Cross-Infection risks in ultrasound examinations

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REDUCING ULTRASOUND PROBE CROSS-INFECTION RISK CAN AID IN REDUCING HEALTHCARE-ASSOCIATED INFECTIONS

Among Healthcare-Associated Infections (HAIs), cross-infections due to the use of ultrasound probes in various medical procedures have become a major concern with converging evidence in research literature.

High Risk of infection following Low Level Disinfection

Various global guidelines recommend High Level disinfection for endocavity ultrasound probes that are classified as semi-critical/semi-invasive. However, some institutions and medical teams proceed to Low Level Disinfection (LLD) and may not be fully aware of the cross-infection risks after use of an ultrasound probe. However, LLD has been proven to be insufficient, as demonstrated by the results of a retrospective cohort study using linked national datasets from Scotland:[6]

41%

Patients are 41% more likely to have positive bacterial cultures 30 days after a transvaginal scan where probes were low level disinfected and **26% (HR=1.26) more likely to be prescribed antibiotics.**

26%

3.4x

For transrectal scans, patients were **3.4** (HR=3.4) **times more likely to have positive bacterial cultures** and **75%** (HR=1.75) **more likely to be prescribed antibiotics** ($p<0.001$).

75%

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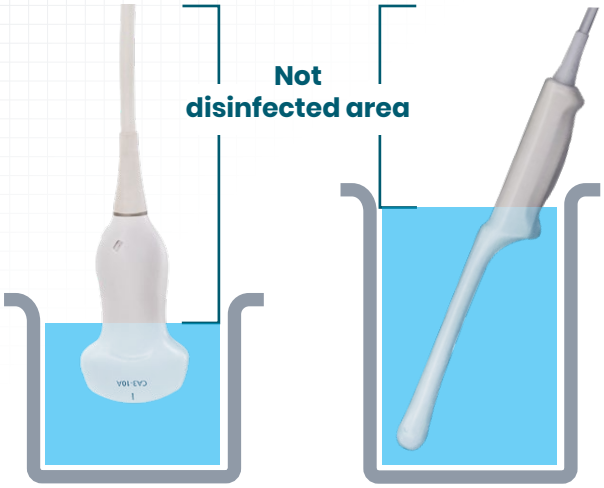
Probe Handles Infection Risk

Ultrasound probe handle is often forgotten in the disinfection process. In a prospective randomized controlled clinical study of two groups, one with an automated process and the other one with a manual process, it has been shown that more than 80% of probe handles that were not disinfected, had residual pathogens, including MRSA.[5] This stresses the fact that the probe handle should also be included in the disinfection.[5]



Probe covers NOT 100% protection proof

Guidelines recommend the use of dedicated probe covers during endocavity examinations to reduce cross contamination. Research studies show that up to 13% of condoms and 5% of commercial covers have tears pre and post-transvaginal ultrasound examinations.[1-4] This highlights the reason why you need to HLD ultrasound probes to reduce cross contamination risk due to the high probability probe covers can have micro-tears.

References: 1. Basseal,j. et al. (2019).Analysis of the integrity of ultrasound probe covers used for transvaginal examinations. Australasian College for Infection Prevention and Control. Dec. **2.** Vickery K, et al. Evaluation of an automated high-level disinfection technology for ultrasound transducers, Journal of Infection and Public Health, 2013. **3.** Masood J et al. Condom perforation during transrectal ultrasound guided (TRUS) prostate biopsies: a potential infection risk. Int Urol Nephrol 2007;39(4):1121-4. **4.** Leroy S. Infectious risk of endovaginal and transrectal ultrasonography: systematic review and meta-analysis. The Journal of hospital infection. 2013;83(2):99-106. NAN0046. **5.** Ngu.A, et.al Reducing Transmission Risk Through High-Level Disinfection of Transvaginal Ultrasound Transducer Handles. Infection Control & Hospital Epidemiology, 36, pp 581-584 doi:10.1017/ice.2015.12 **6.** Health Protection Scotland (HPS), NHS National Services Scotland (2017). NHS Scotland Risk Based Recommendations for the Decontamination of SemiInvasive Ultrasound Probes: Risk of infection following semi-invasive ultrasound procedures in Scotland, 2010 to 2016. Version 1.0.

GER0041-GL-PDF-F-V03