Recommended Practices for Surgical Attire

The following Recommended Practices for Surgical Attire were developed by the AORN Recommended Practices Committee and have been approved by the AORN Board of Directors. They were presented as proposed recommendations for comments by members and others. They are effective November 1, 2010.

These recommended practices are intended as achievable recommendations representing what is believed to be an optimal level of practice. Policies and procedures will reflect variations in practice settings and/or clinical situations that determine the degree to which the recommended practices can be implemented.

AORN recognizes the various settings in which perioperative nurses practice. These recommended practices are intended as guidelines adaptable to various practice settings. These practice settings include traditional operating rooms (ORs), ambulatory surgery centers, physicians' offices, cardiac catheterization laboratories, endoscopy suites, radiology departments, and all other areas where surgery and other invasive procedures may be performed.

Purpose

These recommended practices 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. The human body and inanimate surfaces inherent to the surgical environment are major sources of microbial contamination and transmission of microbes; therefore, surgical attire and appropriate personal protective equipment (PPE) are worn to promote worker safety and a high level of cleanliness and hygiene within the perioperative environment. These recommended practices are not intended to address sterile surgical attire worn at the surgical field or all PPE.

Recommendation I

Surgical attire should be made of low-linting material, contain shed skin squames, provide comfort, and promote a professional appearance.

In a prospective interventional study of surgical attire that was motivated by an increase in endophthalmitis after cataract surgery, researchers compared several types of polyester scrub attire and cotton scrub attire. They found that surgical attire made of 100% spunbond polypropylene decreased the bacterial load in the air by 50% compared to cotton surgical attire. Researchers also found that surgical attire helps contain bacterial shedding and promotes environmental control.[1] In another study researchers found that the design of the surgical attire was not as important as the material of which it was made.[2]

I.a. Surgical attire fabrics should be tightly woven, stain resistant, and durable. Surgical attire should provide comfort in terms of design, fit, breathability, and the weight of the fabric.

Cotton fabrics with pores greater than 80 microns may allow microorganisms attached to skin squames to pass through the interstices of the material's weave.[3,4] Tightly-woven surgical attire (cotton and polyester [50/50] with 560 x 395 threads/10 cm) reduced the amount of bacteria shed into the air by two to five times, with the exception of methicillin-resistant *Staphylococcus epidermidis* (MRSE) from MRSE carriers.[5]

I.b. Surgical attire made of 100% cotton fleece should not be worn.

Some fabrics made of cotton fleece material collect and shed lint. Lint may harbor microbial-laden dust, skin squames, and respiratory droplets. In addition, fleece is made up of a napped surface with low density, which renders it more flammable.[6]

Cotton fiber is one of the most flammable fibers, and 100% cotton fleece without fire-retardant chemical treatment does not meet the federal flammability standard.[7,8] Cotton blended with 10% to 20% polyester may reduce the flammability,[6,7] but this is not always successful. Application of a fire-retardant chemical still may be required.[8]

Recommendation II

Clean surgical attire, including shoes, head covering, masks, jackets, and identification badges should be worn in the semirestricted and restricted areas of the surgical or invasive procedure setting.