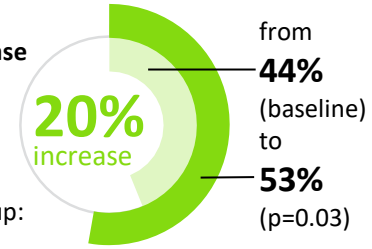
By a holistic approach: more hand hygiene compliance, less infections

How a multimodal intervention programme increased the hand hygiene compliance before aseptic activities and lowered the rate of bloodstream infections.

INTERVENTION STUDY by Charité in Berlin with the active involvement of the **BODE SCIENCE CENTER**.

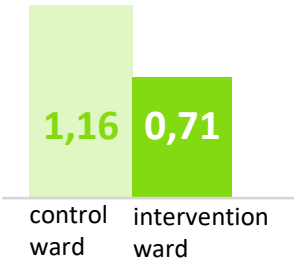
STUDY RESULTS

Significant increase in hand hygiene compliance before aseptic procedures in intervention group:



from **44%** (baseline) to **53%** (p=0.03)

Lower rate of bloodstream infections per 1,000 patient days in intervention group:



STUDY DESIGN

Two-arm cluster randomised intervention study

10 normal wards for **intervention**
10 normal wards for **control**

STUDY PERIOD

2017–2018;
intervention phase of one year

MEASUREMENTS

Measurements during intervention phase

Observation of hand hygiene compliance with the Observe App

Rate of positive blood cultures per 1,000 patient days

INTERVENTIONS

Focus on aseptic tasks

Team meetings with feedback sessions

HARTMANN SOPs with integrated hygiene-relevantsteps (SOPs – Standard Operating Procedures)

Training videos

Eurodispenser 3 flex on all infusion stands

Research for infection protection

Source: Aghdassi et al. (2020) A multimodal ntervention 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.

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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 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 ≥150 observations (of which ≥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; 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).

COMPLIANCE RATE (%)

	Baseline (cycle1)		Intervention (cycle 2-5)	
INDICATION	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: 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 activities and that HH compliance in the interventional group significantly improved with this indication.

Research for infection protection

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