Universal Wipes

CLEEN case study



Reducing Healthcare-Associated Infections through Enhanced Cleaning Protocols Utilising Clinell Universal and Sporicidal (Peracetic Acid) Wipes

Background

Healthcare-associated infections (HAIs) pose a significant risk to patient safety, leading to increased morbidity, mortality, and healthcare costs. There is compelling evidence that contaminated surfaces, especially those on items of shared medical equipment, contribute to transmission. Despite advancements in infection prevention and control practices, the effective cleaning of shared medical equipment remains a challenge. The Cleaning and Enhanced disinfection (CLEEN) study aimed to evaluate the impact of enhanced cleaning and disinfection of shared medical equipment on the prevalence of HAIs in a hospital setting.

Setting

The study was conducted at a large public hospital in New South Wales, Australia, across ten wards, each with at least 20 beds, over a 36-week period from March 20 to November 24, 2023.

Situation

A hospital that met the set criteria for the designed study was chosen and agreed to participate. A thorough review and assessment of current cleaning practices identified that shared medical equipment, which often harbours pathogens due to inadequate cleaning, was a significant contributor to the ongoing transmission of micro-organisms that can cause HAIs.

Action

A stepped-wedge, cluster randomised controlled trial (RCT) was designed to assess the impact of enhanced cleaning protocols on reducing HAIs.

The intervention included:

- An additional 3 hours per weekday dedicated solely to the cleaning and disinfection of shared medical equipment for each ward.
- Ongoing education and training for newly recruited cleaning staff, coupled with regular audits and feedback to ensure compliance and effectiveness.
- Detergent-disinfection wipes, specifically Clinell Universal and Sporicidal (Peracetic Acid) Wipes (GAMA Healthcare, Melbourne, VIC, Australia), which are effective against a broad spectrum of bacteria and viruses, were used to provide the additional cleaning.



Key items that were frequently cleaned during the trial included:

- Bladder scanners
- Blood pressure monitors
- Blood testing kits (glucose or ketones)
- Commodes
- Computers on wheels

- Metal trolleys
- Resuscitation trolleys
- Walking frames (pick-up frames, rollator frames, and 4-wheel)
- Wheelchairs

- Infusion pumps
- Intravenous drip stands/poles
- Medication trolleys

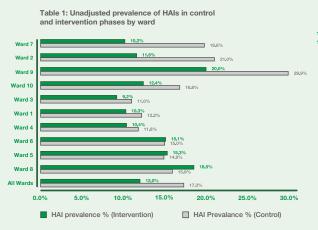
These items were chosen because they are commonly shared between patients and are high-touch points, thus posing a higher risk for pathogen transmission. For equipment that had been cleaned but was in storage ready for use, an 'I am clean' label was applied so that clinical staff knew it had been cleaned.

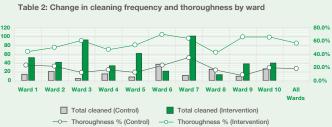
To ensure thorough cleaning, the study employed the EvaluClean™ system, which utilised fluorescent marker (FM) and ultraviolet (UV) light technology. This system was used to audit the cleanliness of the shared medical equipment. FM dots were placed on frequent touch points of equipment, and after 24-36 hours, the equipment was inspected under UV light to assess whether the cleaning was thorough. If any FM was visible, it indicated that the equipment had not been cleaned adequately.

Results

The intervention led to a significant reduction in HAIs:

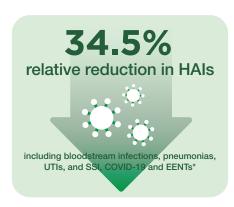
- A 34.5% relative reduction in the prevalence of HAIs was observed, with a statistically significant reduction from 14.9% in the control phase to 9.8% during the intervention phase.
- The intervention was effective in reducing bloodstream infections, urinary tract infections, pneumonias, and surgical site infections from 6.3% to 4.0%.
- For the primary outcome, in unadjusted results HAI prevalence in all wards combined was higher in the control phase than in the intervention phase. (Table 1)

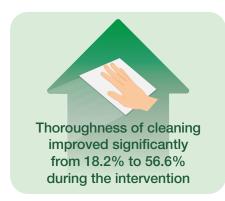




The thoroughness of cleaning improved substantially, with the percentage of cleaned equipment rising from 18.2% to 56.6% during the intervention (Table 2). The intervention was effective in reducing bloodstream infections, urinary tract infections, pneumonias, and surgical site infections from 6.3% to 4.0%.







Clinical impact

This study highlights the critical role of dedicated cleaning and disinfection protocols in reducing HAIs in a hospital setting. The successful implementation of additional dedicated cleaning time, using effective cleaning products, implementing the EvaluClean™ auditing system, and reinforcing ongoing staff education alongside communication of equipment readiness through labelling, healthcare facilities can significantly improve patient safety by reducing the microbial load on shared medical equipment.

Conclusion

The CLEEN study underscores the importance of systematic cleaning approaches in healthcare environments. By dedicating additional time and resources to the cleaning of shared medical equipment, coupled with the use of disinfectant wipes along with ongoing staff education, hospitals can achieve substantial reductions in HAIs. This case study serves as a model for other healthcare facilities seeking to enhance their infection prevention and control practices and improve patient outcomes.

The study's findings advocate for the adoption of similar cleaning protocols in hospitals worldwide, emphasising that even modest improvements in cleaning practices can lead to significant health benefits.

Browne K, White NM, Russo PL, et al. Investigating the effect of enhanced cleaning and disinfection of shared medical equipment on health-care-associated infections in Australia (CLEEN): a stepped-wedge, cluster randomised, controlled trial. *Lancet Infect Dis.* Published online August 13, 2024. doi:10.1016/S1473-3099(24)00399-2 *Urinary tract infections (UTIs), surgical site infections (SSIs) and eye, ear nose and throat infections (EENTs)
Use biocides safely. Always read the label and product information before use.

