of information about new instruments is the instrument manufacturer. The manufacturer's instructions provide specific details about the precise steps and processes to follow for ensuring the instrument's proper care, handling and processing. Manufacturers may also offer in-person education through clinical educators and sales representatives, as well as online education through their company websites, manuals, and other resources.

Standards and guidelines are also essential, providing specific recommendations about SP-related processes and practices. Additionally, IFU for the sterilizer and sterilization packaging must also be readily available and carefully followed. Before new items are introduced into the system, training must occur in every area of the department so that SP technicians assigned to each area can process and manage the devices when they arrive at the facility. Information about handling, cleaning, assembling and sterilizing instruments must be shared with all SP staff who will handle the instruments. It is crucial to ensure that all employees on all shifts are aware of the new instruments and have received training on how to process them.

Instruments must be cleaned between patient uses, but other situations also require instruments to undergo a

cleaning process. Brand-new, never-used devices still require thorough cleaning, as do devices that have been opened and placed on the sterile field, even if they do not appear to have been used during the procedure. Instruments returned from repair or refurbishment must also undergo thorough cleaning before being placed into the system. Loaned instruments entering the facility must be cleaned according to their IFU (cleaning is required even if the company or facility that loaned them processed them before delivery). *Note: Loaned instruments may pose a challenge if no IFU is provided. Be sure to ask the instrument manufacturer for a current copy of the IFU and ensure it is available at the time of delivery.* Instruments retrieved from the back-up storage area should also be cleaned before being sterilized and put into service.

In addition to cleaning instruments at specific times during their use cycle, SP professionals must also be aware of how early steps in the cleaning process impact instrument quality. The first step begins with point-of-use treatment in the Operating Room or other procedural area. This process removes gross soil and ensures the devices remain moist to prevent soil from drying on surfaces, which can make cleaning more difficult and lead to biofilm formation. Biofilm is a rapidly growing colony of microorganisms that attaches to surfaces and other microorganisms. The colony produces a protective gel that is highly resistant to detergents and disinfectants. Prompt cleaning can prevent biofilm formation. Point-of-use treatment should occur before the instruments are transported to the SPD. As with all instrument processes, the manufacturer's IFU should always be followed to ensure proper point-of-use treatment.

Time is another critical factor. In addition to point-of-use treatment, whenever instruments have been used, they should be cleaned as soon as possible to prevent soil from drying and biofilm from forming.

Conclusion

The instrument system is complex. It continually changes as new instruments are added and others are retired from service. Each day provides challenges, and every effort should be made to meet patient needs. Every instrument must be safe and functional when it reaches the patient. Meeting that critical goal requires proper planning, attention to detail and a commitment to excellence from SP professionals responsible for their processing, care and handling. P

CIS Self-Study Lesson Plan Quiz: Instrument Preparation and Care: Key Considerations for the Processing Specialist

Lesson No. CIS 311 (Instrument Continuing Education – ICE) • Lesson expires August 2028

1. Instrument systems are:
- a. Typically simple for small facilities
- b. Not a concern for Sterile Processing (SP) professionals
- c. Often static once developed
- d. Complex and subject to continuous change

2. Specific processing instructions are found:
- a. In standards and guidelines
- b. In survey documents
- c. On the device's label
- d. In the device manufacturer's instructions for use (IFU)

3. Instruments with peeling or cracked tape:
- a. Are typically safe for patient use
- b. Should be removed from service until the tape has been replaced
- c. Should be sent to the manufacturer for refurbishment
- d. Must be discarded and replaced with a new instrument

4. If instruments are repaired by the original manufacturer:
- a. They are ready for immediate assembly
- b. The instrument's life will often be doubled
- c. Future damage will typically not occur
- d. They must be cleaned before they are placed back in the system for patient use

5. Before instruments are purchased, Sterile Processing should determine if:
- a. Any disposable components are required
- b. They have the right equipment and chemicals to follow the IFU
- c. Specialized supplies and equipment are needed for inspection
- d. All the above

6. Which of the following statements is correct?
- a. The Sterile Processing department (SPD) must have a current IFU for any loaned instrument received
- b. New instruments that have not been used do not require cleaning
- c. If the instrument back-up board is located in the clean assembly area, the instruments retrieved do not need additional cleaning
- d. Most cleaning errors can be overcome during the sterilization process

7. Device IFU may not be necessary if processing technicians receive thorough inservice training from the manufacturer.
- a. True
- b. False

8. Where should the first step of instrument cleaning occur?
- a. In a dedicated sink in the procedure room
- b. During the washing and rinsing phase
- c. At the point of use, such as in the Operating Room (OR) or other procedure area
- d. In the SP decontamination area

9. Biofilm is resistant to:
- a. Alcohol and phenolics
- b. Detergents and disinfectants
- c. Moist heat and pressure
- d. Critical water and alcohol

10. During inspection, if instrument staining is detected, technicians must:
- a. Return the instruments to decontamination for recleaning
- b. Remove the device from service and report the finding so the cause can be determined
- c. Rinse the instruments in the assembly area to determine if the stains are permanent
- d. Attempt to remove the stains with an instrument lubricant

11. Instruments retrieved from back-up storage:
- a. Should be cleaned before being placed into a tray and sent for patient use
- b. Are usually in need of repair
- c. Are often older, outdated versions of current instruments
- d. None of the above

12. IFU for the sterilizer and sterilization packaging:
- a. Are not needed if the device manufacturer's IFU is available
- b. Should be posted at every workstation
- c. Should be memorized by processing technicians
- d. Must also be readily available and carefully followed

13. When instruments have been used, they should be:
- a. Soaked in saline to prevent soil from drying
- b. Sprayed with alcohol to kill bacteria on the surface
- c. Cleaned as soon as possible in the decontamination area
- d. Dried before transport

14. Technicians who process instruments should receive training:
- a. At least once a month, but preferably more
- b. When their competencies expire
- c. Each time new instruments are introduced into the system
- d. Bi-monthly throughout their employment

15. Dumping instrument trays into the decontamination sink or onto assembly tables:
- a. Should always be avoided because it increases the risk of device damage
- b. Is only acceptable for durable stainless-steel instruments
- c. Helps technicians quickly see the devices they will be cleaning and assembling
- d. Should result in technician termination

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