

cleaning (KLEEN-ing)	p. 101	a mechanical process using soap and water or detergent and water to remove all visible dirt, debris, and many disease-causing germs; cleaning also removes invisible debris that interferes with disinfection; cleaning is what beauty professionals are required to do before disinfecting
communicable (kuh-MYOO-nih-kuh-bul)	p. 104	able to be communicated; transferable by contact from one person to another as in a communicable disease
contagious disease (kun-TAY-jus diz-EEZ)	p. 104	also known as <b>communicable disease</b> ; disease that is capable of being spread from one person to another
contamination (kon-tuh-nuh-NAY-shun)	p. 105	the presence, or the reasonably anticipated presence, of blood or other potentially infectious materials on an item's surface, or visible debris or residues such as dust, hair, and skin
diagnosis (dy-ag-NO-sis)	p. 105	determination of the nature of a disease from its symptoms and/or diagnostic tests; federal regulations prohibit salon professionals from performing a diagnosis
direct transmission (die-REKT trans-MISH-uhn)	p. 99	transmission of pathogens through touching (including shaking hands), kissing, coughing, sneezing, and talking
disease (diz-EEZ)	p. 99	an abnormal condition of all or part of the body, or its systems or organs, that makes the body incapable of carrying on normal function
disinfectants (dis-in-FEK-tents)	p. 97	chemical products approved by the EPA designed to destroy most bacteria (excluding spores), fungi, and viruses on surfaces
disinfection (dis-in-FEK-shun)	p. 101	a chemical process that uses specific products to destroy harmful organisms (except bacterial spores) on environmental surfaces
efficacy (EF-ih-kuh-see)	p. 119	the ability of a product to produce the intended effect; on a disinfectant label, it indicates specific pathogens destroyed or disabled when used properly
exposure incident (eks-PÖ-zhoor IN-sih-dent)	p. 128	contact with non-intact (broken) skin, blood, body fluid, or other potentially infectious materials, which is the result of the performance of an employee's duties
fungi (FUN-ji)	p. 112	single-celled organisms that grow in irregular masses and include molds, mildews, and yeasts; they can produce contagious diseases such as ringworm
fungicidal (fun-ji-SYD-uhl)	p. 102	capable of destroying molds and fungi
hepatitis (hep-uH-TY-tis)	p. 111	a bloodborne virus that causes disease and can damage the liver
herpes simplex virus (HER-peez SIM-pleks VY-rus)	p. 110	an inflammatory disease of the skin caused by a viral infection and characterized by small vesicles in clusters
human immunodeficiency virus (HYOO-mun ih-MYOO-noh-dif-FISH-en-see VY-rus)	p. 111	abbreviated HIV; virus that causes HIV disease and acquired immune deficiency syndrome (AIDS)
human papilloma virus (HYOO-mun pap-uH-LOW-ma VY-rus)	p. 110	abbreviated HPV; virus that can infect the bottom of the foot and resembles small black dots, usually in clustered groups; also a cutaneous viral infection commonly contracted through sexual transmission and exhibited by genital warts

indirect transmission (in-dih-REKT trans-MISH-uhn)	p. 100	transmission of blood or body fluids through contact with an intermediate contaminated object such as a razor, extractor, nipper, or an environmental surface
infection (in-FEK-shun)	p. 99	the invasion of body tissues by disease-causing pathogens
infection control (in-FEK-shun con-TROL)	p. 95	the methods used to eliminate or reduce the transmission of infectious organisms from one individual to another
infectious (in-FEK-shus)	p. 95	caused by or capable of being transmitted by infection
infectious disease (in-FEK-shus diz-EEZ)	p. 101	disease caused by pathogenic (harmful) microorganisms that enter the body; an infectious disease may or may not be spread from one person to another person
inflammation (in-fluh-MAY-shun)	p. 106	a condition in which the body reacts to injury, irritation, or infection, characterized by redness, heat, pain, and swelling
local infection (LOKE-uhl in-FEK-shun)	p. 106	an infection, such as a pimple or abscess, that is confined to a particular part of the body and appears as a lesion containing pus
methicillin-resistant staphylococcus aureus (meth-uH-SILL-en ree-ZIST-ent staf-uH-loh-KOK-uS OR-ee-us)	p. 107	abbreviated MRSA; a type of infectious bacteria that is highly resistant to conventional treatments such as antibiotics
microorganism (my-kro-OR-gah-niz-um)	p. 105	any organism of microscopic or submicroscopic size
mildew (MIL-doo)	p. 112	a type of fungus that affects plants or grows on inanimate objects but does not cause human infections in the barbershop
multiuse (mul-hye-YOOS)	p. 118	also known as <b>reusable</b> ; items that can be cleaned, disinfected, and used on more than one person, even if the item is accidentally exposed to blood or body fluid
mycobacterium (my-co-bac-TEER-ee-um)	p. 108	a large family of bacteria that is often found in soil and water
nonpathogenic (nahn-path-uh-JEN-ik)	p. 106	harmless microorganisms that may perform useful functions and are safe to come in contact with since they do not cause disease or harm
nonporous (nahn-POOR-rus)	p. 120	an item that is made of a material that has no pores or openings and cannot absorb liquids
occupational disease (ahk-u-PAY-shun-al diz-EEZ)	p. 105	illness resulting from conditions associated with employment, such as prolonged and repeated overexposure to certain products or ingredients
parasites (PAYR-uh-sytz)	p. 113	organisms that grow, feed, and shelter on or inside another organism (referred to as the <i>host</i> ), while contributing nothing to the survival of that organism. Parasites must have a host to survive
parasitic disease (pah-rah-SIT-ick diz-EEZ)	p. 105	disease caused by parasites, such as lice and mites
pathogenic (path-uH-JEN-ik)	p. 106	harmful microorganisms that can cause disease or infection in humans when they invade the body



- 9 Discard gloves and thoroughly wash hands with warm running water and liquid soap. Rinse and dry hands with a clean fabric or disposable towel and then put on fresh gloves.



- 10 Properly clean and disinfect implements.



- 11 Discard gloves and thoroughly wash your hands with warm running water and liquid soap. Rinse and dry hands with a clean fabric or disposable towel.



- 12 Return to where you had left the service.

## COMPETENCY PROGRESS

How are you doing with Infection Control? Check off the Chapter 5 Learning Objectives below that you feel you have mastered; leave unchecked those objectives you will need to return to:

- EXPLAIN INFECTION CONTROL.
- DESCRIBE FEDERAL AND STATE REGULATORY AGENCIES.
- RECOGNIZE THE PRINCIPLES OF INFECTION.
- IDENTIFY DIFFERENT TYPES OF PATHOGENS.
- EMPLOY THE PRINCIPLES OF PREVENTION.
- FOLLOW STANDARD PRECAUTIONS TO PROTECT YOURSELF AND YOUR CLIENTS.
- DEMONSTRATE SAFE WORK PRACTICES AND SAFETY PRECAUTIONS.

## GLOSSARY

acquired immune deficiency syndrome (uh-KWY-er-ih MYOON di-FISH-en-see SIN-drome)	p. 111	abbreviated AIDS; a disease that breaks down the body's immune system; AIDS is caused by the human immunodeficiency virus (HIV)
antiseptics (an-tih-SEP-tiks)	p. 117	chemical germicides formulated for use on skin; registered and regulated by the Food and Drug Administration
asymptomatic (uh-simp-toe-MAT-ick)	p. 126	showing no symptoms or signs of infection
bacteria (bak-TEER-ee-ah)	p. 105	single-celled microorganisms that have both plant and animal characteristics; some bacteria are harmful, some are harmless
bacterial spores (bak-TEER-ee-uh SPORZ)	p. 102	bacteria capable of producing a protective coating that allows them to withstand very harsh environments and to shed the coating when conditions become more favorable to them
bactericidal (bak-TEER-uh-SYD-uh-l)l	p. 102	capable of destroying bacteria
biofilms (BY-o-films)	p. 113	colonies of microorganisms that adhere to environmental surfaces, as well as the human body
bloodborne pathogens (BLUD-born PATH-o-genz)	p. 110	disease-causing microorganisms carried in the body by blood or body fluids, such as hepatitis and HIV
chelating soaps (CHE-lay-ting SOHPS)	p. 125	break down stubborn films and remove the residue of products such as scrubs, salts, and masks; also known as <i>chelating detergents</i>

# PROCEDURE 5-4: HANDLING AN EXPOSURE INCIDENT: EMPLOYEE INJURY

Should you accidentally cut yourself during a service, calmly take the following steps:

## MATERIALS, IMPLEMENTS, AND EQUIPMENT

- Antiseptic
- Bandages
- Cotton
- Disposable gloves
- Disposable paper towels
- Liquid soap
- Plastic bag
- Disinfectant solution, spray, or wipes
- Sharps box (optional)

## PROCEDURE



- 1 Stop the service immediately.



- 2 Inform your client of what has happened. Let them know you are taking care of your cut and that the service will be interrupted for a few minutes. If the nature of your cut is severe, ask an employee to assist with the exposure incident.



- 3 If appropriate, wash and rinse the injured area under running water.



- 4 Pat the injured area dry using a new, clean paper towel.



- 5 Apply antiseptic and an adhesive bandage to the wound.



- 6 Put on gloves.



- 7 Discard all single-use contaminated objects, such as wipes or cotton balls, in a plastic bag and then place in a trash bag. Deposit sharp disposables in a sharps box. Dispose of double-bagged items and sharps containers as required by state or local law. In general, all of these items (except sharps) may go into the regular trash.



- 8 Remove all implements from the workstation and then clean and disinfect workstation surfaces.



- ④ If appropriate, assist your client to the sink, wash the injured area with soap, and rinse under running water.



- ⑤ Pat the injured area dry using a new, clean paper towel.



- ⑥ Offer your client antiseptic and an adhesive bandage.



- ⑦ Discard all single-use contaminated objects, such as wipes or cotton balls, in a plastic bag and then place in a trash bag. Deposit sharp disposables in a sharps box. Dispose of double bagged items and sharps containers as required by state or local law. In general, all of these items (except sharps) may go into the regular trash.



- ⑧ Remove all implements from the workstation and then clean and disinfect workstation surfaces.



- ⑨ Discard gloves and thoroughly wash hands with warm running water and liquid soap. Rinse and dry hands with a clean fabric or disposable towel and then put on fresh gloves.



- ⑩ Properly clean and disinfect implements.



- ⑪ Discard gloves and thoroughly wash your hands with warm running water and liquid soap. Rinse and dry hands with a clean fabric or disposable towel and return to the service.



- ⑫ Recommend that the client see a physician if any signs of redness, swelling, pain, or irritation develop. Ask if the client would like to continue the service, and return to where you left off if they are willing. If you were working on the client's hands and they have refused a bandage, put on gloves before finishing the service.

b. Sprays are used for larger tools and implements that cannot or should not be immersed.



- i. Place cleaned items on a disinfected surface or clean towel and spray with disinfectant until thoroughly saturated. Ensure that all surfaces of items stay visibly moist for the full contact time listed on the label.



- ii. After the required contact time has passed, pick up items with tongs or gloved hands, rinse in warm running water, and pat dry.

c. Wipes are used for surfaces and other nonsubmersible items.



- i. Steps #2 through #6 above are not required when using one wipe to clean and a second wipe to disinfect.

- ii. Use an EPA-registered wipe to wipe surfaces or items and ensure that all surfaces remain visibly moist for the contact time listed on the label.



- ⑧ Store items as directed by your state rules. Most states require that dry, disinfected items be stored in a clean, covered container labeled "disinfected" or "ready to use" until needed.



- ⑨ Remove gloves and thoroughly wash your hands with warm running water and liquid soap. Rinse and dry hands with a clean fabric or disposable towel.

# PROCEDURE 5-3: HANDLING AN EXPOSURE INCIDENT: CLIENT INJURY

Should you accidentally cut a client during a service, calmly take the following steps:

## MATERIALS, IMPLEMENTS, AND EQUIPMENT

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> Antiseptic        | <input type="checkbox"/> Disposable paper towels | <input type="checkbox"/> Disinfectant solution, spray, or wipes |
| <input type="checkbox"/> Bandages          | <input type="checkbox"/> Liquid soap             | <input type="checkbox"/> Sharps box (optional)                  |
| <input type="checkbox"/> Disposable gloves | <input type="checkbox"/> Plastic bag             |   |

## PROCEDURE



- ① Stop the service immediately.



- ② Put on gloves (if you were not already wearing gloves for the procedure).



- ③ Face your client and calmly apologize for the incident.

# PROCEDURE 5-2: CLEANING AND DISINFECTION OF NONPOROUS, REUSABLE ITEMS

Nonporous, reusable items include nonelectrical tools and implements that can be completely submerged, such as combs, brushes, shears, clips, hairpins, tweezers, and nippers, as well as larger equipment that cannot be submerged, all the way up to nonporous work surfaces.

## MATERIALS, IMPLEMENTS, AND EQUIPMENT

- Covered storage container
- Disinfectant solution, spray, or wipes
- Disposable gloves
- Disposable towels
- Liquid soap or cleaning solution
- Safety glasses
- Scrub brush
- Timer
- Tongs

## PROCEDURE



- 1 It is important to wear safety glasses and gloves while cleaning and disinfecting to protect your eyes from unintentional splashes of disinfectant, to prevent possible contamination of the implements by your hands, and to protect your hands from the powerful chemicals in the disinfectant solution.



- 2 Rinse items with warm running water.



- 3 Use a small scrubbing brush to wash items with soap or cleaning solution.



- 4 Disinfect items as appropriate or required by your state:  
a. **Immersion** is used for items that can be safely and effectively immersed in disinfectant.



- i. Brush grooved items thoroughly and open hinged implements to scrub the revealed areas clean.

- ii. Rinse away all traces of soap or solution with clean running water. Soap is most easily rinsed off in warm, not hot, water.

- 6 Dry items with a clean or disposable towel.

- i. Completely immerse cleaned items in an appropriate disinfection container holding an EPA-registered disinfectant approved for use in your state for the required time listed in the manufacturer's instructions. Remember to open hinged implements before immersing them in the disinfectant. If the disinfectant solution is visibly dirty, or if the solution has been contaminated, it must be replaced.

- ii. After the required contact time has passed, remove items from the disinfectant solution with tongs or gloved hands, rinse in warm running water, and dry thoroughly with a disposable towel or allow to air dry on a clean towel. Do not store implements with any moisture on them, particularly in the hinges.

- 4 Scrub your nails with a nail brush if product or debris is visible under your nails or if you are washing your hands following an exposure incident:

a. Choose a clean and disinfected nail brush.



b. Wet the nail brush and pump soap onto the bristles.



c. Brush your nails horizontally back and forth under the free edges.



d. Change the direction of the brush to vertical and move the brush up and down along the nail folds of the fingernails. The process for brushing both hands should take about 60 seconds to complete.



e. Rinse the nail brush and deposit in a labeled container for dirty implements.



5 Rinse hands in warm running water.



6 Use a clean cloth or paper towel to dry your hands, according to the salon, spa, or barbershop's policies or state rules and regulations.



7 After drying your hands, turn off the water with the towel. Use the towel to open the door and then dispose of the towel. Touching a doorknob with your bare fingers can recontaminate your hands.

- Be prepared for emergencies. Every salon, spa, and barbershop should have employee and clientele emergency information available.
- An emergency phone number checklist should include the contact numbers for fire, police, poison control, and medical rescue departments; the nearest hospital emergency room; and taxis.
- Utility service companies, such as electricity, water, heat, air-conditioning, and landlord or custodial numbers are also helpful in an emergency or if something breaks down in the shop. Update this information on an annual basis and you will always be prepared.
- Realize that behavior that stems from a knowledgeable and caring manner is what separates a true professional from a nonprofessional. Being a professional is something you can take pride in.

#### CHECK IN

Why is it of the utmost importance to practice strict infection control protocols with every client?

## APPLY INFECTION CONTROL

Congratulations on completing this chapter! Before you move on, take a moment to think about how these Infection Control topics apply to your particular discipline. Discuss with a classmate or study group how you will fit infection control into your daily routine on the job; what special infection control measures you will need to take for specific procedures; what some special needs of your target audience may be; and so on.

# PROCEDURE 5-1: PROPER HAND WASHING

Hand washing is one of the most important procedures in your infection control efforts and is required in most states before beginning any service and after eating, smoking, or using the restroom.

## MATERIALS, IMPLEMENTS, AND EQUIPMENT

- Disposable paper towels
- Liquid soap in a pump container
- Nail brush

## PROCEDURE



- 1 Turn the water on and wet your hands.



- 2 Pump soap from a pump container onto the palm of your hand.



- 3 Rub your hands together, all over and vigorously, until a lather forms. Continue for a minimum of 20 seconds.

work through your practical skills, you will learn proper protection procedures and chemical application methods to ensure client safety and comfort from the standpoint of avoiding skin irritations, burns, wet or soiled clothing, and so forth; however, there are also several common sense services that should be performed. Using good manners and performing common courtesies will help you gain the reputation of being a safety-conscious and courteous professional.

- Assist clients (especially the elderly) in and out of chairs and onto and off treatment tables. Turn hydraulic chairs so the client may get out of the chair without a risk of feet becoming tangled in any of the cords.
- Always lower a hydraulic chair to its lowest level and lock it in position so that it does not spin before inviting the client to be seated or leave the chair.
- Hold doors open for clients.
- Assist clients in walking whenever necessary.
- Always support the back of the chair, and thus the client, when reclining or raising a chair back. Support the client's head whenever appropriate at the shampoo bowl or during other neck-straining procedures.

## HIGH-RISK CLIENTS

- While some customers who know that they have impaired immune systems will share that information with you, many will not because they are embarrassed, do not know it is important, or do not know that they have a compromised immune system. These people are at very high risk of infection should they encounter pathogens. Because you will not always know who these people are, it is important to practice proper infection control with every customer.
- Diabetic customers have immune systems that do not work effectively and have impaired healing. A simple nick from a tool that was not properly disinfected may have devastating effects. While many people will tell you they have diabetes if they do, some type 2 diabetics can be diabetic for years prior to being diagnosed, which means that even if you ask, they may say "no" because they have not yet been diagnosed.
- Lumpectomy/mastectomy patients have had surgical treatment for breast cancer. A part of that surgery involves removing the lymph nodes in the axilla (armpit). With those nodes removed any infectious process in that arm could lead to a permanent condition called *lymphedema*. It is extremely important to these clients that properly disinfected implements be used, particularly in a nail (Figure 5-24).



▲ FIGURE 5-24 Lymphedema is a condition that can afflict lumpectomy/mastectomy patients.

SK/Sonya Sava

- Clients on medication for conditions such as asthma, rheumatoid arthritis, and fibromyalgia are likely to have suppressed immune systems, making them particularly susceptible to infection.
- Clients who are pregnant may be particularly sensitive to harsh smells; their skin may also have unusual reactions to chemicals. Each client must decide for themselves what is safe for their baby during pregnancy; however, allowing a client to read the labels of products prior to using them may help them to decide.

## YOUR PROFESSIONAL RESPONSIBILITIES

After studying this chapter, it should be clear that your responsibilities as a beauty professional far exceed the ability to perform a good service; your most important responsibility is to protect your clients' health and safety.

- Never take shortcuts for cleaning and disinfecting. You cannot afford to skip steps in order to save time or money when it comes to safety.
- It is your professional and legal responsibility to follow state and federal laws and rules.
- Keep your license current and notify the licensing agency if you move or change your name.
- Check your state's website monthly for any change or update to the rules and regulations.
- Be aware of your environment so that you can identify and eliminate potential hazards to make your salon, spa, or barbershop safer for you and your clients.



▲ FIGURE 5-23 Avoid tangled cords, which can be dangerous in addition to unsightly and cumbersome.

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## EQUIPMENT AND FIXTURES

- Keep all chairs, headrests, tables, heat lamps, and lighting fixtures in good working order. Tighten screws and bolts, grease or oil hinges, and service equipment mechanisms as needed.
- Dust and clean regularly to avoid dust buildup and to maintain clean conditions.
- Maintain lighting fixtures. Change bulbs when necessary to keep workstations well lit.

## VENTILATION

- Proper ventilation and air circulation are extremely important in today's salons, spas, and barbershops. Particles from products such as hair sprays and disinfectants can be inhaled and may cause allergic reactions or other health problems.
- Heating and air-conditioning vents should be located to perform their optimum functions without interfering with client services.
- Vents should be vacuumed or cleaned periodically to prevent any buildup of hair that might impede ventilation.
- Fumes from chemical applications and nail care products require sophisticated filtration units that cleanse and detoxify the air. Once installed, air filters should be changed or cleaned regularly.

## EXITS

- Exits should be well marked and identifiable. (Check with your local building inspection office for codes and requirements.)
- Employees should know where exits are located and how to evacuate the building quickly in case of fire or other emergencies. Implement fire drills to practice for this contingency.

## FIRE EXTINGUISHERS

- Fire extinguishers should be placed where they are readily accessible.
- All employees should be instructed in fire extinguisher use.
- It is a law that fire extinguishers be checked periodically. Be guided by the manufacturer's recommendations and state and local ordinances.

## ATTIRE

- Clothing should be comfortable and professional in appearance. Excessively baggy clothes can get in the way of your performance just as easily as tight clothing can restrict it.
- Long hair worn in a loose style may easily get caught in motor vents and other appliances. Keep hair pulled back or short enough to avoid entanglements.
- Necklaces should be of an appropriate length so as not to get caught on equipment or dangle in a client's face during a service. Rings should not be worn on the index and middle fingers as they might interfere with procedure accuracy. In general, rings with stones and elaborate settings are very hard to keep clean. Watches should be waterproof and shock absorbent.
- Shoes should have nonskid rubber soles with good support.
- Electronic devices that may distract you, such as cell phones or tablets, should be kept stored away and checked or answered only between clients.

## CHILDREN

- Children can cause serious risk of injury to themselves in the salon, spa, or barbershop environment. Being aware of their inquisitive nature and the speed with which they can move can help prevent accidents from happening.
- Post notices in the reception area advising patrons that children are not to be left unattended.
- Do not allow children to play, climb, or spin on hydraulic chairs.
- Do not allow children to wander freely with access to workstations, storage areas, and so forth.
- When performing a service on a child, try to anticipate the child's sudden moves. Never trust a young child to hold the head or body while you are wielding tools. Instead, hold the child gently but firmly with one hand while working with the other.

## ADULT CLIENTS

- As beauty professionals, many of the things we do to assure client comfort also fall under the category of safety precautions. As you





If a service requires moving from one place of service to another several times, or working on different body parts—such as when performing a manicure and a pedicure—several sets of gloves will need to be used. The technician is to perform hand washing after removing each set of gloves and before putting on a new set when two services are being performed together, or use antimicrobial gel cleanser between sets of gloves during the same appointment.

#### CAUTION

When choosing what type of disposable gloves to use, you should avoid latex due to increasingly common allergies to the material. You should also exercise caution when using petroleum-based products, as petroleum-based gloves degrade on contact and cannot maintain a safe barrier. Nitrile gloves are a strong alternative in both instances.

### AN EXPOSURE INCIDENT: CONTACT WITH BLOOD OR BODY FLUID

You should never perform a service on any client who comes in with an open wound, a rash, or an abrasion. However, sometimes accidents happen while a service is being performed.

An exposure incident (eks-PO-zhoor IN-sih-dent) is contact with non-intact (broken) skin, blood, body fluid, or other potentially infectious materials that is the result of the performance of a worker's duties. Should the client suffer a cut or abrasion that bleeds during a service, follow the steps outlined in **Procedure 5-3** for the client's safety as well as your own.

As a beauty professional, you will likely work with an array of sharp implements and tools, and cutting yourself is a very real possibility. If you do suffer a cut and blood is present, you must follow the steps for an exposure incident outlined in **Procedure 5-4**. Many of the steps are similar to a client injury, although attending to yourself should hopefully require fewer soft skills!

#### CHECK IN

What are Standard Precautions?

### DEMONSTRATE SAFE WORK PRACTICES AND SAFETY PRECAUTIONS

Most potentially harmful situations in the salon, spa, and barbershop can be avoided by being observant and using common sense. Learn to recognize safety hazards to minimize the occurrence of accidents.

### WATER

- At the shampoo bowl, be careful how you handle the spray hose. Position the client's head for comfort and access, being conscious of your own body position as well. Do not bend or twist from the waist unnecessarily. Wipe up any water spills or leaks immediately.
- If the water temperature reaches a scalding level while in the hot position, turn the thermostat on the hot-water tank down to a more acceptable temperature for application to the skin, scalp, and hair. Water heaters should not be set at higher than 130 degrees Fahrenheit.
- As a precaution, always test water temperature on the inside of your wrist before applying to a client's hair or scalp. The same procedure may be used to test steam towels for facials and shaves. must

### TOOLS AND APPLIANCES

- Tools and equipment should be strategically placed so that items are safely stored when not in use yet are accessible when needed.
- Smaller tools may be placed in countertop receptacles designed for that purpose. Larger equipment may be mounted under the cabinet, attached to a wall, or set on a shelf.
- Disinfecting jars should be set back toward a wall or partition so as not to interfere with other tools. This also limits the risk of accidental spillage of disinfectant solution.
- If a tool or implement is dropped on the floor during a service, it must be replaced with a disinfected tool or you must stop the service and properly disinfect the tool that was dropped prior to continuing the service. This is a good reason to keep an extra set of tools that are ready to use handy.
- All tools and implements should be in good working condition. Replace damaged tools immediately, including worn electrical cords, chipped clipper blades, cracked housings, and broken shears. Do not try to repair tools yourself; send them to the manufacturer for service. Never subject yourself or your client to the risks of faulty or broken equipment.
- Electrical cords can often threaten to become a safety hazard in a busy shop. Cords to clippers, trimmers, curling irons, and blow-dryers tend to become twisted and tangled during use. If the cord is too long, it can get caught on the foot or armrests of a chair or table or even on the foot of a client. Some beauty professionals use cordless tools, such as trimmers, to eliminate the problem altogether. A well-planned workstation with sufficient and conveniently placed outlets can also help minimize "tangled cord syndrome" (Figure 5-23).
- Never place any tool or implement in your mouth or pocket.

# FOLLOW STANDARD PRECAUTIONS TO PROTECT YOURSELF AND YOUR CLIENTS

Standard Precautions (SP) (STAN-derd pruh-CAW-shuns) are guidelines published by the CDC that require the employer and employee to assume that any human blood and body fluids are potentially infectious. Because it may not be possible to identify clients with infectious diseases, whether or not they look sick, strict infection control practices should be used with all clients. In many instances, clients who are just getting sick or are long-term viral carriers are asymptomatic (A-simp-toe-MAT-ick), meaning that they show no symptoms or signs of infection.

OSHA and the CDC have set safety standards and precautions that protect employees in situations when they could be exposed to blood-borne pathogens. Precautions include proper hand washing, wearing of gloves, and proper handling and disposing of sharp instruments and any other items that may have been contaminated by blood or other body fluids (Figure 5-21). It is important that specific procedures be followed if blood or body fluid is present.



▲ FIGURE 5-21 Sharps containers are puncture-proof plastic biohazard containers for disposable needles and anything sharp and must be disposed of as medical waste.

## CAUTION

Taking the time to conduct a thorough hair and skin analysis will enable you to determine whether a customer has any open wounds or abrasions. If the client does have an open wound or abrasion, do not perform services of any kind.

## PERSONAL PROTECTIVE EQUIPMENT (PPE)

Many chemicals used in the salon, spa, or barbershop bear labels that require the use of personal protective equipment, such as gloves and safety glasses, when working with their products. However, some equipment, such as gloves, offer protection from exposure to pathogens and should be worn whenever practical.

### GLOVES

OSHA defines PPEs as "specialized clothing or equipment worn by an employee for protection against a hazard." The hazards this particular standard refers to are bloodborne pathogens, such as hepatitis and HIV; however, beauty professionals are required to prevent their occupational exposure to any amount of blood, no matter how minuscule, through the use of gloves, masks, and eye protection.

Gloves are single-use equipment; a new set is used for every client and at times must be changed during the service, according to the protocol. Removal of gloves is performed by inverting the cuffs, pulling them off inside out, and disposing of them into the trash. The glove taken off first is held in the hand with a glove still on it; the glove with the cuff inverted is then pulled over the first glove inside out (Figure 5-22). The first glove is then inside the second one, which has the service side now on the inside against the other glove, and they are disposed of together.



▲ FIGURE 5-22 First remove one glove by inverting the cuff and pulling it off inside out (A). Then, with the cuff inverted, the second glove is pulled off over the inside-out first glove (B). Both are disposed of together.



not require you to keep a logbook of all equipment usage, cleaning, disinfecting, testing, and maintenance, it may be advisable to keep one.

## CLEANING AND DISINFECTING NONPOROUS, REUSABLE ITEMS

State rules require that all multiuse tools and implements be cleaned and disinfected before every service. Mix all disinfectants according to the manufacturer's directions, always adding the disinfectant to the water, not the water to the disinfectant (**Figure 5-20**). Follow the cleaning and disinfecting nonporous, reusable items procedure described in **Procedure 5-2**.



▲ FIGURE 5-20 Carefully pour the disinfectant into the water when preparing disinfectant solution.

## DISINFECTING ELECTRICAL TOOLS AND EQUIPMENT

Hair clippers and other types of electrical equipment have contact points that cannot be completely immersed in liquid. These items should be cleaned and disinfected using an EPA-registered disinfectant designed for use on these devices. Follow the procedures recommended by the disinfectant manufacturer for preparing the solution and follow the item's manufacturer directions for cleaning and disinfecting the device.

### CAUTION

Electric sterilizers, bead sterilizers, and baby sterilizers should not be used to disinfect or sterilize implements. These devices can spread potentially infectious diseases and should never be used in a salon, spa, or barbershop. Additionally, UV light units will not disinfect or sterilize implements. Most state rules require that you use liquid disinfecting solutions. Autoclaves are effective sterilizers. If you decide to use an autoclave, be sure that you know how to operate and maintain it properly.

## DISINFECTING WORK SURFACES

Most states require that all work surfaces be cleaned and disinfected before beginning a service. Be sure to clean and disinfect tables, stations, shampoo sinks, chairs, armrests, and any other surface that a customer's skin may have touched. Clean doorknobs and handles daily to reduce transfer of germs to your hands.

## CLEANING TOWELS, LINENS, AND CAPEs

Clean towels and linens should be used for each client, and some states require freshly laundered capes for every service. To clean towels, linens, and capes, launder according to the directions on the item's label. Be sure that towels, linens, and capes are thoroughly dried. Items that are not dry may grow mildew and bacteria. Store soiled linens and towels in covered or closed containers, away from clean linens and towels, even if your state regulatory agency does not require that you do so. Whenever possible, use disposable towels, especially in restrooms. Do not allow the neckband of capes to touch the client's skin. All states require the use of a barrier, such as disposable neck strips or towels, to prevent the client's skin from touching the neckline of the cape.

## MULTIUSE PRODUCTS

When using creams, lotions, gels, or any other product that is dispensed from a multiuse container, it is important not to contaminate the product. Always use a pump or shaker to dispense products when possible. For products in a tub-type container, always use a clean spatula (disposable or disinfectable) to remove the product—never use your fingers.

## SOAPs AND DETERGENTS

Chelating soaps (CHE-lay-ing SOHPS), also known as chelating detergents, work to break down stubborn films and remove the residue of products such as scrubs, salts, and masks. The chelating agents in these soaps work in all types of water, are low-sudsing, and are specially formulated to work in areas with hard tap water. Hard tap water reduces the effectiveness of cleaners and disinfectants. If your area has hard water, ask your local distributor for soaps that are effective in hard water. This information will be stated on the product's label.

### CHECK IN

What is the difference between cleaning, disinfecting, and sterilizing?



# Don't learn safety by Accident

- JERRY SMITH



▲ FIGURE 5-19 Wear gloves and safety glasses while handling disinfectants.

To mix a bleach solution, always follow the manufacturer's directions. Store the bleach solution away from heat and light. A fresh bleach solution should be mixed every 24 hours or when the solution has been contaminated. After mixing the bleach solution, date the container to ensure that the solution is not saved from one day to the next, but rather disposed of daily like other disinfectants. Bleach can be irritating to the lungs, so be careful about inhaling the fumes.

## DID YOU KNOW?

Bleach is not a magic potion! All disinfectants, including bleach, are inactivated (made less effective) in the presence of many substances, including oils, lotions, creams, hair, and skin. If bleach is used to disinfect equipment, it is critical to use a soap detergent first to thoroughly clean and rinse the equipment and remove all debris. Never mix detergents with bleach and always use bleach in a well-ventilated area.

Additionally, not all household bleaches are as effective as disinfectants. To be effective, the bleach must have an EPA registration number and contain at least 5 percent sodium hypochlorite and be diluted properly to a 10 percent solution—nine parts water to one part bleach.

## DISINFECTANT TIPS AND SAFETY

Never forget that disinfectants are poisonous and can cause serious skin and eye damage. Some disinfectants appear clear while others, especially phenolic disinfectants, are a little cloudy. Always use caution when handling disinfectants, in addition to the tips below.

### Always

- Keep the SDS on hand for the disinfectant(s) you use.
- Wear gloves and safety glasses (Figure 5-19).

- Avoid skin and eye contact.
- Add disinfectant to water when diluting (rather than adding water to a disinfectant) to prevent foaming, which can result in an incorrect mixing ratio.
- Use tongs, gloves, or a draining basket to remove implements from disinfectants.
- Keep disinfectants out of reach of children.
- Follow the manufacturer's instructions for mixing, using, and disposing of disinfectants.
- Use disinfectants only on clean, hard, nonporous surfaces.
- Keep an item submerged in the disinfectant for 10 minutes unless the product label specifies differently.
- Immerse the entire implement in disinfectant if the product label calls for "complete immersion."
- To disinfect large surfaces, such as countertops, carefully apply the disinfectant to the clean surface or use a disinfectant spray and allow it to remain moist for 10 minutes, unless state regulations say differently.
- Strictly follow the manufacturer's directions for when to replace the disinfectant solution in order to ensure the healthiest conditions for you and your client. Replace the disinfectant solution every day—more often if the solution becomes soiled or contaminated.

### Never

- Let quats, phenols, bleach, or any other disinfectant come in contact with your skin. If you do get disinfectant on your skin, immediately wash the area with liquid soap and warm water. Then rinse and dry the area thoroughly.
- Place any disinfectant or other product in an unmarked container. All containers should be labeled with, at the least, product name, ingredients, date of mixing, and manufacturer's information.
- Mix chemicals together unless specified in the manufacturer's instructions. (For example, mixing together bleach and ammonia products or bleach and vinegar creates potentially fatal toxic vapors!)

## DISINFECTION CONTAINERS

In the past, jars or containers used to disinfect implements were often incorrectly called "wet sanitizers." Disinfectant containers contain disinfectant for disinfecting purposes, not for cleaning. The container you choose must be large enough to contain all items to be disinfected and covered, but not airtight. Remember to clean the container every day and to wear gloves when you do. Always follow the manufacturer's label instructions for disinfecting products.

## KEEP A LOGBOOK

Salons, spas, and barbershops should always follow manufacturers' recommended schedules for cleaning and disinfecting tools and implements, disinfecting work surfaces, scheduling regular service visits for equipment, and replacing parts when needed. Although your state may



▲ FIGURE 5-17 Implements must be completely immersed in disinfectant solution.

## TYPES OF DISINFECTANTS

Disinfectants are not all the same. Some are appropriate for use in the beauty and wellness industry and some are not. As a beauty professional, you will primarily be using disinfectants that are effective for cleaning blood and body fluids from nonporous (nah-n-POOR-rus) surfaces. Nonporous items are made of a material that has no pores or openings and that cannot absorb liquids—as opposed to porous (POOR-rus) material that has holes or openings and is absorbent.

### QUATS

Quaternary ammonium compounds (KWAT-ur-nayr-ee uh-MO-nee-um KAHM-powndz), also known as *quats* (KWATZ), are disinfectants that are very effective when used properly on nonporous surfaces. The most advanced type of these formulations is called *multiple quats*. Multiple quats contain sophisticated blends of quats that work together to significantly increase the effectiveness of these disinfectants. Quat solutions usually disinfect implements in 10 minutes. As with all disinfectants, leaving tools in a quat solution for prolonged periods can cause dulling or damage. They should be removed from the solution after the specified period, rinsed (if required), dried, and stored in a clean, covered container.

### TUBERCULOCIDAL DISINFECTANTS

Tuberculocidal disinfectants (tuh-bur-kyoo-LOH-syd-ahl dis-in-FEK-tents) are proven to kill the bacterium that causes tuberculosis (tuh-bur-kyoo-LO-sus), in addition to other pathogens destroyed through the use of hospital disinfectants. Tuberculosis is a disease caused by a bacterium that is transmitted through coughing or sneezing. It is passed through inhalation only and is not transmitted by the hands or picked up on surfaces.

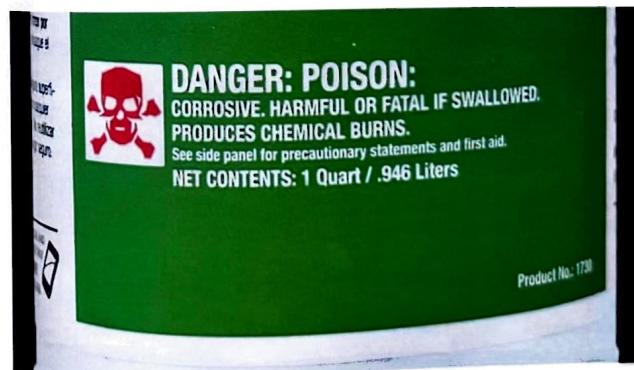
Phenolic disinfectants (fi-NOH-lik dis-in-FEK-tents) are powerful tuberculocidal disinfectants; however, just because these disinfectants are effective against the pathogen does not mean that you should automatically reach for them. They are a form of formaldehyde, have a very high pH, and can damage the skin and eyes. Phenolic disinfectants can be harmful to the environment if put down the drain. They have been used reliably over the years to disinfect tools; however, they do have significant drawbacks. Phenol can damage plastic and rubber and cause certain metals to rust. Extra care should be taken to avoid skin contact with phenolic disinfectants. Phenolics are known carcinogens and as such should be used only in states that require their use. In those states, you should keep a tuberculocidal disinfectant readily available, but you should use it only when required.

### DID YOU KNOW?

While phenolic disinfectants are still required in a handful of states as of this writing, they will be widely unavailable by late 2018. Most states have removed phenolic disinfectants from their requirements, due to the risks outweighing the benefits. Consequently, manufacturers have elected to discontinue the manufacture of these products for the professional beauty industry.

### BLEACH

Household bleach, 5.25 percent sodium hypochlorite (SO-dee-um hy-puh-KLOR-eyt), is an effective disinfectant and has been used extensively in salons, spas, and barbershops. Bleach used in the salon, spa, or barbershop must be EPA registered as a disinfectant. Chlorine bleach is the only bleach that disinfects, so it is wise to always look for disinfection instructions on the label to ensure that the bleach you use is actually disinfecting. Bleach is corrosive and can damage metals and plastics (Figure 5-18) as well as cause skin irritation and eye damage.



▲ FIGURE 5-18 Pay attention to warnings on product labels.



Stock Photo.com/Chris Ryan



▲ FIGURE 5-16 Hand sanitizers contain a high concentration of alcohol.

#### CAUTION

Products and equipment that do not have the word **disinfectant** on the label are merely cleaners. They do not disinfect.

### COMMON ANTISEPTICS USED IN THE SALON, SPA, AND BARBERSHOP

- Hydrogen peroxide has been used in homes and the beauty industry virtually forever. It is generally used at 3 percent strength and works well as an antiseptic. However, it should never be used on an open cut, as it destroys the cells that begin the healing process in a wound.
- Isopropyl alcohol is effective in cleaning the skin; however, it can be very drying and cause irritation of the skin. Alcohol is not a disinfectant for surfaces or implements and should be used only as a cleaner or antiseptic.

### STEP 2: DISINFECTING

The second step of infection control is disinfection. Remember that disinfection is the process that eliminates most, but not necessarily all, microorganisms on nonporous surfaces. This process, however, is not effective against bacterial spores. In the salon, spa, and barbershop, disinfection is extremely effective in controlling microorganisms on surfaces such as shears, clippers, and other multiuse (mul-tye-YOOS) tools and equipment—multiuse refers to items that can be cleaned, disinfected, and used on more than one person. A disinfectant used in the shop must carry an EPA registration number, and the label should clearly state the specific organisms the solution is effective against when used according to the manufacturer's product instructions.



iStockPhoto.com/bpalmer

Remember that disinfectants are products that destroy most bacteria (not including spores), fungi, and viruses on surfaces. Disinfectants are not for use on human skin, hair, or nails. Never use disinfectants as hand cleaners since this can cause skin irritation and allergic reactions. Disinfectants are pesticides and can be harmful if absorbed through the skin.

#### CAUTION

Improper mixing of disinfectants—to be weaker or more concentrated than the manufacturer's instructions—can significantly reduce their effectiveness. Always add the disinfectant concentrate to the water when mixing and always follow the manufacturer's instructions for proper dilution.

Safety glasses and gloves should be worn while mixing to avoid accidental contact with eyes and skin.

### CHOOSING A DISINFECTANT

You must read and follow the manufacturer's instructions whenever you are using a disinfectant. Mixing ratios (dilution) and contact time (the time as listed on the product label required for the disinfectant to be visibly moist to be effective against pathogens) are very important and can vary widely based on manufacturer and delivery method. For example, most concentrates have a 10-minute contact time, whereas most wipes have a 2-minute contact time. In general, as concentration goes up and contact times go down, disinfectants become more corrosive and damaging to implements.

Not all disinfectants have the same concentration, so be sure to mix the correct proportions according to the instructions on the label. If the label does not have the word concentrate on it, the product is already mixed and must be used directly from the original container and must not be diluted. All EPA-registered disinfectants, even those sprayed on large surfaces, will specify a contact time in their directions for use. Disinfectants must have efficacy (EF-ih-kuh-see) claims on the label. Efficacy is the ability to produce the intended effect. As applied to disinfectant claims, efficacy means the effectiveness with which a disinfecting solution kills organisms when used according to the label instructions.

### PROPER USE OF DISINFECTANTS

Implements must be thoroughly cleaned of all visible matter or residue before being placed in disinfectant solution. This is because residue will interfere with the disinfectant and prevent proper disinfection. Properly cleaned implements and tools, free from all visible debris, must be completely immersed in disinfectant solution. Complete immersion means there is enough liquid in the container to cover all surfaces of the item being disinfected, including the handles, for 10 minutes or for the time recommended by the manufacturer (Figure 5-17). When using a spray, wipe, or aerosol disinfectant, you must still look for and adhere to the contact time to ensure that all pathogens on the label are being effectively destroyed.

detergent and warm water, or a chemical cleaner, and using a clean and disinfected brush to scrub any grooved or hinged portions of the item.

When a surface is properly cleaned, the number of contaminants on the surface is greatly reduced. In addition, proper cleaning removes any oils or residue from items that might interfere with disinfectant being able to work properly. This is why cleaning is an important part of disinfecting tools and equipment. A surface must be properly cleaned before it can be properly disinfected. Using a disinfectant without cleaning first is like using mouthwash without brushing your teeth—it just does not work properly!

Cleaned surfaces can still harbor small amounts of pathogens, but the presence of fewer pathogens means infections are less likely to be spread (Figure 5-15). Applying antiseptics to your skin or washing your hands with soap and water will drastically lower the number of pathogens on your hands. Do not underestimate proper cleaning and hand washing. They are the most powerful and important ways to prevent the spread of infection.



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▲ FIGURE 5-15 Unwashed hands can be swarming with pathogens.

There are three ways to clean your tools and implements:

- Washing with soap and warm water and then scrubbing them with a clean and properly disinfected nailbrush
- Using an ultrasonic unit
- Using a chemical cleaner

#### CAUTION

Read labels carefully. Manufacturers take great care to develop safe and highly effective products. However, when used improperly, many products that are otherwise safe can be rendered dangerous if you do not follow proper guidelines and directions exactly as the label instructs.

## HAND WASHING

Properly washing your hands is one of the most important actions you can take to prevent spreading germs from one person to another. Proper hand washing removes germs from the folds and grooves of the skin and from under the free edge of the nail plate by lifting and rinsing germs and contaminants from the surface of your skin. You should wash your hands thoroughly before and after working with each client. Follow the hand washing procedure described in **Procedure 5-1**.

#### CAUTION

When washing hands, use liquid soaps in pump containers. Bacteria can grow in bar soaps.

## ANTIBACTERIAL SOAPS

While there are many marketing claims on soaps these days, antibacterial and antimicrobial soaps have been under the scrutiny of the FDA since 2014. In 2016, many of the chemicals used in these soaps were banned. What's more, research has shown that repeated use of antibacterial products can actually increase the growth of some of the worst pathogens. The true benefit of hand washing comes from the friction created by the soap bubbles that works to "pull" pathogens off the skin surface. Repeated hand washing can also dry the skin, so using a moisturizing hand lotion after washing is a good practice. Be sure the hand lotion is in a pump container, not a jar.

Avoid using very hot water to wash your hands because this is another practice that can damage the skin. Remember, you must wash your hands thoroughly before and after each service, so do all you can to reduce any irritation that may occur.

## WATERLESS HAND SANITIZERS

Antiseptics (ant-ih-SEP-tiks) are chemical germicides formulated for use on skin and are registered and regulated by the Food and Drug Administration. Antiseptics generally contain a high volume of alcohol and are intended to reduce the numbers and slow the growth of microbes on the skin (Figure 5-16). When there is visible dirt/debris on the hands, neither waterless hand sanitizers nor antiseptics will work until the dirt/debris is removed; this can be accomplished only with liquid soap, a soft-bristle brush, and water.

Due to the drying effect of alcohol, hand sanitizers should not be overused, but, if allowed by your state, they are an excellent option when hand washing is not possible. Never use an antiseptic to disinfect instruments or other surfaces. It is ineffective for that purpose. Be warned that the high percentage of alcohol can dry the skin to the point of causing openings that allow for infectious agents to infect you. With that in mind, only use hand sanitizers as a secondary option to hand washing.



▲ FIGURE 5-13 Head lice.

hard-to-penetrate, protective coating that cements them together. The biofilm grows into a complex structure, with many kinds of microbes. The sticky matrix substance holds communities together, making them very hard to pierce with antiseptics, antimicrobials, and disinfection, ultimately keeping the body in a chronic inflammatory state that is painful and inhibits healing. One action of the biofilm community is to resist the body's defense mechanisms; we are learning that biofilms play a large role in disease and infection.

Biofilms are usually not visible and must grow very large to be seen without a microscope. Dental plaque is an example of a visible human biofilm, and algae colonies on ponds and slime in drains are examples of visible environmental biofilms. In the beauty and wellness world, foot spas can harbor biofilm and require extra attention, especially piped models.

Because biofilms are hard to detect, their presence and effects seem to be underestimated. They are one of the most significant scientific discoveries of the past few decades, though we have much more to learn. Conscientiously using infection control precautions, including Standard Precautions, cleaning, disinfection, and sterilization, is the best method of prevention at the present time.

#### CHECK IN

List the five types of organisms that are important to a beauty professional.

## EMPLOY THE PRINCIPLES OF PREVENTION

Proper infection control can prevent the spread of disease caused by exposure to potentially infectious materials on an item's surface. Infection control will also prevent exposure to blood and visible debris or residue such as dust, hair, and skin.

Proper infection control requires two steps: cleaning and then disinfecting with an appropriate EPA-registered disinfectant. When these two steps are followed correctly, virtually all pathogens of concern in the salon, spa, or barbershop can be effectively eliminated.

Sterilization (ster-ih-luh-ZAY-shun), which is the process that destroys all microbial life including spores, can be incorporated but is rarely mandated. Effective sterilization typically requires the use of an autoclave (Figure 5-14) – a piece of equipment that incorporates heat and pressure. For sterilization to be effective, items must be cleaned prior to use and the autoclave must be tested and maintained as instructed in the manufacturer's specifications. The Centers for Disease Control and Prevention (CDC) requires that autoclaves be tested monthly to ensure they are properly sterilizing implements. The accepted method is called a spore test. Sealed packages containing test organisms are subjected to a typical sterilization cycle and then sent to a contract laboratory that specializes in autoclave performance testing.



▲ FIGURE 5-14 Sterilization using an autoclave.

### STEP 1: CLEANING

The first step in infection control is cleaning. Remember that when you clean, you must remove all visible and surface dirt and debris from tools, implements, and equipment by washing them with liquid soap or

## FUNGI

Fungi (FUN-ji) (singular: *fungus* [FUN-gus]) are single-celled organisms that grow in irregular masses that include molds, mildews, and yeasts. They can produce contagious diseases, such as ringworm. Mildew (MIL-doo), another fungus, affects plants or grows on inanimate objects but does not cause human infections in the salon, spa, or barbershop.

The most frequently encountered fungal infection resulting from hair services is *tinea barbae* (TIN-ee-uh BAR-bee), also known as *barber's itch*. A person with *tinea barbae* may have deep, inflamed or noninflamed patches of skin on the face or the nape of the neck. *Tinea barbae* is similar to *tinea capitis* (TIN-ee-uh kap-EYE-tus), a fungal infection of the scalp characterized by red papules, or spots, at the opening of hair follicles. Ringworm (RING-wurm), a fungal infection of the skin that appears in circular lesions, is another fungus that may contraindicate a beauty service (Figure 5-12).



▲ FIGURE 5-12 Ringworm.

While all beauty professionals must avoid spreading scalp and skin infections, the increased risk for hair services in particular can be reduced by diligently cleaning and disinfecting clippers and similar cutting tools. Always refer to the manufacturer's directions for proper cleaning and disinfecting methods and recommendations.

## DID YOU KNOW?

Pathogenic bacteria, viruses, or fungi can enter the body through the following routes:

- Skin: broken or inflamed skin, such as a cut or a scratch, or a bruise (weakened tissue) or a rash, but not through intact skin, which is an effective barrier to infection
- Mouth: contaminated water, food, fingers, or objects
- Nose: inhaling infectious dust or droplets from a cough or sneeze
- Eyes or ears: organisms that reside in water that are commonly transmitted when the person is swimming
- Genitals: unprotected sex

The body prevents and controls infections through:

- healthy, uncompromised skin—the body's first line of defense
- body secretions, such as perspiration and digestive juices
- white blood cells that destroy bacteria
- antitoxins that counteract toxins (various poisonous substances produced by some microorganisms such as bacteria and viruses)

## PARASITES

Parasites (PAYR-uh-sytz) are organisms that grow, feed, and shelter on or inside another organism (referred to as a *host*), while contributing nothing to the survival of that organism. They must have a host to survive. Parasites can live on or inside of humans and animals. They also can be found in food, on plants and trees, and in water. Humans can acquire internal parasites by eating fish or meat that has not been properly cooked. External parasites that affect humans by way of the skin include ticks, lice, fleas, and mites. Services should never be performed on a customer with visible signs of a parasitic infestation. Always refer the client to a physician for treatment.

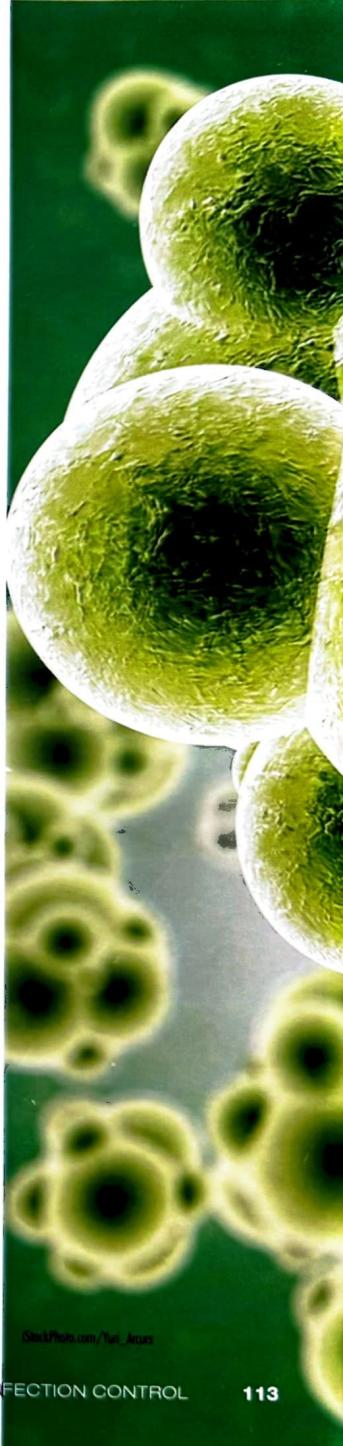
There are two types of parasites commonly encountered in the salon, spa, and barbershop environment:

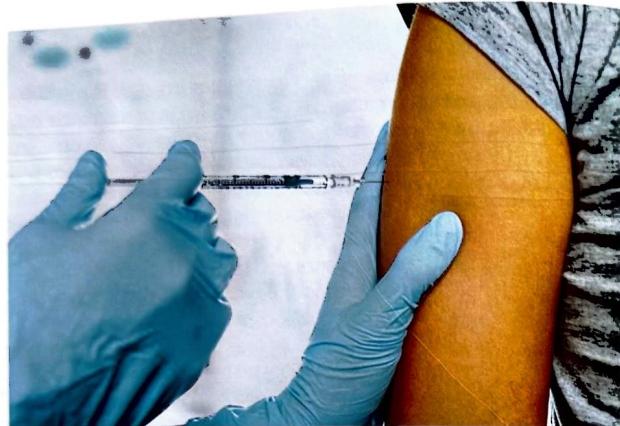
- Head lice (Figure 5-13) are a type of parasite responsible for contagious diseases and conditions. One condition caused by an infestation of head lice is called *pediculosis capitis* (puh-dik-yuh-LO-sis kap-EYE-tus).
- Scabies (SKAY-beez) is a contagious skin disease caused by the itch mite, which burrows under the skin.

Contagious diseases and conditions caused by parasites should only be treated by a doctor. Contaminated countertops, tools, and equipment should be thoroughly cleaned and then disinfected with an EPA-registered disinfectant for the time recommended by the manufacturer or with a bleach solution for 10 minutes.

## BIOFILMS

Biofilms (BY-o-films) are colonies of microorganisms that adhere to environmental surfaces, as well as the human body. They secrete a sticky,





▲ FIGURE 5-10 Vaccines combined with a strong daily infection control regimen are the best way to fight viruses.

## INCUBATION AND CONTAINMENT

Many viruses can remain dormant for months to years following exposure, but most produce signs of illness within 10 to 14 days. Unfortunately, in most cases, a person is highly contagious in the days just before symptoms appear. This makes prevention paramount in reducing the spread of illness. Containment is achieved when those who are ill stay home—away from work, school, malls, etc.—until their symptoms resolve to the extent that they are no longer contagious. If you believe you have influenza, for example, it is important to see your doctor as soon as possible, as the medication used to reduce symptoms is only effective if given in the first 48 hours.

## HPV AND HSV

Human papilloma virus (HYOO-mun pap-uh-LOW-ma VY-rus) and Herpes simplex virus (HER-peez SIM-pleks VY-rus) are two highly contagious viruses that can be transmitted both directly and indirectly. Both of these viruses can be spread through skin-to-skin contact and are often thought of as sexually transmitted diseases. However, both viruses can also be spread from person to person indirectly through items like a wax pot. Because the majority of people infected with these viruses have no symptoms, it is even more important to follow good infection control procedures with all procedures that may involve contact with blood and fluids (Figure 5-11).

## HEPATITIS AND HIV/AIDS

Disease-causing microorganisms that are carried in the body by blood or body fluids, such as hepatitis and HIV, are called bloodborne pathogens (BLUD-born PATH-o-genz). In the salon, spa, and barbershop, the



▲ FIGURE 5-11 Herpes can go undetected or be found in atypical parts of the body, such as the eyebrow.

spread of bloodborne pathogens is possible whenever the skin is broken. Use great care to avoid cutting or damaging the customer's skin during any type of service.

Hepatitis (hep-uh-TY-tis) is a bloodborne virus that causes disease and can damage the liver. In general, it is difficult to contract hepatitis. However, it is easier to contract than HIV because it can be present in all body fluids of those who are infected. In addition, unlike HIV, hepatitis can live on a surface outside the body for long periods of time. For this reason, it is vital that all surfaces that a customer comes into contact with are thoroughly cleaned and disinfected.

The human immunodeficiency virus (HYOO-mun ih-MYOO-noh-di-FISH-en-see VY-rus), abbreviated HIV, causes acquired immune deficiency syndrome (uh-KWY-erd ih-MYOON di-FISH-en-see SIN-drome), abbreviated AIDS. AIDS is a disease that breaks down the body's immune system. HIV is spread from person to person through blood and, less often, through other body fluids, such as semen and vaginal secretions. A person can be infected with HIV for many years without showing symptoms; some people who are HIV-positive have never been tested and do not know they have the potential to infect others.

If you accidentally cut a client's skin, the tool will be contaminated with whatever might be in the client's blood, including bloodborne pathogens. You should not continue to use the implement without cleaning and disinfecting it. Continuing to use a contaminated implement without cleaning and disinfecting it puts you and others in the salon, spa, or barbershop at risk of infection.





Dr. P. Marazzi/Science Source

▲ FIGURE 5-7 MRSA infection in a toe.

## MYCOBACTERIUM

Mycobacterium (my-co-bac-TEER-ee-um) is the name for a large family of bacteria that is often found in soil and water. In recent years, it has been linked to disfiguring infections associated particularly with pedicure bowls. Because this bacterium may be present in your water supply, it is important to protect your clients by properly disinfecting all implements and bowls. It is also important that both you and your client keep your skin intact and protected. Avoid cracked skin by using lotions frequently, particularly in the winter months. Advise clients not to shave or wax their legs 24 hours prior to a pedicure (Figure 5-8).

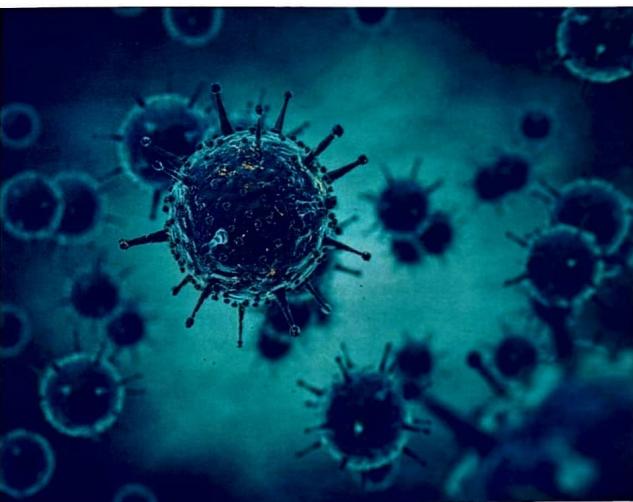


▲ FIGURE 5-8 Mycobacterium infection has been associated with pedicure bowls.

## VIRUSES

A virus (VY-rus) is a submicroscopic particle that infects and resides in the cells of a biological organism. A virus is capable of replication only through taking over the host cell's reproductive function. Viruses are so small that they can be seen only under the most sophisticated and powerful microscopes. They cause common colds and other respiratory and gastrointestinal (digestive tract) infections. Some of the viruses that plague humans are measles, mumps, chickenpox, smallpox, rabies, yellow fever, hepatitis, polio, influenza, and HIV (which causes AIDS).

One difference between viruses and bacteria is that a virus can live and reproduce only by taking over other cells and becoming part of them, while bacteria can live and reproduce on their own. Another difference is that while bacterial infections can usually be treated with specific antibiotics, viral infections cannot; also, viruses are hard to kill without harming the host cells in the process (Figure 5-9).



Industockphoto/Charlottesville Stock, LLC

▲ FIGURE 5-9 Viruses.

## PREVENTION

Although we cannot cure viruses, we can often prevent contracting and spreading them through the use of vaccinations. Although there have been several controversies over vaccines in the past, discuss with your physician the vaccines that are recommended for you based on your type of employment, age, and medical history. Along with vaccines, hand washing and disinfection are your best defense against becoming sick with a virus (Figure 5-10).



secretions, on clothing, or under the free edge of nails. Bacteria are so small they can be seen only with a microscope.

## TYPES OF BACTERIA

There are thousands of different kinds of bacteria, which fall into two primary types: pathogenic and nonpathogenic. Most bacteria are nonpathogenic (nah-nuh-pah-thuh-JEN-ik); in other words, they are harmless organisms that may perform useful functions. They are safe to come in contact with since they do not cause disease or harm. For example, nonpathogenic organisms are used to make yogurt, cheese, and some medicines. In the human body, nonpathogenic bacteria help the body break down food, protect against infection, and stimulate the immune system.

Pathogenic (path-uh-JEN-ik) bacteria are harmful microorganisms that can cause disease or infection in humans when they invade the body. Salons, spas, and barbershops must maintain strict standards for cleaning and disinfecting at all times to prevent the spread of pathogenic microorganisms. It is crucial that students learn proper infection control practices while in school to ensure that they understand the importance of following them throughout their career.

## ACTIVITY

### Attacking the Source

Consider where bacteria might grow and reproduce in a salon, spa, barbershop, or school. Keep in mind that bacteria multiply best in warm, dark, damp, or dirty places. Discuss with your classmates how you can help stop the growth and spread of bacteria.

## BACTERIAL INFECTIONS

There can be no bacterial infection without the presence of pathogenic bacteria. Therefore, if pathogenic bacteria are eliminated, clients cannot become infected.

Inflammation (in-fluh-MAY-shun) is a condition in which the tissue of the body reacts to injury, irritation, or infection. Inflammation is characterized by redness, heat, pain, and/or swelling.

Pus (PUS) is a fluid containing white blood cells, bacteria, and dead cells, and is the by-product of the infectious process. The presence of pus is a sign of a bacterial infection. A local infection (LOKE-uh-in-FEK-shun), such as a pimple or abscess (Figure 5-6), is confined to a particular part of the body and appears as a lesion containing pus. A systemic infection (sis-TEM-ik in-FEK-shun) is an infection where the pathogen has spread throughout the body rather than staying in one area or organ.



Stuane Tucker/Shutterstock.com

▲ FIGURE 5-6 Pimples are an example of a local infection.

## MRSA

Staphylococci (staf-uh-loh-KOKS-eye) are among the most common bacteria that affect humans and are routinely found in our environment, including on our bodies, although most strains do not make us ill. Staph bacteria can be picked up on doorknobs, countertops, and other surfaces; however, they are more frequently spread in salons, spas, or barbershops through skin-to-skin contact (such as shaking hands), pedicure bowls, or the use of unclean tools or implements, and can be very dangerous.

Staph is responsible for food poisoning and a wide range of diseases, including toxic shock syndrome and some flesh-eating diseases. Some types of infectious staph bacteria are highly resistant to conventional treatments such as antibiotics. An example is the staph infection called methicillin-resistant staphylococcus aureus (meth-uh-SILL-en ree-ZIST-ent staf-uh-loh-KOK-us OR-ee-us) (Figure 5-7). Historically, MRSA occurred most frequently among persons with weakened immune systems or who had undergone medical procedures. Today, it has become more common in otherwise healthy people. Clients who appear completely healthy may bring this organism into the shop with them, where it can infect others. Some people carry the bacteria and are not even aware of their infection; however, the people they infect may show more obvious symptoms.

In general, MRSA initially appears as a skin infection, resulting in pimples, rashes, or boils that can be difficult to cure. Without proper treatment, the infection becomes systemic and can have devastating consequences, even resulting in death. Because of these highly resistant bacterial strains, it is important to clean and disinfect all tools and implements used on customers. Additionally, do not perform services if your client's skin, scalp, or neck show visible signs of abrasion or infection.

## PREVENTION 101

In general, the risk of infection can be greatly reduced with a few simple steps:

- Eliminate pathogens through proper hand washing, cleaning, and disinfection.
- Clean and disinfect tools and equipment after every service.
- Keep your skin intact to reduce portals of entry for bacteria. Wear gloves when working with chemicals, use lotion to reduce skin drying and cracking, and cover open wounds.
- Be prepared to turn away clients who show signs of illness. Remember, you are not licensed to diagnose illness or infection. Refer ill patients to their doctor for a proper diagnosis and treatment regimen.

### PERSONAL HABITS

It is important to think about your personal habits in terms of how they might increase or decrease the risk of transmitting an illness. For example, if you see 50 clients a week and you shake hands with each of them, you are exposing yourself to everything on the hands of those 50 people, every week—it's only a matter of time before you will get sick! However, making a habit of following the rules of proper cleaning and disinfection, both in your home and at work, will help decrease the odds of falling ill. Hand washing, cleaning, and disinfection are all ways in which you can personally combat the spread of disease and safeguard your health and that of your clients.

#### CHECK IN

What are four modes of pathogen transmission?

## IDENTIFY DIFFERENT TYPES OF PATHOGENS

When a disease is capable of being spread from one person to another, it is said to be a contagious disease (kon-TAY-jus diz-EEZ), also known as a communicable (kuh-MYOO-nih-kuh-bul) disease. Some of the more prevalent contagious diseases that prevent a beauty professional from servicing a client are the common cold, ringworm, conjunctivitis (pinkeye), and viral infections. These infections are most often spread through dirty hands, especially under the fingernails and in the webs between the fingers. In many states, you are required to wash your hands prior to every client, but in all states you must wash your hands after using the restroom and before eating. Contagious diseases can also be spread by contaminated implements, cuts, infected nails, open sores, pus, mouth and nose discharges, shared drinking cups, telephone receivers, and towels. Uncovered coughing or sneezing and spitting in public also spread germs. **Table 5-1** lists additional terms and definitions that are important for a general understanding of disease.

TABLE 5-1: ADDITIONAL TERMS RELATED TO DISEASE

TERM	DEFINITION
Contamination (kun-tam-uh-NAY-shun)	The presence, or the reasonably anticipated presence, of blood or other potentially infectious materials on an item's surface, or visible debris or residues such as dust, hair, and skin.
Decontamination	The removal of blood or other potentially infectious materials on an item's surface and the removal of visible debris or residues such as dust, hair, and skin.
Diagnosis (dy-ag-NO-sis)	Determination of the nature of a disease from its symptoms and/or diagnostic tests. Federal regulations prohibit salon professionals from performing a diagnosis.
Germs	Nonscientific synonym for disease-producing organisms.
Occupational Disease (ahk-u-PAY-shun-al diz-EEZ)	Illnesses resulting from conditions associated with employment, such as prolonged and repeated overexposure to certain products or ingredients.
Parasitic Disease (pahr-a-SIT-ick diz-EEZ)	Disease caused by parasites such as lice and mites.
Pathogenic Disease (path-uh-JEN-ick diz-EEZ)	Disease produced by organisms such as bacteria, viruses, fungi, and parasites.
Toxins	Various poisonous substances produced by some microorganisms (bacteria and viruses).

When it comes to preventing the spread of infectious disease, beauty professionals must understand and be prepared to deal with five types of potentially harmful organisms:

- Bacteria
- Viruses
- Fungi
- Parasites
- Biofilms

### BACTERIA

Bacteria (bak-TEER-ee-ah) (singular: *bacterium* [bak-TEER-ee-uhm]) are single-celled microorganisms that have both plant and animal characteristics. A microorganism (my-kro-OR-gah-niz-um) is any organism of microscopic or submicroscopic size. Some bacteria are harmful, while others are harmless. Bacteria can exist almost anywhere: on skin, in water, in the air, in decayed matter, on environmental surfaces, in body

bacterial spores (bak-TEER-ee-ul SPORZ), which are bacteria capable of producing a protective coating that allows them to withstand very harsh environments and to shed the coating when conditions become more favorable to them. Thankfully this type of bacteria is rare and of very little risk in the salon, spa, or barbershop environment.

Cleaning and disinfecting procedures are designed to prevent the spread of infection and disease. At a minimum, disinfectants used in salons, spas, and barbershops must be

- **bactericidal** (bak-TEER-uh-SYD-uhl), capable of destroying bacteria;
- **virucidal** (viy-ruh-SYD-uhl), capable of destroying viruses; and
- **fungicidal** (fun-ji-SYD-uhl), capable of destroying molds and fungi.

### HERE'S A TIP

You should know how to look for specific things on the label of any product you use for disinfection in the salon, spa, or barbershop. It should always have the following:

- The list of pathogens against which it is effective; should include HIV (human immunodeficiency virus), HBV (hepatitis B virus), and MRSA (methicillin-resistant staphylococcus aureus); if Pseudomonas aeruginosa is included, the disinfectant will kill other lesser bacteria (**Figure 5-4**)
- EPA registration number
- The words **bactericidal**, **virucidal**, and **fungicidal**
- Mixing and changing instructions

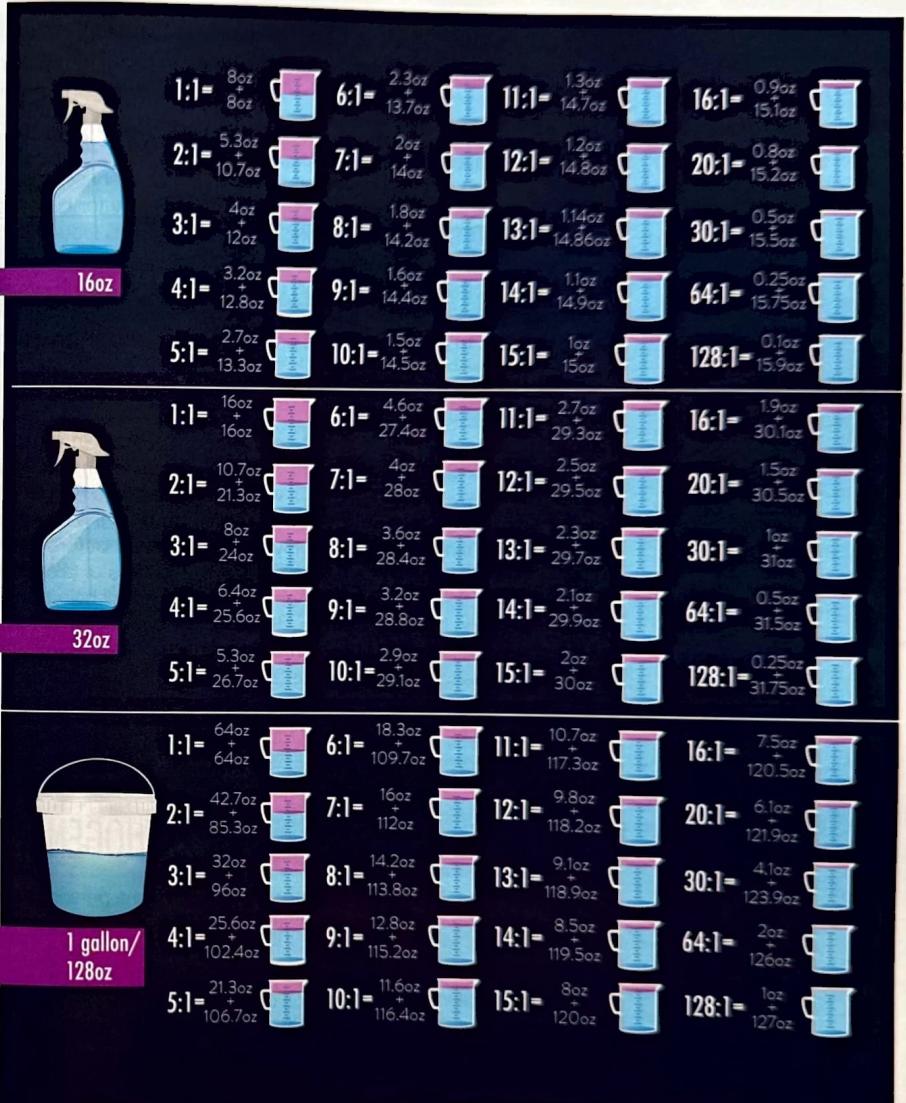
PATHOGEN/PATÓGENO	CONTACT TIME/TIEMPO DE CONTACTO
<i>Clostridium difficile/Clostridium difficile</i>	3 minutes/3 minutos
Bacteria/Bacteria	30 seconds/30 segundos
#Viruses/Virus	1 minute/1 minuto
#Bloodborne Pathogens/	1 minute/1 minuto
#Pathogens de Transmisión Sanguínea/	1 minute/1 minuto
TB/TB	3 minutes/3 minutos
Parvoviruses/Parvovirus	3 minutes/3 minutos
Fungi/Fungo	3 minutes/3 minutos

ORGANISMS:	
Bacteria:	
• <i>Aerococcus baumannii</i>	"Lipase resistant
• <i>Bacillus cereus</i>	<i>Sphingomonas aurua (LSVA)</i>
• <i>Campylobacter jejuni</i>	" <i>Listeria monocytogenes</i>
• <i>Citrobacter freundii</i>	" <i>Methicillin resistant</i>
• <i>Escherichia coli</i>	<i>S. enterica</i>
• <i>Escherichia coli</i> spores***	" <i>Staphylococcus aureus</i> "
• <i>Escherichia coli</i> resistant <i>Shigella</i> <i>Shiga-like</i> <i>Toxin</i> <i>(STEC)</i>	" <i>Multi-drug resistant Enterococcus faecium (MDR E. faecium)</i> "
• <i>Escherichia coli</i> spores***	" <i>Proteus mirabilis</i> "
• <i>Escherichia coli</i> resistant <i>Shigella</i> <i>Shiga-like</i> <i>Toxin</i> <i>(STEC)</i>	" <i>Pseudomonas aeruginosa</i> "
• <i>Escherichia coli</i> resistant <i>Shigella</i> <i>Shiga-like</i> <i>Toxin</i> <i>(STEC)</i>	" <i>Salmonella enterica</i> "
• <i>Escherichia coli</i> resistant <i>Shigella dysenteriae</i>	" <i>Serratia marcescens</i> "
• <i>Escherichia coli</i> resistant <i>Shigella dysenteriae</i>	" <i>Staphylococcus aureus</i> "
• <i>Escherichia coli</i> resistant <i>Shigella dysenteriae</i>	" <i>Stenotrophomonas maltophilia</i> "
• <i>Escherichia coli</i> resistant <i>Shigella dysenteriae</i>	" <i>Candida albicans</i> "

▲ FIGURE 5-4 Disinfectant labels should include the product's efficacy claims.

Be sure to mix and use these disinfectants according to the instructions on the labels so they are safe and effective (**Figure 5-5**). Remember, in some states, disinfectants may still need to be effective against tuberculosis (tuberculocidal). Check your state board rules and regulations for compliance information.



▲ FIGURE 5-5 Understand and follow the mixing instructions on disinfectants.

and talking. For example, if you shake hands with every customer and one of them has a cold virus, it can be transmitted to you, possibly making you sick if you touch your mouth or nose afterward. If you fail to wash your hands after each handshake, then you risk infecting all of your customers as well as yourself (**Figure 5-2**). Parasitic infections and warts are other examples of diseases spread by direct transmission. Fortunately, diseases spread by direct contact cannot live for long periods of time away from a host.



▲ FIGURE 5-2 Shaking hands without washing can directly transmit infections.

## INDIRECT TRANSMISSION

Indirect transmission (in-dih-REKT trans-MISH-uhn) occurs through contact with an intermediate contaminated object, such as a razor, extractor, nipper, or an environmental surface upon which the pathogen resides. Doorknobs, phones, food-preparation surfaces, or your implements at work are all possible vectors of indirect transmission. In situations like these, someone has contaminated a surface; the pathogen will attempt to infect anyone who touches that surface, making them their new host. Illnesses transmitted by this method include salmonella, ringworm, and MRSA (**Figure 5-3**).

### ACTIVITY

#### Stopping the Transmission

Look around your classroom and identify all the surfaces, tools, doorknobs, fixtures, etc., that constitute routine sources of contamination. List them as a class, along with possible preventive measures you can take to reduce this transmission.



▲ FIGURE 5-3 Doorknobs are a commonly contacted surface ripe for indirect transmission.

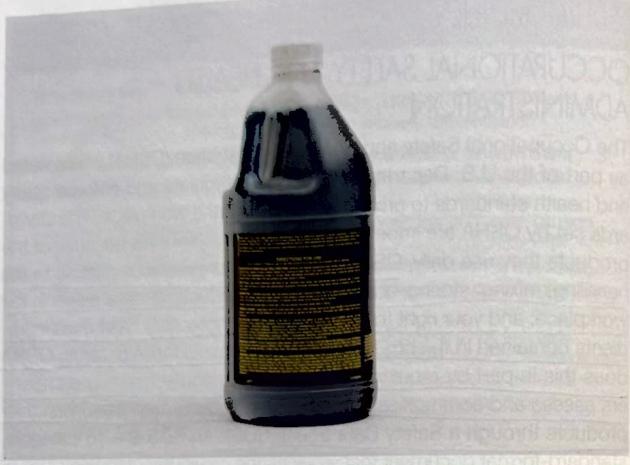
## AIRBORNE TRANSMISSION AND RESPIRATORY DROPLET

Respiratory droplet and airborne transmission are similar in that transmission occurs when a pathogen living in our respiratory tract is expelled through coughing, sneezing, or even talking. The difference between the two is that respiratory droplets are large particles that do not stay suspended in the air for long – wearing a properly fitted mask should protect you from these pathogens. In airborne transmission, the particles are much smaller and dryer, so they hang in the air longer, allowing for the pathogen to spread further. For an example of respiratory droplet transmission, if you have influenza, every time you exhale your breath carries with it the influenza virus attached to air particles. If you are talking too closely to someone, let alone coughing, sneezing or yelling, you are also projecting those particles into the other person's airspace. This helps explain why we see more influenza in the winter, when people congregate inside and create an environment conducive to spreading the illness through coughing.

## PREVENTING TRANSMISSION: INFECTION CONTROL

Under certain conditions, coming into contact with harmful organisms can cause infectious diseases. An infectious disease (in-FEK-shus diz-EEZ) is caused by pathogenic (harmful) organisms that enter the body. An infectious disease, however, may or may not be spread from one person to another, depending on the organism and its method of transmission.

In this chapter, you will learn how to properly clean and disinfect the tools and equipment you use so they are safe for you and your customers. Cleaning (KLEEN-ing) is a mechanical process using soap and water or detergent and water to remove all visible dirt, debris, and many disease-causing germs from tools, implements, and equipment. The process of disinfection (dis-in-FEK-shun) involves the use of a chemical to destroy most, but not necessarily all, harmful organisms on environmental surfaces. Disinfection, however, is not effective against



▲ FIGURE 5-1 Follow all label instructions, especially when it comes to disinfectants.

## STATE REGULATORY AGENCIES

State regulatory agencies exist to protect beauty professionals' and their customers' health and safety during services. State regulatory agencies include licensing agencies, state boards, commissions, and health departments. Regulatory agencies require that everyone working with clients in a salon, spa, or barbershop follow specific procedures. Enforcement of the rules through inspections and investigations of consumer complaints is also part of an agency's responsibility. An agency can issue penalties against both owners and beauty professional. Penalties vary and include warnings, fines, probation, and suspension or revocation of licenses. It is vital that you understand and follow the laws and rules of your state at all times. Your professional reputation, your license, and your clients' safety depend on it.

## LAWS AND RULES—WHAT IS THE DIFFERENCE?

Laws are written by both federal and state legislatures to determine the scope of practice (what each license allows the holder to do) and establish guidelines for regulatory agencies to make rules. Laws are also called *statutes*.

Rules and regulations are more specific than laws. The regulatory agency or the state board writes the rules and determines how the law must be applied. Rules establish specific standards of conduct and can be changed or updated frequently. It is the beauty professional's responsibility to be aware of any changes to the rules and regulations and to comply with them. Ignorance of the law is not an acceptable reason or excuse for noncompliance.

## CAUTION

Remember, beauty professionals are not allowed to treat or recommend treatments for infections, diseases, or abnormal conditions. Customers with such problems should be referred to their physicians.

## CHECK IN

What are the primary purposes of regulatory agencies?

## RECOGNIZE THE PRINCIPLES OF INFECTION

Being a beauty professional is not just rewarding; It is also a great responsibility. One careless action could cause injury or spread disease (diz-EEZ), which is any abnormal condition of all or part of the body, its systems, or its organs that makes the body incapable of carrying on normal functions. If your actions hurt a client or make them ill, you could lose your license or ruin your salon, spa, or barbershop's reputation. Fortunately, preventing the spread of infection (in-FEK-shun), the invasion of body tissues by disease-causing pathogens, is possible when you know proper procedures and follow them at all times. Prevention begins and ends with you.

Effective infection control also influences the professional image of your establishment. A client's first impression begins the moment they open the door, so a clean environment should extend beyond each professional's immediate work area. All of the sights, sounds, smells, and textures of the salon, spa, or barbershop meld together to form this first impression regardless of the number of times a client has previously visited. A clean and orderly business helps build client confidence and trust that continuous care is being taken to provide a safe and sanitary environment in which to receive personal services.

## MODES OF TRANSMISSION

All pathogens are different in terms of where they reside and how they infect humans. Bacteria, viruses, and fungi have different ways of moving from one person to another or from an object to a person. Transmission (trans-MISH-uhn) is the process by which pathogens move between individuals and objects—this is *how we get sick*. Merely being exposed to pathogens does not make you sick, as your immune system may be able to put up a good fight. However, transmission is the necessary first step in getting sick, and if you prevent transmission, you prevent illness. The most common types of transmission in the salon, spa, or barbershop environment are direct, indirect (surface), airborne and respiratory droplet.

## DIRECT TRANSMISSION

Direct transmission (die-REKT trans-MISH-uhn) is what we most commonly think of in terms of getting sick, as it involves the transmission of pathogens through touching, kissing, coughing, sneezing,

## FOCUS ON

### Infection Control Vocabulary

Before we discuss infection control and safe work practices, the terms **cleaning**, **sanitizing**, **disinfecting**, and **sterilizing** need to be properly differentiated:

- **Cleaning** is a mechanical process using soap and water or detergent and water to remove all visible dirt, debris, and many disease-causing germs. Cleaning also removes invisible debris that interferes with disinfection.
- **Sanitizing** is a chemical process for reducing the number of disease-causing germs on cleaned surfaces to a safe level. Infection control professionals consider **sanitation** (san-ih-TAY-shun) to be a layperson's term or a product marketing term (as in **hand sanitizers**), preferring cleaning to describe the step before disinfecting.
- **Disinfecting** is a chemical process for use with nonporous items that uses specific products to destroy harmful organisms including bacteria, viruses and fungi (except bacterial spores) on implements and environmental surfaces.
- **Sterilizing** is the process that destroys all microbial life, including spores, generally with the use of an autoclave.

Beauty professionals should study and have a thorough understanding of infection control because:

- It is important to know about the pathogens professionals and their clients may be exposed to and their modes of transmission.
- Understanding and practicing proper infection control within the laws and rules will help safeguard professionals' health, the health of their clients, and their business.
- Practicing safety precautions on a daily basis protects their clients and their license.
- A responsible beauty professional is conscientious about infection control and safety.

## ACTIVITY

### Infection Control on the Home Front

Consider the following questions and then discuss your answers with the rest of the class in comparison to how often you think a salon, spa, or barbershop environment should be cleaned and disinfected.

- How often do you sweep the floors of your home?
- How often do you mop the floors of your home?
- How often do you clean/disinfect the bathroom?
- How often do you clean/disinfect the bathroom doorknob?
- How often do you remove hair and debris from your hairbrush or comb and wash it with soap and water?

## DESCRIBE FEDERAL AND STATE REGULATORY AGENCIES

Many federal and state agencies regulate the beauty and wellness professions. Federal agencies set guidelines for the manufacture, sale, and use of equipment and chemical ingredients. These guidelines also monitor safety in the workplace and place limits on the types of services you can perform in a salon, spa, or barbershop. **State agencies regulate licensing, enforcement, and your conduct when you are on the job.**

## FEDERAL AGENCIES

### OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

The Occupational Safety and Health Administration (OSHA) was created as part of the U.S. Department of Labor to regulate and enforce safety and health standards to protect employees in the workplace. The standards set by OSHA are important to beauty professionals because of the products they use daily. **OSHA standards address issues relating to the handling, mixing, storing, and disposing of products; general safety in the workplace; and your right to know about any potentially hazardous ingredients contained in the products and how to avoid these hazards.** OSHA does this in part by requiring that chemical manufacturers and importers assess and communicate the potential hazards associated with their products through a Safety Data Sheet (SDS). An SDS is a 16-category, standard-format document that replaces the previously mandated MSDS or PSDS. Chapter 6: "Chemistry & Chemical Safety" goes into depth on how to read an SDS.

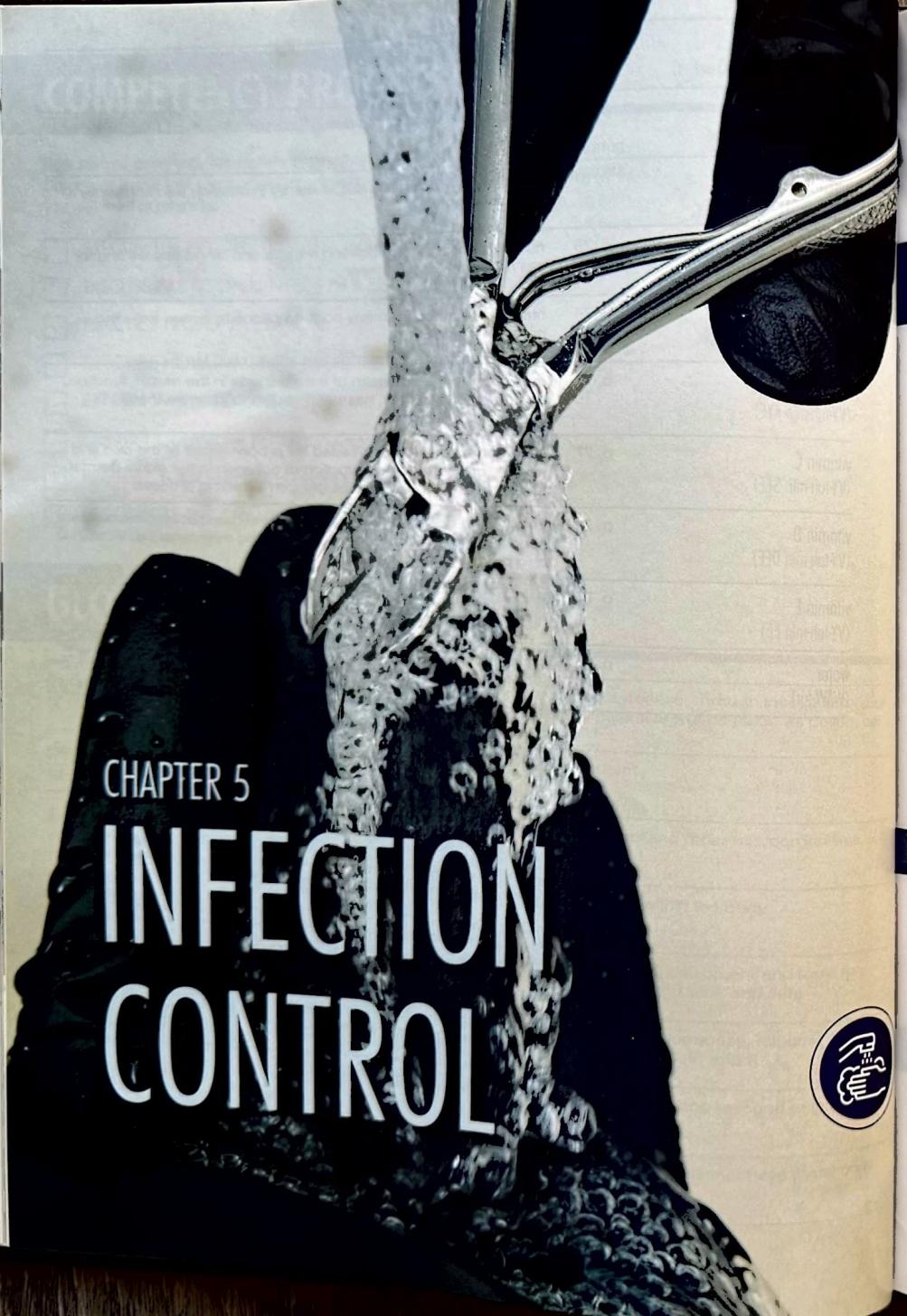
### ENVIRONMENTAL PROTECTION AGENCY

The Environmental Protection Agency (EPA) registers all types of **disinfectants sold and used in the United States.** **Disinfectants** (dis-in-FEK-tents) are chemical products that destroy most bacteria (excluding spores), fungi, and viruses on surfaces. It is against federal law to use any disinfecting product in a way contrary to the use indicated on its label. Before manufacturers can sell a product for **disinfecting surfaces, tools, implements, or equipment, they must obtain an EPA registration number** (indicated on a product label by "EPA Reg. No." near the manufacturer's name) that certifies that the disinfectant, when used correctly, will be effective against the pathogens listed on the label. For example, clipper disinfectants must be approved by the EPA for use with clippers in specific environments (such as a barbershop) or the manufacturer would be breaking federal law by marketing them as clipper disinfectants to the barber market. This also means that if you do not follow the label instructions for mixing, contact time, and the type of surface the disinfecting product can be used on, you are not complying with federal law (**Figure 5-1**). If there were an injury-related lawsuit, you could be held responsible.

### HERE'S A TIP

You can find a list of disinfectants approved by the EPA by going to the EPA's website at <http://www.epa.gov> and entering a search on the home page for EPA-registered disinfectants. Disinfectants are not listed as "hospital grade" but instead are listed based on the pathogens they are effective against. Products on list D meet the criteria of most states for hospital disinfectants; products on list E meet the criteria of a tuberculocidal in those states where that is required.





"Growth itself contains the germ of happiness."

-Pearl S. Buck

## LEARNING OBJECTIVES

AFTER COMPLETING THIS CHAPTER, YOU WILL BE ABLE TO:

1. EXPLAIN INFECTION CONTROL.
2. DESCRIBE FEDERAL AND STATE REGULATORY AGENCIES.
3. RECOGNIZE THE PRINCIPLES OF INFECTION.
4. IDENTIFY DIFFERENT TYPES OF PATHOGENS.
5. EMPLOY THE PRINCIPLES OF PREVENTION.
6. FOLLOW STANDARD PRECAUTIONS TO PROTECT YOURSELF AND YOUR CLIENTS.
7. DEMONSTRATE SAFE WORK PRACTICES AND SAFETY PRECAUTIONS.



### EXPLAIN INFECTION CONTROL

State boards and other regulatory agencies require that infection control measures and safe work practices be applied while serving the public. Infection control (in-FEK-shun con-TROL) refers to the methods used to eliminate or reduce the transmission of infectious (in-FEK-shus) organisms from one individual to another. Since transmission can also occur when using contaminated implements, tools, or equipment, the performance of effective infection control procedures must be a top priority in the salon, spa, and barbershop.

Safe work practices require that implements, tools, and equipment be used safely and that you be aware of situations that can cause accidents. This chapter provides some helpful guidelines to minimize potential risks and accidents.

It is your responsibility as a beauty professional to use proper and effective infection control methods that help safeguard your health and the health of your clients. You are also responsible for employing safe work practices to help prevent accidents and injuries from occurring in the workplace.



# CHAPTER 5

# INFECTION CONTROL

pathogenic disease (path-uh-JEN-ick diz-EEZ)	p. 105	disease produced by organisms, including bacteria, viruses, fungi, and parasites
pediculosis capitis (puh-dik-yuh-L0-sis kap-EYE-tus)	p. 113	infestation of the hair and scalp with head lice
phenolic disinfectants (fi-NOH-lik dis-in-FEK-tents)	p. 121	tuberculocidal disinfectants that are a form of formaldehyde, have a very high pH, and can damage the skin and eyes
porous (POOR-rus)	p. 120	made or constructed of a material that has pores or openings; porous items are absorbent
pus (PUS)	p. 106	a fluid created by infection
quaternary ammonium compounds (KWAT-u-nay-ree uh-M0-nee-um KAHM-powndz)	p. 120	commonly known as <i>quats</i> are products made of quaternary ammonium cations and are designed for disinfection of nonporous surfaces; they are appropriate for use in noncritical (noninvasive) environments and are effective against most pathogens of concern in the salon, spa, or barbershop environment
ringworm (RING-wurm)	p. 112	a fungal infection of the skin that appears in circular lesions
sanitation (san-ih-TAY-shun)	p. 96	also known as sanitizing; a chemical process for reducing the number of disease-causing germs on cleaned surfaces to a safe level
scabies (SKAY-beez)	p. 113	a contagious skin disease that is caused by the itch mite, which burrows under the skin
sodium hypochlorite (SO-dee-um hy-puh-KLOR-eyet)	p. 121	common household bleach; an effective disinfectant for the salon, spa, and barbershop
Standard Precautions (STAN-derd pruh-CAW-shuns)	p. 126	are guidelines published by the CDC that require the employer and employee to assume that any human blood and body fluids are potentially infectious
staphylococci (staf-uh-loh-KOKS-eye)	p. 107	pus-forming bacteria that grow in clusters like a bunch of grapes; cause abscesses, pustules, and boils
sterilization (ster-i-huh-ZAY-shun)	p. 115	the process that completely destroys all microbial life, including spores
systemic infection (sis-TEM-ik in-FEK-shun)	p. 106	an infection where the pathogen has distributed throughout the body rather than staying in one area or organ
tinea barboe (TIN-ee-uh BAR-bee)	p. 112	also known as <i>barber's itch</i> , a superficial fungal infection that commonly affects the skin; it is primarily limited to the bearded areas of the face and neck or around the scalp
tinea capitis (TIN-ee-uh kap-EYE-tus)	p. 112	a fungal infection of the scalp characterized by red papules, or spots, at the opening of the hair follicles
tuberculocidal disinfectants (tuh-bur-kyoo-LOH-syd-ahl dis-in-FEK-tents)	p. 120	often referred to as <i>phenolics</i> , are proven to kill the bacterium that cause tuberculosis, in addition to other pathogens destroyed through the use of hospital disinfectants

tuberculosis (tuh-bur-kyoo-LO-sus)	p. 120	a disease caused by bacteria that are transmitted through coughing or sneezing
virucidal (viy-ruh-SYD-uhl)	p. 102	capable of destroying viruses
virus (VIY-rus)	p. 109	a parasitic submicroscopic particle that infects and resides in cells of biological organisms. A virus is capable of replication only through taking over the host cell's reproductive function