



# Effectiveness of TEE Probe Hanging Times in Reducing the Formation of Bacterial Colonies

## Transesophageal Echocardiogram (TEE) Probe Testing: An Analysis to Evaluate the Formation of Pathogenic Bacterial Colonies on TEE Probes in Storage

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*Radiology Management. November/December 2021*

### Summary and Methods

In this publication, the authors examine the outcomes of a clinical study analyzing the effectiveness of longer clean storage hanging times (the time frame in which a medical device can be stored in a contained, controlled environment that limits damage and exposure to moisture, while also protecting the device from harmful human pathogens) in reducing the presence of harmful pathogens on transesophageal (TEE) probes. The goal of the study was to provide concrete clinical evidence that supports longer hanging times for TEE probes after receiving high-level disinfection. Over the course of their research, the authors processed a total of 140 bacteria samples that were collected from TEE probes that had been stored in a positive pressure HEPA-filtered cabinet for 30 days. Ultimately, the results of the study showed zero pathogenic bacterium on any of the tested probes, leading the authors to conclude that a 30-day hanging time for TEE probes post-HLD is an acceptable amount of time to reduce the risk of pathogenic bacteria growth.

### Discussion and Results

Early on within the high-level disinfection (HLD) revolution, researchers determined that hanging times conducted post-HLD served as a useful protocol in providing probes with an additional level of protection from harmful pathogens. With the majority of the current research on proper hanging times having been conducted almost exclusively on endoscope probes, the authors of this study set out to apply the same practice to TEE probes, with the goal being to develop a clearer understanding of hanging times' overall effectiveness within non-endoscope probes.

In the course of their research, the authors tested three TEE probes, each of which received the same disinfection processing, including pre-cleaning with an enzymatic sponge, a full enzymatic soak in warm water, leak-testing to ensure electrical safety, and full high-level disinfection using an automated endoscopic reprocessor. The probes were then securely stored in a CIVCO Ultrasound TEE Probe Storage Cabinet for 30 days. Afterwards, a total of 140 sample swabs were collected from the probes and processed for microbial colonization. Each sample was placed on a blood agar plate, with bacteria growth considered to be present if more than 10 colonizing forming units (CFUs) were found. Overall, zero pathogenic CFUs were identified across any of the 140 samples tested.

### Conclusions

Ultimately, pathogenic bacterium was detected on none of the TEE probes that were tested. The authors conclude that based on the results of the study, the risk of pathogenic bacteria growth on TEE probes that have been properly stored in a CIVCO Ultrasound TEE Probe Storage Cabinet with positive pressure and HEPA filtration following HLD is low, and that furthermore, a 30-day hang time for TEE probes is an acceptable time frame for ensuring complete decontamination.

### Author Commentary

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