

## Prehospital infection control and prevention in Denmark: A nationwide cross-sectional study on guideline adherence and microbial contamination of surfaces

2019 Vol. 2

DEMC8 abstracts

Heidi Storm Vikke

Falck Denmark A/S - University of  
Southern Denmark

Matthias Giebner

Akutmodtagelsen Aabenraa

Hans Jørn Kolmos

Kontaktinformation

e-mail: [hevi@falck.dk](mailto:hevi@falck.dk)

**Background:** Prehospital acute care and treatment have become more complex, and while invasive procedures are standard procedures, focus on infection control and prevention is scarce. We aimed to evaluate guideline adherence, microbial contamination, and associated risk factors.

**Methods:** In a nationwide cross-sectional study, we evaluated guideline adherence to thorough cleaning (TC) once a day, and moderate cleaning (MC) in-between patient courses. Microbial contamination on hand-touch sites (HTS) and provider-related sites (PRS) was assessed by total aerobic colony forming units (CFU) and presence of selected pathogens, using swab and agar imprints. Also, microbial contamination was assessed in relation to potential risk factors.

**Results:** 80 ambulances and coherent EMS providers were enrolled. Adherence to guidelines regarding TC was 35%, but regarding MC it was 100%. In total, 129 (27%) of 480 HTS presented a total CFU > 2.5/cm<sup>2</sup> and/or pathogenic

growth, indicating hygiene failures. The prevalence of selected pathogens on HTS was: *S. aureus* 7%; *Enterococcus* 3% and *Enterobacteriaceae* 1%. Total CFU on the PRS ranged from 0-250/cm<sup>2</sup>, and the prevalence of pathogens was 18% (*S. aureus* 15%, *Enterococcus* 3% and *Enterobacteriaceae* 0.3%). Methicillin-resistant *S. aureus* was found in one sample, and Vancomycin-resistant *Enterococcus* in two. No *Enterobacteriaceae* with extended-spectrum beta-lactamases were recorded.

**Conclusion:** Guideline adherence was suboptimal, and many HTS did not comply fully with proposed standards for cleanliness. Pathogens were demonstrated on both HTS and PRS, indicating that the EMS may be a source of infection in hospitalized patients. Moreover, cleaning effort and time appears associated with microbial contamination, but a comprehensive investigation of risk factors is needed.