



Localisation of hand disinfectants affects hand hygiene compliance

The localisation of hand disinfectant dispensers plays a crucial role in their use and thus in hand hygiene compliance (HHC).

Observational study at a 404-bed, private, non-profit community hospital in Midwest of USA

STUDY RESULTS



Total usability ($p = 0.0046$)



Visibility ($p = 0.003$)



Localisation at entrance ($p = 0.00055$)

Factors statistically associated with higher observed HHC rates
Correlation of dispenser characteristics with HHC rates

STUDY DESIGN



12 participating inpatient units

STUDY PERIOD



Data from 2010 until 2012 were analysed

MEASUREMENTS

Measurements during observation phase



hand hygiene compliance



usability of disinfectants in patient rooms



standardisation of disinfectants in patient rooms

PARAMETERS

7 usability characteristics with respect to the localisation of hand disinfectant dispensers were considered:

- 1 easily visible on entry
- 2 easy, unobstructed access
- 3 close to point-of-care
- 4 within reach to point-of-care
- 5 along the workflow path
- 6 within reach to entrance or exit
- 7 placed at optimal height



Research for
infection protection



BACKGROUND

There are many different factors and strategies reported to be important and effective to improve hand hygiene compliance (HHC). This also includes the appropriate localisation of hand disinfectant dispensers.

GOAL

The aim of this study was to assess the correlation of HHC with facility design and dispenser localisation.

DESIGN AND METHODS

The user-friendliness and standardisation of dispensers was evaluated in 12 participating inpatient facilities. To quantify the relationship between compliance, usability and standardisation, data from 2010-2012 were analysed.

For analysis on the room level, 7 characteristics for usability were defined (usability score): easy visibility, unobstructed access, close to entrance, visible from point-of-care, along workflow path, close to point-of-care, and placed at optimal height. Evaluation at the unit level was performed using a standardisation score assessing the consistent localisation of dispensers within the unit. Therefore, 12 standard localisations were defined (e.g., head of bedside, next to bathroom door, or next to the entrance).

Additionally, HHC was measured as part of a quality improvement programme.

RESULTS

A statistically significant association with higher compliance rates was observed for the total usability score ($p = 0.0046$) as well as the usability characteristics visibility ($p = 0.003$), and accessibility of the disinfectant on entrance to the patient room ($p = 0.00055$). Results of all usability characteristics are demonstrated in the adjacent table.

Standardisation alone showed no significant impact on observed compliance ($p = 0.37$).

Overall, a HHC rate of 81.6% was obtained for the hospital.

Impact of usability characteristics on compliance rates

Logistic regression analysis of observed compliance versus individual usability characteristics

| Usability characteristic | Coefficient | p value | Significant correlation |
|----------------------------|-------------|---------|-------------------------|
| Easily visible on entrance | 0.146 | 0.00358 | |
| Unobstructed access | 0.050 | 0.32 | |
| Close to point-of-care | 0.019 | 0.80 | |
| Visible from point-of-care | -0.019 | 0.08 | |
| Along the workflow path | 0.000 | 0.99 | |
| Close to entrance/exit | 0.235 | 0.0055 | |
| Placed at optimal height | n/a | n/a | |

n/a: not applicable

CONCLUSION

Hand hygiene compliance can be influenced by the visibility and accessibility of hand disinfection dispensers. Thus, the localisation of dispensers should be an important part of multimodal interventions to improve hand hygiene.