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Improved intra-operative hand hygiene compliance

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Purpose: The purpose of this study was to measure whether or not the use of a personal hand hygiene device would increase the number of hourly hand hygiene events among non-scrubbed surgical staff during OR cases.

Background/significance: Healthcare-associated infections (HAIs) are a significant issue in healthcare, impacting 10% of hospitalized patients. While many measures routinely used within the acute care environment are aimed at decreasing the risk of HAI, hand hygiene is widely believed to be the most important. Unfortunately, numerous studies have found compliance with hand hygiene to be low among healthcare workers. Pittet (2001) and others have found the lowest levels of adherence in the acute care environment to be associated with having no access to hand hygiene while at the bedside/patient side.

Method: Data were collected in the operating room of a large teaching hospital in the Northeast. A before and after study design was used and hand hygiene events during OR cases were measured. In the pre group (Group 1), wireless data were collected between the dates of 6/14/13-9/27/13 from all the OR wall dispensers in each room, including the one used for in/out hand hygiene. An event was captured electronically each time hand hygiene was performed. The post data collection was also electronic and collected between the dates of 9/30/13-3/7/14. In this group (Group 2) the primary method for hand hygiene was the use of a personal alcohol handrub dispenser that was worn by all non-scrubbed OR personnel during the OR cases.

Results: This study examined the hand hygiene practices of the non-scrubbed OR staff in a total of 133 case days. There were 71 case days of hand hygiene using the wall dispensers (Group 1) and 62 case days using the personal alcohol handrub dispensers (Group 2). An independent sample t-test for equality of means was run to look for group differences on the outcome variable, the number of hand hygiene events per hour during surgical cases. A significant difference ($p < 0.001$) was found in the number of hourly hand hygiene events between the two groups. Because the Levene's test for equality of variance was significant, meaning unequal variance between the groups, the significance using "unequal variance assumed" of $p < 0.001$ was reported. Group 1 had a mean hand hygiene rate of 0.34 uses per hour with a standard deviation of 0.03. Group 2 had a mean hand hygiene rate of 5.99 uses per hour with a standard deviation of 1.12. Thus, the data support that OR staff, who use a personal hand hygiene dispenser completed a significantly higher number of hand hygiene events during surgery than those using the wall dispenser for hand hygiene.

Conclusion: The findings of this study align with much of the published research regarding hand hygiene in the acute care environment. In fact, the rate in Group 1 (0.34) is virtually the same as that previously reported for anesthesia providers (0.38) by Koff, et al (2009). These findings provide additional support regarding the importance of having products or systems readily available at the bedside in order to improve the healthcare worker hand hygiene compliance.

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