



KEY POINT SUMMARY

OBJECTIVES

The objective of this research was to understand how the location and visibility of sinks can impact the frequency and duration of handwashing and the association of this to the presence of microbial contamination in the vicinity of the sink.

DESIGN IMPLICATIONS

Designers may take into consideration the visibility of sinks when deciding on their location in cardiac, pediatric, and neonatal ICUs. The study found that the more a sink was used, the lower the contamination levels of the sink lips and soap dispenser, and the higher the contamination levels of the sink bowls.

The important role of sink location in handwashing compliance and microbial sink contamination

Cloutman-Green, E., Kalaycioglu, O., Wojani, H., Hartley, J. C., Guillas, S., Malone, D., ... & Klein, N. 2014 | *American Journal of Infection Control*. Volume 42, Issue 5, Pages 554-555

Key Concepts/Context

Healthcare-associated infections (HAIs) impact healthcare services around the world, particularly in ICUs. Authors note that although handwashing with soap has been considered to be an effective way to reduce the spread of infections, literature indicates that hand hygiene compliance is low among healthcare workers. In this paper authors report on data regarding the usage of sinks, collected from three different ICUs in a children's hospital in the UK – cardiac, pediatric, and neonatal. Data pertaining to usage of sinks at these three locations were collected as were samples of microbial contamination from different sites of the same sinks. After analyzing the data statistically, the authors concluded that visibility of the sink was crucial to hand hygiene compliance.

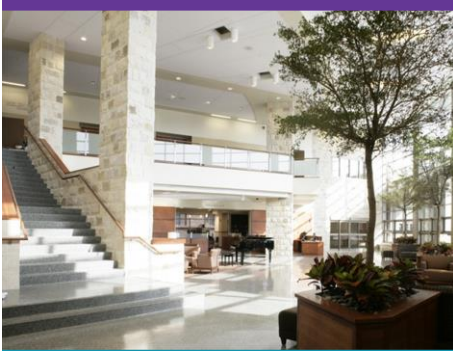
Methods

Observation methodology was used to collect data on the usage of 24 basins for hand hygiene. Each of these sinks was observed three times a day for 1.5 hours for three consecutive days – for frequency and duration of handwashing. Data on bed space occupation were also collected. Microbiologic samples were collected from seven different sites of the same sinks before and after collection of the observation data. Data on sink visibility were obtained from ward plans. Linear regression was used to analyze the observation data and multilevel regression was used to analyze the microbial data.

Findings

With regard to visibility, the study found that

- Even though the bed-to-sink ratio was 1:1, all sinks were not easily visible.



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- The more visible a sink was, the higher was the compliance with handwashing; the authors infer that the visibility was the main determinant of sink usage.
- Bed occupancy had an influence on the duration of handwashing.
- In the case of beds that were occupied and there was a 1-square meter higher visibility of the sink, the duration of handwashing increased by 39 seconds.

With regard to sink contamination, the study found that

- Bacterial contamination was higher in those sink bowls where sink usage was higher
- Bacterial contamination of the sink lips ($P=0.49$) and soap dispensers ($P=0.018$) was lower when the sink usage was higher.

Limitations

The authors did not identify any limitations to this study. One limitation of the study is that the duration of data collection was short. The authors do not specify the times of observation of the sink, and if these times (shift change, etc.) may have impacted data collection.

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