

# STUDY PROFILE

## Improving hand hygiene compliance before aseptic tasks

### Intervention study

by Charité Berlin with active participation  
of BODE SCIENCE CENTER

#### What was investigated?

- The effects of a **multimodal intervention package** (consisting of **team meetings incl. feedback, training materials** focused on aseptic activities and **disinfectant dispensers**) on hand hygiene compliance, in particular before aseptic activities.
- The impact on the **rate of device-associated bloodstream infections**.

#### What was the result?

- **Hand hygiene compliance before aseptic tasks increased** significantly in the interventional group.
- The total compliance rate did not change significantly.
- The **rate of device-associated bloodstream infections** in the interventional group was **lower** than in the control group.

#### What product reference does the study have?

- As part of the intervention package, the following products were used: Eurodispenser 3 flex, HARTMANN SOPs with integrated hygiene-relevant steps (SOPs – Standard Operating Procedures), training videos, Observe app.

**Establishing multimodal intervention focusing on hand hygiene before aseptic tasks can improve hand hygiene compliance on peripheral wards.**

Source: Aghdassi et al. (2020) A multimodal intervention to improve hand hygiene compliance in peripheral wards of a tertiary care university centre: a cluster randomised controlled trial. Antimicrob Resist Infect Control (2020) 18;9(1):113.

## BACKGROUND

Compliance with hand hygiene (HH) is a key factor in preventing healthcare associated infections.

Data from Germany indicate a huge potential for improvement, particularly in the indication before aseptic tasks.

## GOAL

The study investigated the impact of a multimodal intervention package on HH compliance in tertiary

care as well as on the rate of device-associated bloodstream infections (BSI).

## DESIGN AND METHODS

The cluster-randomised, two-arm interventional study took place between 2017 and 2018 at the Charité Universitätsmedizin Berlin and included peripheral wards from three campuses. 20 of these were selected and randomised into 10 interventional wards and 10 control wards. The intermediate care, palliative care and pediatric wards were excluded. Five observational cycles were conducted in accordance with the recommendations of the World Health Organization (WHO). The four subsequent, quarterly cycles with  $\geq 150$  observations (of which  $\geq 30$  before aseptic tasks) were compared with the first cycles (baseline). The intervention package consisted of a kick off meeting, feedback on hand hygiene behaviour on a quarterly basis, training materials

(focus on hand hygiene before aseptic tasks: 10 step-by-step checklists for optimised workflows (SOPs) that integrated hygiene-relevant steps, as well as 2 training videos) and easily accessible disinfectant dispensers (Eurodispenser 3 flex) at all infusion stands. HH compliance in accordance with the Five Moments of the WHO was documented by trained students using the Observe app and validated by a specialist in infection control. The BSI rate (1 BC with pathogen or 2 BCs with usual skin bacteria within 5 days; intravenous catheter on day/day before BC draw; min. 3 days available, etc.) was recorded for 11 months during the intervention and one month after the intervention.

## RESULTS

Overall, 21,424 HH occasions and 12,920 activities were observed with continuous participation of all 20 wards. While the total compliance rate did not significantly change, it increased before aseptic tasks in the interventional group significantly from 44% to 53% (Table 1;  $p=0.03$ ). In addition,

the total BSI rate per 1,000 patient days in the interventional group was significantly lower at 0.71 than in the control group at 1.16 ( $p<0.01$ ). The difference could be particularly attributed to a lower rate of BSIs that were associated with central venous catheters (interventional group 0.31 vs control group 0.71 per 1,000 patient days;  $p<0.01$ ).

Indication	Compliance rate (%)			
	Baseline (cycle 1)		Intervention (cycles 2–5)	
	IG	Control	IG	Control
Everybody	59	59	61	60
Before touching a patient	56	53	60	56
Before aseptic activities	44	45	53*	52
After risk of exposure to body fluids	67	60	63	68
After touching a patient	71	75	71	70
After touching patient surroundings	54	55	54	54

Table 1: Compliance rates at baseline and in the interventional period. Differences were not significant, except for \* ( $p=0.03$ ); IG=interventional group

## CONCLUSION

The results of the study show that interventional material focused on aseptic activities, had an effect on hand hygiene behaviour before aseptic ac-

tivities and that HH compliance in the interventional group significantly improved with this indication.