Table 2. Log_{10} Reduction of Clostridioides difficile Speros Exposed to Cool UV(C) Technology

| Distance | Log_{10} Reduction in Seconds |
|----------|------------------------------|
|          | 10                           |
|          | 30                           |
|          | 60                           |
| 0% Fetal Calf Serum | 1 Inch: 1.84 | 5 Inches: 1.21 |
|          | 3.18                         | 2.11              |
|          | 2.58                         | 3.48              |
| 10% Fetal Calf Serum | 1 Inch: 2.11 | 5 Inches: UTC1.22 |
|          | 2.44                         | 1.64              |

*Unable to Determine

Disclosures. All authors: No reported disclosures.

1221. Comparison of the Antimicrobial Efficacy of Mobile Ultraviolet Light Devices in a Simulated Patient Room
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Background. Multiple mobile ultraviolet (UV) light devices are available for disinfection of hospital rooms, but few data are available on the relative ability of devices to reduce surface contamination and ease of use. The objective of the present study was to compare the antimicrobial efficacy of several devices in a laboratory setting.

Methods. Using a modification of the ASTM International method E2197, spores of Clostridioides difficile (ATCC strain BAA-1870) suspended in phosphate-buffered saline (PBS) with 5% fetal calf serum were inoculated onto 20 mm stainless steel disks and dried. Disks were attached to right and left bedrails, under bed, call button, chair armrest, floor near device, top of door, bottom of door, floor far from device, toilet seat and grab bar and sink handle in a mock 6.4 × 4.1-meter hospital room with a 1.5 × 2.4-meter bathroom. Disks were exposed using cycle times and device placements recommended by device manufacturers. Spores from exposed disks and unexposed control disks were recovered in PBS with Triton X-100, enumerated using dilution plating, and log reductions were determined by comparing the number of spores recovered from exposed and control disks. Times for setup, treatment and resetting the space were recorded for each device. Results were expressed as mean log reductions and percent reduction/minute of room vacancy. Results were compared using Kruskal-Wallis nonparametric analysis.

Results. Mean log reductions, percent reductions, run times for patient rooms and bathroom, setup/reset times, total room vacancy times, and percent reduction/minute of room vacancy are shown in the Table. There were no significant differences in percent reductions between different locations for each device. There were, however, statistically significant differences between microbial reductions for the different machines (P < 0.05 for all comparisons).

Conclusion. There are many factors to consider in selecting a UV device. These considerations should include mean log_{10} reduction, total vacancy times and percent reduction achieved/minute of room vacancy.

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1222. Are Reduced Concentrations of Chlorine-Based Disinfectants Effective Against Candida auris?
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Background. Currently, sporidical disinfectants such as bleach are recommended for daily and terminal disinfection of the rooms of patients with Candida auris colonization and/or infection. However, bleach and other chlorine-based disinfectants can have adverse effects on surfaces and personnel. Disinfectant solutions with reduced chlorine concentrations are commonly used for other pathogens, but it is not known if diluted or alternative products maintain efficacy against C. auris both in vitro and in vivo.

Methods. We tested the efficacy of different concentrations of a sodium dichloroisocyanurate (NaDCC) product and sodium hypochlorite using the method recommended by the Environmental Protection Agency (EPA) for evaluation of the efficacy of liquid disinfectants against C. auris (EPA MB-05 SOP MB-35-00) and in a simulated patient room. Carriers were exposed to each disinfectant for 1 or 2 minutes. Log reductions were calculated by subtracting viable organisms recovered after disinfectant exposure vs. deionized water controls.

Results. As shown in the figure, the NaDCC product at 4300 ppm tested with a 2 minute contact time reduced C. auris by 25 log_{10} colony-forming units (CFU) but had reduced efficacy with shorter exposure time or lower concentrations. Sodium hypochlorite was effective with 1 or 2 minute exposure times at a concentration of 6,500 ppm, and was effective at 4,000 ppm with an exposure time of 2 minutes. In the simulated patient room, NaDCC reduced C. auris contamination by 26 log_{10} CFUs on all surfaces. A chlorine-based NaDCC product was effective at reducing C. auris. Both NaDCC and sodium hypochlorite products exhibited reduced efficacy at lower concentrations, particularly at concentrations below 4000 ppm. The NaDCC products were also effective in reducing contamination in the simulated patient room. UV-C treatment was an effective adjunct to manual cleaning.

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1223. Endoscopic Retrograde Cholangiopancreatography (ERCP)-Associated Carbapenem-resistant Enterobacteriaceae (CRE) Before and After Implementation of Ethylene Oxide (ETO) Sterilization of Duodenoscopes
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Background. Reusable duodenoscopes utilized for Endoscopic Retrograde Cholangiopancreatography (ERCP) have been associated with the use of duodenoscopes even when no clear breaches in manufacturer-recommended manual cleaning and high-level disinfection have been found. We evaluate the impact of implementation of ethylene oxide (ETO) sterilization on rates of ERCP-associated CRE.

Methods. The charts of all patients who developed CRE colonization or infection between 2012 and 2018 in a large tertiary care teaching hospital were reviewed to determine whether the patient had an ERCP in the 90 days prior to the CRE culture date. Rates of CRE acquisition per 100 ERCP procedures were calculated and compared between 2012 and 2018 in a large tertiary care teaching hospital were reviewed to determine whether the patient had an ERCP in the 90 days prior to the CRE culture date. Rates of CRE acquisition per 100 ERCP procedures were calculated and compared before and after implementation of ethylene oxide (ETO) sterilization in the simulation patient room.

Results. Between 2012 and 2018, 44 patients had first clinical culture with CRE within 90 days of the procedure. The charts of all patients who developed CRE colonization or infection between 2012 and 2018 in a large tertiary care teaching hospital were reviewed to determine whether the patient had an ERCP in the 90 days prior to the CRE culture date. Rates of CRE acquisition per 100 ERCP procedures were calculated and compared before and after implementation of ethylene oxide (ETO) sterilization in the simulation patient room.

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Image 626 to 287x423

Figure 1: Rate of First CRE clinical cultures within 90 days of ERCP per 100 procedures

ETO Following HLD Implemented
2012-2018 CRE Carbapenem Breakpoints Implemented (USP)

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