Critical Points In Instrument Sterilization

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Objectives

- Describe the requirements to safely transport contaminated instruments to the processing area
- Explain how to organize a sterile processing area to prevent crossover of clean and dirty
- Describe the required documentation in a sterile processing department/area

Spaulding's Classification

Critical: Enters sterile tissue or the vascular system	Sterilize
Semicritical: Contacts mucous membranes or non-intact skin	Sterilize or high-level disinfection
Noncritical: Contacts intact skin	Hospital grade EPA registered disinfectant

Guidelines and Standards

All reusable medical devices must be cleaned and maintained according to the **manufacturer's instructions** to prevent patient-to-patient transmission of infectious agents (CDC)

Items are pre-cleaned according to **manufacturer's instructions**, or if the manufacturer does not provide instructions, evidence-based guidelines prior to sterilization. (CMS ASC IC Worksheet)

Guide to Infection Prevention for Outpatient Settings: Minimum Expectations for Safe Care v2.3 September 2016. CDC. Division of Healthcare Quality Promotion. https://www.cdc.gov/infectioncontrol/pdf/outpatient/guide.pdf

Cleaning: Automatic

- All instruments must be cleaned in the completely open and disassembled (i.e., taken-apart) configuratic
- Clean all devices within a washer/disinfector using the equipment and detergent recommended by the manufacturer.
- Visually examine each instrument for cleanliness. If visible soil remains, repeat cleaning procedure.
- Rinse with distilled or deionized water to remove residual solution.

Parameters for Wrapped Instruments in Steam Sterilization

	Temperature	Exposure	Drying
Gravity Displacement	132°C (270°F)	15 Minutes	15 Minutes
Pre-Vacuum/Dynamic Air-Removal	132°C (270°F) 135°C (275°F)	4 Minutes 3 Minutes	15 Minutes 15 Minutes

MANUFACTURER'S INSTRUCTIONS

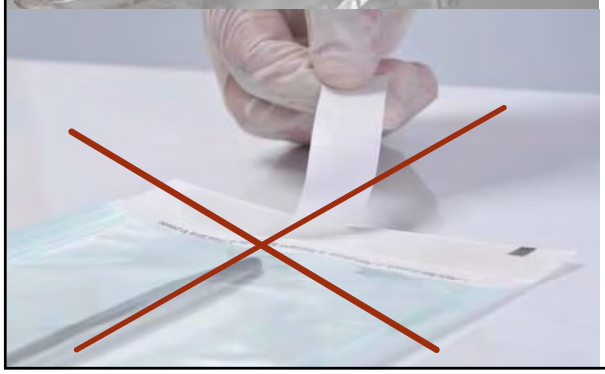
Point of Use Treatment

- Not a thorough cleaning
- Gross soil and debris removal
  - Blood, body fluids, surgical materials (orthopedic cement)

Instrument transport

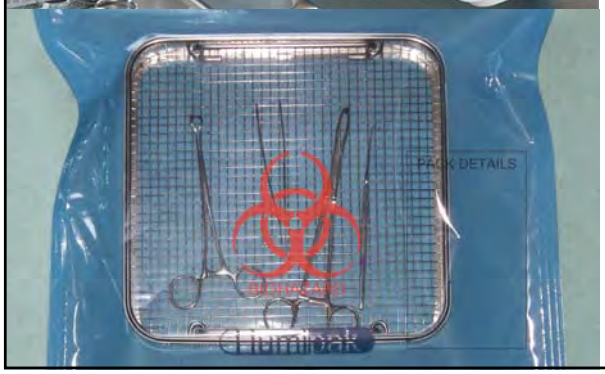
- OSHA BBP (29 CFR 1910.1030) Standard
- Needlestick Safety and Prevention Act (2001)

INSTRUMENT TRANSPORT



Instrument Transport

- Plastic bags
- Peel pouches



Instrument Transport Agents

Keep instruments moist	Best location to apply
• Wet towel • Surfactants • Enzymatic gel or spray • Self-seal pouch with an absorbent layer	• Procedure room? • Instrument cleaning area?

Instrument Processing PPE

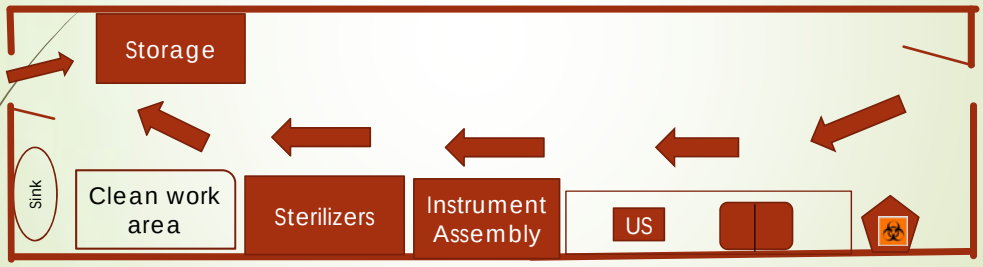
Heavy duty utility gloves	Impervious gown	Mask	Face shield	Goggles
• NOT exam or procedure gloves • MUST cover gown cuffs completely	• Won't allow water to penetrate to clothes	• Ideally, Level 3 (fluid resistant)	• If mask is Level 1 or 2	• ONLY if Level 3 mask worn

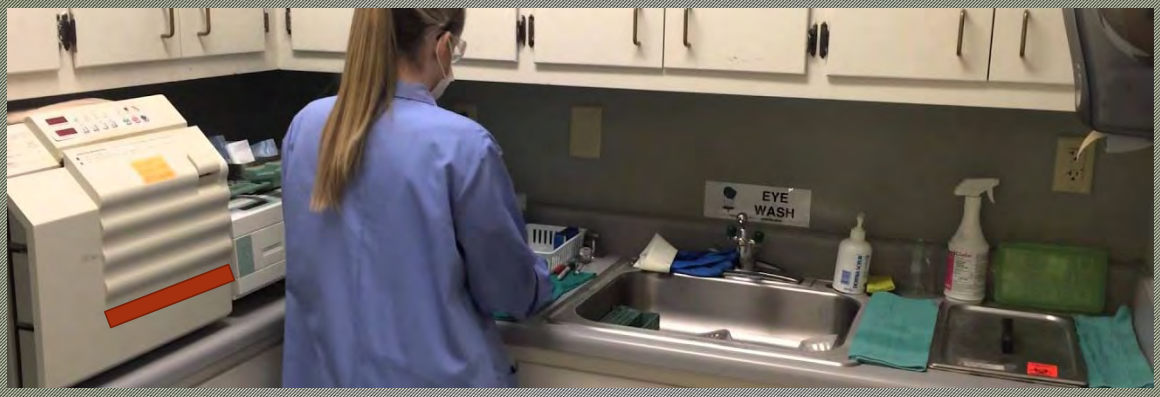
Traditional parts of an instrument sterilization area

- Receiving, cleaning and decontamination
- Prep and pack
- Sterilization
- Storage

Centers for Disease Control and Prevention. Guidelines for Infection Control in Dental Health-Care Settings — 2003. MMWR 2003;52(No. RR-17).
https://www.cdc.gov/mmwr/PDF/rr/rr5217.pdf

Workflow





Proximity

Instrument Processing Steps

Rinse #1

Manual or automated wash

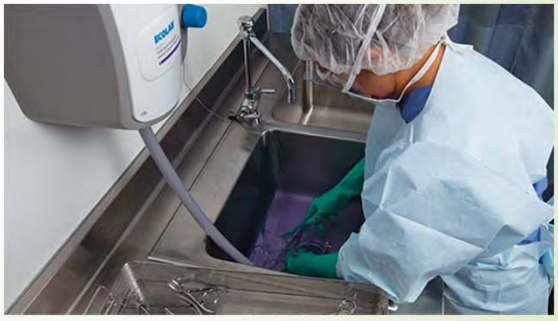
Rinse #2

Dry

Inspect

Package

Enzymatic soak



Automated Washers/Ultrasonics

Follow loading instructions

- Metal
- Types of instruments

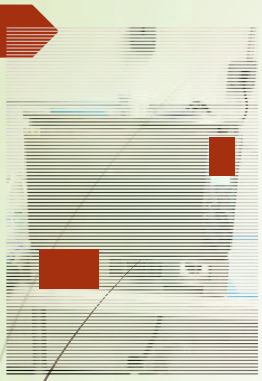
Ultrasonics washers

- MUST use basket

Ultrasonic Washers

Efficacy Testing

- Manufacturer's instructions
- Daily testing
- Document results



Instrument Washers

EFFICACY TESTING

- Manufacturer's IFU
  - Washer
  - Test
- Test daily when in use
- Document results

Visual Inspection

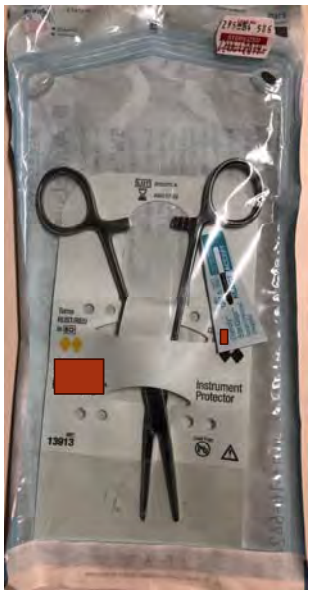
- **Flaws**
- **Damage**
- **Debris**
- **Detergent residue**
- **Completeness**
- **Instrument tape and plastic dipping material**
  - Inspect each time the instrument is processed
  - Check for wear according to the product IFU
    - Cracking
    - Peeling
  - Replace as often as needed

Sterilization monitoring

01 Chemical

02 Biological

03 Physical



CHEMICAL INDICATORS

Packaging Bloopers

Labeling

- Contents if not visible
- Date
- Load or cycle number
- Initials or other identifier of person packaging
- Where to write
  - Plastic side
  - Sterilization tape for wrapped sets

Biological indicators

- Match to sterilizer and cycles
- Correct incubator/reader
- Approved BI
- Frequency
  - Weekly minimum
  - Busy center runs BIs daily
  - Loads with implants requires a BI
- Document results of control and active

Sterilization

1

Manufacturer's instructions

- Sterilizer
- Instruments
- Packaging materials

2

What to do if those don't match?

Sterilization

- Follow manufacturer's instructions for preventive maintenance and routine maintenance (e.g. sterilizer cleaning)
  - Preventive maintenance should be documented
- Tabletop sterilizers
  - Distilled water
  - Cleaning frequency

Physical Monitoring to Verify Parameters

- Gauge
- Dial
- Electronic display
- Print out
- National guidelines: no printer = don't use

Sterilization Documentation

- Date
- Sterilizer number
- Specific contents
- Cycle parameters
- BI/spore test results

Takeaways

- Must measure diluted chemicals and water
- Transport according to OSHA BBP standard
- Appropriate PPE in decontamination
- Dirty to clean workflow
- Efficacy testing and documentation
- Labeling
- Follow IFUs
- Sterilization load documentation

QUESTIONS?