TEAM HUDDLE: Understanding the Responsibility of Infection Prevention and Control

Dental infection prevention and control is a system of policies and procedures designed to ensure the use of best practices to reduce the risk of transmitting potentially dangerous microbes from the treatment environment and support areas. An effective infection control program hinges on the understanding of the WHAT, the WHY, and the HOW of the preventive policies and procedures as well as techniques that enhance compliance.

LEARNING OBJECTIVES

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

- describe some possible breaches in the process of using personal protective equipment (PPE).
- describe how to properly put on PPE.
- describe how to safely remove contaminated PPE.
**SCENARIO: The Incident**

Second semester dental assisting students at a mid-western dental school were challenged to test some of their skills as an Infection Control Coordinator (ICC) by attempting to recognize breaches in infection prevention and control.

The first-year dental students just finished their infection prevention and control lecture course, and they were about to have their initial experience in the clinics. They were told to don PPE for the first time (gloves, mask, protective gowns, and protective eyewear); stand at the side of their assigned operator; not to touch anything; just observe their upper classmates treating patients.

This presented a great opportunity for second year dental assisting students to test some of their skills as an ICC. They were asked to observe the first-year dental students as they managed hand hygiene and donned and doffed their PPE.

At the end of the morning clinic the assisting students wrote out their observations without identifying specific dental students. This information was shared among the assisting students and was used later when live demonstrations were given to the dental students on how to properly use PPE.

**Breaches, Potential Consequences, and Prevention:**

Most of the dental students performed admirably during their clinic observations, but the assisting students did recognize the following seven breaches by some of the dental students.

1. **Four dental students did not perform hand hygiene before gloving and three did not after removing their gloves.**

**WHAT:** Perform hand hygiene: when the hands are visibly soiled; after bare-handed touching of items likely contaminated with blood, saliva or respiratory secretions; and before and after treating each patient; before putting on gloves and again immediately after removing gloves.1,2

**WHY:** The Centers for Disease Control and Prevention (CDC) states that: “Hand hygiene is the most important measure to prevent the spread of infections among patients and dental healthcare personnel (DHCP).”1 Every time one touches a surface, microbes are transferred to the hands, and then these transient microbes (paramount in causing infections) are deposited on subsequent surfaces touched. These transient microbes on the hands are the most important in spreading disease. Fortunately these transient microbes (in contrast to the resident microbes that colonize the hands) can be removed/killed by proper hand hygiene.

Hand hygiene before gloving reduces the number of bacteria that can multiply beneath gloves, decreasing the chances for skin irritation. It also reduces the number of bacteria that can multiply beneath gloves, decreasing the chances for skin irritation. It also reduces the number of bacteria that may contaminate the patient if the gloves are torn during patient treatment. Hand hygiene after removing gloves removes/kills bacteria that have multiplied beneath the gloves and any patient microbes that may have contaminated the hands through glove tears or defects.
4. Eight students did not don their PPE in the proper sequence and six did not remove their PPE properly.

**Donning PPE**

**WHAT:** Put on PPE in the proper sequence to prevent unnecessary contamination of the patient.

**WHY:** The key aspect of donning PPE is to put on gloves last, just before intraoral treatment. If gloves are put on earlier, they become contaminated with transient microbes by touching a variety of non-sterile surfaces.

**HOW:** The proper sequence of donning PPE is:
- protective clothing, followed by;
- mask, followed by;
- protective eyewear, followed by;
- hand hygiene, followed by;
- gloves.

**Removing PPE**

**WHAT:** Remove contaminated PPE properly to prevent unnecessary spread of that contamination to the skin or underlying clothing.

**WHY:** The key aspect of removing contaminated PPE is to remove the gloves first, for they are heavily contaminated. Then the other PPE is removed by touching sites less-likely to be contaminated such as the spines of the eyewear, the rear ties or elastic bands of the face mask and the back of the gown.

**HOW:** The proper sequence of removing PPE are:

**Example 1:**
- gloves, followed by;
- protective eyewear, followed by;
- gown, followed by;
- mask, followed by;
- hand hygiene.

**Example 2:**
- gloves and gown, followed by;
- protective eyewear, followed by;
- mask, followed by;
- hand hygiene.

5. Inappropriate prescription glasses were worn by two students.

**WHAT:** Protective eyewear needs to be worn if oral spatter or dental debris may be generated during patient treatment.\(^{1,3}\)

**WHY:** If the eyewear does not provide adequate eye protection, droplets of patient oral fluids or debris (e.g., tooth or restoration material) may contact the eye mucous membranes.

**HOW:** Protective eyewear needs to provide protection from the front and sides. If prescription glasses are used as protective eyewear, they usually do not have good side protection. Thus they need to be used with outer goggles or appropriate side shields.

6. One student touched her face, earrings, and hair with gloved hands.

**WHAT:** The four principles of infection prevention and control are:
- take action to stay healthy;
- avoid contacting blood/body fluids;
- limit the spread of contamination; and
- make objects safe for use.\(^{6}\)

**WHY:** Transient microbes from the patient and from the environment are present on gloves worn during patient treatment and after touching any other non-sterile surface. These microbes are important in disease spread for they are transferred to any other surface touched. Touching your face, earrings, or hair with contaminated hands/gloves violates infection control principles.

**HOW:** Touch as few surfaces as possible with contaminated gloves.

7. The surgical mask did not cover the noses of four students.

**WHAT:** When a mask is worn it needs to cover the mucous membranes of the mouth, AND nose.\(^{7}\)

**WHY:** If the mask does not cover the nose, droplets of patient oral fluids may contact the nasal mucous membranes. Viruses that cause influenza, mumps, rubella, and herpes infections may be spread by contacting mucous membranes.

**HOW:** Make sure the mask is positioned properly.
# Strategies for Promoting Compliance in using Personal Protective Equipment (PPE)

## Donning PPE

Donning PPE is to be performed in a way that prevents contamination of the patient. The Centers for Disease Control and Prevention (CDC) has provided diagrams to help with donning (this column) and removing (right column) PPE.

### Donning Protective Gown
1. Select the appropriate size.
2. Opening is in the back (Fig. 1).
3. Secure at the neck and waist (Fig. 2).

### Donning a Facemask
1. Place mask over the chin, mouth and nose (Fig. 3).
2. Fix the flexible nosepiece over the bridge of the nose.
3. Secure on the head with the ties or elastic band and adjust to fit.

### Donning Protective Eyewear
1. Position goggles over the eyes and secure to the head using earpieces or headband (Fig. 4).
2. Or, position face shield on face and secure with the headband (Fig. 5).

### Donning Gloves
1. Don gloves last.
2. Before donning, perform hand hygiene.
3. Select correct type and size.
4. Insert hands into gloves (Fig. 6).
5. Extend the gloves over the cuffs of the protective clothing.

## Removing PPE

Removing contaminated PPE needs to be performed in a way that prevents contamination of the skin or underlying clothing. Remember, the outside of gloves and the fronts of protective clothing, eyewear, masks and face shields are highly contaminated. Perform hand hygiene after removing PPE.

### Removing Contaminated Gloves
1. Grasp the edge of the glove near the wrist (Fig. 7).
2. Peel away from the hand turning the glove inside out (Fig. 7).
3. Hold the first glove in the opposite hand (Fig. 8).
4. Slide un gloved finger under wrist of the remaining glove (Fig. 8).
5. Peel off from the inside creating a bag for both gloves (Fig. 9).

### Removing Protective Eyewear
1. Grasp the ear or headpieces with ungloved hands (Figs. 10-11).
2. Remove from the face (Figs. 10-11).
3. Discard in designated receptacle for decontamination or disposal.

### Removing a Disposable Protective Gown
1. Unfasten ties (Fig. 12).
2. Peel gown away from the neck and shoulders (Fig. 13).
3. Turn the contaminated outside toward the inside.
4. Fold or roll into a bundle and discard.

### Removing the Face Mask
1. Untie the bottom, then the top tie (Fig. 14) or carefully grasp the elastic band.
2. Remove from the face and discard (Fig. 15).
3. Remember masks are single use devices. They are to be discarded immediately after removal and not stored in the operatory, in pockets, or around the neck for reuse.
What’s Wrong With This Picture?
Can you identify the breach(es) in infection prevention and safety in this photo of a dental clinician administering a dental treatment procedure?

In preparation for ‘Dental Infection Control Awareness Month’ (DICAM) in September, OSAP will once again launch a national awareness campaign to promote safe dentistry, call attention to resources that assist DHCPs with compliance and build patient trust.

The campaign will feature free educational and marketing resources to help promote the dental community’s commitment to infection control and prevention. Delivery of safe patient care is OSAP’s shared goal with you, whether your job role is in private practice, academia, consulting, speaking, public health or the dental trade.

Help us help you! To better customize resources to suit your job role, we are seeking your advice as to the most useful format for DICAM resources.

Watch for an email from OSAP in the coming weeks with our request for your advice. You’ll have the opportunity to receive first and early notification about resources customized to suit your job role!

Because Safety Matters!
Take the Micro-Learning Silent Video Challenge!

Can you identify the actions in this short video that breach infection control or safety?

Access the link below and challenge your dental infection control and safety knowledge. https://youtu.be/nci87_IC3H0

The Scenario: Preparing for Patient Treatment

The Lesson: Assuming the dentist has just finished the patient's intraoral exam, there is cross contamination occurring when donning mask and protective eyewear and also touching multiple surfaces with contaminated gloves. The sequence of donning PPE is incorrect. The hazard of potential spatter of blood and saliva suggests protective over gowns will be needed. It is hoped that the clinician and dental assistant will don a new pair of gloves before patient treatment.

TEAM HUDDLE DISCUSSION GUIDE

1. What is your process for identifying infection prevention and control breaches?

2. Are you properly donning and removing PPE?

Links to Resources


A CALL FOR AUTHORS

The Journal of Dental Infection Control and Safety is a multidisciplinary, international journal for which we invite submissions from authors in all relevant disciplines and settings. Scholarly original articles are welcome on clinical practice, education, and secondary research related to the practice of dental infection control and safety in oral health settings.

For details on current topics of interest to the journal and author submission guidelines visit: https://osapjdics.scholasticahq.com/for-authors
GET YOUR CE CREDIT ONLINE  

OSAP is recognized by the American Dental Association as a CERP provider.*

Follow the instructions below to purchase and complete the quiz to receive 1 hour of CE credit.

**Step 1:** Go to http://bit.ly/OSAPICIPJUNE2018 and purchase the CE exam through the OSAP Store.
OSAP members, 1 CE credit $15. Non-members, 1 CE credit $20.

**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.

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**QUESTIONS FOR ONLINE QUIZ**

1. What PPE is put on last?
   - a. Mask
   - b. Gown
   - c. Gloves
   - d. Eyewear

2. What hand hygiene procedure cannot be used if the hands are visibly soiled?
   - a. Alcohol hand-rub
   - b. Surgical hand scrub
   - c. Plain soap and water
   - d. Antimicrobial soap and water

3. What is appropriate protective eyewear?
   - a. Those with tinted lenses
   - b. Those with front and side protection
   - c. Those with front protection and anti-fogging properties
   - d. Those with scratch resistant properties and front protection

4. Which bacteria are most important in spreading diseases?
   - a. Resident skin bacteria
   - b. Bacteria in dental unit water
   - c. Transient bacteria on the hands
   - d. Bacteria remaining on sterilized instruments

5. Why is it important to perform hand hygiene before gloving?
   - a. It makes the gloves easier to put on
   - b. It prevents the hands from perspiring
   - c. It eliminates the odor noticed when gloves are removed
   - d. It reduces the number of bacteria that multiply beneath the gloves

6. What is removed first when taking off contaminated PPE?
   - a. Mask
   - b. Gloves
   - c. Goggles
   - d. Face shield

7. What does the CDC say is the most important measure to prevent the spread of infections among patients and DHCP?
   - a. Hand hygiene
   - b. Wearing latex gloves
   - c. Being immunized against hepatitis B
   - d. Sterilizing contaminated instruments

8. When putting on gloves the wrist of the gloves should be placed:
   - a. over the cuff of the gown.
   - b. under the cuff of the gown.
   - c. just barely touching the cuff of the gown.
   - d. about one inch away from the cuff of the gown.

9. Following the proper sequence for removal of PPE, what’s wrong with removing a used mask by untying the rear ties or grabbing the elastic band with one hand, grabbing the front of the mask with the second hand, and pulling it off?
   - a. Nothing, it’s the correct way to remove a mask
   - b. The second hand will contaminate the mask
   - c. The hand untying the mask will become highly contaminated
   - d. The second hand will become highly contaminated

10. The four principles of infection control are: take action to stay healthy; avoid contacting blood/body fluids; make objects safe for use; and:
    - a. limit the spread of contamination.
    - b. make sure patients have been properly immunized.
    - c. document all infections among the office personnel.
    - d. inform patients of infection control procedures used.

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**KEY TAKEAWAYS**

1. Infection Control Coordinators need to keep an eye out for breaches in infection prevention and control.
2. Personal protective equipment needs to be put on properly to maintain patient safety.
3. Personal protective equipment needs to be removed properly to avoid the spread of contamination.

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INFECTION CONTROL IN PRACTICE Team Huddle™

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TEAM HUDDLE HIGHLIGHTS

1. Are you identifying infection prevention and control breaches in your facility?

2. Do you understand why personal protective equipment needs to be put on and removed in proper sequences?

Read on!