INFECTION CONTROL
In Practice

OSAP.org The Safest Dental Visit™

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IN THIS ISSUE

Infection Control in Practice focuses on the basics of infection prevention and control while maintaining a safe work environment, limiting the spread of contamination, and promoting compliance with COVID-19 prevention guidelines in dental facilities. This will help the Infection Control Coordinator (ICC) communicate the importance of **the safestdentalvisit™**

CONTENTS

*Is your dental facility following all **nine steps** for instrument processing?*

TEAM HUDDLE: Instrument Processing - Understanding Your Responsibility for Infection Prevention and Control

Dental infection prevention and control (IPC) is a system of policies and procedures designed to ensure the use of best practices to enhance safety and reduce the risk of transmitting potentially dangerous microbes. An effective IPC program hinges on assuring the quality of the preventive policies and procedures. This issue in this year's review of basic IPC procedures re-emphasizes the importance of instrument processing. It also provides information on COVID-19.

LEARNING OBJECTIVES

After reading this publication, the reader should be able to:

- describe the steps for processing contaminated dental instruments.
- identify the goal for each instrument processing step.
- describe problems that may occur if instrument processing steps are not performed correctly.

Infection Control In Practice Team Huddle™ is a resource prepared for clinicians by the Organization for Safety, Asepsis and Prevention (OSAP) with the assistance and expertise of its members. OSAP is a nonprofit, independent organization providing information and education on infection control and prevention and patient and provider safety to dental care settings worldwide. ICIP Team Huddle™ is published six times per year and is a trademark belonging to OSAP. OSAP assumes no liability for actions taken based on information herein.

SCENARIO: The Incident

It was a Monday morning after a Friday holiday in Dr. Clifton's general practice, and call after call was received from patients with "tooth ache" emergencies. The new sterilization assistant was alerted but realized that there weren't enough exam/operative set-ups to accommodate all emergency patients.

So, Dr. C and the assistant discussed possible ways to speed up instrument processing. These included:

1. **Reducing the ultrasonic cleaning time.**
2. **Not drying or rinsing the instruments before packaging.**
3. **Adding more packages into the sterilizer by layering rather than placing on their edges.**
4. **Using the immediate-use steam sterilization cycle (higher temperature, shorter time).**
5. **Removing the instrument packages immediately after the pressure in the autoclave comes down.**

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POTENTIAL CONSEQUENCES

To determine the quality of any IPC policy or procedure, it is first important to know **WHAT** should be done, then **WHY** and **HOW** it should be done, and to determine if it is done correctly.

All of the assistant's considerations would save time and allow more set-ups to become available. However, each of these short-cuts could compromise the desired end result – providing instruments safe for patient use.

1. Reducing the ultrasonic cleaning time

WHAT: The Centers for Disease Control and Prevention (CDC) recommend to clean all visible debris and other contamination from the instruments.[1] The ultrasonic cleaner manufacturer provides instructions for use (IFU) that need to be followed for proper functioning of the equipment.

WHY: For instrument sterilization to occur, the sterilizing agent (e.g., the moist heat from steam) must directly contact the surface of the item being processed. If there is debris on the surface of the item, the agent may not reach the surface for a long enough time to kill all microbes that may be present.

Cleaning also reduces the number of contaminating microbes and other debris so that the fewest number of microbes remain to be killed by sterilization. This gives the subsequent sterilizing process the best chance to work.

HOW: Follow the manufacturer IFU and when time permits, consider conducting a study that keeps reducing the cleaning time for a few batches of "dirty" instruments until no visible debris remains. In this study a magnifying glass with a focused light may be of benefit. When the shortest time is determined, add a small increment of time (e.g., 1-2 minutes) for safety. Continue careful visual observation of all cleaning runs at this time to ensure cleanliness.

2. Not drying or rinsing the instruments before packaging

WHAT: CDC states that after cleaning, instruments should be rinsed with water[2] and dried.[3]

WHY: Used ultrasonic cleaning solutions contain live microbes.[4, 5] Thus, these contaminants are in the residual solution that clings to the instruments after their removal from the tank. Rinsing the instruments with water will reduce this bioburden.

Wet instruments/cassettes placed in paper/plastic peel pouches or wrapped with sterilization wrap will make the paper/wrap easier to tear during manipulation and can facilitate wicking of microbes from the air and hands/gloves. Instrument washers/disinfectors have automatic rinsing cycles.

HOW: Remove the cleaning baskets or racks from the ultrasonic cleaner and gently rinse the instruments or cassettes under running tap water in the sink. Avoid splashing. Air dry the items or carefully pat with several layers of absorbent towels.

3. Adding more packages into the sterilizer by layering rather than placing on their edges

WHAT: Arrange items in the sterilizer to permit free circulation of the sterilizing agent (e.g., heat from steam, dry heat, hot chemical vapor).[6]

WHY: Sterilizing agents must have direct contact with the surface of the items being processed for a specific time to achieve sterilization. Overloading may prevent the sterilizing agents from penetrating the entire load in the time allotted, thus leading to sterilization failure.

HOW: Free circulation of the sterilizing agent is facilitated by placing

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items on their edges or in single layers. Follow the manufacturer IFU in regards to loading the sterilizer.

Penetration of the load by the sterilizing agent is determined by the results of the chemical indicators inside each package.

4. Using the immediate-use steam sterilization cycle (higher temperature, shorter time)

WHAT: An immediate-use sterilization cycle in the autoclave is a method for sterilizing unwrapped patient-care items for immediate use.[7]

WHY: This higher temperature shorter time autoclave cycle is designed for the "quick turn-around" of an item in short supply whose sterility was clinically compromised (e.g., dropped on the floor).

The immediate-use cycle is not to be used routinely, for convenience, or as an approach to avoid purchasing more instruments. This shorter time is allowed because; 1) the item is unwrapped to allow the steam to quickly contact the surface of the item; and 2) the temperature (e.g., 273° F) is higher than the normal cycle (e.g., 250° F).

HOW: If an immediate-use cycle is ever used, the item to be processed is to be cleaned, rinsed, and dried. Mechanical and chemical indicators are to be used. The processed item is to be dried and cooled in the sterilizer before being handled to minimize contamination.

For semicritical instruments the unwrapped item can be placed on a tray and handled aseptically (e.g., covered with a clean cover) during removal from the sterilizer and transport to the point of use.

After processing unwrapped critical instruments through the sterilizer, they are to be maintained sterile (e.g., placed in a sterile covered container) during removal and transport to the point of use.[7]

5. Removing the instrument packages immediately after the pressure in the autoclave comes down

WHAT: The CDC recommends to allow the packages to dry inside the sterilizer chamber before they are removed and handled.[8]

WHY: Packages being processed in the autoclave are wet after the sterilizing portion of the cycle. Wet packs are easily torn when handled and act as wicks absorbing moisture and microbes from the air and hands/gloves.

HOW: Some autoclaves have built-in dry cycles; others may allow drying by slightly opening the door for a while to let the heat/moisture dissipate.

Note: Dr. C and the assistant decided that none of the options for speeding up instrument processing were acceptable, and that they would do the best they can with their current procedures to maintain patient safety. Dr. C decided to increase the instrument inventory.

KEY TAKEAWAY

Each step of instrument processing must be performed properly in a routine fashion to ensure the desired outcome of presenting sterile instruments and handpieces to the point of use for patient protection with minimal instrument damage.

DETAILS and STRATEGIES for Instrument Processing

Instrument processing is a collection of procedures that prepares contaminated patient care instruments for the safe reuse. This processing is related to the principle of IPC that states: ***Make objects safe for use***.

Principles of Infection Control

1. Take Action to Stay Healthy
2. Avoid Contact with Infectious Materials
3. Limit the Spread of Contaminants
4. Make Objects Safe for Use

Instrument Processing Area

The processing should be performed in an area that is dedicated only to instrument processing, physically separated from the operatories and dental laboratory, and not be a part of a common walkway. It should be separated into identified areas for:

A) receiving, cleaning and decontamination;

B) preparation and packaging;

C) sterilization; and

D) storage.

Other considerations include dust control, ventilation, temperature and humidity control, air and vacuum lines, sinks and trash containers with hands-free controls, adequate electrical and water supplies, and uncarpeted flooring.

Instrument Processing Steps

Instrument processing can be described in nine steps and involves wearing personal protective equipment (PPE) that includes heavy utility gloves, eye protection, mask, and protective clothing.

Each step must be performed properly each time to ensure the desired outcome of presenting sterile instruments and handpieces to the point of use for patient protection with minimal instrument damage.

1. Transport to processing area and waste management
2. Holding (presoaking)
3. Cleaning, rinsing, and inspection
4. Rust control, drying, lubrication
5. Packaging and labeling
6. Sterilization
7. Sterilization monitoring
8. Handling and storage
9. Distribution and inspection

Instrument processing is summarized in the following pages in four Tables:

Table 1: Administrative Measures for Instrument Processing[9]

Administrative Measure	Desired Result	Problems If Not Performed
Written policies and procedures are in place for containing, transporting, and handling contaminated instruments and equipment.	Helps with the training of new and review for current employees and ensures consistency of tasks performed. Standard operating procedures can be used as checklists to ensure use of proper procedures.	Inefficient training of new employees; variability in procedures performed that may lead to continued incorrect performance of tasks; nothing to document what IPC procedures are being performed; increases risks to patients
Manufacturer instructions for reprocessing reusable dental instruments/equipment are readily available in or near the reprocessing area.	Ensures instrument/equipment will be safely handled, thoroughly cleaned, properly sterilized, and have maximum longevity. Helps to quickly answer any questions that arise during reprocessing. Will aid in training new employees.	Improper cleaning, non-sterilization, and/or damage to the items; risk of cross-contamination from patient to patient; inefficient training of new employees; increased costs of replacing damaged items
Workers assigned to reprocessing instruments/ equipment should have appropriate training on the what, why, and how of each step in the process.	This training helps ensure that the instruments/equipment will be safe for use on patients. A better understanding of procedures used may help in routine compliance with the procedures.	Increased risk of cross-contamination from patient to patient
Provide training and equipment to ensure the reprocessing workers wear appropriate PPE.	Proper use of appropriate PPE for safe handling of contaminated items helps prevent occupational exposures.	Possible occupational exposure and disease spread
Maintain sterilization records.	Documents sterilization activity.	Won't be able to show that appropriate patient-safety procedures are being performed
Perform routine maintenance on sterilization equipment according to manufacturer's instructions and document by written maintenance records.	Designed to help keep equipment working properly. Helps ensure patient safety and shows that the equipment is being properly managed.	Enhances breakdown or malfunctioning of equipment
Develop policies outlining response in the event of a reprocessing error or failure.	Helps prevent non-sterile items from being used on patients; identifies if worker re-training may be necessary.	Increased risk of cross-contamination from patient to patient

Table 2: Summary of Pre-sterilization Procedures

Pre-sterilization Steps	Desired Result	Examples of How to Perform	Problem(s) If Performed Improperly
1. Transport to processing area & waste handling	**A)** Transport instruments from point of use to the reprocessing area without occupational exposure. **B)** General and regulated medical/dental wastes are safely discarded.	**A)** Wear PPE including heavy-duty utility gloves. Use leakproof, covered, solid, container labeled with a biohazard symbol.[a] **B)** If not managed at chairside, place any regulated waste in properly labeled sharps containers or biohazard bags. Other trash is placed in regular containers.	**A)** Increases risk of occupational exposure from protruding instruments or contact after accidental dropping. **B)** Contact with regulated waste has a risk of transmitting disease.
2. Holding (presoaking)	Keeps bioburden on instruments from drying if they cannot be readily processed.	Submerge in water, enzyme solution, or subsequent cleaning agent to be used.	Dental materials and dried proteins in blood and saliva may be more difficult to remove by the subsequent cleaning procedures.
3. Cleaning, rinsing & inspection	**A)** Cleaning removes bioburden to facilitate the subsequent sterilization process. **B)** Rinsing reduces the number of microbes and chemicals present in the residual cleaning solution on the instruments. **C)** Inspection confirms the absence of visible debris.	**A)** Disassemble items when necessary and use ultrasonic cleaner or instrument washer/disinfector following manufacturer IFU.[b] **B)** Gently rinse the instruments in the ultrasonic baskets or cassette racks under running tap water.[c] **C)** Dry and visually inspect the processed items.	**A), B) & C)** Remaining bioburden insulates the instrument from direct contact with the sterilization agent (e.g., steam, heat, hot chemical vapors), and this can result in sterilization failure enhancing risk to patients.

(table continued on page 8)

a If an ultrasonic cleaner will be used, place an ultrasonic cleaning basket in the transport container. This reduces direct handling of the instruments facilitating safe and efficient transport between containers. Do not place any liquid in the transport container. (Eklund, KJ, Bednarsh, H, and Haaland, CO. (2022). *OSHA and CDC Guidelines: Interact Training System – Self-instructional Workbook*. OSAP, Atlanta, p. 5 · 4.)

b Instructions for use

c Instrument washers/disinfectors have automatic rinsing and drying cycles.

Table 2: Summary of Pre-sterilization Procedures (cont'd)

Pre-sterilization Steps	Desired Result	Examples of How to Perform	Problem(s) If Performed Improperly
4. Rust control, drying, lubrication	**A)** Rust control reduces corrosion of carbon steel instruments in the autoclave, and may aid in the functioning of those instruments. **B)** Drying aids in maintaining integrity of packaging materials and proper functioning of dry heat and unsaturated chemical vapor sterilizers.[d] **C)** Lubrication following IFU aids in the functioning and longevity of items (e.g., some handpieces). **D)** Hinged instruments are to be opened.	**A)** Spray or dip in anti-rust chemicals. **B)** Dry in air or carefully pat with several layers of clean nonlinting absorbent towels. **C)** Follow manufacturer IFU for those items needing lubrication. **D)** Opening hinged instruments helps ensure good contact with the sterilizing agent.	**A)** Rusty items may become dull and/or malfunction and will be unsightly to patients. **B)** Wet instruments may cause packaging materials to tear which allows for recontamination after sterilization. Also, water on undried instruments may interfere with anti-rusting properties of chemical vapor sterilization and dry heat sterilization. **C)** Unlubricated instruments may malfunction. **D)** Sequestered hinge areas may not become sterile possibly leading to cross-contamination.
5. Packaging & labeling	**A)** Packaging maintains sterility of the processed items after removing from the sterilizer and during storage and distribution.[e] **B)** Labeling identifies the packages.	**A)** Use FDA[f]-cleared packaging recommended for the particular type of sterilizer to be used. **B)** Each package is to be labelled with the date, the sterilizer used, the cycle or load number, the contents (when necessary), and the expiration date, if used.	**A)** Instruments in inappropriate packaging may not become sterile or become easily recontaminated during post-sterilization handling, storage or distribution enhancing risk to patients. **B)** No labeling will lead to the inability to identify packages related to a sterilization failure and to misidentification of the specific instruments inside wrapped packages.

d Water is required for rusting. The anti-rusting properties of dry heat and unsaturated chemical vapor sterilizers occurs because there is no or low amounts of water present.

e Immediate-use steam sterilization requires unpackaged instruments, and is only to be used under special circumstances (e.g., if an instrument in short supply is dropped), and if a protocol for minimizing post-sterilization contamination is carefully followed, if mechanical and chemical sterilization monitoring are heeded, and if the instrument is used immediately [CDC. Guidelines for infection control in dental health-care settings – 2003. *Morb Mortal Wkly Rpts* 2003; 52(No RR-17) (Recommendation VI.E). Available at: **cdc.gov/mmwr/PDF/rr/rr5217.pdf**. Accessed July 2022.]

f Food and Drug Administration

Table 3: Summary of Sterilization and Beyond

Sterilization Steps and Beyond	Desired Result	Examples of How to Perform	Problem(s) If Performed Improperly
6. Sterilization & drying	**A)** Kills remaining microbes on the instruments ensuring patient safety. **B)** Yields dry packages	**A)** Process through FDA[a] – cleared sterilizers following the manufacturer IFU. **B)** Let packages dry inside the autoclave before removal and handling.[b]	**A)** Improper use or functioning of the sterilizers causes sterilization failures and enhances the risk of cross-contamination from patients to patient. **B)** Wet packs may easily tear and allow wicking of microbes from the air and hands/gloves to the instruments inside.
7. Sterilization monitoring	Measures the use and functioning of the sterilizers and the effectiveness of the sterilization process.	**A)** Perform mechanical monitoring on each load. Check the results immediately after each run to determine if the instrument processing should continue. **B)** Use a chemical indicator inside each package, and if it cannot be seen from the outside, place another chemical indicator on the outside of the package. Check the results of visible indicators immediately after each run to determine if the instrument processing should continue. **C)** Monitor each sterilizer at least weekly by using a biological indicator (BI) inside a package[c] with a matching control from the same lot number. **D)** Develop a protocol to activate after detecting a sterilization failure.	**A)** May not be able to detect malfunctioning or misuse of the sterilizer. **B)** Will not be able to determine if the packages have been processed through a sterilizer and the sterilizing agent has reached inside the packages to the surface of the instruments. **C)** Will not be able to determine if highly resistant microbes have been killed and the instruments were safe for use. **D)** Possible unlawful conduct as some states have laws requiring routine spore-testing.

(table continued on page 10)

a FDA - Food and Drug Administration

b Packages are already dry at the end of dry heat and unsaturated chemical vapor sterilization.

c Follow the sterilizer manufacturer IFU for placement of the BI package in the most challenging site (e.g., in an autoclave – in the center of load or near the drain).

Table 3: Summary of Sterilization and Beyond (cont'd)

Sterilization Steps and Beyond	Desired Result	Examples of How to Perform	Problem(s) If Performed Improperly
8. Handling & storage	**A)** Handle the dry packages in ways to maintain the integrity of the packaging material. **B)** Maintain the sterility of stored items until distributed for use.	**A)** Prevent crushing, bending, compression, sliding, tearing, or puncturing of packages by not handling wet packages, not squeezing pouches or bags, not stacking wrapped cassettes or pouches/bags, and not sliding wrapped cassettes on shelves. **B)** Practice event-related or date-related storage. Store sterilized packages in dry, low dust, low traffic areas (preferably in closed cabinets) away from sinks, exposed sewer and water pipes, and a few inches away from floors, outside walls, and ceilings.	**A) & B)** If packaging material is breached during handling and storage, the instruments inside become recontaminated and are not safe for use on patients. Such instruments need to be re-cleaned, re-packaged and re-sterilized.
9. Distribution & inspection	**A)** Maintain sterility of instruments during transport to the point of use. **B)** Identify breached packaging material.	**A)** Carefully place sterile packages on/in sterile or at least cleaned and disinfected, covered trays, tubs, or cart tops. Transport to the point of use.[d] **B)** At the point of use check packages for tears, punctures, and dampness and any external chemical indicators. If intact and the indicators have changed, open the packaging without touching the instruments. Check the internal chemical indicators, and if changed, cover with sterile or clean barriers if not used immediately. If any of the chemical indicators have not changed, do not use the instruments.	**A) & B)** Breaches of packaging material or detection of unchanged chemical indicators requires reprocessing of the instruments (re-cleaning, re-packaging, re-sterilizing).

d If the same container or cart is used to transport both dirty and sterile instruments, decontaminate the containers/carts between uses and mark as "dirty" or "clean".

DETAILS and STRATEGIES for Instrument Processing

Table 4: Tips for Protecting Dental Instruments[a]

1	Follow the instrument and sterilizer manufacturer's IFU for cleaning and sterilization.
2	Clean as soon as possible after use. Cleaning removes corrosive materials such as blood and salts and may counteract the drying of the bioburden that will make cleaning more difficult.
3	Keep instruments from knocking against each other as much as possible during the cleaning process. This practice reduces damage to instruments.
4	Do not store instruments for long periods of time in water or chloride solutions. Corrosion requires water, and extended exposure to chlorine can damage some metals.
5	Use only cleaning solutions that are recommended for dental or medical instruments. Cleaning solutions designed for medical and dental instruments have special properties that are gentle to metal surfaces, that facilitate rinsing, and that interfere with corrosion.
6	Rinse well after cleaning. Residual cleaning solution on the instruments contains microbes that need to be rinsed away. If necessary, rust inhibitors from the cleaning solution that are rinsed away can be replaced before steam sterilization.
7	Use distilled or deionized water in steam sterilizers. Water spots on instruments give the impression that the instruments are not clean, and hard-water deposits can build up in the sterilizer and cause malfunctions.
8	Use rust inhibitors for carbon steel items to be processed through steam, or process these items through a dry heat or unsaturated chemical vapor sterilizer to prevent corrosion. Corrosion can interfere with the sharpness and functioning of some instruments.
9	Dry items before processing through dry heat or chemical vapor sterilizers. Excess water on instruments interferes with the anticorrosion aspects in these types of sterilizers.

a From: Miller, CH. Instrument processing. In *Infection Control and Management of Hazardous Materials for the Dental Team*. 7th ed, 2023 (available now), Elsevier, St. Louis. Chapter 13, Box 13.2. p 139.

Further details about dental instrument processing are available.[10-12]

TEAM HUDDLE DISCUSSION GUIDE

1. Does your facility have standard operating procedures for each step of instrument processing?
2. Are your instrument processing administrative measures in place?
3. Do you know what to do if a sterilization failure is detected?

Glossary

fully vaccinated: persons who have received the primary series of inoculation(s) (two with the Pfizer-BioNTech vaccine or the Moderna vaccine; one with the Johnson & Johnson-Janssen)

bioburden: the microbial or organic material on a surface or object before decontamination

biological monitoring: the use of biological indicators (e.g., spore strips) to test the use and functioning of sterilizers (same as spore testing)

chemical monitoring: the use of chemical indicators to test the use and functioning of sterilizers

cross-contamination: the spreading of microbes between persons and/or environmental surfaces

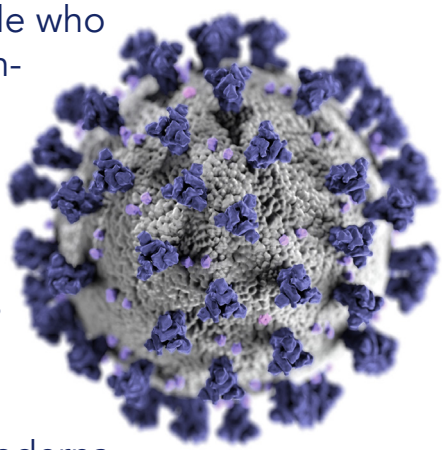
event-related storage: a storage practice that recognizes that a package and its contents should remain sterile until some event causes the item(s) to become contaminated

mechanical monitoring: the use of readings (e.g., time, temperature, and pressure) from sterilizer gauges and readouts to determine the use and functioning of sterilizers

regulated medical waste: medical/dental waste shown to have a disease-producing potential and that must be handled in a specified fashion to ensure proper containment and disposal

COVID-19 Update – Who is recommended to receive a bivalent booster dose?

Bivalent booster dose: People ages 12 years and older who received a primary series with any COVID-19 vaccine, including people who previously received a monovalent booster dose(s), are recommended to receive 1 bivalent booster dose; any age-appropriate bivalent booster dose (Moderna or Pfizer-BioNTech) can be used.



Monovalent booster dose: People ages 5–11 years who received a Pfizer-BioNTech COVID-19 Vaccine primary series are recommended to receive 1 age-appropriate monovalent Pfizer-BioNTech COVID-19 Vaccine booster dose.

No booster dose: People ages 6–11 years who received Moderna COVID-19 Vaccine primary series and people ages 4 years and younger are not currently eligible for any booster dose.

Links to Resources

1.CDC. Guidelines for infection control in dental health-care settings – 2003. *Morb Mortal Wkly Rpts* 2003; 52(No RR-17) (Recommendation VI.C.1). Available at: **cdc.gov/mmwr/preview/mmwrhtml/rr5217a1.htm**. Accessed July 2022.

2. CDC. Guidelines for infection control in dental health-care settings – 2003. *Morb Mortal Wkly Rpts* 2003; 52(No RR-17) (page 21). Available at: **cdc.gov/mmwr/preview/mmwrhtml/rr5217a1.htm**. Accessed July 2022.

3. CDC. *Summary of Infection Prevention Practices in Dental Settings: Basic Expectations for Safe Care*. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Oral Health; May 2016. **Summary of Infection Prevention Practices in Dental Settings: Basic Expectations for Safe Care** (cdc.gov) (Checklist, Section II.6.F, p. 32). Accessed July 2022.

4. Miller, CH, Riggen, SD, Sheldrake, MA, and Neeb, JM. (1993). The presence of microorganisms in used ultrasonic cleaning solutions. *Amer J Dent* 6:27-31.

5. Betner, MD, Beiswanger, MA, Miller, CH, Palenik, CJ. (1993). Effect of ultrasonic cleaning on microorganisms. *Amer J Dent* 11:185-188.

6. CDC. Guidelines for infection control in dental health-care settings – 2003. *Morb Mortal Wkly Rpts* 2003; 52(No RR-17) (page 22). Available at: **cdc.gov/mmwr/preview/mmwrhtml/rr5217a1.htm**. Accessed July 2022.

7. CDC. Guidelines for infection control in dental health-care settings – 2003. *Morb Mortal Wkly Rpts* 2003; 52(No RR-17) (page 23). Available at: **cdc.gov/mmwr/preview/mmwrhtml/rr5217a1.htm**. Accessed July 2022.

8. CDC. Guidelines for infection control in dental health-care settings – 2003. *Morb Mortal Wkly Rpts* 2003; 52(No RR-17) (Recommendation VI.A.4). Available at: **cdc.gov/mmwr/preview/mmwrhtml/rr5217a1.htm**. Accessed July 2022.

9. CDC. *Summary of Infection Prevention Practices in Dental Settings: Basic Expectations for Safe Care*. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Oral Health; May 2016. **Summary of Infection Prevention Practices in Dental Settings: Basic Expectations for Safe Care** (cdc.gov) (Checklist, Section I.10, p. 24-25). Accessed July 2022.

10. Eklund, KJ, Bednarsh, H, and Haaland, CO. *OSHA and CDC guidelines: Interact Training System – Self-instructional workbook*, 2022, OSAP, Atlanta, Course 5.

11. *OSAP, From Policy to Practice: OSAP's Guide to the CDC Guidelines*, 2022, OSAP, Atlanta, Chapter 7.

12. Miller CH. Instrument processing. In *Infection Control and Management of Hazardous Materials for the Dental Team*. 7th ed, 2023 (available now), Elsevier, St. Louis. Chapter 13.

Educational Spotlight – OSAP Boot Camp 2023

A fast-paced, foundational-level course perfect for those new to dental infection prevention and safety who are seeking an introductory understanding. Boot Camp is also meant for those early in their career, making a career shift, or who want a refresher. This year, OSAP is offering two formats – In-Person Plus and On-Demand Only.

In-Person Plus

January 23 - 25, 2023
Location: Crowne Plaza Atlanta Perimeter at Ravinia

OR

On-Demand Only

February 13 - April 14, 2023

For the first time, OSAP will also host an Antibiotic Stewardship Summit, a pre-course event on January 22, focusing on antibiotic stewardship in dentistry.

For more information, visit **osapbootcamp.org**.

Boot Camp Features	In-Person Plus	On-Demand Only
In-person presentations, including live Q&A	✓	✗
On-demand recordings (Available Feb 13 – Apr 14); Not live-streamed	✓	✓
Access to PowerPoints, checklists, tools & resources	✓	✓
OSHA & CDC Guidelines: OSAP Interact Training System 7th Edition workbook	✓ Printed copy	✓ Digital copy (not printed)
CE Credits & Recognition		
20+ ADA CERP CE Credits	✓	✓
Digital badge and online certificate of attendance	✓	✓
Counts toward the education requirements for DISIPC® & CDIPC® certifications	✓	✓
Social Events & Networking Opportunities		
Network with OSAP board members, speakers, participants, & exhibitors	✓	✗
Lunch provided by OSAP on Tuesday, January 24	✓	✗
Exhibit Hall		
Learn about products to solve your infection control challenges	✓	✗
Earn prizes and take advantage of exclusive discounts	✓	✗

What's Wrong With This Picture?

Can you identify the pre-sterilization work practice in this picture that can inhibit sterilization and increase risk of cross contamination?

Answer: The hinged instruments (scissors and locking forceps) are to be opened prior to sterilization. Opening hinged instruments helps ensure good contact with the sterilizing agent. Sequestered hinge areas may not become sterile, possibly leading to cross-contamination. If the chemical indicators are external, there needs to be an internal chemical indicator in each package.

Take the Silent Video Challenge!

The Scenario: Immediate-Use Sterilization

When using an immediate-use sterilization cycle, what precautions must be taken when processing and handling the sterilized unpackaged patient care items? Challenge your knowledge and compare to the lesson below. **https://youtu.be/YvO4idBFm5U**

The Lesson: Immediate-use steam sterilization requires unpackaged instruments and is only used under exceptional circumstances (e.g., if an instrument in short supply is dropped). The use of mechanical and chemical indicators must be evident to verify sterilization. The unpackaged and processed items are allowed to dry and cool in the sterilizer, before being aseptically handled (e.g., use of sterile forceps). The unwrapped sterilized items are immediately and aseptically transported (e.g., placed in a sterile covered container) to the point of use to maintain sterility[7]. Unpackaged sterilized instruments are not to be stored.

Thanks

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QUESTIONS TO ONLINE QUIZ:
Select the most correct answer

1. How does the CDC state to routinely determine the cleanliness of instruments?
   a. Wipe each processed item with a disinfectant wipe and check the wipe for debris
   b. View them under a magnifying glass
   c. Always clean all items twice
   d. Visual observation

2. What does the CDC state to do after ultrasonically cleaning instruments?
   a. Rinse and proceed directly to packaging
   b. Dry and proceed directly to packaging
   c. Rinse, dry, inspect, and proceed directly to packaging
   d. Nothing just proceed directly to packaging

3. How does one routinely determine if the sterilizing agent has reached the instruments inside packages?
   a. Check the sterilizer temperature reached
   b. View the internal chemical indicator in each package
   c. Check the sterilizer exposure time reached
   d. Make sure the instruments are hot at the end of the cycle

4. When should immediate-use sterilization be used?
   a. To speed up instrument processing
   b. To avoid having to purchase more instruments
   c. To avoid having to use chemical monitoring
   d. To quickly process a needed instrument dropped on the floor

5. Immediate-use sterilization cycles compared to regular autoclaving cycles operate at:
   a. higher temperature and shorter time
   b. lower temperature and shorter time
   c. higher temperature and longer time
   d. lower temperature and longer time

6. Which sterilizer yields dry packages at the end of the sterilization portion of the cycle?
   a. Steam and dry heat
   b. Dry heat and unsaturated chemical vapor
   c. Unsaturated chemical vapor and steam
   d. Only steam

7. When should use of a holding solution be considered?
   a. To disinfect the instruments before cleaning
   b. To begin the sterilization process
   c. To keep instruments moist if cleaning is delayed
   d. To replace the cleaning step if instruments are minimally contaminated

8. Why does rusting of certain instruments occur in the regular autoclave cycles but is minimized in dry heat and unsaturated chemical vapor sterilizers?
   a. The maximum temperatures reached are lower than those in the autoclave
   b. The exposure time is lower than those in the autoclave
   c. The amount of water is absent or lower than in the autoclave
   d. The pressures are higher than those in the autoclave

9. What is the main reason for cleaning instruments prior to packaging?
   a. To minimize damage during sterilization
   b. To remove bioburden
   c. To keep the instruments sharp
   d. To make the instruments shiny looking for patients

10. Sterilization monitoring involves biological, chemical, and _____ monitoring.
   a. mechanical
   b. regulated
   c. event-related
   d. bioburden

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FROM THE Editor's Desk

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