

## **RISKS DUE TO IMPROPER ULTRASOUND PROBE REPROCESSING**

### **Background and Facts**

Effective high level disinfection should eliminate fungi, bacteria, and viruses on an ultrasound probe. Traditional disinfection involves manual methods such as spraying, wiping, or soaking in toxic chemicals, which can be ineffective, inefficient and environmentally unsound. Clinical evidence highlights the various cross contamination risks when ultrasound reprocessing is not performed properly.

### **Manual Disinfection Risks**

As well as being potentially inconsistent, manual processes can also be arduous for the operator, leading to a risk of error and a lack of compliance. Additionally, there is the risk of exposure to dangerous chemicals.

Clinical research confirms the drawbacks of traditional disinfection processes:

- A study that evaluated endoscopy reprocessing practices, including employee perceptions and occupational health issues, found there was “extensive non-adherence with reprocessing guidelines when manual methods were used.” Further, “automation resulted in better compliance with guidelines and reduced [health problems] associated with reprocessing.” Employee compliance to high level disinfection recommendations was observed as only 1.4% for manual methods versus 75.4% for an automated process.<sup>1</sup>
- Manual disinfection of medical devices has been shown to lead to an increased risk of operator error if protocols are not followed correctly and poor protocol compliance can lead to an increased risk of infection transmission for patients.<sup>1,2</sup>
- A non-fatal case of hepatitis C and a fatal case of hepatitis B have been linked to improper ultrasound transducer disinfection.<sup>3,4</sup>

### **Probe Handle Risk**

Some ultrasound probes cannot be immersed in bulk liquids due to potential probe damage, so users avoid disinfecting the handle. Additionally, manual wipe-based disinfection systems may not specify disinfection of the probe handle and practice can vary between users.

While there is no specific guidance for ultrasound probe handle disinfection, a number of experts have noted that it is imperative for reprocessing guidelines to be updated.<sup>5,7</sup>

Clinical research confirms the necessity of proper handle disinfection:

- Residual bacteria, including pathogens such as methicillin resistant *Staphylococcus aureus* (MRSA), persist on more than 80% of handles that are not immersed during liquid soak disinfection.<sup>5</sup>
- The frequency of handle contamination was also confirmed in another study showing that more than 80% of handles had residual contamination (after probe reprocessing) where handles were not disinfected.<sup>6</sup>
- Experts have discussed the potential for ultrasound probe handles to act as a reservoir for nosocomial pathogens, which could be transferred to the probe head, sheath or to a patient. This highlights the imperative need for guidelines and healthcare policies to be updated to ensure that the handle and probe are adequately disinfected after every patient use.<sup>7</sup>

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#### References

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