Environmental Surface Contamination During Handwashing (9/03)


Effective handwashing is important in infection control. The ability of the various stages of handwashing to decrease skin-surface microbial counts has been documented. However, an important element, environmental surface cleanliness, and the potential for contamination of the hands during the process has not been well studied or quantified. The purpose of this study was to determine the general organic, microbial, and staphylococcal load on 3 categories of contact surfaces (i.e., faucet handles, liquid-soap dispensers, paper-towel dispenser exits) in hospital wards that could be touched by hands during the handwashing process and to evaluate the data within the context of hand-mediated cross-infection. There were no statistically significant differences between the types of surfaces sampled and their location in the ward. However, overall faucet handles were more likely to be contaminated and be in excess of benchmark values than paper-towel dispenser exits.

DIS Comment: Contamination of hand-contact surfaces could be implicated in the spread of infections, could act as a reservoir for microorganisms, and could contribute to hand contamination during or after handwashing. Faucet handles have long been identified as a possible site for cross-contamination because they are touched early in the hand hygiene process with contaminated hands and are more likely to be wet. For these reasons, it is frequently suggested to use automatic faucets or to use a paper towel to turn off the faucet after drying your hands. However, the study noted that even though 60% of the faucet handles were lever arm, patients and health-care personnel frequently ignored the no-touch hand contact instructions. Although, the paper-towel dispenser exits were less contaminated in this study, it is still a concern as they are the final surface that may be touched and the authors noted this required further investigation. The article is also a good review of five interrelated components of hand hygiene:

1. The hands should be hygienic with short, clean nails, and free from dermatologic disruption and jewelry.
2. Compliance - getting health-care personnel to wash their hands at appropriate times.
3. Effective washing of the hands.
4. Thorough hand drying aids the removal of soil, loose skin, and microorganisms by application of kinetic/frictional energy. Remaining moisture can enhance the pick up and deposition of any remaining microorganisms.
5. Prevention of hand contamination at any time during the whole process.