

Guideline for surgical attire



Lisa Croke, Managing Editor

The updated AORN “Guideline for surgical attire,” which was last revised in 2014, will provide guidance on laundering surgical attire and wearing long sleeves, cover apparel, head coverings, and shoes in semirestricted and restricted areas. It also will address cleaning of identification badges, stethoscopes, and personal items (e.g., cell phones, briefcases).¹ According to Lisa Spruce, DNP, RN, CNS-CP, CNOR, ACNS, ACNP, FAAN, AORN director of evidence-based practice and lead author of the guideline, the updates in this guideline will likely make the recommendations less challenging for perioperative teams to implement. “This guideline now really encourages facilities to form a team of all their perioperative staff members and infection preventionists to discuss and make decisions about surgical attire,” she said. “By following the best available evidence and putting it together with each individual practitioner’s experience, there is going to be an improvement in team-based decision making that will promote adherence to the guideline recommendations in the long term.”

Personal clothing

Because there was no evidence found on the benefits and harms of wearing personal clothing under scrub attire, no recommendation could be made regarding this practice. “We instead recommend that facilities establish and implement their own processes for managing personal clothing that may be worn under scrub attire, including types of fabrics allowed, amount of fabric that can extend beyond the scrub attire, and laundering method and frequency,” Spruce said. “Ultimately, if you’re going to allow personal clothing, you have to establish a process for it.” The guideline also notes that if personal clothing becomes contaminated with blood, other body fluids, or other potentially infectious materials, the items should remain at the health care facility for laundering.^{1,2}

Long sleeves

Because the benefits of wearing long sleeves when performing preoperative patient skin antisepsis likely exceed the harms,³ the guideline recommends that

arms may be covered when performing this task.¹ “This is a conditional recommendation, which means personnel may do it, but don’t have to do it,” Spruce said. “Although an experimental study indicated that wearing long sleeves could potentially reduce pathogens to the area being prepped, we need more research; therefore, each perioperative team may want to determine if there is any possibility of harm to the patient if they don’t cover their arms and base their decision about wearing long sleeves on that.”

Although additional research is still needed regarding the risks of contaminating the prep via loose long sleeves worn by personnel during preoperative patient skin antisepsis, these risks may be reduced by wearing sleeves that fit tight, avoiding reaching over the prep area, or wearing sterile sleeves. Because of a lack of evidence on the benefits and harms of wearing long sleeves in semirestricted and restricted areas other than when performing preoperative patient skin antisepsis, no recommendation can be made regarding wearing long sleeves in these circumstances.¹

Head coverings

Based on evidence suggesting that wearing a head covering may help contain hair and bacteria that is shed by perioperative personnel, thus helping to prevent contamination of the sterile field and reducing the risk of surgical site infections,⁴⁻⁶ the scalp and hair should be covered in semirestricted and restricted areas.¹ No recommendation could be made for covering the ears in these settings, however, because evidence has not demonstrated any association between covering the ears and surgical site infection rates.¹ It should be noted that covering the ears may prevent earrings worn by scrubbed team members from falling into the sterile field, but also is associated with such harms as impeding hearing, team communication, and use of stethoscopes. Based on studies that demonstrated that beards can be a source of bacterial organisms,⁷⁻⁹ they should be covered when entering restricted areas and while preparing and packaging items in the clean assembly section of the sterile processing area.¹

GUIDELINE FIRST LOOK

“Because evidence did not demonstrate any association between the type of head covering worn or extent of hair coverage on the outcome of surgical site infection rates, we could not make a recommendation regarding the types of head covers to be worn or the amount of hair required to be covered in semirestricted and restricted areas,” Spruce said. Each facility may want to assemble an interdisciplinary team, including members of the surgical team and infection preventionists, to determine the type of head covers that should be worn.¹ All head coverings, regardless of type, should be removed at the end of the shift or when contaminated.¹ For any reusable head covering, the facility also should establish and implement a process for managing these coverings, including the types of fabrics allowed and laundering frequency and method.¹ Any reusable head coverings contaminated with blood, other body fluids, or other potentially infectious materials should remain at the health care facility for laundering.²

Badges, stethoscopes, and personal items

Because they may be contaminated with pathogens, identification badges and lanyards should be cleaned with a low-level disinfectant when they become soiled with blood, other body fluids, or other potentially infectious materials.¹ In addition, facilities should determine how often (e.g., daily, weekly) it is necessary for identification badges to be routinely disinfected.¹ Stethoscopes should be cleaned according to the manufacturer’s instructions for use before each patient use to decrease the risk of transmitting pathogens to patients and environmental surfaces.¹

Facilities should establish a process to prevent contaminants from entering semirestricted and restricted areas via personal items (e.g., briefcases, backpacks), which may include cleaning or containing the item or placing the item in a designated location. Cleaning these items may help decrease the transmission of potentially pathogenic microorganisms from external surfaces to perioperative surfaces and vice versa.¹ In addition, because moderate-quality evidence demonstrates that cell phones, tablets, and other personal handheld devices are highly contaminated with microorganisms, including some that are potentially pathogenic,¹⁰⁻¹² personnel should clean these items according to the manufacturer’s instructions for use

before bringing them into the OR and then perform hand hygiene.¹

Conclusion

By reducing patients’ exposure to microorganisms that are shed from the skin and hair of perioperative personnel via appropriate surgical attire policies and processes, the risk for surgical site infections may be reduced. As such, perioperative personnel should follow evidence-based recommendations on laundering and cleaning and attire to be worn in semirestricted and restricted areas to help ensure their safety, as well as that of patients. This can include implementing facility-specific recommendations regarding wearing personal clothes under scrub attire; wearing long sleeves when performing patient skin antisepsis; covering the scalp, hair, and beards as appropriate for the area; and cleaning identification badges and lanyards when they become soiled.

Spruce concluded that she hopes this guideline will encourage more research on surgical attire to guide recommendations in the future. “I hope people become interested in the topic and perform more studies to give us a better idea of how attire can affect patients,” she said. “In addition, I anticipate that perioperative team members will pay close attention to any changes they make in their surgical attire to see how it affects the surgical site infection rates at their facilities.”

References

1. Guideline for surgical attire. In: *Guidelines for Perioperative Practice*. Denver, CO: AORN, Inc; 2020. In press.
2. United States Department of Labor. Occupational safety and health standards: bloodborne pathogens. 29 CFR §1910.1030. https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_id=10051&p_table=STANDARDS. Effective March 6, 1992. Accessed April 12, 2019.
3. Markel TA, Gormley T, Greeley D, Ostojic J, Wagner J. Wearing long sleeves while prepping a patient in the operating room decreases airborne contaminants. *Am J Infect Control*. 2018;46(4):369-374.
4. Spruce L. Surgical head coverings: a literature review. *AORN J*. 2017;106(4):306-316.e6.

GUIDELINE FIRST LOOK

5. Boyce JM. Evidence in support of covering the hair of OR personnel. *AORN J*. 2014;99(1):4-8.
6. Berríos-Torres SI, Umscheid CA, Bratzler DW, et al; Healthcare Infection Control Practices Advisory Committee. Centers for Disease Control and Prevention guideline for the prevention of surgical site infection, 2017. *JAMA Surg*. 2017;152(8):784-791.
7. Parry JA, Karau MJ, Aho JM, Taunton M, Patel R. To beard or not to beard? Bacterial shedding among surgeons. *Orthopedics*. 2016;39(2):e290-e294.
8. McLure HA, Mannam M, Talboys CA, Azadian BS, Yentis SM. The effect of facial hair and sex on the dispersal of bacteria below a masked subject. *Anaesthesia*. 2000;55(2):173-176.
9. Wakeam E, Hernandez RA, Rivera Morales D, Finlayson SRG, Klompas M, Zinner MJ. Bacterial ecology of hospital workers' facial hair: a cross-sectional study. *J Hosp Infect*. 2014;87(1):63-67.
10. Haun N, Hooper-Lane C, Safdar N. Healthcare personnel attire and devices as fomites: a systematic review. *Infect Control Hosp Epidemiol*. 2016;37(11):1367-1373.
11. Chang CH, Chen SY, Lu JJ, Chang CJ, Chang Y, Hsieh PH. Nasal colonization and bacterial contamination of mobile phones carried by medical staff in the operating room. *PLoS One*. 2017;12(5):e017581. <https://doi.org/10.1371/journal.pone.0175811>.
12. Martínez-González NE, Solorzano-Ibarra F, Cabrera-Díaz E, et al. Microbial contamination on cell phones used by undergraduate students. *Can J Infect Control*. 2017;32(4):211-216.

**CONNECT WITH THE
AORN JOURNAL ONLINE!**



Facebook:

www.facebook.com/AORNJournal



Twitter:

twitter.com/AORNJournal