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Minimize Risk, Maximize Productivity

Integrating a steriocenter and instrument management system is optimal for instrument processing and compliance with CDC guidelines

The challenges of infection prevention may seem daunting. A plan for infection control must consider guidelines, regulations, and safety of dental personnel. The Guidelines for Infection Control in Dental Health Care Settings—2003 remain the gold standard for infection prevention.¹ Following these recommendations can significantly reduce the risk of transmission. Dental facilities must also comply with Occupational Safety and Health Administration (OSHA) regulations and/or any other regulatory agencies that affect their practice. An infection prevention plan must be written and must address details such as the care and reprocessing of dental instruments.

There are many choices one can make to properly reprocess instruments. The ideal system minimizes occupational injuries and risk, complies with CDC recommendations and regulatory agencies, preserves instruments, is intuitive, ergonomic and time efficient. The sterilization center and instrument management system are two such systems that are complimentary and when integrated together, maximize productivity.

Workflow

Instrument processing workflow must follow CDC guidelines for: sharps disposal, transportation, disposal of waste and single-use items, instrument sorting and handpiece management, cleaning, sterilization, and storage.^{1,2} The practice should have a centrally located instrument processing area designed to accommodate the workflow and traffic pattern of personnel.

Instrument cassettes are a tool for all phases of instrument management and provide a way to organize, protect, and contain instruments. Cassettes keep all instrument sets together during each phase of instrument processing and reduce the risk of injury. In addition to cassettes, procedural tubs can be used to organize and store disposables, such as gauze, cotton rolls, composites, etc.

Sterilization centers encompass each phase of instrument processing and provide a workspace for every task. Steriocenters promote a unidirectional flow for instruments and dental personnel to work intuitively, efficiently, and in compliance with infection control protocols while minimizing occupational risks.

Transportation

After patient care, needles and

other disposable sharps should be placed in an appropriate sharps container, ideally at the point of use. As other contaminated instruments are transported from the dental operatory to the sterilization center, OSHA requires that they be placed in a rigid, puncture-proof container. The CDC recommends that contaminated instruments be handled minimally throughout all phases. Cassettes allow for minimal handling because instruments are held in place securely and locked within a rigid container. Heavy-duty utility gloves should be worn when handling contaminated sharps.



Receiving and Cleaning

Contaminated instruments arrive at a designated area of the steriocenter to be sorted and cleaned. Sterilization centers may include waste-drop areas and built-in automated cleaning devices, such as a washer/disinfector and an ultrasonic. They may also be equipped with "hands-free" faucets and cabinet doors to minimize cross-contamination.

Handpieces should be wiped externally to remove any debris, and burs should be removed prior to packaging and sterilization. The stericerenter may include an automated handpiece maintenance system to facilitate cleaning, lubrication, and purging of the internal components.

After cleaning, instruments should be inspected for remaining debris or damage. The CDC does not recommend hand washing—it poses a greater risk of exposure incidents and is less effective than automated cleaning. Cassettes comply with CDC recommendations for instrument cleaning because they allow cleaning agents to reach all instrument surfaces safely and efficiently.



Preparation and Packaging

In this phase, instruments should be packaged in an FDA-cleared pouch or wrap made of a material intended for the sterilization process.¹ The material must allow penetration of the sterilant and prevent contamination during handling. The package must also remain intact and maintain sterility throughout the sterilization process and storage.³ Stericerenters have a designated area for packaging to be performed and allow easy access to all related materials. Cassettes allow for minimal handling during packaging, and the rigid structure minimizes potential perforations.

Instrument packages may be labeled per procedure or provider. Per CDC guidelines, a chemical indicator should be placed inside each wrapped package. If this indicator cannot be seen from the outside of the package, another indicator (e.g., indicator tape) should be placed on the outside.¹

Advantages of combined IMS/Stericercenter system	Considerations for Combined IMS/Stericercenter System
Ease of staff training	Initial investment
Ergonomic: Each step allows convenience and reduces risk of injury	Preplanning required (space, function, and equipment considerations)
Easier, safer, time-saving	Considerations for future growth of practice
Enhances compliance with regulatory agencies	
Enhances consistency	
Professional appearance	

Sterilization

Sterilization is an essential component of instrument processing. The most commonly used/recommended method is steam autoclaving. Stericerenters often have adjustable shelves to accommodate various sizes and quantity of autoclaves. Sterilizers can be placed at an ergonomic height for ease of use and to provide easy access for autoclave maintenance and cleaning. Autoclave overloading is a common human error with loose instruments in pouches. Cassettes minimize this—autoclave shelving will accommodate only a certain number of these packages. And, adequate spacing of packages ensures that the sterilant will reach all surfaces.



Storage

Sterile packages will maintain the sterility of instruments for prolonged periods, provided they are not torn, wet, or punctured. Instrument packs remain sterile unless they are compromised. Dry instruments must be removed from the sterilizer only after completion of the full cycle and stored in an enclosed cabinet or drawer.

Summary

The prime goal of instrument processing is to deliver sterile instruments for patient care. These sterilization procedures require a constant strive for compliance and safety. To help understand the process, the Organization for Safety, Asepsis and Prevention (OSAP) offers online training, courses, workbooks, and other resources for dental personnel assigned to these related tasks.⁴ Another resource for dental personnel are checklists that may be found in the "Summary of Infection Prevention Practices in Dental Settings: Basic Expectations for Safe Care." These checklists assess policies and practices and direct observation of all aspects of infection control including instrument processing practices.⁵ The use and integration of cassettes and a sterilization center promote improved infection control, a safer work environment, and increased productivity for all those involved.

References:

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