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Computer Keyboards and Faucet Handles: Reservoirs of Pathogens in the ICU

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Bures and colleagues, believing computer keyboards and faucet handles to be significant reservoirs of nosocomial pathogens in the intensive care unit (ICU), conducted a study to determine if their hypothesis was true. Sterile swab samples were obtained from 10 keyboards and 8 pairs of faucet handles in the medical ICU at Tripler Army Medical Center during a period of 2 months. Methicillin-resistant *Staphylococcus aureus* (MRSA) obtained from the environmental and patient specimens were identified using pulsed-field gel electrophoresis (PFGE).

A total of 144 samples were obtained (80 keyboards and 64 faucet handles), yielding 33 isolates. The colonization rate for keyboards was 24% for all rooms and 26% in occupied rooms. Rates for faucet handles in all rooms and occupied rooms were 11% and 15%, respectively. The environmental isolates and their prevalence were as follows: MRSA, 49%; *Enterococcus,* 18%; *Enterobacter,* 12%; and all other gram-negative rods, 21%.

Fourteen individual patient isolates were recorded: MRSA, 43%; *Enterobacter,* 21%; other gram-negative rods, 36%; and *Enterococcus,* 0%. PFGE identified an indistinguishable strain of MRSA in two patients, on the keyboards and faucet handles in their respective rooms, and on other keyboards throughout the ICU, including the doctors' station.

The authors concluded that the colonization rate for keyboards and faucet handles is greater than that of other well-studied ICU surfaces in rooms with MRSA-positive patients. The findings suggest an associated pattern of environmental contamination and patient infection not limited to the patient's room. PFGE results have documented an indistinguishable strain of MRSA present as an environmental contaminant on these two fomites and in two patients with clinical infections during the same period. They believe these findings support the hypothesis that these particular surfaces may serve as reservoirs of nosocomial pathogens and vectors for cross-transmission in the ICU setting. New infection control policies and engineering plans were initiated on the basis of these results.

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