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## Medical News

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### Electronic Monitoring Improves Hand Hygiene and Reduces ICU Infection

Swoboda and colleagues from Johns Hopkins University, Baltimore reported on a study to determine whether electronic monitoring of hand hygiene and voice prompts could improve hand hygiene and decrease nosocomial infection rates in a surgical intermediate care unit. Three-phase quasi-experimental designs were used in a nine-room, 14-bed intermediate care unit in a tertiary-care hospital. Phase I was electronic monitoring and direct observation; phase II was electronic monitoring and computerized voice prompts for failure to perform hand hygiene on room exit; and phase III was electronic monitoring only. All patient rooms, the utility room, and the staff lavatory were monitored electronically. Participants were all healthcare personnel including physicians, nurses, nursing support personnel, and ancillary staff, all visitors and family members, and any other personnel interacting with patients on the intermediate care unit. All patients with an intermediate care unit length of stay greater than 48 hours were observed for nosocomial infection. Electronic monitoring was done during all phases and computerized voice prompts during phase II only. Evaluation was performed on a total of 283,488 electronically monitored entries into a patient room with 251,526 exits for 420 days (10,080 hours and 3,549 patient-days). Compared with phase I, hand

hygiene compliance in patient rooms improved 37% during phase II (odds ratio, 1.38; 95% confidence interval, 1.04-1.83) and 41% in phase III (odds ratio, 1.41; 95% confidence interval, 1.07-1.84). On adjustment for patient admissions during each phase, point estimates of nosocomial infections decreased by 22% during phase II and 48% during phase III; on adjustment for patient-days, the number of infections decreased by 10% during phase II and 40% during phase III. Although the overall rate of nosocomial infections significantly decreased when combining phases II and III, the association between nosocomial infection and individual phase was not significant. The authors concluded that electronic monitoring provided effective ongoing feedback about hand hygiene compliance. During both the voice prompt phase and the post-intervention phase, hand hygiene compliance and nosocomial infection rates improved, suggesting that ongoing monitoring and feedback had both a short-term and, perhaps, a longer-term effect.

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