



KEY POINT SUMMARY

OBJECTIVES

The objective was to determine the optimal location for an ABHR dispenser in an ICU single-patient room.

DESIGN IMPLICATIONS

The following may be considered for the location of ABHR dispensers in single-patient rooms. They should be:

Within line of sight

Within reach

Offering unobstructed access to the dispenser

Near familiar objects

Patients and their families weigh in on evidence-based hospital design

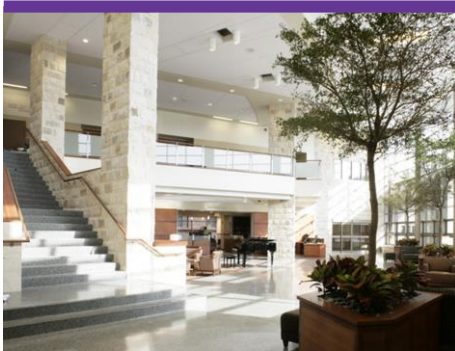
Boog, M.C., Erasmus, V., de Gaaf, J.M., van Beeck, E.A.H.E., Melles, M, & van Beeck, E.F. 2013 | *BMC Infectious Diseases*. Volume 13, Issue 1, Page 510

Key Concepts/Context

The authors allude to literature which says that compliance of hand hygiene (which is crucial to reducing the spread of infectious disease) is low among healthcare workers (HCWs). Literature also shows that alcohol-based hand rubs (ABHRs) improve hand-hygiene compliance by HCWs, which in turn is impacted by location, access to, and visibility of the ABHR dispenser. For this study the authors developed a method to determine the optimal location of ABHR dispensers in single-patient rooms in a thoracic surgery ICU via observations, interviews, and measurements of ABHR use. They found that HCWs considered sites near the sink and the entrance as the two preferred locations for the dispensers.

Methods

This study used both qualitative and quantitative methods to conduct the research - workflow observations, focus group discussions with nurses, interviews with physicians and nurses, and electronic measurements of the frequency of use of the dispensers. The study was conducted in a thoracic surgery ICU in a teaching hospital in Rotterdam, the Netherlands. In the first round, the ABHR dispenser was placed in its original location above the sink in the patient room. HCWs were then interviewed regarding the advantages and disadvantages of this location, their preferred location. This was followed by workflow observations to determine the places in the room most frequented by the HCWs. On the basis of staff responses in interviews and frequency of dispenser use, the next location of the dispenser was determined. This process was repeated three times, with the resulting location for the dispenser in the final round being an optimized one. Data pertaining to frequency of the sites visited and the use of the dispenser were analyzed statistically, while the interview and group discussion data were subject to computer-assisted thematic analysis.



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Findings

The three sites in the patient room where one or more dispensers were located were above the sink, near the entrance, and near the computer.

The study found:

- The most frequented spaces in the patient room by all HCWs were the entrance area and the area where the computer was located.
- The least frequented spaces in the patient room by all HCWs were the areas where the monitor, ventilator, and cupboards, and the area where the drip was located.
- Nurses approached patients more on the patient's right than on their left ($p < 0.001$). Physicians attended patients more on the patient's left than on the right ($p = 0.48$).
- For the location of the dispenser to be conducive for compliance of hand hygiene, the participants considered the following to be important:
 - It has to be in the line of sight.
 - It has to be located on the workflow route.
 - It should be near certain objects (like near the sink, near patient bed, near the computer) and within reach during procedures.
 - Access to the dispenser should not be obstructed by people or objects.
 - It should be located in a familiar place (like the sink).
- Measurements of the frequency of use of the dispensers revealed that HCWs preferred the following locations– near the entrance and near the sink.

Limitations

The authors identified the following limitations to their study:

- The HCWs were aware of the study and this could have affected hand-hygiene behavior.
- The dispensers were placed at the new locations for a short period of time, not giving the HCWs the chance or time to get used to the locations.
- Patient condition may have impacted the use of the dispensers.

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