Sanitation and Sterilization: Update for West Virginia

HOW TO RECEIVE CREDIT

- Read the enclosed course.
- Complete the questions at the end of the course.
- Return your completed Answer Sheet/Evaluation to Paragon CET by mail or fax, or complete online at www.ParagonCET.com. Your postmark or facsimile date will be used as your completion date.
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Faculty

Paragon CET Staff

Division Planner

Leah Pineschi Alberto, licensed cosmetologist and instructor of cosmetology, has been educating students in Northern California since 1975. In addition, she has been responsible for training educators in cosmetology, esthetics, and manicuring for more than 30 years.

Mrs. Alberto began her career with Don's Beauty School in San Mateo, California. She held a 30-year position at Sacramento City College and is currently a State Board expert with Cinta Aveda Institute. She is a salon owner, a former Department of Consumer Affairs examiner, and a speaker at the Esthetics Enforcement Conference.

The health and safety of the community of stylists, salon owners, and school owners has been the focus of Mrs. Alberto's career. She served on the State Board Task Force on Pedicure Disinfection commissioned by Governor Schwarzenegger to investigate the cleanliness of the pedicure industry. The Task Force was responsible for developing foot spa safety regulations in response to illnesses and deaths resulting from unsafe pedicure practices. Mrs. Alberto is currently a member of the California Cosmetology Instructors Association and has her own consulting business.

Audience

This course is designed for all salon and spa professionals in West Virginia.

Accreditations/Approvals

Paragon CET is approved as a provider of continuing education by the West Virginia Board of Barbers and Cosmetologists. Provider number P0030.

Designations of Credit

Paragon CET designates this continuing education activity for 2 CE hours.

About the Sponsor

The purpose of Paragon CET is to provide challenging curricula to assist professionals to raise their levels of expertise while fulfilling their continuing education requirements, thereby improving the quality of service to their clients.

Course Objective

The purpose of this course is to inform salon professionals regarding the necessary sanitation and sterilization guidelines in order to ensure better safety for clients and professionals alike.

Learning Objectives

Upon completion of this course, you should be able to:

- 1. Define the levels of decontamination.
- 2. Describe infections and infestations that may impact the provision of salon services.
- 3. Describe types of available disinfectants and appropriate disinfection techniques.
- 4. Discuss the importance of handwashing in protecting your health and the health of your clients.

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A complete Works Cited list appears on page 10.

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INTRODUCTION

Cleanliness is paramount in the cosmetology industry. Following the guidelines for sanitation and sterilization takes great responsibility and requires vigilance. One technician can put a salon's entire clientele at risk by not practicing stringent sanitation and disinfection guidelines. In addition, salon technicians should be well versed in the types of bacteria, viruses, fungi, and parasites they may encounter so they may identify infections. The transmission of these infections would be properly eliminated through sanitization and disinfection in the salon environment.

DEFINITIONS AND STANDARDS

A business must be clean to be successful in the beauty industry. Knowledge of the standards for cleaning and sanitation and how they may be followed is essential when working in a salon or spa. The three steps of decontamination are sanitation, disinfection, and sterilization.

In the salon industry, sterilization, defined as "the complete elimination of microbial life, including spores," is not as important as it would be in a healthcare setting [1]. There is very low risk of infection compared to a medical facility, as open wounds and exposure to blood are rare. Therefore, sanitation and disinfection are of the most concern in the salon setting.

SANITATION

Sanitation can be as simple as thorough cleaning. In essence, sanitation is the removal of all visible dirt and debris from surfaces, tools, and equipment. There are many methods of cleaning, including [1]:

- Scrubbing (e.g., with a brush)
- Using an ultrasonic unit
- Using a solvent

DISINFECTION

Disinfection is the process by which all microorganisms on non-living surfaces are partially destroyed. The proper disinfection of multi-use tools, such as shears and nail nippers, and other equipment is a requirement for a safe and successful salon. Items should be immersed in a disinfectant for no less than 10 minutes. Prior to immersion, all residue and debris must be removed. Salonappropriate disinfectants are EPA-approved liquid hospital disinfectants or a 10% bleach solution. All disinfectants have different concentrations, and all disinfectants to avoid all contact with the skin and to prevent any damage to living tissue [1].

INFECTIONS AND INFESTATIONS

Improper sanitation and disinfection can result in exposing clients or oneself to a variety of dangerous infections. These infections can be bacterial, viral, fungal, or parasitic.

BACTERIA

Bacteria are either pathogenic (cause disease) or nonpathogenic (harmless). Bacteria are microscopic one-celled micro-organisms. Most types of bacteria are harmless, but certain types can cause infections and even serious diseases and death. Bacterial infections occur when tissues are invaded by disease-causing or pathogenic bacteria.

Staphylococcus

Staphylococcus bacteria are among the most common and can be found on doorknobs, countertops, and other hard surfaces [1]. One type of these bacteria, *Staphylococcus aureus*, is present in many individuals' nostrils, throats, and skin.

Staphylococcal infections can spread easily through contact with pus from an infected wound, skin-toskin contact with an infected person, or contact with objects such as towels and unsanitized equipment (e.g., foot spas) used by an infected person. It is important to note that some people may have S. *aureus* on their hands or other parts of the body and not know it. This is called being a "carrier." If a cosmetologist is a carrier and does not follow appropriate precautions, he or she could transmit the bacteria to a client. This is particularly dangerous if the client has an open cut or is bleeding.

There are steps that clients and cosmetologists can take to prevent the spread of staphylococcal infections. First, clients should be instructed to refrain from any hair removal on the legs, arms, and hands within 24 hours of receiving a manicure or pedicure. If a client has any broken skin and is scheduled to receive a treatment including touching, massaging, or immersing the area, the appointment should be rescheduled for a time after the area has healed [2]. Cosmetologists and nail technicians should wear gloves and should not perform procedures if they have a skin infection. Each client should receive a clean towel, and all implements should be cleaned according to the established standards after each use.

Mycobacteria

Mycobacteria are naturally found in water and soil [3]. Most types of these bacteria are classified as "nontuberculous mycobacterium," which encompasses all mycobacteria not part of the Mycobacterium tuberculosis complex [4]. The bacteria grow very quickly. Several mycobacteria species, including Mycobacterium fortuitum and M. chelonae-abscessus, are found naturally in tap water, and the salon and pedicure tub environment promotes its growth. The bacteria flourish in the warm environment of the water pipes of a salon and feed on the debris that typically accumulates in a hair salon (e.g., hair, skin, and nail debris). It often forms dense layers of cells and proteins called biofilms, which can be very hard to remove [3]. The bacteria can accumulate for a very long time, becoming more difficult to eradicate.

Mycobacterium fortuitum enter the skin and cause bumps on the lower portion of the leg (exposed to the bacteria during a pedicure), which leads to painful boils and skin ulcers. Scar tissue is left after the boils have either gone away on their own or been removed through surgery. As with staphylococcal infections, it has been concluded that shaving the legs before a pedicure makes skin more susceptible to the bacteria. It is safer to not shave or wax legs for at least 24 hours before a pedicure. It is also advised to refrain from getting a pedicure if there any wounds, bites, or abrasions on the lower portion of the legs [5]. Medical treatment should be sought as soon as the infection presents itself in the form of bumps or lesions. Typical treatment may include local wound care for the lesions and antibiotics and surgery in more severe cases. There is no exact duration of therapy, but treatment is commonly given for a period of 6 months and is not considered complete until all lesions have been eliminated [4].

VIRUSES

Viruses are micro-organisms capable of infecting all plants and animals. The viruses that most affect humans are herpes, mononucleosis, human papillomavirus (HPV), verruca plantaris, measles, mumps, chickenpox, hepatitis, influenza, and human immunodeficiency virus (HIV), which causes acquired immune deficiency syndrome (AIDS) [1].

There have been instances of herpes outbreaks and bacterial infections following Brazilian wax hair removal [6]. It is unclear if herpes simplex virus can be spread via multi-use containers of hair removal wax or if trauma to the area reactivates the virus. To ensure that the wax is not contaminated, single-use containers should be used.

Other viruses of high concern in the salon industry are hepatitis and HIV. They are both bloodborne pathogens, meaning they are carried in the blood or body fluids [1]. Unlike HIV, hepatitis can live outside the body, making it very important to maintain safety and sanitary standards. The use of scissors and nail clippers presents a risk of spreading both of these viruses. If the skin is broken and blood is drawn, extra caution must be taken to clean all tools, linens, capes, towels, and work areas.

FUNGI

Fungi consist of a number of small and larger organisms, including mold, mildew, and yeast. Fungi can produce contagious diseases such as tinea corporis, best known as "ringworm." An uncommon salon-related fungal skin infection affecting men is tinea barbae, or Barber's itch. This infection is more common in hot and humid environments. It most often occurs as an infection on the face in the coarse hairs of a beard or mustache. Other types of fungi can infect the hair and scalp, leaving lesions and scars and affecting hair growth. Hair stylists must clean and disinfect all tools, such as clipper blades, to avoid spreading fungal scalp and skin infections. Tinea unguium, or fungal nail infections, are also an issue in the salon environment. These infections occur in the fingernail or toenail area and symptoms include discoloration, thickening, brittleness, and loosening of the affected nail. The fungus can be spread from one client to another if proper cleaning and disinfection of tools does not occur [1].

Athlete's Foot

Athlete's foot, or tinea pedis, is a fungal infection of the foot, usually in the area between the toes. The fungus lives in damp environments, and the enclosed space of socks and shoes creates the perfect environment for fungi to grow [7]. The first signs of the disease are fissures and scales on the feet, causing redness and itching. Transmission can occur with contact with the fungi, either directly with infected skin or through contact with contaminated surfaces such as showers, locker room floors, swimming pool decks and pedicure basins. Proper cleaning and sanitizing techniques can prevent the spread of all types of fungi, including tinea pedis.

Treatments for tinea pedis include topical creams, ointments, and oral medications. Steps should also be taken to prevent the spread of the disease. It is recommended that sandals or flip-flops be worn in the locker room and the shower. Longer nails harbor bacteria and fungi, so it is important to keep nails short and clean. Those with tinea pedis should be sure to keep the feet dry and cool. The best way to do this is by wearing sandals rather than socks and shoes whenever possible. Footwear should be alternated every 2 to 3 days to prevent dampness and fungi growth. When wearing socks and shoes, it is best to wear cotton socks rather than nylon because synthetic materials will trap moisture [7].

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Tinea Capitis/Tinea Favosa

Scalp infections are uncommon in the salon and spa, but possible. Tinea capitis is an infection of the scalp caused by fungal overgrowth [8]. The fungus may also infect the eyebrows or eyelashes.

The fungi associated with scalp infections are most easily contracted by close contact with an infected family member or schoolmate, but infections can be transmitted in the salon by not properly disinfecting tools and combs or contaminated headrests.

The three patterns of fungal infection of the hair and scalp are endothrix, ectothrix, and favus [9]. These types are defined by the level of hair invasion. An infection is categorized as endothrix when the fungus grows completely in the hair shaft and the hair cuticle stays intact. Ectothrix begins this same way, but then advances to destroy the hair cuticle and grow around the hair shaft [10]. Favus is a severe form of tinea capitis. With this type of infection, the fungi grow parallel to the hair shaft. When the fungi degenerates, air tunnels are formed within the hair shaft [10]. Bubbles of air move along the air tunnels, and the infected hair is immersed in a liquid [8; 9]. Favus is also referred to as tinea favosa. The most common presentation of favus is a yellow cap of crust that forms on the scalp called scutula [8]. This cap forms at the base of the follicle and can spread to cover most of the scalp. The shaft of the hair is in the middle of the raised lesion. Beneath the yellow crust is an oozing, moist, red base [8]. If this condition continues untreated, scarring and permanent hair loss can occur.

There are four main presentations of tinea capitis: a non-inflammatory, diffuse, scaly grey patch; inflammatory, diffuse pustular kerion; "black dot" alopecia; and tinea favosa. Non-inflammatory diffuse scaly grey patch usually involves papules around the hair shaft and patches of hair loss or alopecia. There are also broken hairs just above the scalp. Inflammatory diffuse pustular kerion is characterized by painful, itchy irritation and nodules on the scalp. The patient may also experience fever. Broken hairs appear just above the scalp along with a sticky material called kerion [8]. "Black dot" presentation involves fragile, broken hairs in some areas and an infected hair follicle that looks like a black dot [8].

PARASITES

Infestation of parasites, such as lice and scabies, is another issue in the salon environment.

Head Lice

Although reliable data on how many people in the United States get head lice each year are not available, an estimated 6 million to 12 million infestations occur each year among children 3 to 11 years of age [11]. The head louse, or Pediculus humanus capitis, is a parasitic insect that can be found on the head, eyebrows, and eyelashes. Lice are easily contracted through head-to-head contact in a school or daycare setting and can spread among a whole family (usually starting with a child). Head lice are also transmitted by sharing combs, brushes, or clothing (especially hats) or by lying on a bed or couch that an infested person has just used. Direct contact is necessary for transmission as lice cannot jump or fly, from one host to another. Indications of head lice include itching, the sensation of crawling and tickling across the head, and in extreme cases, sores from scratching.

Lotions and shampoos containing 1% of the pesticide permethrin (e.g., Rid, Nix, Clear) are the most common treatments for head lice. The pesticide is safe in small doses, but extra caution should be used with these products. Directions should be followed exactly to avoid any health issues. A nit comb is also required to comb the eggs and dead lice out of the hair. More than one treatment is usually necessary, and complete elimination can take several days to a few weeks [11; 12].

Scabies

Scabies are a contagious skin disease that could cause a problem in a salon if tools and countertops are not adequately cleaned. Scabies are caused by the itch mite or *Sarcoptes scabiei* var. *hominis* [13]. The scabies itch mite burrows its way under the skin and lays its eggs. Scabies mites are microscopic and are passed by direct skin-to-skin contact. In the salon industry, there is very close contact between technician and client and close contact with linens and surfaces, making transmission very possible. This possibility can be eliminated with proper cleaning of tools and surfaces and proper laundering of sheets, towels, and capes.

Symptoms of scabies can take months to develop [13]. Signs that infestation has occurred include itching and a bumpy rash in one area or over many areas. The most common infestation sites are the wrist, elbow, armpit, webbing between the fingers, nipple, penis, waist, belt-line, and buttocks [13]. As with head lice, sores may occur due to excessive scratching. Tiny burrows on the skin may be visible, but this is rare [13]. Once infested, a person can transmit scabies even if there are no obvious signs of infestation. Scabies mites can live on a human for up to 2 months, but when they are off a person, they can only live for 48 to 72 hours [13].

To treat scabies a physician will prescribe scabicide lotions or creams. Directions should be followed precisely, and the scabicide should be applied to all areas of the body. All members of the household should receive treatment from a physician to completely eradicate any possibility of re-infestation. All bedding and clothing must be laundered to eliminate the itch mites. If there are items that cannot be laundered they should be dry cleaned or placed in a plastic bag for several days to one week [13]. After treatment has begun, itching may still occur for several weeks, even if all mites have been killed [13].

COMMON TRANSMISSION METHODS IN THE SALON ENVIRONMENT

Transmission of pathogens is rare in the salon setting but can occur. Most salons are very safe and the risk of transmission is very low, but the overall risk depends on how many surfaces are left unsanitized. Possible contaminated surfaces include poorly sanitized pedicure tubs, uncleaned headrests, shampoo bowls, chair covers being used more than once, unsanitized or reused nail files/ buffers, and garbage cans/lids.

Chair headrests should be covered with a new sanitary sheet and shampoo bowls should be washed out with soap and water before each client. If a treatment table is used, a new sanitary sheet must be placed over the table before each client [14].

Lack of handwashing is another pathway of transmission. All technicians should completely and thoroughly wash their hands with soap and water before serving a client. The technician should also be clean and sanitary in his or her appearance and dress.

TYPES OF DISINFECTANTS

For a disinfectant to be effective it must be economical, easy to use, and effective. In the salon or spa, the most commonly used types of disinfectants are quaternary ammonium compounds (quats), hydrogen peroxide, alcohol, and bleach.

Quats are very safe and effective disinfectants used in salons and spas. In some cases, a more advanced formulation called dual quats, with improved detergency and lower levels of toxicity, is used, but this is not necessary for everyday salon uses. In most cases, tools (e.g., scissors, combs) are completely immersed in the quats liquid for at least 10 minutes. The liquid is rust-proof, but items should not be left in the quats indefinitely [1]. Both ethyl and isopropyl alcohol can be used as cleaning agents in the salon. When used properly, alcohol is considered a useful and powerful disinfectant. In the salon environment, alcohol is best utilized on porous and absorbent surfaces, such as plastic and countertop surfaces. The concentration must be 70% or higher to be effective [1].

Household bleach, or sodium hypochlorite, can be effective and is a long-used disinfectant in the salon industry. A salon-appropriate bleach solution consists of 1 cup of household bleach diluted in 1 gallon of water. Bleach is very effective, but can be damaging to some plastics and metals and also cause harm to skin and bodily tissues or to the respiratory tract if inhaled [1].

A few safety practices should always be observed when using disinfectants [1]:

- Wear gloves and safety glasses when mixing disinfectants.
- Add disinfectant to water, not water to disinfectant. Disinfectants contain detergents and may foam when water is added to them, resulting in an incorrect mixing ratio.
- Use tongs, gloves, or a draining basket to remove implements from disinfectants.
- Keep disinfectants out of the reach of children.
- Never pour quats, phenols, alcohol, or any other disinfectant over your hands. If you get disinfectants on your skin, immediately wash your hands with soap and warm water and dry them thoroughly.
- Carefully weigh and measure all products according to label instructions.
- Never place any disinfectant or other product in an unmarked container.

- Follow the manufacturer's instructions for mixing, using, and disposal of disinfectants.
- Change disinfectants every day, or more often if the solution becomes soiled or contaminated.

DISINFECTION METHODS

As discussed, some items and tools in a salon can be used many times, as long as they are properly cleaned and disinfected between uses. These are termed multi-use items and include the metal tools used in nail care and the combs, clippers, and shears used in hair care. Items that cannot be disinfected, termed single-use, are often porous or absorbable, making them extremely susceptible to bacterial invasion [1]. If disinfection is not possible on items such as emery boards, neck strips, and cotton pads, the item must be discarded after use. Towels, sheets, capes, and other linens must be washed in detergent at a temperature of 140 degrees Fahrenheit before reuse.

All multi-use items should be washed with soap and water and debris (e.g., hair) should be removed before disinfection. As noted, complete immersion of instruments in an EPA-approved or hospitallevel disinfectant is required. Disinfectants must have bactericidal, virucidal, and fungicidal qualities. Although the salon is not a place that typically deals with blood, accidents can happen. If the instrument has had contact with blood or bodily fluids (including saliva), the disinfectant must also be tuberculocidal.

It is important to keep a supply of ready-made solutions handy. Disinfectant solution should be kept in a clear container with a lid, so if the solution becomes cloudy or dirty it can be discarded. If no cloudiness or dirt is visible, the solution should be changed once a week. Finally, all items should be dried with a clean, dry cloth.

Store all disinfected items in a clean, enclosed space (e.g., a designated cabinet or container), where they may be clearly labeled as cleaned and ready for re-use. Non-disinfected items (e.g., papers, candles, pens) should not be stored in the same area as disinfected implements.

NAIL SERVICE SAFETY PROCEDURES

By law, all pedicure equipment that holds water must be cleaned and disinfected after each use and at the end of the day [15]. Once per week, bleach should be circulated through the basin's spa system. Salon owners should follow their state board's guidelines on the proper cleaning of pedicure tubs. Failure to follow the guidelines could result in infection due to *Mycobacterium fortuitum*, as discussed earlier, as well as *S. aureus*, fungal spores, and other pathogens. The manicurist's or pedicurist's license should also be displayed in a place that is visible to the customer.

In general, there are five steps to properly clean pedicure units [15]:

- 1. Drain and remove debris.
- 2. Thoroughly clean with soap or detergent and water
- 3. Disinfect basin with an EPA-registered disinfectant for at least 10 minutes.
- 4. Flush, refill, and circulate disinfectant through the system.
- 5. Record the time and date these procedures were performed in a log book.

Technicians should always use caution when using powerful disinfectants to prevent skin and eye damage. Gloves should be worn at all times, and all items should be kept out of the reach of children. Always mark the contents of containers, follow manufacturers mixing instructions, and change solutions frequently. Make sure contaminated items are disposed of or disinfected with the appropriate disinfection method.

HANDWASHING TECHNIQUE

Handwashing is the best way to prevent transmission of disease from person to person, and West Virginia law requires that every professional licensee, certificate holder, or permitee in a salon must thoroughly cleans his or her hands with soap and water immediately before serving any client [16]. It removes pathogens from the hands and nails and is an essential part of practicing good hygiene. Good handwashing involves removing the skin oils where micro-organisms can remain even when the hands look clean. A quick pass under the water faucet and fast dry with the towel removes visible dirt but the oils and organisms remain. The proper procedure for handwashing consists of the following steps [1]:

- 1. Wet hands with warm water. (Some mistakenly think that hot water must be used to kill the organisms. Water hot enough to kill organisms would be too hot to touch. Warm water adds to comfort and encourages better washing technique.)
- 2. Using liquid soap and a clean, disinfected soft-bristle nail brush, scrub your hands together and work up a good lather for at least 20 seconds. Give particular attention to the areas between the fingers, the nails, both sides of the hands, and the exposed portions of the arms. Be sure to use the nail brush to carefully scrub the underside of the nail plate, where bacteria can flourish.
- 3. Thoroughly rinse soap residue from your hands with warm water.
- 4. Dry hands using a disposable paper towel, air blower, or clean cloth towel.

If there is no visible dirt or contamination, a waterless hand sanitizer with at least 60% alcohol can be used between clients. However, nothing is as good as washing well with soap and water.

RESISTANT MICRO-ORGANISMS

Bacteria and other micro-organisms can become resistant to disinfection. Bacteria, in particular, can evolve defenses against existing disinfectants as a result of several factors, including the overuse of antibiotics in the community, the overuse of antibiotics in feed cattle and agriculture, and the failure of individuals to complete prescribed courses of antibiotics. Studies have shown that antibacterial soaps may contribute to bacteria becoming resistant and are not more effective in preventing disease than regular soaps [1].

The use of single-use rather than multi-use items will help to decrease the risk of resistant bacteria and infections. However, single-use items can be expensive and cannot be used for every task. It is important to keep up-to-date regarding outbreaks of resistant infections in your area, because if these pathogens are introduced into the salon, they can be more difficult to kill and more harmful to clients and employees.

SUMMARY

Sanitation and disinfection in the spa and salon environment is a vital part of every technician's training and education. Styling, shaping, and creating beauty are the basis of cosmetology, but the cosmetologist must first begin with a clean and safe working environment. A successful salon and a loyal clientele cannot be built without adherence to proper sanitation and disinfection guidelines.

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TEST QUESTIONS

#P5022 SANITATION AND STERILIZATION: UPDATE FOR WEST VIRGINIA

This is an open book test. Please record your responses on the Answer Sheet. A passing grade of at least 75% must be achieved in order to receive credit for this course.

Accreditations/Approvals: Paragon CET is approved as a provider of continuing education by the West Virginia Board of Barbers and Cosmetologists. Provider number P0030.

DESIGNATIONS OF CREDIT: PARAGON CET DESIGNATES THIS CONTINUING EDUCATION ACTIVITY FOR 2 CE HOURS.

This 2 CE Hour course must be completed by September 30, 2023.

- 1. Sanitation is defined as the removal of all visible dirt and debris from surfaces, tools, and equipment.
 - A) True
 - B) False
- 2. Pathogenic bacteria are non-disease-causing. A) True
 - B) False
- Staphylococcus bacteria can be found on doorknobs, countertops, and other hard surfaces.A) True
 - B) False
- 4. In order to avoid a Mycobacterium fortuitum skin infection, it is safer not to shave or wax the legs for at least 24 hours before a pedicure.
 A) True
 - B) False
- 5. The viruses that most affect humans include herpes, influenza, and human papillomavirus (HPV).
 - A) True
 - B) False

- 6. Athlete's foot is also known as tinea unguium.
 A) True
 B) False
- 7. Lotions and shampoos containing 1% of the pesticide permethrin are the most common treatments for head lice.A) True
 - B) False
- 8. In the salon or spa, the most commonly used types of disinfectants are quaternary ammonium compounds (quats), hydrogen peroxide, alcohol, and bleach.
 - A) True
 - B) False
- 9. The first step to properly cleaning a pedicure unit is to drain the unit and remove debris.A) True
 - B) False
- 10. With regard to hand hygiene, hands should be scrubbed for no more than 10 seconds.
 - A) True
 - B) False

Be sure to transfer your answers to the Answer Sheet/Evaluation. DO NOT send these test pages to Paragon CET. Retain them for your records. PLEASE NOTE: Your postmark or facsimile date will be used as your test completion date.

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