

Tags Instruments, Reprocessing

Title **Manual reprocessing of endovaginal and transrectal ultrasonography probes: evaluation of a wipe procedure in comparison with an immersion procedure**

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Source 2025, Journal of Hospital Infection, [DOI: 10.1016/j.jhin.2025.11.023](https://doi.org/10.1016/j.jhin.2025.11.023)

Aim of the study The aim of the study was to investigate the cleaning performance and disinfection efficacy of a standardized, validatable manual wiping procedure for the reprocessing of endovaginal and transrectal ultrasound probes under realistic worst-case conditions. The study also aimed to examine whether such a wiping procedure could be an alternative to immersion procedures.

Methods Ultrasound probes with complex surface structures used in clinical settings were contaminated with ultrasound gel, mucin, and protein (bovine serum albumin (BSA)), as well as with relevant bacteria, yeast (*Enterococcus hirae*, *Staphylococcus aureus*, *Escherichia coli*, and *Candida albicans*), and a viral test organism (SV40 as an HPV surrogate). These contaminations were applied to selected worst-case sites. The reprocessing procedure consisting of a cleaning and subsequent disinfection phase with ready-to-use wipes (gigasept® powerSET3) was carried out according to the manufacturer's instructions. The cleaning performance was assessed by determining the residual protein and TOC, and the disinfection efficacy was measured based on the log₁₀ reduction of the test organisms in accordance with ISO EN 14885. In addition, disinfection by immersion (gigasept® pearls) was investigated as a comparison. All tests were performed multiple times and by different users.

Results The manual wiping process achieved effective cleaning of all ultrasonic probes, while conforming to the required residual protein and TOC values. During the disinfection phase, log₁₀ reductions were achieved for all bacteria (≥ 5 log) and yeast (≥ 4 log) tested, in accordance with normative requirements. In addition, SV40 (≥ 4 log) was completely inactivated, demonstrating effective virucidal activity under worst-case conditions. The results were reproducible across different ultrasonic probe models, test areas, and operators. These results were also obtained for hard-to-reach areas when, as described in the reprocessing instructions, special attention was paid to these areas during reprocessing. The immersion method, which was investigated in parallel, also showed high reduction levels and confirmed the comparability with manual wipe reprocessing.

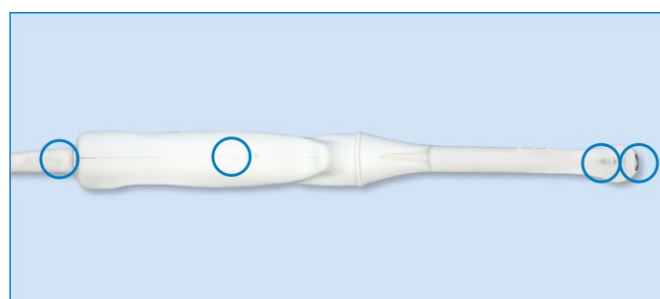


Figure 1:
Representative ultrasound
probe with selected
worst-case contamination
sites (blue circles).

Conclusion The study shows that structured manual reprocessing by wiping of lumen-free endovaginal and transrectal ultrasound probes is safe and effective in realistic settings. The wipe procedure examined met all relevant requirements in terms of cleaning performance, disinfection effectiveness, and reproducibility. Validated wipe disinfection is therefore a suitable alternative to immersion or automated reprocessing.