LEARNING OBJECTIVES

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

- describe the importance of post-treatment infection prevention.
- describe how to manage contaminated operatory surfaces.
- describe how to manage regulated waste.
- describe proper decontamination of dental impressions.
The Incident

Trudy has been the sole dental assistant in her brother’s general dentistry practice for 18 years. Her husband wants her to retire, so she convinced her brother (Dr. Mano) that he could save a lot of money if he let her train her daughter (Paso) to take her place in the practice. Dr. Mano suggested having Paso look into joining some professional organization to see if there was anything new in the area of dental assisting. Trudy was insulted, telling her brother that they have not had any practice problems for 18 years and that her techniques are saving time and money. So Dr. M said, “OK, go ahead and train your daughter”.

Paso just graduated from high school and was eager to start shadowing her Mom at work. She told her Mom that she had been on-line checking out the dental assisting and infection control organizations. Trudy said, “Don’t worry about it - I’ll show you everything you need to know”. When Trudy felt confident that Paso had learned the chairside techniques, she concentrated on teaching her the post-treatment procedures.

Paso observed Trudy’s post-treatment procedures. After the patient was dismissed Trudy removed her gloves and mask and placed them in a red biohazard bag. She lathered her hands with the Ivory bar soap and rinsed and dried her hands with the soft terry-cloth towel. She then donned fresh exam gloves, removed the surface barriers from the bracket table, nearby countertop, drawer knobs, chair headrest and handpiece connector/hoses and discarded them in the biohazard bag. She placed fresh barriers, put on eyewear and a mask and then sprayed the uncovered surfaces (light handles and switch, chair arms, handpiece control switches, and x-ray view box) with a disinfectant and wiped them with gauze pads. The used pads and her mask were discarded in the biohazard bag.

Trudy also removed the disposable air/water syringe tip and placed it in the instrument cassette. The handpieces, anesthetic syringe with uncapped needle, the mandibular impression of the patient, and the biohazard bag were placed on top of the instrument cassette and carried back to the sterilizing room. She removed the needle from the syringe, recapped the needle, and discarded it (along with a disposable scalpel from inside the instrument cassette) into the office’s only sharps container in the sterilizing room. The burs were pulled out of the handpieces and placed in a bur block. The cotton rolls, air/water syringe tip, and other debris (articulating paper, cotton pludgets) were picked out of the cassette and placed (along with her exam gloves) into the biohazard bag. The bag was stored in a covered tub to await the monthly pickup by the local medical waste disposal company. The impression made during patient treatment was taken to the lab, rinsed with water, and the model poured up. At the end of the day she removed her gloves and washed and dried her hands then removed her disposable gown and placed it in a biohazard bag.

Dr. M should have insisted that Paso obtain more “enlightened” training. Maybe PASO will look at her name badge in the mirror and remember seeing “OSAP” on-line and take it upon herself to pursue appropriate infection prevention training.

INFECTION CONTROL TIP

Using the thumb and finger to “pull out” burs from handpieces can slice through exam gloves and cause injury and cross-contamination. Burs are sharps and can be safely removed from handpieces using cotton pliers or tongs.
<table>
<thead>
<tr>
<th>TRUDY'S ACTIONS</th>
<th>APPROPRIATE ACTION FOR INFECTION PREVENTION</th>
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<tbody>
<tr>
<td>Bar soap is inexpensive but serves as a reservoir for skin microbes to be shared by each user. The terry-cloth towel also enhances the likelihood of cross-contamination because it's used multiple times.</td>
<td>Hands-free liquid soap and disposable paper towels should be used for hand-washing.</td>
</tr>
<tr>
<td>Using exam gloves for operatory clean-up increases the risk for tearing and chemical exposure.</td>
<td>Heavy utility gloves are more puncture resistant and chemical resistant than exam gloves. Contaminated examination gloves need to be removed before leaving the operatory.</td>
</tr>
<tr>
<td>Applying fresh surface barriers while wearing contaminated gloves can spread the previous patient’s microbes to the subsequent patient.</td>
<td>After removing contaminated surface barriers, gloves are to be removed and hand hygiene performed before placing fresh barriers.</td>
</tr>
<tr>
<td>While spraying disinfectants onto electrical switches may not be involved in cross-contamination, it can possibly cause a short circuit or may eventually “gum-up” connections causing switch failure.</td>
<td>Electrical switches that may become contaminated at chairside need to be protected with surface barriers.</td>
</tr>
<tr>
<td>When contaminated operatory surfaces are not properly treated between patients, cross-contamination can occur. Using a spray-wipe technique instead of a spray-wipe-spray technique to treat a contaminated surface provides cleaning but not necessarily adequate disinfection.</td>
<td>When contaminated operatory surfaces are not properly treated between patients, cross-contamination can occur. Using a spray-wipe technique instead of a spray-wipe-spray technique to treat a contaminated surface provides cleaning but not necessarily adequate disinfection. Use a spray-wipe-spray technique with a liquid disinfectant, or a wipe-discard-wipe technique with a disinfectant-soaked cloth or with a commercial disinfectant wipe for flat surface asepsis. While flat surfaces such as countertops and bracket tables lend themselves to cleaning and disinfection, barriers should be used on electrical surfaces and surfaces that are difficult to clean. Clinical contact surfaces that should be barrier-protected include light switches, dental x-ray equipment, reusable containers of dental materials, drawer handles, pencils, telephone handles and doorknobs.</td>
</tr>
<tr>
<td>Transporting an anesthetic syringe containing an exposed, uncapped, contaminated needle or any other exposed contaminated sharp is dangerous. The sharp may be accidentally contacted causing a percutaneous injury or may be dropped requiring further risky handling.</td>
<td>Containers of sharps need to be available as close to the source as possible.</td>
</tr>
<tr>
<td>Removing a needle from a non-disposable anesthetic syringe without first recapping the needle requires the hand to come too close to the exposed sharp.</td>
<td>Needles need to be recapped by a one-handed scoop technique or with the aid of a safe mechanical device, removed from the syringe, and discarded in an appropriate sharps container at chairside, not in the sterilization area. Discarding disposable sharps at chairside prevents additional handling in the sterilizing room that places someone else at risk of injury.</td>
</tr>
<tr>
<td>Even when wearing heavy utility gloves special care must be taken when retrieving items such as needles or scalpel blades from instrument trays or cassettes for this brings hands too close in proximity to sharp objects.</td>
<td>Cotton pliers, hemostats, or tongs should be used to remove or retrieve disposable items from trays and cassettes containing sharp contaminated instruments.</td>
</tr>
<tr>
<td>Items not considered as regulated medical waste (e.g., gloves, mask, surface barriers, cotton rolls and pluggers, disinfectant wipes and gauze pads) should not be placed in biohazard waste containers.</td>
<td>These items carry a minimal risk for disease transmission, and placing non-regulated medical waste in biohazard containers will increase the cost of the regulated waste pick-up service.</td>
</tr>
<tr>
<td>Impressions not properly decontaminated before handling in the laboratory can serve as fomites in cross-contamination.</td>
<td>Impressions need to be rinsed and disinfected before model pouring to reduce the risk of spreading microbes. Use PPE when handling items received in the laboratory until they have been decontaminated.</td>
</tr>
<tr>
<td>If personal protective equipment (PPE) is not removed properly, unnecessary contamination will result.</td>
<td>One approach to safely removing PPE is to remove the gloves, then protective eyewear (just touch the spines), gown, and mask (just touch the ties or elastic band). Perform hand hygiene after removing all PPE.</td>
</tr>
<tr>
<td>Trudy’s teaching did not include flushing the handpiece and air/water syringe for 20-30 seconds after each patient.</td>
<td>While this flushing will not eliminate the biofilm in the waterlines, it will reduce retracted microbes inside the handpieces and syringe, and will bring fresh water into the hoses.</td>
</tr>
</tbody>
</table>

The post-treatment procedures used by Trudy may have saved some time, but they increased the risk of cross-contamination in many ways.
Hand Hygiene

- Visibly dirty hands are washed with a non-antimicrobial or antimicrobial soap and water, rinsed and dried with a clean paper towel. Or if hands are not visibly dirty, they may be treated with an alcohol-based hand rub.¹

Safe Handling of Sharps

- Syringe needles should be safely recapped before being passed to another person or placed onto the instrument tray.
- Contaminated reusable sharps are transported and stored in closed containers that do not require employees to reach in risking injury.² ³

Flushing Air and Waterlines⁴

- Discharge water and air for a minimum of 20-30 seconds after each patient through any devices connected to the dental water system that enters the patient’s mouth. Follow the dental unit manufacturer’s recommendations for maintaining good microbial water quality and for monitoring that quality.

Managing Environmental Surfaces

- Utility gloves, mask, protective eyewear and protective clothing are worn during operatory clean-up.⁵
- Proper surface barriers are used to prevent contamination of clinical contact surfaces, particularly those that are difficult to clean.⁵
- After a treatment session, surface barriers are removed, the area is visually assessed for debris, gloves are removed and hands washed, and fresh barriers are placed with clean hands.⁵
- Disinfectants used are compatible with equipment surfaces and are registered with the Environmental Protection Agency (EPA).⁵
- Clinical contact surfaces that are not barrier protected are cleaned and disinfected between patients by using an EPA-registered hospital disinfectant with a low-level (i.e., human immunodeficiency virus [HIV] and hepatitis B virus [HBV] label claims) to intermediate-level (i.e., tuberculocidal claim) activity after each patient. An intermediate-level disinfectant is used if the surface is visibly contaminated with blood.⁵
- Disinfectant manufacturer’s instructions are followed (e.g., precleaning, dilution, contact time, shelf-life, use-life, expiration date, disposal).⁵
- Clinical contact surfaces are cleaned and disinfected using a spray-wipe-spray technique or disinfectant wipes are used in a wipe-discard-wipe technique.⁶ ⁷
- Floors, walls and sinks are routinely cleaned using a fresh solution of detergent and water or a hospital-level disinfectant/detergent; reusable mops and cloths are cleaned after use and allowed to dry before reuse.⁵
- Blinds and window curtains in patient-care areas are cleaned when visibly dusty or soiled.⁵

Waste Management

- DHCP are trained in handling regulated medical waste according to the written office protocol patterned after federal, state and local regulations.
- Appropriate items are handled as regulated medical waste: sharps (e.g., needles, scalpel blades, burs, wire, points, broken instruments and glass); solid waste soaked or saturated with blood or saliva or caked with dried blood (e.g., items that can release blood/saliva when handled); extracted teeth, surgically removed tissue, liquid blood or saliva.
- After injection, the contaminated needle on a non-disposable syringe is safely recapped, carefully removed from the syringe, and immediately discarded into a proper sharps container at chairside.² ⁸
- Sharps containers are closable, puncture resistant, leakproof on sides and bottom, labeled with a biohazard symbol or color-coded, located where sharps are used and may be found, maintained in an upright position when in use, not overfilled, and closed when transported.²
- When moving containers of contaminated reusable (e.g., hand instruments) or disposable sharps, the containers are to be closed.² ⁹
- A biohazard bag that is leak-resistant, labeled with a biohazard symbol or color-coded, is used for solid, regulated, medical waste (e.g., gauze pads soaked with blood).
- Extracted teeth containing amalgam not returned to the patient are discarded in a container that will not be incinerated. If allowed by state and local laws, blood, suctioned fluids and other liquid waste are poured down the drain (connected to a sanitary sewer system) while wearing gloves, face mask, protective eyewear and protective clothing.

Handling Biopsy Specimens¹⁰

- During transport, place biopsy specimens in a sturdy, leakproof container labeled with the biohazard symbol.
- If a biopsy specimen container is visibly contaminated, clean and disinfect the outside of the container, or place it in an impervious bag labeled with the biohazard symbol.

Laboratory Asepsis

- Please review the CDC guidelines on Laboratory Asepsis.¹¹
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Educational Spotlight

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Infection Control Basic Training
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FEATUREING:
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OFFERING:
A total of 24 continuing education (CE) hours
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"Our annual Infection Control Boot Camp provides the most comprehensive dental infection control education available in a three-day workshop so that dentists, hygienists, dental assistants and educators can master the material and put it into practice as soon as possible."

- Therese Long
  Executive Director of OSAP

TEAM HUDDLE DISCUSSION GUIDE

1. What specific post-treatment procedures help provide the Safest Dental Visit for the next patient?
2. What’s the best way to remove PPE without contaminating your skin or underlying clothing?
3. Why should used anesthetic needles be recapped and discarded at chairside?
4. What operatory surfaces need to be barrier protected before patient treatment or cleaned and disinfected after patient treatment?

What’s Wrong With This Picture?

Can you identify the breach in infection prevention and safety procedures in this photo? Check your answer below.

ANSWER: Dental burs should be pulled and removed from dental handpieces with cotton pliers or small tongs. The operator is at risk for creating glove micropunctures and subsequent hand contamination.

For more information and to register, visit http://bit.ly/OSAPBootCamp

Only four hundred registrations are available.
Glossary

Aseptic retrieval: The process of retrieving an item without contaminating its container or any adjacent items.

Clinical contact surfaces: Surfaces that are touched by contaminated hands, instruments, devices or other items while providing patient treatment or while performing activities that support patient treatment.

Hospital-level disinfectant: A germicide registered by the EPA that is effective against Staphylococcus aureus, Salmonella choleraesuis, and Pseudomonas aeruginosa for use on non-living objects in health care facilities.

Intermediate-level disinfectant: An EPA-registered hospital disinfectant with a label claim of tuberculocidal activity.

Low-level disinfectant: An EPA-registered hospital disinfectant with no label claim of tuberculocidal activity. May also have a label claim of activity against HIV and HBV.

Links to Resources


KEY TAKEAWAYS

- Don’t take “short-cuts” with infection control procedures.
- Proper post-treatment infection prevention procedures help protect you and your next patient.
- Not being up-to-date with infection prevention procedures can cause serious problems.
QUESTIONS FOR ONLINE QUIZ

1. Bar soap should not be used in health care facilities because it:
   a. usually is too expensive.
   b. contains too much perfume.
   c. is easily dropped on the floor.
   d. can serve as a reservoir for skin microbes.

2. What type of disinfectant is tuberculocidal?
   a. Hospital
   b. Low-level
   c. Intermediate-level
   d. A mixture of hospital and low-level

3. What type of operatory surface should be barrier protected before patient treatment rather than cleaned and disinfected after patient treatment?
   a. Flat
   b. Metal
   c. Plastic
   d. Electrical

4. What is considered as regulated medical waste?
   a. Burs
   b. Used face mask
   c. Plastic surface barriers
   d. Contaminated exam gloves

5. What regulated waste item should not be discarded in a container that will be incinerated?
   a. Scalpel blade
   b. Orthodontic wire
   c. Tooth containing amalgam
   d. Blood-soaked gauze square

6. What should be done before transporting a full sharps container?
   a. Empty it
   b. Close the top
   c. Shake it to settle the items inside
   d. Carefully push down any protruding items

7. What is an example of a clinical contact surface?
   a. Sink
   b. Floor
   c. Dental light handle
   d. Countertop behind the patient’s head

8. Heavy utility gloves rather than exam gloves should be used for operatory clean-up because:
   a. utility gloves usually fit better.
   b. exam gloves can contain powder.
   c. exam gloves can contain protein allergens.
   d. utility gloves are more puncture-resistant.

9. What organization registers disinfectants?
   a. American Dental Association (ADA)
   b. Environmental Protection Agency (EPA)
   c. Centers for Disease Control and Prevention (CDC)
   d. Occupational Safety and Health Administration (OSHA)

10. What is the proper method for handling and decontamination of dental impressions before model pouring in the laboratory?
    a. Brush with soap and water
    b. Autoclave using a short (1-2 minutes) cycle
    c. Place in an ultrasonic cleaner with a disinfectant
    d. Rinse with water then spray with a disinfectant

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TEAM HUDDLE HIGHLIGHTS

• Are you properly managing your contaminated operatory surfaces?
• Does your operatory clean-up procedure provide appropriate protection for the next patient?
• Are you properly managing your regulated medical waste?
• Are you paying for disposal of non-regulated medical waste?
• Are you contaminating your in-office dental laboratory?

Read on!

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