

Disinfecting Computer Keyboards (6/06)

Rutala WA, White MS, Gergen MF, Weber DJ. Bacterial contamination of keyboards: efficacy and functional impact of disinfectants. *Infect Control Hosp Epidemiol* 2006;27:372–377.

Computers are ubiquitous in the health-care settings and have been shown to be contaminated with potentially pathogenic microorganisms. This study was performed to determine the degree of microbial contamination, the efficacy of different disinfectants, and the cosmetic and functional effects of the disinfectants on the computer keyboards. The study assessed the effectiveness of six different disinfectants (wipes containing chlorine, alcohol, or phenol and three containing quaternary ammonium) against three test organisms (oxacillin-resistant *Staphylococcus aureus* [ORSA], *Pseudomonas aeruginosa*, and vancomycin-resistant *Enterococcus* species) inoculated onto study computer keyboards. The computer keyboards were also assessed for functional and cosmetic



damage after disinfectant use. Potential pathogens cultured from more than 50% of the computers included coagulase-negative staphylococci (100% of keyboards), diphtheroids (80%), *Micrococcus* species (72%), and *Bacillus* species (64%). Other pathogens cultured included ORSA (4% of keyboards), OSSA (4%), vancomycin-susceptible *Enterococcus* species (12%), and nonfermentative gram-negative rods (36%). All disinfectants, as well as the sterile water control, were effective at removing or inactivating more than 95% of the test bacteria. No functional or cosmetic damage to the computer keyboards was observed after 300 disinfection cycles. **The data suggest that microbial contamination of keyboards is prevalent and that keyboards may be successfully decontaminated with disinfectants. Keyboards should be disinfected daily or when visibly soiled or if they become contaminated with blood.**

DECS Comment: Contaminated keyboards might serve as a mechanism for cross-contamination in the dental setting. Therefore, preventing contamination of the keyboard is critical by not touching the keyboard with contaminated hands or gloves, using plastic barriers on the keyboard or disinfecting the keyboard after contamination has occurred. The risk of transmission from contaminated keyboards could be eliminated if individuals washed their hands after contacting items in the patient care area, but because studies have demonstrated low compliance (approximately 40%) with hand hygiene recommendations, the authors recommend routinely disinfecting computer keyboards in patient-care areas. This study demonstrated that keyboards could be safely and successfully decontaminated using disinfectant wipes. If keyboards are not disinfected they should be covered with a plastic barrier when contamination is likely. Like any barrier used during patient care, the barrier should be changed between patients. If a reusable form-fitted barrier is used, it should be cleaned and disinfected between patients.