



## KEY POINT SUMMARY

### OBJECTIVES

To quantify the relationship between hand hygiene compliance rates and the locations of hand sanitizer locations.

## Effect of hand sanitizer location on hand hygiene compliance

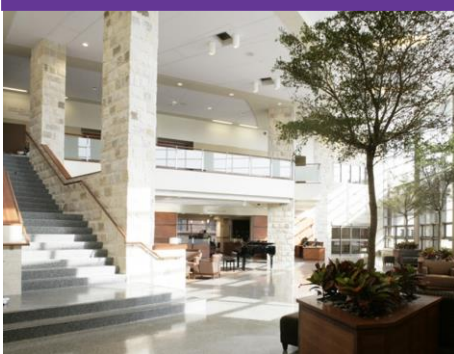
Cure, L., Van Enk, R., 2015 | *American Journal of Infection Control, Volume 43, Issue 9, Pages 917-21*

### Key Concepts/Context

Hand hygiene is a widely accepted practice for preventing the spread of healthcare-associated infections (HAIs). Since the Centers for Disease Control and Prevention (CDC) established guidelines for hospital hand hygiene practices in 2002, healthcare organizations have worked to improve compliance with recommendations and researchers have studied the results of noncompliance. Waterless hand sanitizer dispensers are a practical method for promoting effective hand hygiene practices; however, few studies have examined the effect of the physical locations of these dispensers on healthcare worker compliance, or on specific guidelines for determining ideal locations.

### Methods

This study took place in a 404-bed private hospital. Hand sanitizer dispensers were added retroactively after the CDC's 2002 guidelines were released, and thus were not factored into the original designs of patient rooms and hospital units. Data on hand hygiene compliance rates were extracted from hospital records that were routinely maintained separately from this study. In all, 26,707 hand hygiene compliance observations were observed within a three-year period, with a varied number of observations in each patient room and unit. No new dispensers were added during the study, and no existing dispensers were moved to new locations. "Usability rates" of dispenser locations were calculated in 12 separate patient care units, as well as a "standardization score." This score represented the proportion of rooms with dispensers installed in identical locations (for example, a score of 0.6 indicates that 60% of the rooms have dispensers by the bathroom, while the remaining 40% have dispensers in other locations).



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## Findings

Within the three-year study period the overall hand hygiene compliance rate was 81.6%. Both the usability and standardization scores of units involved in this study were positively correlated with compliance, though the usability score was significantly more correlated. Analysis of usability characteristics indicated that the most important factors in dispenser placement were 1) close location to room entrances and 2) making the dispenser easily visible. All dispensers in the hospital were installed at the appropriate height, making that characteristic irrelevant during analysis.

## Limitations

The authors note that the hand hygiene observers whose data formed the basis of this study were mainly focused on staff entering and exiting patient rooms, meaning hygiene acts inside of patient rooms may not have been consistently documented or reflected in the study. This study took place within one hospital; the results are not universally applicable to all healthcare environments.

## Design Implications

Incorporating ergonomic principles into the placement of hand sanitizer dispenser locations can effectively support staff compliance with hygiene guidelines. This study indicates that placing hand sanitizer dispensers in plain sight and at the appropriate height (85-110 cm) near patient room entrances is strongly correlated with compliance. Designers might also consider standardizing the location of most (if not all) dispensers throughout a facility.

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