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### Improving stethoscope disinfection at a tertiary hospital

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**Background:** Nosocomial infections prolong hospital stays, causing unnecessary deaths. Health professionals and their medical equipment, like stethoscopes have long been known to act as vectors of pathogenic bacteria, increasing resistance to antimicrobials. And it's represented an additional financial burden for health systems and generate high costs for patients and their family. Consequently, disinfection of stethoscopes between the use in one patient and another is required. The aim of this study was to evaluate the improve stethoscope disinfection rates.

**Material/methods:** Material: In phase 1, 69 samples from stethoscopes were analysed of health workers from different sections of the Miguel Servet University Hospital (Zaragoza, Spain) were taken using swabs. Afterwards, 70% alcohol was applied to 39 stethoscopes and the others 30 stethoscopes were cleaned with commercial wipes (Menalind® HartMann Laboratories). After that, new swabs were taken again. In phase 2, we made an information campaign, educational interventions as videotaping by team members reflecting inappropriate practices and the importance of following correct habits, facilitates its viewing in social networks, encouraging its diffusion between the HUMS health staff and other hospital centres. We participated in clinical sessions of services with greater involvement in the study, meeting with the supervisors of these units. In phase 3, 61 specimens were analysed, but not cleaning control were used. All samples were cultured onto sheep blood agar at 35°. The system of Matrix-assisted laser desorption/ionization-Time of Flight (MALDI-TOF) was used to microbiological identification. Negative cultures were stored 24 hours before to confirm the absence of growth.

**Results:** In phase 1: 89.9% (62/69) of stethoscopes before disinfection showed positive culture. The most prevalent microorganism isolated was *Staphylococcus hominis* (44/69) followed by *Staphylococcus epidermidis* (22/69) and *Micrococcus luteus* (10/69). Other species were isolated with lower prevalence, among them Methicillin-resistant *Staphylococcus aureus* (2/69) and *Pseudomonas aeruginosa* (1/69) highlight by the risk that can lead. The two disinfection methods used showed similar effectiveness (90%). In phase 2: involvement in the study was observed at the HUMS health staff. In phase 3: 60.6% (37/61) showed positive culture and the most prevalent isolate was *Staphylococcus hominis* (28/61) and *Staphylococcus epidermidis* (11/61). Only one methicillin-resistant *Staphylococcus aureus* was isolated

**Conclusions:**

1. Most of stethoscopes were contaminated with bacteria.
2. Education and preventive strategies as video, meeting and participation in clinical sessions, produced a positive response in the health workers.
3. The stethoscope contamination rate was improved after these mentioned strategies.