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816. Effectiveness of Aseptic Stethoscope Barriers in Allowing Clean Contact for Clostridioides Difficile-Contaminated Stethoscopes


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Fig 1. Distribution of bacterial growth and genera/species identified in new flexible gastroscope channels after 30 days of patient-use and reprocessing at the endoscopy service of a large Brazilian teaching hospital. *FG1: flexible gastroscope nº1 **FG2: flexible gastroscope nº2 ***FG3: flexible gastroscope nº3 ¥Moisture was visually detected inside the channels during longitudinal cutting for SEM.

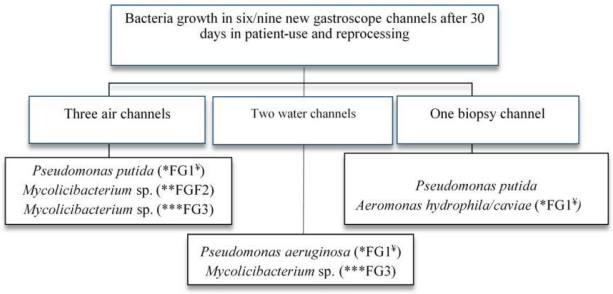
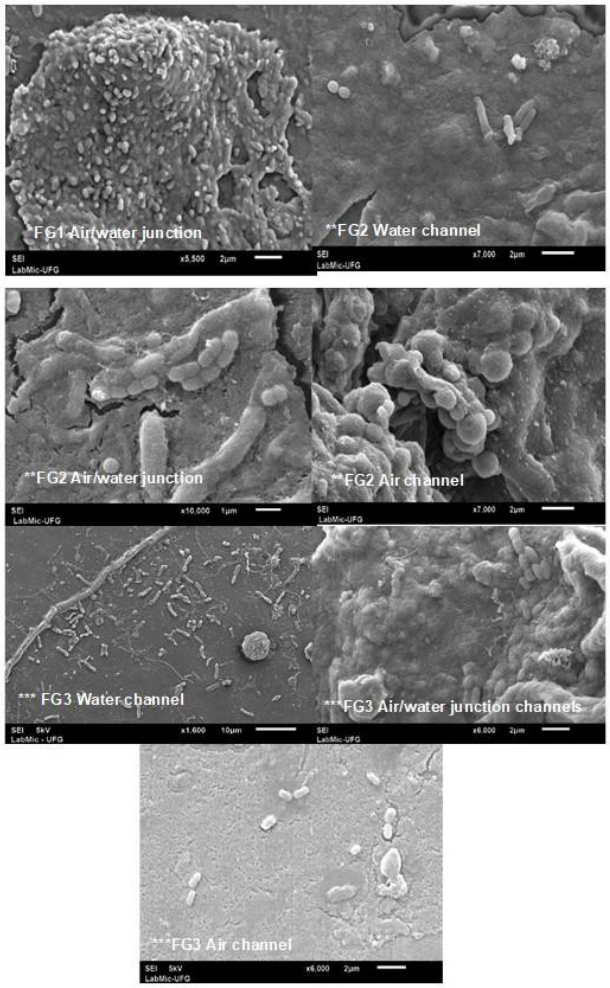



Fig 2. Scanning Electron Micrographs showing extensive biofilm, containing bacilli/rods and/or cocci shape bacteria, on the inner surface of new flexible gastroscope channels after 30 days of patient-use and reprocessing at the endoscopy service of a large Brazilian teaching hospital. *FG1: flexible gastroscope nº1 **FG2: flexible gastroscope nº2 ***FG3: flexible gastroscope nº3




***Conclusion.*** The short timeframe before damage and biofilm accumulation in the channels were evident and suggests that improving endoscope design is necessary, while better reprocessing methods and channel maintenance needs to be investigated in detail. Improving design, maintenance and reprocessing of endoscopes will ensure safe use of these devices.

***Disclosures.*** **Michelle J. Alfa, B.Sc., M.Sc., Ph.D**, **Healthmark** (Consultant, Other Financial or Material Support, Royalty monies from University of Manitoba that are provided through a License agreement with Healthmark)**Kikkoman** (Consultant)**Olympus** (Consultant, Advisor or Review Panel member, Speaker's Bureau)**STERIS** (Consultant, Speaker's Bureau)

### 816. Effectiveness of Aseptic Stethoscope Barriers in Allowing Clean Contact for *Clostridioides Difficile*-Contaminated Stethoscopes

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**Session:** P-34. HAI: Disinfection/Sterilization & Environmental Infection Prevention

***Background.*** Healthcare-associated infections (HAIs), such as *C. difficile* colitis, pose a significant health risk. *C. difficile* is a spore-forming gram-positive anaerobic bacillus capable of surviving on various surfaces. While a strong emphasis has been placed on hand-washing and environmental cleaning with bleach products to limit the spread of *C.* difficile, stethoscope contamination has been poorly addressed. Studies have demonstrated that the stethoscope diaphragm harbors similar levels and type of contamination to one's hands. While a non-alcohol-based solution is recommended for stethoscope hygiene in settings at risk for *C. difficile*, the use of an aseptic stethoscope diaphragm barrier has not been evaluated. Our purpose is to evaluate whether *C. difficile*-contaminated stethoscope diaphragms remain aseptic by the placement of an aseptic diaphragm barrier.

***Methods.*** Fresh cultures of *C. difficile* were diluted to $10^7$ CFU/mL. After inoculating 16 stethoscope diaphragms with *C. difficile*, 8 had an aseptic diaphragm barrier applied, and 8 served as non-barrier controls. Contaminated stethoscopes were placed in an anaerobic incubator, then swabbed at 15 and 30 minutes, 2 and 4 hours, and 1, 2, 3, and 7 days after inoculation, and subsequently plated onto blood, chocolate, and cycloserine-cefoxitin fructose agar. These plates were incubated for 48 hours, and resulting colonies were manually counted. Statistical analysis was performed (RStudio version 1.0.153) by ANOVA (Analysis of Variance) with post-hoc Tukey HSD (Honestly Significant Difference).

***Results.*** Overall, mean colony count was 33 CFU on the 8 stethoscope diaphragms without barriers, vs zero on those with barriers ($p \leq 0.05$). Growth rates were greatest at 48 hours, with colony counts as high as 160. While stethoscope diaphragms without barriers had increasing rates of *C. difficile* culture growth, the presence of the barrier resulted in no growth in 100% of stethoscope diaphragms for up to 1 week after contamination (Figure 1).

C. difficile colony counts from stethoscope diaphragms at time-points up to 1 week.

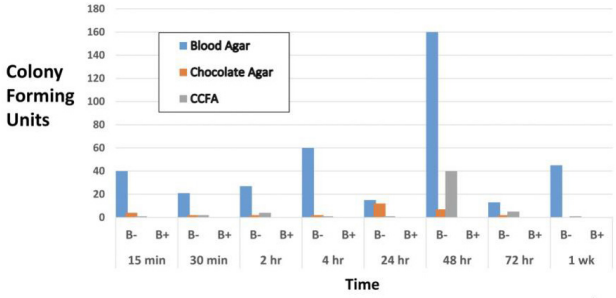


**Figure 1.** *C. difficile* colony counts from stethoscope diaphragms at time-points up to 1 week. Stethoscopes were swabbed at several pre-determined time points up to 1 week. Colony counts are shown on the y-axis. B- – diaphragms without aseptic barriers. B+ – diaphragms with aseptic barriers. CCFA – cycloserine-cefoxitin-fructose agar.

***Conclusion.*** Aseptic barriers allow *C. difficile*-contaminated stethoscope diaphragms to remain without bacterial growth for up to a week. Disposable aseptic diaphragm barriers may be effective in preventing the spread of *C. difficile*.

***Disclosures.*** William F. Peacock, MD, AseptiScope Inc. (Board Member)

### 817. Exploring Microbial Community Alterations during Hospital Animal-Assisted Intervention Programs

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**Session:** P-34. HAI: Disinfection/Sterilization & Environmental Infection Prevention

***Background.*** Animal-assisted interventions, or pet therapy, is increasingly used by healthcare facilities given the numerous benefits in various settings. However, therapy animals may serve as vectors of hospital-associated pathogens. Yet, both pathogenic and protective commensal microbes could be transferred between patients and therapy animals. This pilot study aims to quantify the microbial sharing between patients and therapy dogs, and determine if contact level and a decolonization intervention modifies this sharing.