

**O1085 A randomised control trial of the effectiveness of chlorine impregnated hospital privacy curtains in resisting bacterial contamination**

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**Background:** Privacy curtains are a potential source of infection transmission in healthcare settings. Previous work has shown their ability to become heavily contaminated with MRSA and other hospital associated pathogens. Novel textile interventions with antimicrobial activity might decrease contamination on privacy curtains and subsequently prevent spread of pathogens in healthcare settings.

**Materials/methods:** We completed a randomized control trial to determine the efficacy of chlorine impregnated privacy curtains in preventing bacterial contamination as compared to standard untreated hospital linens. Rooms within the surgical and neurological intensive care unit at University of Iowa Hospitals and Clinics were randomized to receive either chlorine impregnated curtains, chlorine impregnated curtains with hypochlorite spray, or standard curtains. Curtains were sampled twice weekly for a period of 3 weeks. Presence of key hospital associated bacterial pathogens was established via bacterial culturing. The bivariable associations between curtain type and contamination was assessed with the chi-square test or Fisher exact test. Median time to first contamination for each curtain type was compared using the Wilcoxon rank-sum test. Time to first contamination was measured in days, from the day each curtain was hung to the day of first positive pathogenic culture.

**Results:** Bacterial density, measured as total colony counts after 48 hours incubation, increased significantly overtime (p-value<0.0001). There were 1,066 bacterial identifications completed; 8% were determined to be pathogenic bacteria. The majority of pathogenic organisms were MRSA, VRE, *Pseudomonas spp.*, and *Acinetobacter spp.* The pathogenic bacteria culture rate was significantly reduced among the chlorine impregnated plus spray curtains when compared to the control curtains (p-value=0.0493). There was no difference in time to contamination between treatment and control groups (p-value=0.2665). PFGE analysis is ongoing, project completion is projected for February, 2019.

**Conclusions:** Hospital privacy curtains are contaminated with a wide variety of bacterial organisms and could play a key role in environmental contamination in a healthcare setting. Frequent decontamination may play a critical role in infection prevention and control.