Disinfection of Ultrasound Transducers Used for Percutaneous Procedures

Intersocietal Position Statement

We, the undersigned organizations, wish to address the issue of disinfection of transcutaneous ultrasound transducers used for percutaneous procedures or for the purpose of monitoring other invasive procedures.

Current guidelines from multiple clinical societies have endorsed the use of low-level disinfection (LLD) for transcutaneous ultrasound transducer cleaning and disinfection used for guidance of percutaneous procedures.[1–3] Some organizations are not congruent regarding their recommendations for disinfection.[1, 4–7] In some cases, guidelines that address endocavity transducers are being misapplied to percutaneous and vascular-access applications. The Spaulding classification[8] is meant for *intended* uses, and some of the above guidelines reclassify *intended non-critical applications* as semicritical.[5–7] Recommendations for high-level disinfection (HLD) of sheathed probes used for percutaneous procedures are not evidence-based and will result in unwarranted and unnecessary use of resources, increasing the possibility of *safety events* if percutaneous procedures are performed without ultrasound guidance.[9] This statement addresses several specific points that we regard as pivotal for determining when the use of HLD or a different level is appropriate. Specifically:

1. Ultrasound-guided percutaneous procedures are imaged transcutaneously, ie, through intact skin, to monitor procedures done percutaneously in conjunction with a transducer cover and can be safely performed in conjunction with LLD.[10–12]
2. Transducer covers for transcutaneous procedures are meant to protect the sterility of the procedure, not to make the transducer sterile. An analogous situation exists for human hands in surgical procedures. The gloves that cover the hands adequately protect the procedure from contamination, even though only LLD via hand washing is performed prior to surgery. LLD via proper hand washing plus sterile gloves has been safely used for over a century and LLD of devices placed inside of sterile covers should be equally safe.[10-12]
3. If contamination of covered transcutaneous transducers with blood or other bodily fluids occurs, it can be eliminated with low-level disinfectants that are effective against mycobacteria and bloodborne pathogens

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(including hepatitis B virus, hepatitis C virus, and HIV).[13–17] Human hands are always cleaned LLD and covered with gloves.[18]

4. HLD was meant to clean instruments intended for contact with internal organs or mucous membranes.[19–26] Evidence of infection from ultrasound (US) transducers relates to contaminated gel and improper cleaning of internal transducers.[19, 20, 23–25, 27, 28]

We recommend cleaning and disinfection for the reprocessing of transducers used for percutaneous sheathed US procedures on the basis of the scientific and safety information available. We also call on other organizations that address this issue to disclose contributions from manufacturers of US disinfection equipment.

Respectfully,

American College of Emergency Physicians

American Institute of Ultrasound in Medicine

Association for Professionals in Infection Control and Epidemiology

Association for Vascular Access

Society for Healthcare Epidemiology of America

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