10 environmental surface cleaning tips

Environmental surface cleaning: Getting the job done right [by Marie T. Fluent, DDS]

While cleaning the house one day, I asked my teenage son to clean the bathroom. He looked me square in the eye and said, "I don't know *how* to clean the bathroom." He quickly added that he did not know which areas needed to be cleaned, how to best clean each specific area, what "stuff" to use or where you find it, and finally, what a good job even looked like.

So, I patiently explained what needed to be done and then we performed the tasks side-by-side. As we worked together, it struck me that I have seen and experienced this same scenario play out dental personnel tasked with the cleaning and disinfection of environmental surfaces. While household bathroom cleaning protocol is generally at parent discretion, the Centers for Disease Control and Prevention, the Environmental Protection Agency and product manufactures all have much to say with regard to recommendations and/or regulations for cleaning and disinfection of environmental surfaces in dentistry. With that said, here are 10 steps critical to getting the job done right in light of agency recommendations, regulations and manufacturer's instructions.

1. Establish policies for routine cleaning and disinfection of environmental surfaces—and write these down.[1]

A written cleaning schedule may include information such as which surfaces should be cleaned and with what product(s), the location within the facility, how often they should be cleaned and by whom, the type of debris anticipated, the tasks or procedures to be performed and the use of barriers.

Note that these policies and procedures should be facility-specific. This means the surfaces in your operatories, your team members involved, and products that your facility uses. Note that a written program improves consistency and efficiency, enhances compliances and reduces miscommunication.

2. Ensure education and job-specific training of dental personnel who manage environmental surfaces.

Dental team members who clean and disinfect environmental surfaces should be trained upon hire, at least annually, and when procedures or policies change within the facility. For instance, dental personnel should receive updated training if a new product is being introduced or if a policy has changed regarding surfaces to be barrier protected. This information should be reviewed, and the training session documented. In addition, cleaning, disinfection and the use of barriers should be periodically monitored and evaluated to ensure they are consistently and correctly performed.[1]

3. Know definitions regarding environmental surfaces in dentistry.[2]

- **Clinical contact surfaces:** These surfaces come in direct contact with contaminated hands, instruments, gloves and devices or have a high potential for direct contamination from spray or spatter. Some examples include: light handles, bracket trays, switches on dental units and computer equipment. The emphasis for cleaning and disinfection should be placed on clinical contact surfaces since they have a higher potential for disease transmission.
- **Housekeeping surfaces:** These surfaces do NOT come in contact with patients and devices and thus have a limited risk of disease transmission. Several examples include: floors, walls, sinks, break area and other non-patient areas.
- **Cleaning:** The removal of visible debris and organic matter on a surface via mechanical or manual process.
- **Disinfection:** The process of decontamination killing most microorganisms.
- **Sterilization:** Destroys all pathogens—including bacterial spores.
- **Contact time (kill time):** The length of time the disinfectant must remain wet on the surface to achieve disinfection of various pathogens and *Mycobacterium tuberculosis* (TB). (Note: *M. tuberculosis* is considered to be among the more resistant microorganisms. Thus, if a disinfectant can kill TB, it is likely to inactivate other bacteria, fungi and viruses that are less resistant.)
- **Surface barriers:** Fluid impervious coverings used as another way to protect clinical contact surfaces from becoming contaminated.
- **Environmental Protection agency (EPA):** The EPA has regulatory authority for low-and intermediate-level disinfectants for use on environmental surfaces. EPA reviews manufacturer's test data and ensures that efficacy claims are accurate.[3]
- **Low-level disinfectant (EPA-registered hospital disinfectant):** Broad-spectrum disinfectant that is effective against most vegetative bacteria, some fungi and some viruses. They do not inactivate *M. tuberculosis*. Low-level disinfectants may be used for general housekeeping surfaces and clinical contact surfaces that are NOT contaminated with blood.
- **Intermediate-level disinfectant (EPA-registered hospital disinfectant with TB claim):** Disinfectant that destroys most fungi, and most viruses and inactivates *M. Tuberculosis*. Intermediate-level disinfectants should be used to disinfect ANY surfaces that are contaminated with blood.
- **High-level disinfectant (sterilants):** Destroys all pathogens—including bacterial spores. Note that high-level disinfectants (liquid chemical sterilants) should never be used for disinfection of environmental surfaces.

4. Understand the importance of cleaning.

The CDC states, "cleaning is the necessary first step of any disinfection process[2]" and that the mechanical action of cleaning will physically remove 99-99.9 percent of organisms on a surface! The actual physical removal of organisms and soil by wiping or scrubbing is just as important as any antimicrobial effect of the cleaning agent used. And, cleaning should always come before disinfection.[2] When using any cleaning agent, dental personnel should read the manufacturer's instructions for proper dilution, storage, usage, use of personal protective equipment and material compatibility.

5. Know which types of products to use on various surfaces within your facility.

• **Housekeeping surfaces** should be routinely cleaned with soap and water or a low-level disinfectant (EPA-registered hospital detergent). Fresh cleaning and disinfecting solutions should be prepared daily according to manufacturer's instructions. Reusable mops and cloths should be cleaned after use and allowed to dry before reuse or, utilize a single-use disposable option. If blood is present, disinfection with an intermediate-level disinfectant (EPA-registered hospital disinfectant with TB claim) is also required.[2]

• **Clinical contact surfaces** require cleaning with low-OR intermediate-level surface disinfectant. IF blood is present, disinfection with an intermediate-level surface disinfectant should follow.[2]

Clinical tip: To simplify cleaning and disinfection routines, reduce inventory, and to minimize operator error, most dental facilities choose to use an intermediate level surface disinfectant for both cleaning and disinfection of clinical contact surfaces AND housekeeping surfaces that are contaminated with blood. Check the product label to ensure whether the product is intended to clean, disinfect, or both.

6. Read your product label and follow manufacturer's instructions.

Instructions for use (IFU) on the product label should be clear and easy to understand. Look for information regarding dispensing, cleaning and disinfection instructions and contact time. If the contact time states three minutes, the surface must stay wet for this length of time, so more time would be required versus a product with a one-minute kill time. The IFU will indicate whether the product is intended to be used as a cleaner, a disinfectant or both (clean AND disinfect). The product label will indicate whether the product is to be utilized in a one- or two-step process. A two-step product will clean in the first step and disinfect in the second, whereas a one-step product will simultaneously clean and disinfect.

Note that if a surface is heavily soiled (i.e. visibly contaminated with blood) instructions on a one-step product may indicate to "pre-clean heavily soiled areas." In other words, when using a one-step product on highly contaminated areas, use as a two-step product (clean first, disinfect second). The product label should also state precautionary statements, first aid, compatibility issues, storage and disposal, kills claims, and contact time.

Clinical tip: Both surface disinfectant wipes and sprays are available. Surface sprays may be less expensive than surface wipes however the latter may be more equipment friendly and introduce less chemical sprays into the environment. Other advantages and disadvantages of wipes and sprays exist, and dental personnel should evaluate the various product types to determine the best options for their facility.

7. Ensure compatibility with your product and the surfaces to be cleaned and disinfected.

Not all products may be used on all types of surfaces. Some active ingredients may be detrimental to certain materials and surfaces. Some may be corrosive and be considered irritants, others may not react well with other chemicals. Some products have good cleaning properties and may penetrate organic material well, others do not. It is recommended to consult with the manufacturer of your dental unit (and other dental devices) for recommended product types. And, it is recommended to consult with the manufacturer of your surface disinfectant to ensure compatibility.

8. Consider barrier use.

Surface barriers are another way to protect clinical contact surfaces—especially those that are difficult to clean. Potential surfaces to protect with barriers may include switches on dental chairs, light handles and computer equipment. Barriers are available in many different sizes and shapes such as plastic wrap, sheets or tubing and plastic-backed paper. Note that these products are considered single-use and must be discarded after use. Use clean hands to place fresh barriers, and wear gloves to remove and discard contaminated barriers.

Note that surfaces that are barrier protected do not require cleaning and disinfection unless the surface underneath has been contaminated. Cleaning and disinfection of these surfaces is also required at the beginning and at the end of the work day.[4] There are some advantages of using barriers: They may save time and eliminate potentially hazardous chemicals and may enhance staff safety and efficiency. Some disadvantages of barriers include adding plastic to the environment, and potential additional costs over disinfectant sprays and wipes. Due to the pros and cons of all types of environmental surface products, dental teams often use a combination of products to manage environmental surfaces in their facilities.

9. Wear appropriate personal protective equipment.

PPE for cleaning environmental surfaces may include gloves, masks, gowns and eye protection. Utility gloves may be recommended as they are more chemical and puncture resistant than examination gloves. The correct type of PPE depends on the infectious or chemical agent and the anticipated type of exposure.[1] The safety data sheets and manufacturer's instructions of products used will indicate which PPE will be required when using the product.

10. Know what to do in case of spill of blood or body fluid.

Fortunately, these occurrences are rare as most spills in dentistry are of a small volume. However, CDC states that procedures are in place for decontamination of spills of blood or other body fluids.[1] Recommendations include managing the spill as quickly as possible and wear gloves and other PPE as needed. Visible debris should be removed with disposable paper towels and discarded in a leak-proof container with a biohazard symbol. Finally, CDC recommends cleaning and decontamination of blood and other potentially infectious materials using a low- to intermediate-level disinfectant.[1] If the surface is visibly contaminated with blood or other potentially infectious material, an intermediate level disinfectant should be used after cleaning.[2]

Conclusion

There are numerous products available to maintain operatory asepsis and minimize the potential for cross-contamination in the dental operatory. These include surface cleaners and disinfectants (in the form of wipes, sprays and concentrates) and barriers. Most dental facilities use a combination of barriers and wipes or sprays, however surface barriers are often considered for surfaces that are difficult to clean. Clinical personnel should remember to never use a sterilant (high-level disinfectant) on environmental surfaces and surface cleaning is at least as important as disinfection.

With that said, it is critical to recognize that for any of these various products to ultimately be effective in providing a safe dental visit for patients and staff, they must be consistently deployed as a component of a comprehensive dental office infection control plan. The plan must be written, evidence-based, tailored to their dental facility, and both well-known and reliably practiced by all members of the dental team. The preceding ten steps are intended to serve as guideposts to help dental personnel understand the basics of environmental cleaning and disinfection, and get the job done right! ●

References available on dentalproductsreport.com