



# Implementing AORN Recommended Practices for Surgical Attire

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## ABSTRACT

Surgical attire is intended to protect both patients and perioperative personnel. AORN published the “Recommended practices for surgical attire” to guide perioperative RNs in establishing protocols for selecting, wearing, and laundering surgical attire. Perioperative RNs should work with vendors and managers to ensure appropriate surgical attire is available, model the correct practices for donning and wearing surgical attire, and teach team members about evidence-based practices. The recommendation that surgical attire not be home laundered is supported by evidence that perioperative nurses can share with their colleagues and managers to help support appropriate practices. Hospital and ambulatory surgery center scenarios have been included as examples of appropriate execution of these recommended practices. *AORN J* 95 (January 2012) 122-137. © AORN, Inc, 2012. doi: 10.1016/j.aorn.2011.10.017

**Key words:** *AORN recommended practices, surgical attire, cover apparel, home laundering.*

**T**he revised AORN “Recommended practices for surgical attire” document was published electronically in AORN’s

*Perioperative Standards and Recommended Practices* in November 2010. The purpose of the revised recommended practices (RP) document is to “provide guidelines for surgical attire including jewelry, clothing, shoes, head coverings, masks, jackets, and other accessories worn in the semirestricted and restricted areas of the surgical or invasive procedure setting.”<sup>1(p57)</sup> The practice recommendations in the RP document are intended to be achievable and represent what is believed to be an optimal level of practice, and these recommendations can be adapted

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to various settings where surgical and other invasive procedures are performed.

### WHAT'S NEW?

The new surgical attire RP document replaces the 2004 AORN "Recommended practices for surgical attire." Some significant changes were made to the RP document during its review and subsequent update. The most notable change includes the stronger stance AORN has taken against home laundering of surgical attire, which is probably the least popular recommendation in the RP document. Based on the number of questions and comments that AORN received from constituents when the recommendation was first introduced at the 2010 AORN Congress in Denver, Colorado, and when the RP document was in the public comment phase during the summer of 2010, the RP document was revised and then submitted for a second public comment phase. When the RP document was featured at the 2011 AORN Congress in Philadelphia, Pennsylvania, there continued to be questions surrounding the recommendation that surgical attire not be home laundered. This article may help perioperative nurses implement the revised surgical attire practice recommendations, including the recommendations against home laundering.

The previous RP document on surgical attire stated, "Home laundering of surgical attire is not recommended. Without clear evidence about the safety for patients, health care workers, and their family members, AORN does not support the practice of home laundering of surgical attire."<sup>2(p299-300)</sup> Additionally, the 2004 recommendations stated "Home laundering of surgical attire that is not visibly soiled is controversial, and there is no concrete evidence to either support or refute the practice."<sup>2(p300)</sup> The 2004 RP document provided perioperative nurses with suggestions for how to home launder soiled surgical attire, including the type of washer and water temperature settings to use, as well as laundering surgical attire in a separate load with no other

items, laundering surgical attire as the last load, washing one's hands immediately after placing surgical attire into the washer, keeping items completely submerged during the entire wash and rinse cycles, not placing hands and arms into the laundry or rinse water to submerge clothing, and thoroughly cleaning the door and lid of the washing machine before removing the washed surgical attire.

Research and evidence have evolved since the 2004 RP document was published, and AORN maintains the statement "Home laundering of surgical attire is not recommended." However, the revised RP document does not provide perioperative nurses with suggestions for home laundering of soiled surgical attire. The RP document now states, "Home laundering may not meet the specified measures necessary to achieve a reduction in antimicrobial levels in soiled surgical attire,"<sup>1(p64)</sup> and details those measures in more depth.

### RATIONALE

Wearing surgical attire and appropriate personal protective equipment in the semirestricted and restricted areas of health care facilities promotes personnel safety and helps ensure cleanliness in the perioperative environment. It is understood that the human body and the various surfaces in the perioperative setting are sources of microbial contamination and microbe transmission. Clean surgical attire helps to minimize the introduction of microorganisms and lint from health care personnel to clean items and the environment. Although there is no direct link between nonsterile surgical attire and the impact on surgical site infections, it seems prudent to minimize a patient's exposure to a surgical team member's skin, mucous membranes, or hair.

Using a health care-accredited laundry facility is preferred because accredited facilities follow industry standards. The Healthcare Laundry Accreditation Council provides voluntary accreditation to those laundry facilities that process health care textiles and incorporate Occupational Safety



#### What's Wrong With This Picture?

100% fleece

- collects material and sheds lint.
- is highly flammable.
- is not stain resistant.
- does not promote a professional appearance.

**Figure 1. Attire made of 100% fleece is not recommended for the OR.**

and Health Administration (OSHA) and Centers for Disease Control and Prevention (CDC) guidelines, including establishing quality control monitoring and using processes based on industry standards; regularly testing water quality; monitoring wash loads and recording data; and routinely monitoring laundry processes, such as correct measurement of chemicals, correct water temperatures, mechanical action, and the duration of the washing cycle.

## DISCUSSION

There are nine evidence-based practice recommendations in the RP document. These recommendations pertain to the various aspects of surgical attire in the semirestricted and restricted areas of the perioperative environment, including recommendations about materials that are and are not acceptable for surgical attire, the specific types of attire that should and should not be worn in the perioperative practice setting, the cleanliness

and laundering of surgical attire, and how and when to wear surgical attire correctly, as well as recommendations for education and competency validation, creating policies and procedures, and establishing a quality management program. This article offers suggestions for implementing the recommendations in the perioperative practice setting with a specific focus on the nurse's role in establishing safe and appropriate surgical attire practices.

## Recommendation 1

In selecting surgical attire, perioperative nurses should choose attire that is made of low-linting material, catches shed skin squames, is comfortable, and looks professional.<sup>1(p57)</sup> AORN recommends choosing fabrics that are tightly woven, stain resistant, and durable. In fact, research shows that the design of the surgical attire is not as important as the material of which it is made.<sup>3</sup> Surgical attire should not be highly flammable,



#### What's Wrong With This Picture?

- The use of cover apparel (eg, lab coat, cover gown) may be determined by practice setting.
- Cover apparel should be laundered daily in a health care-accredited laundry facility.
- Cover apparel has been found to have little or no effect on reducing contamination of surgical attire.
- Studies have shown that rather than protecting the clothing underneath, the cover gown or cover apparel may contaminate the clothing underneath.

**Figure 2. Use of cover apparel should be determined on a facility-by-facility basis.**

which is why 100% cotton fleece is not recommended<sup>4</sup> (Figure 1), and it should not shed lint or harbor dust, skin squames, or respiratory droplets.

To ensure surgical attire is made of appropriate materials, perioperative staff members can read labels carefully, review health care catalogs, and interact with vendors. This can be done by visiting the Exhibit Hall at AORN Congress and during vendor meetings. If the vendor offers items that are 100% cotton fleece, such as warm-up jackets, perioperative nurses should educate them about the misuse of cotton fleece inside the perioperative suite. The vendors can then return to their research and development departments to redesign jackets that are made of cotton with a 10% to 20% polyester blend, which decreases the shedding component. In addition, perioperative staff members can work with their respective materials management department personnel in making decisions about obtaining new surgical attire. They can also discuss the revised surgical attire RP document, which provides detail on fabric

specifications, with vendors and other facility staff members.

#### Recommendation II

Recommendation II deals with many facets of surgical attire, including cleanliness of the attire, where and how to don surgical attire, what not to wear (eg, jewelry, open-toed shoes), suggestions for head coverings and the best types of shoes to wear, how and why to wear identification (ID) badges, the use of cover apparel, and items that should not be taken into the semirestricted or restricted areas (eg, backpacks, briefcases).<sup>1(p57-61)</sup>

It is recommended that perioperative personnel in the semirestricted and restricted areas wear facility-approved, clean, freshly laundered, or disposable surgical attire, including shoes, head coverings, masks, jackets, and ID badges.<sup>1(p57)</sup>

Perioperative personnel should change into surgical attire in designated dressing areas to decrease the possibility of cross-contamination and to assist with traffic control and should



#### What's Wrong With This Picture?

- Wearing jewelry increases bacterial counts on skin surfaces both when the jewelry is in place and after removal.
- The removal of watches and bracelets allows for more thorough hand washing.

**Figure 3. Jewelry, including earrings, necklaces, watches, and bracelets, that cannot be contained or confined within the scrub attire should not be worn.**

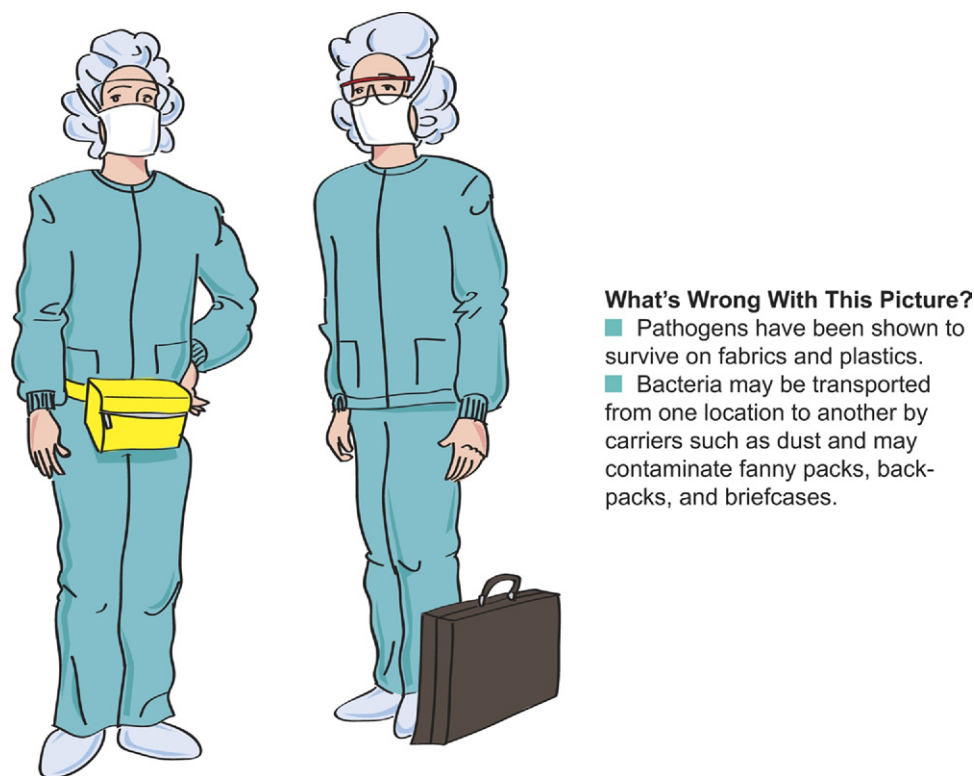
change back into street clothes if they need to leave the facility or travel between buildings to prevent contaminating the surgical attire through contact with the external environment. Additionally, the use of cover apparel may be determined by the practice setting (Figure 2).

Surgical personnel who are required to travel from one health care facility to another should not wear the same surgical scrubs from facility to facility. Wearing contaminated scrubs between facilities can transfer pathogens, for example, from clothing to the transport vehicle or from patient to patient. Health care personnel should change into street clothes when leaving one facility and don clean surgical attire on arrival at the second facility. While possibly increasing the time factor, the benefits of changing scrubs outweigh the costs; the provider's personal transport vehicle will not come in contact with infected materials, and the next patient will have a provider who is wearing a clean, noncontaminated

pair of scrubs. Time allotments should be included for providers who are commuting from facility to facility.

Perioperative nurses should not wear jewelry such as earrings, necklaces, watches, or bracelets that cannot be contained within the surgical attire<sup>5</sup> (Figure 3) because of the risk of contaminating the surgical attire. Nurses who wear jewelry should be aware of the findings as reported in the revised RP document. Research now shows that bacteria are nine times higher on the skin beneath finger and nose rings than on the rings themselves.<sup>5</sup> During the nurse's orientation phase is a good time to discuss these findings. Using safety as his or her guide, the preceptor can relay these findings and emphasize that wearing rings may, in fact, cause injury to the wearer or to patients. For example, a ring may become caught while the nurse is preparing surgical equipment and result in an injury, laceration, or avulsion. The ring may become contaminated





**Figure 4.** Fanny packs, backpacks, briefcases, and other personal items that are constructed of porous materials may be difficult to clean or disinfect adequately and may harbor pathogens, dust, and bacteria.

with unknown microorganisms during a surgical procedure, causing the skin beneath the ring to become colonized. If nurses prefer to place jewelry in a personal locker or pin jewelry to their clothing, they increase the risk of losing it. Rings may become dislodged or misplaced. Rings worn beneath gloves may be accidentally removed with the gloves and possibly lost.

Shoe selection also is important, and perioperative personnel should wear clean shoes with closed toes and backs, low heels, and nonslip soles.<sup>6</sup> Shoes made of cloth or that have holes or perforations are not recommended. Perioperative nurses should adhere to OSHA regulations that pertain to the choice of footwear in the practice setting related to potential hazards such as needle sticks, scalpel cuts, and splashes from blood or other potentially infectious materials. Cloth shoes or shoes that have open toes or backs, for example, increase the wearer's risk

of sustaining a sharps injury from a dropped instrument or being exposed to blood or other bodily fluids.

Perioperative nurses maintain a high commitment to evidence-based practice and research. Therefore, when health care personnel question the prohibition of fanny packs, backpacks, or briefcases in the semirestricted or restricted areas of the perioperative suite (Figure 4), the perioperative nurse must be able to cite literature related to studies confirming the growth of bacteria and microbial carriage on fabrics, plastics, or other porous materials.<sup>7-10</sup>

Stethoscopes may be the most widely used medical device in health care. Although stethoscopes are not part of the surgical attire, perioperative health care providers often wear them around their necks (Figure 5). They are inanimate objects that can transmit pathogens (eg, methicillin-resistant *Staphylococcus aureus*) by indirect



#### What's Wrong With This Picture?

- Inanimate objects such as contaminated stethoscope tubing may transmit pathogens such as methicillin-resistant *Staphylococcus aureus* by indirect contact.
- Stethoscopes that come in direct contact with patients' skin could provide an opportunity for transmission of microbes from patient to patient, to health care personnel, or from health care personnel to patients.
- Stethoscope fabric covers act as fomites by carrying infectious organisms and transferring them from one individual to another.

**Figure 5. Identification badges should be secured on the surgical attire top and visible, and stethoscopes should be clean and not worn around the neck.**

contact. Cleaning stethoscopes along with hand washing between treating patients decreases the possibility of pathogen transmission. Nurses can provide antibacterial wipes for providers to use on their stethoscopes at hand washing stations.

The perioperative nurse is responsible for maintaining a safe and secure environment at all times; therefore, as a security measure, all personnel in the perioperative setting should wear ID badges. This allows the perioperative nurse, as well as patients, to identify all persons authorized to be in the perioperative setting.<sup>11,12</sup> Facilities can ensure patient and staff member safety by implementing policies and procedures related to visitors in the OR. For example, a health care facility's policies may state that on arrival to the facility, vendors and visitors must check in through an automated badge terminal. This will print a photo/ID badge that contains information such as the date and time, a photograph, the company represented, and the name of the person they are visiting. On arrival to the perioperative

services area, the photo/ID badge is presented to the control center. Vendors and visitors must submit their driver's licenses to receive an additional badge that authorizes their admittance into the OR. On completion of their business, the vendors and visitors return to the control center to retrieve their driver's licenses and return the facility-issued badges. Securing and locking the perioperative suites will add an additional measure of safety. Visitors or vendors are to appear at the door, ring the bell for help, and be authorized entrance to the control center. Knowing these procedures are in place before a vendor or visitor arrives at an OR, the nurse can ensure that no person enters without having followed the appropriate steps. If someone appears without the necessary stickers and badges, he or she should not be allowed to enter until the steps have been completed. The nurse can refer unauthorized visitors or vendors to the control center for further guidance and to complete required documentation before they are permitted to enter.



#### What's Wrong With This Picture?

■ Long-sleeved attire helps contain any shedding from bare arms, including skin squames and hair.

**Figure 6.** All nonscrubbed personnel should wear a freshly laundered or single-use long-sleeved warm-up jacket snapped closed with the cuffs down to the wrists.

### Recommendation III

Recommendation III includes suggestions for how often to change surgical attire, what to do when attire is contaminated, guidelines for reusable and single-use attire, the types of attire that nonscrubbed personnel should wear, and wearing personal clothing in the practice setting.<sup>1(p61-62)</sup>

*All individuals who enter the semirestricted and restricted areas should wear freshly laundered surgical attire that is laundered at a health care-accredited laundry facility or disposable surgical attire provided by the facility and intended for use within the perioperative setting.*<sup>1(p61)</sup>

Perioperative personnel should not place worn surgical attire in lockers to be worn again because studies have shown that microbes survive for long periods on fabrics.<sup>9,10,13</sup> Storing used surgical attire in one's personal locker can expose the perioperative nurse's other personal items to microbes that may fall from the fabric of the attire. As previously discussed, the possibility of the transmission of microorganisms to the nurse's

individual belongings should be a strong deterrent for this type of behavior. Perioperative nurses can speak to their managers and materials management personnel to ensure there is an adequate supply of surgical attire available for use by personnel to help offset the possibility of staff members retaining used attire in their personal lockers.

Surgical attire should include warm-up jackets with long sleeves and snap closures. Members of the nonscrubbed perioperative team should wear a freshly laundered or single-use long-sleeved warm-up jacket snapped closed with cuffs to the wrist to contain shedding skin squames from bare arms (Figure 6). Perioperative nurses should don a long-sleeved warm-up jacket before prepping a patient where there is risk of skin squames shedding. Jackets should be available in a variety of sizes to accommodate every staff member. While prepping the patient, the nurse should take care that the sleeves of the jacket do not come into contact with the sterile field.

Surgical attire should not include personal clothing that extends above the top neckline or





#### What's Wrong With This Picture?

- Undergarments such as T-shirts with a V-neck, which can be contained underneath the scrub top, may be worn.
- Personal clothing that extends above the scrub top neckline or below the sleeve of the surgical attire should not be worn.

**Figure 7. All personal clothing should be completely covered by the surgical attire.**

below the sleeve (Figure 7). Surgical attire should be changed daily or at the end of a shift and should not be worn if it becomes wet or contaminated. Perioperative personnel whose attire becomes soiled should change into freshly laundered attire as soon as possible to prevent prolonged exposure to potentially harmful bacteria.<sup>14,15</sup> When their bodies are extensively contaminated, perioperative staff members should bathe before donning fresh attire.<sup>14,16</sup> The perioperative nurse, as an advocate, should assist other perioperative personnel with the opportunity for changing contaminated, soiled, or wet attire. The perioperative nurse may need to contact the charge nurse or floor manager and request an additional perioperative team member to relieve the team member whose attire becomes soiled while the change occurs. If this is not immediately possible, as soon as time permits, the affected team member should be relieved. Managers should facilitate these reliefs to decrease the amount of time a team

member is exposed to any potentially harmful bacteria as outlined in OSHA standards.

#### Recommendation IV

All personnel should cover their head and facial hair when in the semirestricted and restricted areas.<sup>1(p62)</sup> Hair coverings should cover facial hair, sideburns, and the nape of the neck. Perioperative nurses can help minimize the risk of surgical site infections by covering head and facial hair, which prevents skin squames and hair shed from the scalp from falling onto the sterile field.<sup>17,18</sup> Skull caps are not recommended because they do not completely cover the wearer's hair and skin; they fail to cover the side hair above and in front of the ears and the hair at the nape of the neck (Figure 8). Perioperative nurses can talk with their department managers and materials management department personnel to eliminate the availability of skull caps. Providing bouffant caps in a variety of sizes will allow perioperative team members



#### What's Wrong With This Picture?

- Short skull caps should not be used because they do not fully cover hair.
- Hoods may be required to cover facial hair.
- Falling skin squames and hair potentially harbor pathogens and may contribute to surgical site infections.

**Figure 8. All personnel should cover head and facial hair, including sideburns and the nape of the neck, when in the semirestricted and restricted areas.**

choices when converting to bouffant caps over skull caps.

Perioperative team members should place single-use head coverings in a designated receptacle after daily use or when contaminated. Personal, reusable head coverings are acceptable for perioperative personnel to wear if they are covered with a single-use disposable head covering or if they are laundered daily in a health care-accredited laundry facility.<sup>19</sup> If personal head coverings are laundered at the facility's laundry, they should be properly labeled with the employee's name and department and placed in an appropriate laundry receptacle. Perioperative team members can work with their managers and laundry facility personnel to recommend labels that can be easily sewn or ironed into the personal head cap or that can be securely affixed by another means. A nonbleeding, nonfading, permanent marker should be used to place the name of the owner onto the label. Working with the laundry department to ensure all necessary information is contained on the label to ensure the caps return to the rightful departments and owners will help prevent lost personal items. Many health care facilities now provide individual mesh laundry bags for perioperative personnel to use for personal, re-

usable caps. Labels and mesh laundry bags should be provided to every member of the perioperative team, including anesthesia personnel and other team members who wear personal head caps. Mesh laundry bags should have an affixed label, written with a permanent marker, that identifies the staff member's name and department. A facility may prefer to provide larger mesh laundry bags instead of individual mesh laundry bags for depositing soiled, personal caps.

#### Recommendation V

Surgical attire should be laundered in a health care-accredited laundry facility and should not be laundered at home (Figure 9).<sup>1(p63)</sup> AORN has not changed its position on the home laundering of surgical attire since 2004, and home laundering of surgical attire is still not recommended. The difference in the revised RP document is that research now shows definitively that home laundering is less effective than health care facility laundering. Studies have shown that the bioburden found on the health care providers' uniforms at the beginning of a shift following home laundering is the same as the bioburden found on uniforms at the end of their shifts. The primary reason is that accredited laundry facilities



#### What's Wrong With This Picture?

- Home laundering is not monitored for quality, consistency, or safety.
- Exposure of health care personnel and their family members to blood and other potentially infectious materials may result from improper handling and decontamination of surgical attire.

**Figure 9.** Home laundering has been shown to be less effective for cleaning surgical attire than attire laundered by health care facilities or commercial laundries.

incorporate numerous OSHA and CDC guidelines as well as professional association practice recommendations to ensure that surgical attire and textiles are free of contaminants such as bacteria and fungi.<sup>1(p63-64),20</sup> Comparatively, home laundering may not meet the specified mechanical, thermal, or chemical measures that are necessary to reduce antimicrobial levels in soiled surgical attire.<sup>1(p64)</sup>

Perioperative nurses should provide literature to perioperative team members related to the perils of home laundering. This information should be distributed to perioperative managers as well. Information may be distributed in the form of staff bulletin boards, staff meetings, educational venues, or journal clubs as a means to share the findings of relevant research AORN has used to recommend against home laundering of surgical attire. Perioperative nurses can provide staff members, managers, and all other perioperative health care team members with the following information:

- In a study of bacterial contamination of home-laundered uniforms, 39% of uniforms identi-

fied as “clean” at the beginning of the shift were actually found to be contaminated with one or more microorganisms, including vancomycin-resistant enterococci, methicillin-resistant *Staphylococcus aureus*, and *Clostridium difficile*.<sup>1(p64),21</sup>

- A quantitative study performed on cotton strips of fabric that were inoculated with 10 mL of a viral suspension showed that enteric viruses such as hepatitis A, rotavirus, and adenovirus remained on the fabric strips after the home-laundering process that included being washed, rinsed, and dried on a 28-minute permanent press cycle.<sup>22</sup>

#### Recommendation VI

“All individuals entering the restricted areas should wear a surgical mask when open sterile supplies and equipment are present.”<sup>1(p65)</sup> The mask protects both the patient and the perioperative team members from exposure to microorganisms. All members of the perioperative team are at risk for exposure from droplets. Wearing a surgical mask protects health care providers from droplets greater than 5 micrometers in size. Ex-



#### What's Wrong With This Picture?

- A clean mask should be donned before every procedure.
- Masks should not be worn hanging from the neck.

**Figure 10. Surgical masks should be worn to cover the mouth and nose.**

amples of diseases where potential droplet exposures may occur include group A *Streptococcus*, adenovirus, and *Neisseria meningitides*.

Wearing a surgical mask protects the patient from exposure to infectious material carried in the health care provider's nose or mouth. Wearing a surgical mask also protects the health care provider from exposure to other infectious material from patients, such as respiratory secretions or sprays of blood or body fluids. Wearing a surgical mask decreases the risk of inadvertent splashes or splatters of blood or body fluid into the health care provider's mouth or nose. A study of 8,500 surgical procedures revealed that 26% of blood exposures were to the heads and necks of scrubbed personnel. The same study revealed that 17% of blood exposures occurred in the nonscrubbed, circulating personnel outside the sterile field.<sup>23</sup>

Perioperative nurses can help reduce the transfer of microorganisms when they instruct other

team members about how to properly wear, replace, and discard masks. Masks should cover the mouth and nose and prevent venting.<sup>1(p65)</sup> They should be secured at the back of the head and behind the neck to decrease the risk of transmitting nasopharyngeal and respiratory microorganisms to patients or to the sterile field.<sup>1(p66)</sup> Conversely, surgical masks applied appropriately can prevent infectious particles from reaching the wearer's nose and mouth by passing through leaks at the mask-face seal.

Surgical attire should not include a surgical mask that is worn hanging from the neck or a surgical mask that becomes soiled or wet (Figure 10). Only one mask should be worn at a time, and soiled or wet masks should be discarded and replaced. The perioperative nurse should confront any health care provider who is wearing a contaminated surgical mask. If a team member's surgical mask becomes wet or soiled, the perioperative nurse should inform the team member and

assist him or her in replacing the soiled mask. After each procedure, the surgical mask should be discarded by carefully handling only the ties of the mask.<sup>1(p66)</sup> After discarding his or her mask, the perioperative team member should perform proper hand hygiene.<sup>24</sup>

Perioperative nurses can coach other team members to discard their surgical masks and perform hand hygiene afterward. Providing the appropriate receptacles for the team members to deposit used surgical masks as well as providing alcohol foam hand wash in the OR will help facilitate compliance. Additional receptacles and hand hygiene stations located immediately before the exit from the perioperative suite also will help facilitate compliance. Perioperative nurses, in collaboration with infection preventionists, can develop signage to indicate that removal of all surgical masks before exiting the department is required. The signs may be placed at the exit to each OR and at each department exit. As a means to ensure infection control policies are followed, any person found outside the perioperative suite wearing a surgical mask should be asked to remove it.

### The Final Three

In the “Recommended practices for surgical attire,” the final three recommendations discuss education/competency, policies and procedures, and quality assurance/performance improvement. These topics are integral to the implementation of AORN practice recommendations. Personnel should receive initial and ongoing education and competency validation as applicable to their roles. Implementing new and updated recommended practices affords an excellent opportunity to create or update competency materials and validation tools. AORN’s perioperative competencies team has developed the *AORN Perioperative Job Descriptions and Competency Evaluation Tools*<sup>25</sup> to assist perioperative personnel in developing competency evaluation tools and position descriptions.

Policies and procedures should be developed, reviewed periodically, revised as necessary, and readily available in the practice setting. New or updated recommended practices may present an opportunity for collaborative efforts with nurses and personnel from other departments in the facility to develop organization-wide policies and procedures that support the recommended practices. The *AORN Policy and Procedure Templates*, 2nd edition,<sup>26</sup> provides a collection of 15 sample policies and customizable templates based on AORN’s *Perioperative Standards and Recommended Practices*. Regular quality improvement projects are necessary to improve patient safety and to ensure safe, quality care. For details on the final three practice recommendations that are specific to the RP document discussed in this article, please refer to the full text of the RP document.

### AMBULATORY PATIENT SCENARIO

Staff members at a freestanding ambulatory surgery center have implemented the new AORN “Recommended practices for surgical attire.” One of the many changes is that all unscrubbed personnel working in the restricted or semirestricted area are now required to wear long-sleeved scrub jackets that are buttoned up the front. The intent is for everyone to comply starting immediately. However, when Nurse J enters OR 1 to assist Nurse W in prepping a patient for a carpal tunnel release, she encounters a problem.

While Nurse J holds the patient’s arm up for Nurse W, Nurse W removes her jacket and proceeds to prep the patient’s arm. When Nurse J questions Nurse W about why she removed the jacket, Nurse W says, “It is ok for me to take off my jacket to prep; otherwise I may get something on it. AORN doesn’t state that it has to be worn for the prep.” How should Nurse J respond?

Nurse J should explain to Nurse W that while in the semirestricted or restricted areas, all non-scrubbed personnel should wear freshly laundered or single-use long-sleeved scrub jackets. The recommended practice is that perioperative nurses



should don a long-sleeved warm-up jacket before prepping a patient where there is risk of skin squames shedding. The jacket prevents shedding of skin squames into the OR environment and the sterile field. Healthy skin is constantly turning over and forming a new protective layer. As these skin cells are shed, they are disseminated into the environment, taking with them viable bacteria that could potentially land on the surgical field and the patient. This could contribute to a compromised surgical field and potential surgical site infection. If Nurse W's jacket is too large and may interfere with the surgical prep, Nurse J may assist with additional measures such as tucking the front, sides, or sleeves of the jacket to maintain a sterile prep.

### HOSPITAL PATIENT SCENARIO

Dr R has been working in Gold Hospital for five years as an anesthesiologist. His service is part of a large specialty group that Gold Hospital contracts for anesthesia services. Dr R always brings his large bag into the OR with him and places it on the floor by the anesthesia cart. The bag is extremely worn. It is made of a cracked, dry, leather-type material. The handles are made of fabric and are also extremely worn. Many items inside the bag may have been there for several months to several years.

Gold Hospital has recently written and implemented a new policy on surgical attire that includes all of AORN's recommendations, including prohibiting bags in the semirestricted and restricted areas. When a colleague informs Dr R that he can no longer bring his bag into the OR with him, he becomes irate. Nurse G is nearby when Dr R is told of the practice change. "Nurse G!" he yells. "I have been bringing my bag into the OR for five years, and now you tell me that I can't? I want to see the evidence that this causes problems!"

This is a dilemma that many perioperative nurses encounter. How could this practice change have been better communicated to all involved? What should Nurse G do?

It is important for all key stakeholders and physician groups to be included when a new policy that will affect them, such as an attire policy, is being created. Many physicians may feel that they are being manipulated or controlled if they are not involved in the change process. To prevent this, perioperative personnel who are involved in creating or updating a facility policy should provide education early and ask for feedback before implementing a process change. Before a change is made, perioperative nurses must determine what barriers they may face. What are the attitudes of physicians and staff members? It is important to communicate the benefits for the patients as well as the benefits for personnel. Perioperative nurses should expect some resistance in implementing facility-wide practice changes.

In this scenario, Nurse G should explain the rationale for the change. She could offer to show Dr R the evidence-based practice articles that support the change. These articles can be presented to perioperative and anesthesia managers and other perioperative staff members to further disseminate the information. Nurse G could discuss the articles with managers to obtain their buy-in. She could offer to provide an education session to outline the changes that have occurred. With managers' support, Nurse G could determine how repeat offenders should be reported.

### CONCLUSION

Implementing the AORN "Recommended practices for surgical attire"<sup>1</sup> presents a challenging and unique opportunity for perioperative nurses. Nurses implementing these practice recommendations may encounter resistance to change from perioperative staff members who will question the updated practices. The perioperative nurse should reiterate that the practice recommendations are written by expert content authors. The RP document authors include content from additional expert sources as well, such as the American

Association of Nurse Anesthetists, the American College of Surgeons, the American Society of Anesthesiologists, the Association for Professionals in Infection Control and Epidemiology, the CDC, and the International Association of Healthcare Central Service Materiel Management. The intent of all RP documents is to improve staff member and patient safety.

As of September 2011, AORN is in the beginning stages of putting an “evidence rating implementation” phase into the creation process for each of its RP documents. As stronger, richer, and more robust scientific evidence becomes available, perioperative nurses will know with certainty that each of AORN’s practice recommendations has been researched, written, reviewed, revised, and publicly commented upon. For instance, in the surgical attire RP document, the literature review provided compelling evidence that prompted AORN to take a stronger stance against home laundering of surgical attire. Although this has not been a popular part of the revised RP document, as evidenced by the number of Congress attendees and public commenters who have expressed concern regarding these changes, the recommendation is supported by scientific research with extremely compelling results. Therefore, perioperative nurses should comply with all parts of any RP document and not just the “popular” parts. On any given day—whether it is an inpatient hospital setting in a traditional OR, an ambulatory surgery center, a physician’s office, a cardiac catheterization laboratory, an endoscopy suite, a radiology department, or any other area where invasive procedures are performed—perioperative nurses have the opportunity to set themselves apart and to lead by example. Implementing AORN’s recommendations is a “call to action” for standing up and doing what is right—according to the evidence. **AORN**

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*This RP Implementation Guide is intended to be an adjunct to the complete recommended practices document upon which it is based and is not intended to be a replacement for that document. Individuals who are developing and updating organizational policies and procedures should review and reference the full recommended practices document.*

# EXAMINATION

CONTINUING EDUCATION PROGRAM

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## Implementing AORN Recommended Practices for Surgical Attire

### PURPOSE/GOAL

To educate perioperative nurses about how to implement the AORN “Recommended practices for surgical attire” in inpatient and ambulatory settings.

### OBJECTIVES

1. Identify the purpose of AORN’s “Recommended practices for surgical attire.”
2. Discuss why home laundering of surgical attire is not recommended.
3. Identify appropriate materials for surgical attire.
4. Discuss AORN’s practice recommendations for surgical attire.
5. Identify methods for implementing AORN’s practice recommendations for surgical attire.

**The Examination and Learner Evaluation are printed here for your convenience. To receive continuing education credit, you must complete the Examination and Learner Evaluation online at <http://www.aorn.org/CE>.**

### QUESTIONS

1. The purpose of AORN’s “Recommended practices for surgical attire” is to provide guidelines for surgical attire including \_\_\_\_\_ worn in the semirestricted and restricted areas of the surgical or invasive procedure setting.
  1. clothing
  2. head coverings
  3. jackets
  4. jewelry
  5. masks
  6. shoes
  - a. 1, 3, and 5
  - b. 2, 4, and 6
  - c. 1, 2, 3, 5, and 6
  - d. 1, 2, 3, 4, 5, and 6
2. Perhaps the most notable change to the recommended practices for surgical attire is the stronger stance AORN has taken against
  - a. wearing jewelry in the perioperative setting.
  - b. wearing 100% cotton fleece in the OR.
  - c. home laundering of surgical attire.
  - d. taking briefcases into the OR.
3. Using accredited laundry facilities is preferable to home laundering because they
  1. establish quality control monitoring and use processes based on industry standards.
  2. monitor wash loads and record data.
  3. regularly test water quality.
  4. routinely monitor chemical measurement, water temperature, mechanical action, and wash cycle duration.
  - a. 1 and 2
  - b. 3 and 4
  - c. 1, 2, and 3
  - d. 1, 2, 3, and 4

4. Surgical attire should be
  1. 100% fleece.
  2. made of low-linting material.
  3. professional looking regardless of comfort.
  4. stain resistant and durable.
    - a. 1 and 3
    - b. 2 and 4
    - c. 2, 3, and 4
    - d. 1, 2, 3, and 4
5. To ensure surgical attire is made of appropriate materials, perioperative staff members should
  1. conduct flammability tests in a controlled environment.
  2. consult attire vendors.
  3. read attire labels carefully.
  4. review health care catalogs.
    - a. 1 and 3
    - b. 2 and 4
    - c. 2, 3, and 4
    - d. 1, 2, 3, and 4
6. Perioperative personnel should change from their surgical attire into street clothes if they need to leave the facility or travel between buildings.
  - a. true
  - b. false
7. If worn surgical attire is not visibly soiled, perioperative personnel can opt to place the attire in a locker to be worn again.
  - a. true
  - b. false
8. Correct use of warm-up jackets includes
  - a. ensuring jackets are available in one-size-fits-all.
  - b. donning a freshly laundered or single-use long-sleeved warm-up jacket.
  - c. snapping the jacket closed and wearing the cuffs to the elbow.
  - d. removing the jacket during prepping to ensure that the sleeves of the jacket do not come into contact with the sterile field.
9. When a perioperative team member's attire and body become extensively contaminated, actions the perioperative nurse might take include
  1. assisting the person with accessibility for changing the contaminated attire.
  2. contacting the charge nurse or floor manager to request relief personnel for the staff member whose attire became contaminated.
  3. ensuring the perioperative staff member whose attire became contaminated leaves the OR as soon as time permits.
  4. helping to decrease the amount of time the contaminated perioperative staff member is exposed to any potentially harmful bacteria.
    - a. 1 and 2
    - b. 3 and 4
    - c. 1, 2, and 4
    - d. 1, 2, 3, and 4
10. Proper wearing, replacement, and discarding of surgical masks includes making sure that
  1. any team member who is sick dons two masks to prevent disease transmission.
  2. the mask covers the mouth and nose and is secured at the back of the head and behind the neck.
  3. the mask is worn hanging from the neck after the procedure is finished.
  4. surgical masks are discarded by carefully handling only the ties.
  5. proper hand hygiene is performed after the mask is removed and discarded.
    - a. 1 and 2
    - b. 2, 4, and 5
    - c. 1, 3, 4, and 5
    - d. 1, 2, 3, 4, and 5

The behavioral objectives and examination for this program were prepared by Kimberly Retzlaff, editor/team lead, with consultation from Rebecca Holm, MSN, RN, CNOR, clinical editor, and Susan Bakewell, MS, RN-BC, director, Perioperative Education. Ms Retzlaff, Ms Holm, and Ms Bakewell have no declared affiliations that could be perceived as potential conflicts of interest in the publication of this article.



# LEARNER EVALUATION

CONTINUING EDUCATION PROGRAM

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## Implementing AORN Recommended Practices for Surgical Attire

[www.aorn.org/CE](http://www.aorn.org/CE)

**T**his evaluation is used to determine the extent to which this continuing education program met your learning needs. Rate the items as described below.

### OBJECTIVES

To what extent were the following objectives of this continuing education program achieved?

1. Identify the purpose of AORN's "Recommended practices for surgical attire."  
*Low 1. 2. 3. 4. 5. High*
2. Discuss why home laundering of surgical attire is not recommended.  
*Low 1. 2. 3. 4. 5. High*
3. Identify appropriate materials for surgical attire.  
*Low 1. 2. 3. 4. 5. High*
4. Discuss AORN's practice recommendations for surgical attire. *Low 1. 2. 3. 4. 5. High*
5. Identify methods for implementing AORN's practice recommendations for surgical attire.  
*Low 1. 2. 3. 4. 5. High*

### CONTENT

6. To what extent did this article increase your knowledge of the subject matter?  
*Low 1. 2. 3. 4. 5. High*
7. To what extent were your individual objectives met? *Low 1. 2. 3. 4. 5. High*
8. Will you be able to use the information from this article in your work setting? *1. Yes 2. No*

9. Will you change your practice as a result of reading this article? (If yes, answer question #9A. If no, answer question #9B.)

**9A.** How will you change your practice? (*Select all that apply*)

1. I will provide education to my team regarding why change is needed.
2. I will work with management to change/implement a policy and procedure.
3. I will plan an informational meeting with physicians to seek their input and acceptance of the need for change.
4. I will implement change and evaluate the effect of the change at regular intervals until the change is incorporated as best practice.
5. Other: \_\_\_\_\_

**9B.** If you will not change your practice as a result of reading this article, why? (*Select all that apply*)

1. The content of the article is not relevant to my practice.
2. I do not have enough time to teach others about the purpose of the needed change.
3. I do not have management support to make a change.
4. Other: \_\_\_\_\_

10. Our accrediting body requires that we verify the time you needed to complete the 3.6 continuing education contact hour (216-minute) program: \_\_\_\_\_

This program meets criteria for CNOR and CRNFA recertification, as well as other continuing education requirements.

AORN is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

AORN recognizes these activities as continuing education for registered nurses. This recognition does not imply that AORN or the American Nurses Credentialing Center approves or endorses products mentioned in the activity.

AORN is provider-approved by the California Board of Registered Nursing, Provider Number CEP 13019. Check with your state board of nursing for acceptance of this activity for relicensure.

**Event:** #12503; **Session:** #0001; **Fee:** Members \$18, Nonmembers \$36

The deadline for this program is January 31, 2015.

A score of 70% correct on the examination is required for credit. Participants receive feedback on incorrect answers. Each applicant who successfully completes this program can immediately print a certificate of completion.