

How safe are your ultrasound probes?

You don't want your patients on antibiotics, fighting infection because an ultrasound probe was not high level disinfected

New population-level study reveals increased risk of infection and antibiotic prescriptions following semi-invasive ultrasound probe procedures

Study highlights the importance of maintaining proper high level disinfection processes for endocavitary procedures to avoid increased risk of infection

The first population-level study of its kind conducted by Health Protection Scotland and NHS Scotland has demonstrated a greater risk of positive microbiological reports and antibiotic prescriptions within 30 days for adults who had undergone semi-invasive ultrasound procedures (SIUP) when high level disinfection was not used as standard of care.¹

During the study period from 2010 to 2016, low level disinfection was the primary method used for the disinfection of endocavitary probes.

The study found that in the 30 days after a transvaginal ultrasound scan, patients were 41% (HR=1.41) more likely to have positive bacterial cultures and 26% (HR=1.26) more likely to be prescribed antibiotics than similar patients who underwent gynaecological procedures without ultrasound ($p<0.001$).

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 ($p<0.001$).

The study authors strongly recommend adherence to the current NHS Scotland guidance which came into effect in 2016. It calls for high level disinfection of endocavitary ultrasound probes.²

In its conclusion, the new study stated: "Analysis of linked national datasets demonstrated a greater risk of positive microbiological reports and community antibiotic prescriptions within 30 days for Scottish adults who had undergone SIUP procedures in Scotland. This indicates that, prior to the publication of NHS Scotland guidance advocating high level disinfection, the re-use of semi-invasive ultrasound probes without high level disinfection posed an increased risk of infection."

"... failure to comply with guidance recommending high level disinfection of semi-invasive ultrasound probes will continue to result in an unacceptable risk of harm to patients."

Official guidance and standards are helping to prevent the risk of ultrasound infections caused by cross-contamination

In line with growing international concerns, official guidance and standards are being released around the world to help prevent the risk of ultrasound infections caused by cross-contamination.

The ACIPC-ASUM Guidelines on the reprocessing of ultrasound transducers (released February 2017) apply Australian and New Zealand standards (AS/NZS 4187:2014 and AS/NZS4815:2006).³

HLD is advised as the minimum reprocessing standard for ultrasound probes used in semi-critical procedures by AS/NZS.

The ACIPC-ASUM guidelines are a world first joint guideline between an infection prevention and ultrasound society and form the minimum standards of practice for

reprocessing ultrasound transducers in Australia.

Ensure you comply

The ACIPC-ASUM Guidelines state that "If the transducer comes in direct contact with non-intact skin, blood or mucous membranes transducers should be cleaned with [and undergo] HLD."

The National Health and Medical Research Council (NHMRC) guidelines for the prevention and control of infection in healthcare are also a useful resource for determining the Spaulding classification of ultrasound probes.⁴

In Australia, the Therapeutic Goods Administration (TGA) regulates the use of disinfectants for the reprocessing of medical devices.

The TGA states "These devices (semi-critical medical devices), when disinfected, must be subjected to at least a high level disinfection process with an 'instrument grade high level disinfectant'. Therapeutic Goods Administration (TGA) Order No. 54, 2009."⁵

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References: 1. Health Protection Scotland, NHS National Services Scotland. NHSScotland Risk Based Recommendations for the Decontamination of Semi-Invasive Ultrasound Probes: Risk of infection following semi-invasive ultrasound procedures in Scotland, 2010 to 2016. Version 1.0. October 2017. Accessible at: <http://www.hps.scot.nhs.uk/pubs/detail.aspx?id=3366>. 2. Health Facilities Scotland, NHS National Services Scotland, Health Protection Scotland. Scotland, March 2016. NHSScotland Guidance for Decontamination of Semi-Critical Ultrasound Probes; Semi-invasive and Non-invasive Ultrasound Probes. Document: HPS/HFS Version 1.0. 3. ACIPC-ASUM. Guidelines for Reprocessing Ultrasound Transducers. Australasian Journal of Ultrasound in Medicine. 2017;20(1):30-40. 4. Australian Government/ National Health and Medical Research Council (NHMRC) Australian Guidelines for the Prevention and Control of Infection in Healthcare (2010). NHMRC; 2010 (<https://www.nhmrc.gov.au/guidelinespublications/cd33>). 5. Therapeutic Goods Order No. 54B. Standard for Disinfectants and Sterilants (Amendment to Therapeutic Goods Order No. 54). Therapeutic Goods Act 1989; 2009 (<https://www.legislation.gov.au/Details/F2009C00327>).