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From Medscape Medical News Electronic Reminder Improves Hand Washing



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May 6, 2011 (Dallas, Texas) — An electronic reminder system improved adherence to hand hygiene among healthcare providers in a pediatric oncology unit, according to a study presented here at the Society for Healthcare Epidemiology of America 2011 Annual Meeting.

Healthcare-associated infections cause morbidity and mortality, and can contribute to antimicrobial resistance. The Centers for Disease Control, The World Health Organization, and The Joint Commission estimate that improvements in hand hygiene could lead to a 50% reduction in hospital-acquired infections.

Currently, methods to determine hand hygiene adherence include direct observation, product utilization, and reporting of hand hygiene activities, but these are subjective and unreliable. The researchers conducted a study of a new hand hygiene monitoring and reminder system among healthcare workers (HCWs) near patient areas in a pediatric oncology unit.

The monitoring system (HyGreen) is composed of a bed monitor that produces a 7-foot safe infrared/acoustic field, an electronic badge for HCWs, and a hand-wash station that automatically monitors hand hygiene activities. Data from all 3 devices were incorporated into a database.

In all, 79 HCWs participated in the 5-week study, resulting in 6315 hand-wash station interactions, 6888 monitor interactions, and 9759 badge log-in events. Any attempt to approach the bed without conducting hand washing was detected by the system, which warned the HCW to first conduct hand hygiene measures. There was a 100% correlation between the badges and monitors and between the badges and hand-wash stations. Both physicians (436 hand-washing events) and nurses (7834 hand-washing events) had hand hygiene compliance of 94%.

During the study period, hospital-acquired infections decreased 89%, and the implementation of the electronic hand-washing monitoring system was the only change during that time.

"These results suggest that the electronic monitoring of hand hygiene among healthcare workers has played an important role in the reduction of hospital-acquired infections in our facility, and could do so in other healthcare facilities [in the United States]," Barbara Simmonds, RN, director of infection prevention and control at Miami Children's Hospital, Florida, said during her presentation of the study.

Reaction among HCWs was mixed. "The nurses embraced it and did a wonderful job with it. The physicians were a tougher sell. We wanted this to be nonpunitive, so we told people, 'you guys are doing a good job, this is going to prove it,'" said Ms. Simmonds.

The results were impressive, according to John Boyce, MD, chief of the infectious disease division at the Hospital of Saint Raphael in New Haven, Connecticut. "I'd be a little bit surprised if everybody saw that degree of reduction of infections, but that's what we're looking for — not only to improve compliance, but also to drive down healthcare-associated infection rates. I think that to the extent that real-time location systems become more and more widespread, they will be adapted to hand hygiene in healthcare settings," Dr. Boyce told *Medscape Medical News*.

The study did not receive commercial support. Ms. Simmonds and Dr. Boyce have disclosed no relevant financial relationships.

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