OSAP introduces The Safest Dental Visit,” an educational program based on authoritative best practices and supported by behavioral change tools including Infection Control in Practice.

This year Infection Control in Practice will feature a team huddle discussion guide to encourage reader interaction with the scenario presented in each issue. The guide can be used as a tool to spark discussion during a morning team huddle, at a staff meeting or within an educational presentation.

EDUCATIONAL UPDATE!
Sign up NOW for the OSAP Infection Control Boot Camp. Registration closes December 19.
Boot Camp runs January 12-14, 2015 in Atlanta, GA and offers 24 hours of CE credit.

TEAM HUDDLE: Asepsis After Patient Treatment - Part 2
Infection prevention performed after patient treatment involves protection of dental health care personnel (DHCP) and helping to assure a safe dental visit for the next patient. The overall goal is to safely address the surface and equipment contamination generated during the patient treatment. The aseptic procedures discussed in Part 1 of this topic included, among others, hand hygiene, proper use of personal protective equipment (PPE), transport of contaminated items, flushing air/water lines, sharps and waste management, surface asepsis, and laboratory asepsis. This issue of Asepsis After Patient Treatment: Part 2 will concentrate on instrument processing. See page 4 for Asepsis After Patient Treatment - Part 2 Implementation Guide.

LEARNING OBJECTIVES
After reading this publication, the reader should be able to:
• describe the importance of aseptic patient treatment.
• describe how to best protect yourself from exposure to patient microbes during instrument processing.
• describe some breaches in infection prevention during instrument processing that may lead to cross-contamination of the staff and patients.
• describe how to show that processed instruments are safe for use on patients.
The Incident

Dr. Verti and his family (wife Adrian – hygienist; daughter Estry – assistant; and daughter Sissy – receptionist and financial manager) operate a general dentistry practice in a small town. Dr. and Mrs. V are ready to retire and are trying to sell the practice. A young dentist showed some interest in the practice but wanted them to completely revamp their instrument managing system before he would make an offer. So Mrs. V called the local dental school for help in finding someone who could review their office procedures. She hired the person recommended by the school (Marisa - a consultant member of OSAP) who observed the following:

Since Estry was the only assistant in the practice, she didn’t have enough time to start the instrument processing until the end of the morning and afternoon clinic sessions. So she took the trays of contaminated instruments to the sterilizing room after each appointment and stacked them between the sink and the sterilizer. After the last patient of each half-day clinic session Estry discarded her mask, rinsed off her eyewear, donned fresh latex exam gloves and headed back to the sterilizing room. She picked up and discarded the cotton rolls and other disposables from each instrument tray, gathered up the contaminated instruments, and dropped them into a pan of water and dishwashing detergent. She thoroughly hand-scrubbed the instruments with a nail brush, rinsed them under running tap water and laid them out on a towel. She then donned fresh exam gloves, placed the instruments on a large metal tray, sprayed them with a rust inhibitor, placed the tray in the built-in Kenmore oven, and set the timer for 30 minutes at 250°F.

Special instruments used for extractions (forceps and elevator) were cleaned as usual, wrapped in aluminum foil, and processed in a small steam sterilizer for 30 minutes at 250°F. The processed foil packages were stored on the counter between the sink and the sterilizer.

The other instruments were removed from the oven and placed under a fan for cooling. Estry donned fresh exam gloves and arranged the instruments in functional sets on disposable instrument trays, and then added disposable items. The trays were then covered with blue denim cloths labeled with the set-up name (e.g., hygiene; crown; restore; exam), and stored on the countertops in either the hygiene or the dental operatory.

Potential Consequences

Well, to say the least, Marisa was stunned! She told Dr. and Mrs. V that there were serious breaches in infection prevention procedures that put Estry and patients at risk. The V’s were surprised stating: “We’ve never had any problems”. Marisa gathered her notes (and her wits) and presented her findings.

First of all Estry wore exam gloves and protective eyewear but no mask during instrument processing. The exam gloves are not as protective as heavy utility gloves, and a mask prevents contamination of the lips and mouth from splashes and splatter. Since the instruments were processed at the end of each half-day clinic session, the debris on the instruments was allowed to dry before cleaning. This created a greater challenge to the cleaning process.

Estry reached in among the contaminated...
sharps on each instrument tray to retrieve disposable items and risked injury. Furthermore she gathered up the sharp instruments by hand from the sudsy water – probably not being able to see through the suds - and again risked injury. While hand-brushing instruments can remove the debris, it increases the risk for sharps injuries as well as creates contaminated splatter. The dishwashing detergent used is alkaline for grease removal, but is not very gentle on metal instruments. The chances for intermingling of contaminated instruments with cleaned/heat-processed instruments, or recontamination of the latter, was enhanced by placing the trays of used instruments close to the processed surgery packages. Adding rust inhibitor to items to be processed in dry heat is a waste of time. This is necessary only if non-stainless steel items are to be processed in a steam sterilizer.

Using a kitchen oven for heat-processing is risky since the unit was not designed or intended for use as a sterilizer. Also, 30 minutes at 250°F is OK for some autoclave cycles, but dry-heat needs at least 60-120 minutes at 320°F for adequate processing as determined by sterilization monitoring. This wasn’t even adequate for baking a cake! In addition the instruments were not even exposed to the 250°F for the full 30 minutes because the oven was cold when the tray was inserted and the timer started. Not prepackaging the instruments prior to heat-processing enhances the risk for their recontamination after sterilization and before distribution to chairside.

Estry did not use mechanical, chemical or biological monitoring, so there is no evidence that any of the instruments in this practice were safe for use on patients. This is also true of the steam-processed surgical instruments, since the foil wrapping prevented steam from penetrating to the instruments inside. Using a fan to cool/dry processed instruments results in exposing the instruments to an unnecessary amount of contaminated air. Open storage of processed instrument trays or packages in the operatory or on the countertops or near sinks in the sterilizing room allows them to be exposed to patient’s spatter or moisture. This enhances the risk for recontamination before the instruments are used on patients.

Prevention Recommendations and Regulations

<table>
<thead>
<tr>
<th>Recommendation</th>
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<tbody>
<tr>
<td>Use heavy utility gloves, mask, protective eyewear and protective clothing impermeable to moisture for instrument processing.¹</td>
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<tr>
<td>Consider using a detergent holding solution to prevent drying of debris on instruments if they cannot be cleaned right away.²</td>
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<tr>
<td>Don’t reach blindly into a container of sharps.³</td>
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<tr>
<td>Consider using instrument cassettes to reduce direct handling of the sharp instruments.²</td>
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<tr>
<td>Use mechanical cleaning units such as an ultrasonic cleaner or instrument washer/disinfector.¹</td>
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<tr>
<td>Use a detergent designed for use on dental/medical instruments.²</td>
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<tr>
<td>Package the instruments with materials cleared by the Food and Drug Administration (FDA) prior to sterilization.¹</td>
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<tr>
<td>Use signage or spatial separation to differentiate between contaminated and processed items in the sterilizing room.¹</td>
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<tr>
<td>Use sterilizing equipment that has been cleared by the FDA and follow the manufacturer’s directions for operation.¹</td>
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<tr>
<td>Dry/cool instruments inside the sterilizer.¹</td>
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<tr>
<td>Use mechanical, chemical and biological sterilization monitoring.¹</td>
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<tr>
<td>Maintain sterilization records (mechanical, chemical, biological) in compliance with state and local regulations.</td>
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<tr>
<td>Store processed instruments in closable cabinets.¹</td>
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</tbody>
</table>
IMPLEMENTATION GUIDE - A Checklist Related to Post-treatment Procedures

General

- Personal protective equipment (heavy utility gloves, mask, protective eyewear and protective clothing) is used during operatory clean-up and instrument processing.\(^2\)\(^1\)
- Containers of contaminated reusable sharps (e.g., dental hand instruments) are labeled properly with a biohazard symbol or color coding, are closed during transport, and the containers do not require one to reach inside without being able to see the sharps.\(^2\)\(^3\)
- A central area is designated for instrument processing and is divided physically or spatially into distinct areas for: receiving, cleaning and decontamination; preparation and packaging; sterilization; and storage. Processed instruments are not stored where contaminated instruments are held or cleaned.\(^1\)
- Employees are trained to use work practices that prevent injuries and contamination of clean areas.\(^1\)

Cleaning

- If instrument processing is delayed, placing them in the cleaning solution to be used until processing can begin is considered to prevent drying and to facilitate cleaning.\(^2\)
- All visible blood and other contamination is cleaned from instruments and devices before packaging and sterilization by using automated equipment as directed by the manufacturer.\(^1\)
- Directly handling the instruments is avoided as much as possible (e.g., use cleaning baskets, instrument cassettes, instrument forceps).\(^2\)
- Used cleaning solutions are changed at least daily, using heavy utility gloves, mask, protective eyewear, and appropriate protective clothing.\(^2\)
- Instruments are checked for broken tips and cleanliness, carefully dried, lubricated when necessary, and non-stainless steel items are treated with a rust inhibitor for subsequent steam sterilization.\(^1\)\(^2\)
- Hinged instruments are opened to allow thorough cleaning and exposure of all surfaces to heat sterilization.\(^2\)
- All instruments are arranged in functional sets or necessary items are added to instrument cassettes and are packaged (along with the internal chemical indicator and when appropriate a biological indicator) in FDA-cleared material that is compatible with the method of sterilization used and will maintain sterility after sterilization (e.g., paper/plastic peel pouches; sterilization wrap, paper or tubing).\(^1\)\(^2\)
- The date of sterilization and the sterilizer used is placed on the outside of each package to facilitate the retrieval of processed items in the event of sterilization failure.\(^1\)

Sterilization

- Cleaned, dried, inspected, and packaged instruments or packaged instrument cassettes and devices are heat-sterilized before each use (e.g., steam, dry heat, or unsaturated chemical vapor sterilizers).\(^1\)
- Only FDA-cleared devices are used for sterilization, and the manufacturer's directions for loading, exposure time, temperature, and drying are carefully followed.\(^1\)
- Packages are placed correctly and loosely into the sterilizer so as not to impede penetration of each package by the sterilizing agent.\(^2\)
- Packages are allowed to dry in the steam sterilizer before they are handled to avoid contamination.\(^1\)
- The manufacturer's instructions for cleaning, lubrication, and sterilization of handpieces and other intraoral instruments that can be removed from the air and water lines of dental units are followed.\(^1\)
- Items that can be sterilized, are sterilized.\(^1\)
- Sterilization of unpackaged items is performed only in emergency situations, and items should be used immediately.\(^2\)

Sterilization Monitoring

- Mechanical, chemical, and biological indicators are used according to the manufacturer's instructions.\(^1\)
- Each sterilizer load is monitored with mechanical (e.g., time, temperature, pressure), and chemical indicators.\(^1\)\(^2\)
- A chemical indicator is placed on the inside of every pack, pouch or cassette to be sterilized, and if this indicator cannot be seen from the outside of the package, a chemical indicator is placed on the outside of the package.\(^1\)
- Sterilizers are monitored at least weekly using a biological indicator (i.e., spore test) with a matching control indicator (one that is not processed through the sterilizer) from the same lot number.\(^1\)\(^2\)
- Positive spore tests are managed as described by the Centers for Disease Control and Prevention (CDC) recommendation VI F.\(^1\)

Instrument Storage

- Date-related or event-related storage of packaged sterile instruments and devices is used.\(^1\)\(^2\)
- Even if event-related storage is used the date of sterilization and the sterilizer used is placed on the outside of each package to be sterilized to facilitate the retrieval of processed items in the event of sterilization failure.\(^1\)
- Wrapped packages of sterilized instruments are examined before opening them to ensure the barrier wrap has not been compromised during storage.\(^1\)
- Any package that has been compromised is recleaned, repacked, and resterilized.\(^1\)
- Sterile items and dental supplies are stored in covered or closed cabinets, if possible.\(^1\)
What’s Wrong With This Picture?
Can you identify the breach(s) in infection prevention and safety procedures in this photo? Check your answer below.

ANSWER: The dental clinician and dental assistant are not wearing long sleeve protective clothing to guard against spatter and airborne particulate during a procedure that will likely generate spatter. As a general rule, hair should be pulled back from the face and pinned.

Product Spotlight
Is that instrument safe for use?
Are you reinforcing safe instrument processing practices? OSAP has created an all-inclusive workbook, *CDC Guidelines, From Policy to Practice*, to help dental healthcare professionals put infection control recommendations from the CDC into practice.

Through practical, how-to instructions, pictures, charts and checklists, you will find answers to common questions and guidance for making sound clinical judgments. A go-to resource to help maintain safe dental care practices.

Order today at OSAP’s online store or call 1-800-298-OSAP (6727)

To access this product go to: https://osap.site-ym.com/store/ViewProduct.aspx?id=396090

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**KEY TAKEAWAYS**

- "Short-cuts" in instrument processing can put the staff and patients at risk of contamination with infectious agents.
- Review the CDC recommendations for instrument processing in dental facilities.
- Carefully follow manufacturers’ directions for use of cleaning and sterilizing equipment and sterilization verification.

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**Glossary**

- **Event-related storage**: A storage practice which recognizes that a package and its contents should remain sterile until some event (e.g., tearing, puncturing, or becoming wet) causes the items inside to become contaminated. Is practiced by carefully inspecting the packages before they are opened.

- **FDA-cleared medical device**: A medical device (e.g., sterilizers, sterilization packaging materials, sterilization indicators) whose manufacturing and label claims have been satisfactorily reviewed by the FDA and determined to be substantially equivalent to a device that is already legally marketed for the same use.

- **Holding solution**: A solution for soaking contaminated instruments prior to cleaning. It prevents the drying of debris which makes cleaning more difficult.

- **Noncritical device**: Contacts the skin (e.g., radiograph head/cone, blood pressure cuff, facebow, pulse oximeter).

- **Work practice control**: Reduces the likelihood of exposure by altering the manner in which a task is performed (e.g., prohibiting the recapping of needles by a two-handed technique).

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**Links to Resources**


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**TEAM HUDDLE DISCUSSION GUIDE**

1. Have a contest on how many infection prevention breaches can be identified from the scenario before reading the “Potential Consequences” section.

2. How many of the instrument processing checklist items are followed in your facility?

3. Identify how instrument processing in your facility may be improved.

4. Are the cleaning equipment and sterilizers in your facility being used per manufacturers’ directions?
QUESTIONS FOR ONLINE QUIZ

1. What is the best way to prevent contamination of sterilized instruments?
   a. Remove them from the sterilizer and quickly place them in closable drawers
   b. Remove them from the sterilizer and store them in a disinfectant solution
   c. Package them in FDA-cleared material prior to placing them in the sterilizer
   d. Coat them with a liquid sterilant prior to placing them in the sterilizer

2. What is the purpose of a holding solution?
   a. To sterilize instruments
   b. To disinfect instruments
   c. To keep the instruments from drying
   d. To prevent the instruments from rusting

3. What is one advantage in using instrument cassettes?
   a. Eliminate the need for wrapping
   b. Reduce the direct handling of sharp instruments
   c. Prevent rusting of non-stainless steel instruments
   d. Permit a shorter exposure time in the sterilizer

4. Why is aluminum foil an inappropriate material for packaging instruments prior to steam sterilization?
   a. It causes the instruments to rust
   b. It discolors the sterilizing chamber
   c. It remains hot for a long period of time after sterilization
   d. It prevents the steam from contacting the instruments inside

5. How should heat-processed instrument packages be stored?
   a. Near a sink
   b. In a closable cabinet
   c. On a countertop in the operatory
   d. On shelves in the general storage room

6. How is event-related storage of sterilized instrument packages practiced?
   a. By using two layers of packaging material
   b. By adding a chemical indicator to the outside of the package
   c. By carefully inspecting the packaging for defects before opening
   d. By automatically recleaning, repackaging and resterilizing after one month of storage

7. What is the CDC recommendation for use of chemical indicators?
   a. One on the outside of every package
   b. One on the inside and outside of one package in every sterilizer load
   c. One on the inside and outside of every package in one sterilizer load per day
   d. One on the inside of every package, and if this indicator cannot be seen from
      the outside of the package, a second indicator is placed on the outside of the package

8. How should steam-sterilized packages be allowed to dry?
   a. Under a fan
   b. Inside the sterilizer
   c. At room temperature
   d. Next to an air-conditioning vent

9. When should a rust inhibitor be used on non-stainless steel instruments to be sterilized?
   a. If they are to be processed through a steam sterilizer
   b. When packages will not be dried after sterilization
   c. Only if the instruments are sterilized unpackaged
   d. For dry heat sterilization

10. What is an FDA-cleared medical device?
    a. A device that is the only one of its kind on the market
    b. A device that is sold only by companies located in the U.S.
    c. A device whose manufacturing and label claims have been satisfactorily reviewed by the FDA
    d. A device that has been shown to be the least expensive form of the device on the U.S. and foreign markets

GET YOUR CE CREDIT ONLINE

Follow the instructions below to purchase and complete the quiz to receive 1 hour of CE credit. OSAP is recognized by the American Dental Association as a CERP provider.*


Step 2: OSAP will send you a purchase confirmation email and a separate email with the link to the online CE exam. Click on that link to access the exam.

Step 3: Complete the online exam. You have 2 attempts to pass with 7 out of 10 correct answers. When finished, you can print out or download your CE record of completion for your records. Your record of completion will also be emailed to you.
TEAM HUDDLE HIGHLIGHTS

• Do your instrument processing procedures follow the recommendations from the CDC?

• Are you unnecessarily exposing yourself to patient microbes during instrument processing?

• Are your processed instruments safe for use on patients?

Read on!