GUIDELINE FOR HAND HYGIENE

The Guideline for Hand Hygiene was developed by the AORN Recommended Practices Committee and was approved by the AORN Board of Directors. It was presented as proposed recommendations for comments by members and others. The guideline is effective July 1, 2009. The recommendations in this guideline are intended to be achievable and represent 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 guideline can be implemented. AORN recognizes the various settings in which perioperative nurses practice; therefore, this guideline is 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 operative and other invasive procedures may be performed.

Purpose

This document provides guidance for hand hygiene for surgical and other invasive procedures. Microorganism transfer from the hands of health care workers to patients is an important factor in health care-associated infections and has been recognized since the observations of Ignaz Semmelweis and others more than 100 years ago. Skin is a major potential source of microbial contamination in the surgical environment. Hand hygiene has been recognized as a primary method of decreasing health care-associated infections.[1] Prevention of health care-associated infections is a priority of all health care personnel. Health care-associated infections can result in untoward outcomes such as escalating cost of care, increased morbidity and mortality, longer length of stay, as well as the pain and suffering a patient may experience.[2] Hand hygiene, hand washing, and surgical hand scrubs are the most effective way to prevent and control infections and represent the least expensive means of achieving both.

The normal skin flora on the hands include transient and resident microorganisms. The transient flora are microorganisms that colonize the superficial layers of the skin. These microorganisms are acquired by health care personnel while caring for patients and from coming into contact with contaminated surfaces where patients reside. Transient bacteria are easier to remove during hand washing. Resident flora are bacteria seated in the deeper layers of skin and are more difficult to remove. The transient and resident bacteria usually maintain a constant level on individuals' hands.[3,4]

The term "hand hygiene" is used to describe all measures related to hand condition and decontamination. Decontamination of hands can be done by one or more methods:

- **hand washing** using
  - soap and water,
  - antiseptic and water, or
  - antiseptic hand rub if visible soil is not present, or
- **surgical hand scrub** using
  - water-aided brushless surgical antiseptics,
  - waterless brushless surgical antiseptics, or
  - traditional surgical hand scrub using a sponge.[3,4]

Recommendation I

All health care personnel should follow established hand hygiene practices for maintaining healthy skin and fingernail condition and regarding the wearing of jewelry in the perioperative setting.

A direct route of transmission of microorganisms occurs when person-to-person contact results in transmission of microorganisms from a person who is infectious or colonized to a susceptible host. An indirect route of transmission of microorganisms occurs when inanimate objects such as a contaminated surface, instrument, or health care personnel's hands transfer microorganisms to a susceptible host.[5,6] An example of an outbreak involved a cardiac surgeon's infected fingernail. When cultured, it grew *Pseudomonas aeruginosa*. Two patients treated by the surgeon developed a surgical site infection with the same strain of *P aeruginosa*.[7]

I.a. Health care personnel should keep natural fingernails no more than one-quarter inch (0.64 cm) long.[3,8,9]

The subungual area of fingernails has the largest number of microorganisms on the hands. Pathogens most frequently isolated from the subungual area are coagulase-negative staphylococci, gram-negative rods (including *Pseudomonas* spp), corynebacteria, and yeasts.[10,11]

Long fingernails pose a risk of developing tears in gloves and also the possibility of injuring a patient during positioning and caring for the patient. There is also the concern that hand washing, hand rub, and surgical hand scrubbing may not be performed as well due to the health care personnel protecting their fingernails.[12,13] Short fingernails collect less debris, and debris is more easily removed when fingernails are short. Short fingernails have a decreased risk of being colonized with *P aeruginosa* compared to health care personnel with long or artificial fingernails. Long