



Recommended Standards of Practice for Hand Hygiene and Fingernails

Introduction

The following Recommended Standards of Practice were researched and written by the AST Education and Professional Standards Committee and have been approved by the AST Board of Directors. They are effective April 13, 2007.

AST developed the following Recommended Standards of practice to support health care facilities in the reinforcement of best practices related to hand and fingernail hygiene in the perioperative setting. The purpose of the recommended standards is to provide an outline that health care workers (HCWs) in the perioperative setting can use the Recommended Standards are presented with the understanding that it is the responsibility of the health care facility to develop, approve, and establish policies and procedures for performing counts according to established hospital protocols.

Rationale

Handwashing with soap and water has long been considered a standard of personal hygiene and its efficacy dates back to the 19th century. In 1846, Ignaz Semmelweis observed that women whose babies were delivered by medical students and physicians at the Vienna General Hospital had a much higher mortality rate compared to women whose babies were delivered by midwives. He observed that physicians were going directly from the autopsy room to the obstetrics ward to deliver babies without washing their hands, and he made the connection. Beginning in mid 1847, he became a proponent of students and physicians washing their hands with a chlorine solution between patients; and the mortality rate significantly decreased. This represents the first evidence indicating that handwashing between patients will contribute to the prevention of the transmission of disease between health care workers (HCW) and patients. In 1843, Oliver Wendell Holmes associated the spread of puerperal fever by the hands of HCWs. He was an advocate of handwashing between patients, but initially ignored. However, over time due to the observations and advocacy of Semmelweis and Holmes, handwashing has now become recognized as an important measure to be practiced by HCWs in preventing the transmission of pathogens.

However, it is interesting to note that studies have indicated adherence by HCWs to proper hand hygiene is still poor.² Refer to Table 1 for the factors that influence adherence to hand hygiene practices.

Table 1: Factors for Poor Adherence to Hand-Hygiene Practices

Observed risk factors for poor adherence to recommended hand hygiene practices²

- Physician status (rather than a nurse)
- Nursing assistant status (rather than a nurse)

- Male sex
- Working in an ICU
- Working during the week (versus the weekend)
- Wearing gowns/gloves
- Automated sink
- Activities with high risk of cross-transmission
- High number of opportunities for hand hygiene per hour of patient care

Self-reported factors for poor adherence with hand hygiene

- Handwashing agents cause irritation and dryness
- Sinks are inconveniently located/shortage of sinks
- Lack of soap and paper towels
- Often too busy/insufficient time
- Understaffing/overcrowding
- Patient needs to take priority
- Hand hygiene interferes with health care worker relationship with patients
- Low risk of acquiring infection from patients
- Wearing of gloves/beliefs that glove use obviates the need for hand hygiene
- Lack of knowledge of guidelines/protocols
- Not thinking about it/forgetfulness
- No role model from colleagues or superiors
- Skepticism regarding the value of hand hygiene
- Disagreement with the recommendations
- Lack of scientific information of definitive impact of improved hand hygiene on health care associated infection rates

Additional perceived barriers to appropriate hand hygiene

- Lack of active participation in hand hygiene promotion at individual or institutional level
- Lack of role model for hand hygiene
- Lack of institutional priority for hand hygiene
- Lack of administrative sanction of noncompliers/rewarding compliers
- Lack of institutional safety climate

Based upon the above information, it is recognized that the transfer of microorganisms from the fingernails, hands and arms of HCWs to patients has been a longtime infection-control concern. Proper care and hygiene of the fingernails, hands and arms by the surgical team members is essential to promoting surgical conscience, providing quality surgical care to the patient, and ensuring a positive outcome for the patient.

Standard of Practice I

The surgical team members should practice on a daily basis effective hand and fingernail hygiene.

1. Effective hand hygiene should be practiced on a daily basis to remove dirt, skin oil, debris and transient microorganisms to prevent transmission to the patient.
 - A. Indications for handwashing include the following:

- (1) Hands are visibly dirty or contaminated, or visibly contaminated with blood or body fluids.
 - (2) Anytime the possibility existed of contact with blood or body fluids
 - (3) When entering the surgical suite at the beginning of a day or shift
 - (4) Prior to having direct contact with a patient and between patients
 - (5) Immediately after the removal of gloves
 - (6) Before and after eating
 - (7) Immediately after using the restroom
2. Hand hygiene includes daily skin care by using hand lotions or creams to minimize the occurrence of irritant contact dermatitis, dry and cracked skin associated with repeated handwashing.^{1,2}
 - A. Manufacturers of hand lotions and creams should be consulted regarding any effects their product(s) may have on the persistent effects of antimicrobial soaps being used in the health care facility in order to choose the proper lotion or cream.²
 - B. Lotions and creams should be selected based on compatibility with gloves.
 3. The skin of surgical team members should be healthy and intact. Cuts, abrasions, open sores and hangnails provide a portal of exit and entry of microorganisms, thereby providing risk of exposure to surgical personnel and patients.

Standard of Practice II

Fingernails should be natural and polish-free. Fingernails should be short, debris-free, and not extend past the tips of the fingers.

1. The subungual area of the fingernail harbors high concentrations of bacteria, particularly coagulase-negative *staphylococci*, gram-negative rods, *Corynebacteria*, and yeasts. The subungual area should be cleansed with particular attention, using a disposable fingernail cleaner and/or fingernail brush under running water.⁷
2. Artificial fingernails should not be worn by surgical team members.¹⁴
 - A. Artificial fingernails are more likely to harbor greater numbers of microorganisms, as compared to the natural fingernail, even after handwashing.^{5,13} Personnel wearing artificial nails have been epidemiologically connected in outbreaks of infection.^{2,7,10,11,12}
 - B. Fungal growth can occur between the natural fingernail, and the artificial fingernail due to moisture, and products used to apply the artificial fingernail.⁹
3. Studies have established that there is no increase in microbial growth related to wearing freshly applied nail polish. However, it is recommended that fingernail polish should not be worn by surgical personnel.
 - A. Chipped fingernail polish may support microbial growth on the fingernails.^{6,15}
 - B. Data does indicate that chipped nail polish or polish that has been worn for more than four days does harbor greater numbers of bacteria.^{6,15}
4. The relationship between long fingernails and surgical site infections has not been established. However, it is known fingernails that extend beyond the fingertips are

more difficult to clean and keep clean, and therefore could contribute to an increase in the potential for harboring greater numbers of microorganisms.¹

- A. Fingernails that extend beyond the fingertips add to the potential for scratching patients during patient care, transfer and transport to and from the surgical suite and O.R., and while positioning the patient.
- B. Fingernails that extend beyond the fingertips increase the risk of tearing or puncturing gloves .¹
- C. It is recommended that the natural nail tips be kept less than ¼ inch long and not significantly extend past the fingertips.²

Standard of Practice III

The reinforcement of hand and fingernail hygiene should be constantly emphasized with surgical technology students and peers.

- 1. Hand and fingernail hygiene begins in the classroom, lab and clinical rotation, and should be constantly emphasized to the student.
- 2. Education and promotion of hand and fingernail hygiene have been targeted as the primary factors in gaining compliance by HCWs.

Competency Statements

Competency Statements	Measurable Criteria
<p>1. Certified Surgical Technologists (CSTs) and Certified First Assistants (CFAs) have the knowledge and proper skills, concerning patient care practices in the perioperative environment.</p> <p>2. CSTs and CFAs are highly knowledgeable about surgical asepsis, modes of microbial transmission, and proper hand and fingernail hygiene practices related to providing safe patient care practices in the perioperative environment.</p>	<p>1. Educational standards as established by the <i>Core Curriculum for Surgical Technology</i> and <i>Core Curriculum for Surgical Assisting</i>.^{3,4}</p> <p>2. The subject area of proper hygiene as related to safe patient care practices is included in the didactic studies as a surgical technology and surgical assistant student.</p> <p>3. Students demonstrate knowledge of recommended practices of hand and fingernail hygiene and preventing microbial transmission in the surgical environment in the lab/mock O.R. setting and during clinical rotation under the supervision of instructors and preceptors.</p> <p>4. As practitioners, CSTs and CFAs apply the principles of hand and fingernail hygiene in providing safe patient care practices in the perioperative environment.</p>

	5. CSTs and CFAs complete continuing education to remain current in their knowledge of microbial transmission and safe patient care practices.
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