In the dental practice, personal protective equipment (PPE) and clothing—such as face masks, eyewear, gowns, and jackets—are essential for not only preventing contamination of street clothing, but most importantly for protecting the skin against exposure to blood and bodily fluids. Personal protective equipment creates a barrier between dental professionals' skin and the mucous membranes of their eyes, nose, and mouth that effectively limits exposure to the pathogens and potential diseases that they encounter every day. In fact, the Occupational Safety and Health Administration (OSHA) Bloodborne Pathogens Standard requires dental healthcare professionals to wear gloves, surgical masks, protective eyewear, and protective clothing in specific instances in order to reduce their risk of exposure to bloodborne pathogens.

Gowns, lab coats, and/or jackets are also required during procedures when there is the possibility for splatter and spray of blood, saliva, and other potentially infectious fluids and material. Such apparel should be knee length, have a high neck, and sleeves that are long enough to cover and protect the forearms. Note that a dental team member's uniform, street clothes, and/or scrubs should be worn over the top of them during the aforementioned types of procedures. Therefore, to limit exposure to any infectious material that may have landed on the garment, it is advisable to remove clothing by turning it inside out as it is removed so that exposed areas are on the inside.

Clinical Attire

The wearing of apparel by clinicians and their assistants is vulnerable to contamination from splash, spatter, aerosols, and patient contact. The recommended uniform is designed and cared for in a manner that minimized cross-contamination.

Various types of protective clothing (e.g., gowns, jackets) are worn to prevent contamination of street clothing and to protect the skin of personnel from exposure to blood and body fluids. When the gown is worn as personal protective equipment (i.e., when spatter and spray of blood, saliva, or other potentially infectious material is anticipated), the sleeves should be long enough to cover and protect the forearms. Protective clothing should be changed daily or sooner if visibly soiled. Personnel should remove protective clothing before leaving the work area.

Gown or Uniform

Gowns or uniforms are expected to be clean and maintained as free as possible from contamination. Clinical clothing over street clothes is not recommended because of exposure to infectious material while seeing clinical patients. An adequate Gown or Uniform should have a solide closed front, full length sleeves, and no pockets. Commercial laundering services are preferred for gowns or uniforms. If laundering at home, separate the office laundry from home clothing. Exercise great diligence and wash with hot water and bleach. Because it is the responsibility of the dentist and/or practice owner to launder contaminated personal protective clothing (such as gowns, lab coats, or jackets), disposable gowns with an open back on the garment can provide good protection while simultaneously allowing better ventilation for dental team members. When choosing simple disposable gowns or reusable gowns and jackets, options are available that are recyclable, stain- and fluid-resistant, and easy to put on and remove. Today's personal protective apparel is also more breathable, and some materials even demonstrate antibacterial properties.

Face Mask

Wearing a surgical mask is a necessity for many doctors, including dentists and surgeons. A surgical mask works in two ways—keeping the doctor’s germs from threatening the patient’s sensitive immune system, as well as keeping the doctor free of illness. In countries like Japan, surgical masks have become an everyday accessory for many men and women who are conscious about breathing in city smog and germs from contagious people in public areas. It has been said that adults breathe an average of more than 17,000 times per day. Choosing the proper facemask can provide one of our most effective modes of defense against harmful irritants. Surgical facemasks protect both the patient and the Dental Health Care Professional (DHCP) from a variety of potential bloodborne and inhalation hazards. Choosing the correct facemask is extremely important as well as mask placement. Due to sprays, splashes, and splatter generated in dentistry,

<table>
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<th>DO</th>
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<td>DO…Change masks between patients, or during treatments if they become wet.</td>
<td>DON’T…Store contaminated personal protective equipment (such as masks or gloves) in the pockets of other personal protective equipment. Doing so can cross-contaminate hands, pens, and other objects stored in gowns or lab coats.</td>
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<td>DO…Disinfect used protective eyewear before placing in lab coat or jacket pockets.</td>
<td>DON’T…Wear used personal protective equipment outside the dental office.</td>
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<tr>
<td>DO…Remove all used personal protective equipment before leaving the operatories or work areas.</td>
<td>DON’T…Wear used personal protective equipment in restrooms, the front office, the dentist’s personal office, or breakrooms.</td>
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<tr>
<td>DO…Clean reusable protective eyewear with soap and water when visibly soiled, and disinfect between patients.</td>
<td>DON’T….Hang personal protective equipment in the same location as patient items (such as jackets, purses, etc.) when not being used in order to avoid cross-contamination.</td>
</tr>
<tr>
<td>DO…Change protective clothing daily or sooner if it is visibly soiled and/or penetrated by blood or other potentially infectious materials.</td>
<td>DON’T…Laundry personal protective clothing at home; it is the dentist’s or practice owner’s responsibility to have PPE properly laundered.</td>
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wearing a fluid resistant mask helps protect the DHCP from mucosal contact with, or inhaling these potentially infectious materials. Surgical masks are available with fluid-resistant outer layers and tissue inner layers or fluid-resistant outer and inner layers.

**Gloves and Gloving**

Dental health care personnel wear gloves to prevent contamination of their hands when touching mucous membranes, blood, saliva, or other potentially infectious materials and to reduce the likelihood that microorganisms on their hands will be transmitted to patients during dental patient care procedures.

Wearing gloves does not replace the need for hand washing. Personnel should wash their hands immediately before donning gloves. If the integrity of a glove is compromised (e.g., if the glove is punctured), the glove should be changed as soon as possible. Exposure to glutaraldehyde, hydrogen peroxide, and alcohol preparations may weaken latex, vinyl, nitrile, and other synthetic glove materials. Other chemicals associated with dental materials that may weaken gloves include: acrylic monomer, chloroform, orange solvent, eugenol, cavity varnish, acid etch, and dimethacrylates. Because of the diverse selection of dental materials on the market, glove users should consult glove manufacturers about the compatibility of glove material with various chemicals.

**Proper Hand Washing**

Studies have proven that hand washing is the most important measure in preventing the transmission of infectious diseases. In addition to washing hands regularly after using bathroom facilities and before eating, healthcare providers, including dentists, must practice hand hygiene at other essential times throughout their day. These times include before any contact with the patient with or without glove protection, after contact with blood, saliva, and other bodily fluids, or contact with contaminated surfaces even when wearing gloves, before invasive procedures, and after removing PPEs.

Wetting hands with clean, running water, applying soap, and massaging together to produce a soapy lather performs the most effective hand washing. Special care should be taken to scrub the backs, in between each finger, and under the fingernails. Scrubbing should continue for at least 20 seconds, which happens to be the amount of time it takes to hum the “Happy Birthday” song twice. Hands should be rinsed thoroughly under running water and dried. Previously used towels can harbor bacteria, so it is preferable to use a disposable towel or an air drier. If soap and water are unavailable, an alcohol-based hand sanitizer can be used. The sanitizer should contain at least 60% alcohol. Although alcohol-based hand sanitizers decrease germ count, they do not eliminate all types of germs and are not effective when hands are visibly dirty or soiled with blood or other bodily fluids. Hand sanitizers are applied to the palms and rubbed over the surfaces of the hands, including the backs, between each finger, and under the fingernails. Although proven effective, hand sanitizers should not be relied upon to replace traditional hand-hygiene. When appropriate, waterless antimicrobial gel is used in dental practices in place of, and sometimes in addition to, hand washing.

**References**