

Multi-Center Study found Bacteria on Reusable Electroencephalography Electrodes

Growing problems with resistant bacteria coupled with concerns for patient safety have increased focus on avoiding hospital-acquired infections. Reusable medical equipment can cause cross-contamination between patients by acting as vectors for infection – especially when the equipment is used in close contact with the patients. Electroencephalography (EEG) cup electrodes are placed directly on the patients' skin that may be non-intact following abrasion. Hence, the electrodes are categorized as a semi-critical device and it is essential that they are clean and free from bacteria.

A recent multi-center study set out to test whether cleaned, ready-to-use EEG cup electrodes might harbor bacteria. One-hundred and twenty-four swaps were systematically performed at four different hospitals across the United States. All samples were cultured, and any identified bacteria species were identified, classified, and tested for antibiotic resistance.

Bacterial growth was found on EEG cup electrodes from all four hospitals. A total of 25% of electrodes were contaminated with 8 different bacterial species – the majority of these were Staphylococcus types. More than 90% of the contaminated electrodes harbored bacteria that were potential - or at-risk for causing human infection and more than half of the bacteria were resistant to one or more types of antibiotics.

The results of the study were presented at the 45th Annual Conference for the Association for Professionals in Infection Control and Epidemiology (APIC) in Minneapolis and published in American Journal of Infection Control AUG 2018. The researchers highlight that "Cleaned reusable EEG electrodes pose a risk of patient cross-contamination" and in the abstract, they conclude: "Use of single-use electrodes and research on scalp infection and infection reduction interventions are warranted".

