The updated “Recommended practices for surgical attire,” which will be electronically released Nov. 15, provide guidance for surgical attire, including scrub attire, shoes, jewelry, head coverings, and masks worn in semi-restricted and restricted areas of the perioperative setting. In addition, the recommended practices (RP) document provides guidance for personal items (e.g., stethoscopes, backpacks, briefcases, cell phones) brought into the perioperative setting. Although research related to surgical attire is limited and no randomized controlled trials or systematic reviews show a direct causal relationship between surgical attire and surgical site infections (SSIs), increased numbers of microorganisms in the perioperative setting increase the patient’s risk of SSI. Thus, health care workers should make efforts to reduce the patient’s exposure to microorganisms by following the RP for surgical attire.

Wearing surgical attire

The RP states that clean surgical attire should be worn in semi-restricted and restricted areas of the perioperative setting. Wearing clean surgical attire may reduce microorganisms present in the perioperative environment, and as a result, may reduce the patient’s risk of developing an SSI and the potential for health care workers to transport microorganisms between the health care facility and the home or community. The RP states that fabrics used for scrub attire should be “tightly woven, low linting, stain resistant, and durable” and that scrub attire may be made of antimicrobial fabric. The RP cites emerging evidence on the use of fabrics with antimicrobials incorporated into yarns during processing or finishing to prevent bacteria and fungi from adhering to the fabric and states that incorporating this technology into scrub attire may help protect patients from SSIs.

According to evidence cited in the RP, health care providers’ skin provides the primary source of bacteria dispersed into the air in the OR or procedure room. Thus, the RP recommends health care providers don clean scrub attire daily in a designated dressing area before entering semi-restricted or restricted areas from outside. The RP also states that all nonscrubbed personnel should completely cover their arms with a long-sleeved scrub top or jacket when in restricted areas to help contain the shedding of skin.

SURGICAL MASKS should cover the mouth and nose and be secured in a way that prevents venting at the sides of the mask. Reprinted from Perioperative Standards and Recommended Practices. Copyright© 2014, AORN, Inc.
Surgical masks
The RP states it is a regulatory requirement that healthcare workers wear surgical masks in combination with eye protection devices (e.g., goggles, glasses with solid side shields) whenever splashes, spray, spatter, or droplets of blood, body fluids, or other potentially infectious materials may be generated and are likely to contaminate the eye, nose, or mouth. The RP highlights the dual function of surgical masks worn in the perioperative setting: to protect the patient and the environment from microbial contamination by organisms carried in the healthcare provider’s mouth or nose, and to protect the healthcare provider from exposure to blood, body fluids, or other potentially infectious materials. The RP also provides detailed instructions for wearing surgical masks and recommends that the surgical mask cover the mouth and nose and be secured in a way that prevents venting at the sides of the mask. In addition, healthcare workers should don a new mask before each procedure and replace or discard the mask after it has been taken down or if it becomes wet or soiled.

Jewelry, shoes, and personal items
The RP states that jewelry (e.g., earrings, necklaces, bracelets) cannot be contained or confined within scrub attire and should not be worn in semi-restricted or restricted areas. According to the RP, wearing earrings, watches, and rings has been found to increase bacterial counts on skin surfaces when jewelry is in place and after it has been removed. The RP also recommends that perioperative personnel wear clean shoes solely dedicated for use within the perioperative environment. A quasi-experimental study cited in the RP found significantly higher contamination rates among shoes worn outdoors when compared with shoes only worn in the perioperative area.

The RP recommends that personal items (e.g., briefcases, backpacks) brought into the semi-restricted or restricted areas be cleaned according to the manufacturer’s instructions for use with a low-level disinfectant before and after being brought into the perioperative setting. The RP cites multiple studies that demonstrate that personal handheld devices (e.g., cell phones, tablets) are highly contaminated with microorganisms, some that are potentially pathogenic. Researchers recommend regularly cleaning these devices and performing hand hygiene before and after use to reduce the potential for transferring microorganisms from devices to patients.

Cover apparel and head covers
According to the RP, any personnel who enter semi-restricted and restricted areas should cover their head, hair, ears, and facial hair. Because hair and skin can harbor and disperse bacteria into the environment, covering the head, hair, ears, and facial hair reduces the patient’s exposure to potentially pathogenic microorganisms residing on the perioperative team member. The RP recommends wearing a clean surgical head cover (e.g., bouffant cap) or hood that confines all hair and completely covers the ears, scalp, sideburns, and nape of the neck. Personnel wearing surgical head coverings should wait to remove the head coverings until they exit the healthcare facility to decrease the potential for contamination.

The RP also states that cover apparel (e.g., laboratory coats) worn over scrub attire should be clean or single-use, and reusable cover apparel should be laundered in a healthcare accredited facility after each daily use and when contaminated. However, the collective evidence does not support wearing cover apparel to protect scrub attire from becoming contaminated and some evidence shows that laboratory coats worn as cover apparel have the potential to become contaminated with large numbers of pathogenic microorganisms.

Laundering surgical attire
The RP states that anyone who enters semi-restricted and restricted areas should wear scrub attire that has been laundered at a healthcare accredited laundry facility or disposable scrub attire provided by the facility intended for use within the perioperative setting. More specifically, scrub attire should be laundered in a healthcare accredited laundry facility after each daily use and when contaminated. Although evidence is conflicting regarding home laundering...
of surgical attire versus health care-accredited laundering, the RP cites multiple studies that indicate a risk for pathogenic organisms carried on scrub attire that is laundered in the home. Health care-accredited laundering may protect the patient from potential exposure to microorganisms that could contribute to an SSI and may protect the health care worker from contaminating his or her home or community.¹

One study cited in the RP involved three cases of *Gordonia bronchialis* sternal infections that implicated a nurse anesthetist as the cause of the SSIs and attributed the nurse anesthetist’s home washing machine as the likely bacterial reservoir.⁴ The study is the first to show a causal relationship between home laundering and human disease. The RP supports the use of health care-accredited laundry facilities because they meet industry standards. Health care-accredited laundering of surgical attire may protect the patient from exposure to pathogenic organisms that remain on health care worker’s attire after home laundering and may prevent the health care worker from transmitting pathogenic organisms from attire worn in the health care facility into the home or community.³ Home laundering—which is not monitored for quality, consistency, or safety—may not protect individuals from exposure to bloodborne pathogens or other infectious materials when handling and decontaminating scrub attire. Also, home washing machines may not have the adjustable parameters or controls required to achieve the necessary thermal, mechanical, or chemical measures to reduce microbial levels in soiled scrub attire.¹

**References**