





# CIS Self-Study Lesson Plan

Lesson No. CIS 264 (Instrument Continuing Education - ICE)

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# Off-Site Instrument Transport

## LEARNING OBJECTIVES

1. Define off-site transport and identify its advantages for healthcare facilities
2. Review voluntary and regulatory standards related to off-site transport of sterile and contaminated medical devices
3. Describe the proper way to prepare sterile and/or contaminated medical devices for transport
4. Describe the training and competencies recommended for transporting medical devices

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**A**S AN INCREASING NUMBER OF HEALTHCARE FACILITIES centralize their reprocessing tasks, off-site transport of instrumentation is being used more than ever before. This practice is raising questions on how to keep instruments properly contained and free from any contaminants while transporting them to and from each designated area.

## OBJECTIVE 1: DEFINE OFF-SITE TRANSPORT AND IDENTIFY ITS ADVANTAGES FOR HEALTHCARE FACILITIES

Off-site transport is the process of moving medical devices between healthcare facilities and their various buildings, campuses and cities. Many healthcare facilities have off-site clinics, physician offices, surgery centers, etc., that require reusable medical devices for procedures. It is not always cost effective or efficient to install cleaning and sterilization equipment at each location; therefore, reprocessing services are frequently centralized at one location, with items being transported to and from the various buildings and facilities. While many facilities transport small quantities of contaminated and sterile devices over short distances, some facilities have centralized all their cleaning and sterilization functions on one campus or have contracted with a third-party reprocessing company to clean, disinfect and sterilize all their devices.

Transporting items between facilities can have a large financial impact on a healthcare facility because processing equipment will not have to be purchased for each site. The centralization of employees or the complete outsourcing of Central Service (CS) personnel and the

processing functions can also reduce the facility's operating costs.

Like all systems, however, transporting devices between buildings and campuses must be carefully monitored to ensure devices are managed safely and effectively.

## OBJECTIVE 2: REVIEW VOLUNTARY AND REGULATORY STANDARDS RELATED TO OFF-SITE TRANSPORT OF STERILE AND CONTAMINATED MEDICAL DEVICES

ANSI/AAMI ST79, Section 8.11.5 states "Vehicles used to transport between health care facilities should provide for the complete separation of clean and sterile items from contaminated items. Transport vehicles must be completely enclosed and checked periodically, at least annually or more frequently, if needed."

In addition, environmental conditions should be assessed both while the vehicle is in motion and not in motion. There currently are no universal guidelines that specify appropriate temperatures or humidity levels for transport vehicles; however, both should be kept at levels that protect the integrity of the sterile products. Some medical device instructions for use (IFU) might identify these conditions. Items should not be left in a vehicle that is not running, especially on very cold, hot or humid days, as the



temperature and humidity levels can change quickly.

The US Department of Transportation (DOT) is a federal government agency dedicated to ensuring safe transportation. DOT regulations for labeling and transporting of contaminated instruments must be followed. Failure to follow these regulations could result in statute violations. CS departments should also

contact their state's DOT for specific requirements.

The Occupational Safety and Health Administration (OSHA) operates under the US Department of Labor. OSHA's primary role is to protect workers from occupationally-caused illnesses and injuries. Both the DOT and OSHA have specific guidelines that must be followed when transporting biohazardous

materials, such as contaminated instruments or laundry. Contaminated laundry consists of laundry that has been soiled with blood or other potentially infectious materials, or laundry that may contain sharps. Transport containers must be enclosed, secure, and leak and puncture proof. Transport containers and carts should be thoroughly decontaminated before each use.

**OSHA states that warning labels must be affixed to containers containing blood or other potentially infectious material. The labels shall be fluorescent orange or orange-red, with lettering and symbols in a contrasting color. Labels should be affixed to the container by string, wire, adhesive or other methods that prevent their loss or unintentional removal.**



Figure 1: Contaminated instrument tote bin



**Transport of sterile items should be done in a manner that protects the sterility of the items. All items should be completely cooled prior to packaging for transport. Items should be delivered intact and ready to use. It is important that items are protected from crushing, bending, falling or other types of damage – including situations that could expose them to moisture and condensation from changing temperature and humidity levels.**



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Each facility should develop and follow policies and procedures for transporting sterile and contaminated items, using the standards as a guideline. Transport vehicles should have enough space to separate clean items from dirty items. Items should not be transported in the trunk of a car because temperature and humidity levels cannot be controlled. To prevent contamination by individuals who are unaware of proper handling of sterile products, sterile items should never be left unattended in an unsecured area.

Cleaning and maintenance of the transport vehicle is important to protect instruments from dust, dirt and other contaminants.

### **OBJECTIVE 3: DESCRIBE THE PROPER WAY TO PREPARE STERILE AND/OR CONTAMINATED MEDICAL DEVICES FOR TRANSPORT**

What follows are general guidelines for transporting soiled/sterile devices.

- Policies and procedures should be developed for the cleaning and

maintenance of all transport vehicles.

- All transport containers/carts should be carefully cleaned after each use. Ensure containers/carts are completely dry before placing soiled or sterile items inside them.
- Soiled and clean transport containers should be carefully secured during transport to prevent damage from shifting.
- Contaminated items should be physically separated from clean and sterile products.
- Employees should be trained in the proper packing of items for off-site transport.

#### **SOILED ITEM PREPARATION**

Soiled items should be transported to the decontamination area in a manner that minimizes the risk of cross contamination. Technicians should always wear the appropriate personal protective equipment (PPE) when handling contaminated items. At the point of use, all gross soil should be removed from instruments and the device manufacturer's IFU should be followed. Sharps should be separated from other instruments so they are easily identified and to reduce the risk of injury to employees. Linen should be separated, with all disposable components removed and discarded. Hinged instruments should be opened and multi-part

instruments should be disassembled and placed in the appropriate container. Instruments should be kept moist to prevent soil from drying on the surface and to reduce the formation of biofilms. This can be accomplished by using commercially-prepared foams, gels or spray products, or by placing a moist towel over the instruments. It is important to never use saline solutions on instruments; doing so may result in damage, such as pitting or rusting. Items being transported should not contain fluids. Fluids should be emptied from containers prior to packing and transporting.

Heavy instruments should be placed on the bottom of the container, with lighter instruments on top. Instrument sets or multi-part items should be kept together for transport. Failure to keep items together increases the risk of components being misplaced or lost. Items should be packed in a manner that protects the devices from damage during transport. If transporting items that have been exposed to suspected or known Creutzfeldt-Jakob Disease (CJD), the receiving facility's CS management and Infection Prevention leadership should be notified.

#### **STERILE ITEM TRANSPORT**

Transport of sterile items should be done in a manner that protects the sterility of the items. All items should be



completely cooled prior to packaging for transport. Items should be delivered intact and ready to use. It is important that items are protected from crushing, bending, falling or other types of damage – including situations that could expose them to moisture and condensation from changing temperature and humidity levels. Any sterile items that are dropped should be considered contaminated and reprocessed, even if no damage is visible. Compression upon landing can force dust and airborne microorganisms into the package. CS technicians and end users must be trained to recognize signs of sterility compromise. If there is ever any doubt regarding the sterility of an item, it should be reprocessed.

All carts and containment devices that house sterile items should be secured during transport to protect the sterile items from damage.

#### **OBJECTIVE 4: DESCRIBE THE TRAINING AND COMPETENCIES RECOMMENDED FOR TRANSPORTING MEDICAL DEVICES**

If performed incorrectly, the transport of contaminated items can pose a threat to employee, visitor and patient safety. Well thought out procedures must be developed to help ensure all contaminated items are handled correctly and that the integrity of these items is not compromised in any way.

Procedures that address the transport of sterile or contaminated items should contain input from the Infection Prevention department and Hazardous Materials committee. Procedures should also reflect OSHA and DOT regulations, and standards set forth by the Association for the Advancement of Medical Instrumentation (AAMI) and the Association of periOperative Registered Nurses (AORN). Everyone who may have contact with contaminated items must be

educated about the dangers associated with these items.

Training and competency assessment should include the following:

- Selecting, donning and doffing of PPE;
- Bloodborne pathogen training;
- Medical treatment in the event of an exposure;
- Hazardous material spill containment;
- Information on and the option of Hepatitis B vaccination at the time of hire;
- Safe handling of sterile items;
- Temperature and humidity requirements for sterile items; and
- Information about the different types of transport containers.

Each employee should be trained at the time of hire and periodically (e.g., annually). Training must be documented and kept on file.

It is also important to avoid contact with sterile packages. This includes any touching or excessive handling of packages.

#### **CONCLUSION**

The preparation and transport of sterile and soiled instruments requires interdepartmental teamwork, good communication and proper training to protect employees, visitors and patients. CS professionals must understand the recommended guidelines for the safe handling of these devices by familiarizing themselves with regulatory and voluntary standards, and strictly following facility policies and procedures. Everyone who has contact with contaminated items should receive training about the devices' associated risks. Everyone who handles sterile medical devices should also receive training on the safe handling of these items to preserve their integrity and sterility.

#### **RESOURCES**

International Association of Healthcare Central Service Materiel Management. Central Service Technical Manual, Eight Edition. Chapters 4, 5, 6, 7. 2016.

Association for the Advancement of Medical Instrumentation. ANSI/AAMI ST79:2010: & A1 2010: & A2 2011: & A3 2012: & A4, 2013. Comprehensive Guide to Steam Sterilization and Sterility Assurance in Health Care Facilities.

Association for the Advancement of Medical Instrumentation. AAMI News, March 2016. Transporting Sterile Instruments Kindles Uncertainty.

Healthcare Purchasing News. CS Solutions. July 2010.

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# CIS Self-Study Lesson Plan Quiz - Off-Site Transportation



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1. Off-site instrument transport is:
  - a. Regulated by the US Food and Drug Administration
  - b. Designed to only move small quantities of devices at a time
  - c. Defined as the moving of medical devices between a healthcare facility and various clinics and offices
  - d. All the above
2. Off-site transport of medical devices may allow for centralization of equipment and staff.
  - a. True
  - b. False
3. When transporting healthcare devices, the Occupational Safety and Health Administration states there must be a clear separation between clean and contaminated items.
  - a. True
  - b. False
4. The national standard for temperature and humidity levels in transport vehicles is:
  - a. 30% humidity and temperature less than 75°F
  - b. 20% to 60% humidity and temperature 69° to 72°F
  - c. Less than 60% humidity and temperature less than 75°F
  - d. There are currently no national standards for temperature and humidity that are specific to instrument transport
5. The Department of Transportation is the federal agency dedicated to ensuring safe transport.
  - a. True
  - b. False
6. Off-site transport containers should be:
  - a. Color coded for clean and contaminated items
  - b. Specifically designed for off-site transport
  - c. Leak proof and puncture resistant
  - d. All the above
7. Clean and sterile items should be placed into totes that contain an orange or orange-red label.
  - a. True
  - b. False
8. Because employees are properly trained in packaging soiled items, soiled devices do not need to be treated prior to transport.
  - a. True
  - b. False
9. When packing soiled items for transport, it is important to:
  - a. Remove all disposable items
  - b. Open hinged instruments
  - c. Separate sharp devices from non-sharp devices
  - d. All the above
10. It is important to package sterile supplies:
  - a. In a way that avoids excessive heat and humidity
  - b. With like items placed together
  - c. With heavy items on top of the transport device for easy retrieval
  - d. All the above
11. It is not necessary to wear personal protective equipment when packing soiled items for transport because the staff will not be cleaning any of the devices.
  - a. True
  - b. False
12. Departmental procedures for off-site transport should reflect standards from:
  - a. Department of Transportation
  - b. Association for the Advancement of Medical Instrumentation
  - c. Occupational Safety and Health Administration
  - d. All the above
13. Training and competency assessment should include information on:
  - a. Hazardous material spill containment
  - b. Different types of transport containers
  - c. Bloodborne pathogen training
  - d. All the above
14. If done incorrectly, transporting of contaminated items can pose a threat to:
  - a. Patients
  - b. Visitors
  - c. Employees
  - d. All the above
15. Upon hiring, it is important that an employee receives information regarding \_\_\_\_\_.
  - a. Human immunodeficiency virus vaccination
  - b. Methicillin-resistant staphylococcus aureus screening and vaccination
  - c. Hepatitis B vaccination
  - d. All the above

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