Table 2. Log$_{10}$ Reduction of Clostridioides difficile Spores Exposed to Cool UV™ Technology

| Distance          | Log$_{10}$ Reduction | 10    | 30    | 60    |
|-------------------|----------------------|-------|-------|-------|
| 0% Fetal Calf Serum |                      |       |       |       |
| 1 Inch            | 1.84                 | 3.18  |       |       |
| 5 Inches          | 1.21                 | 1.34  | 2.58  |       |
| 10% Fetal Calf Serum |                    |       |       |       |
| 1 Inch            | 2.11                 | 3.48  | 2.44  |       |
| 5 Inches          | *UTD*                | 1.22  | 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 door, table top, bottom, 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 determined by comparing the number of spores recovered from exposed and control disks. Times for set-up, 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 Kruskall-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 were calculated for each device. These considerations should include mean log reduction, total vacancy times and percent reduction achieved/minute of room vacancy.

| Device                      | Mean log$_{10}$ Reduction | Percent Reduction vs Control | Run Time - minutes (patient room) | Run Time – minutes (bathroom) | Setup/Reset Time - minutes | Total Vacancy Time - minutes | Percent Reduction per Minute of Room Vacancy |
|-----------------------------|---------------------------|-------------------------------|----------------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------------------------|
| A                           | 5.21                      | 99.9883%                      | 34.9                             | 7.5                           | 12.0                      | 54.0                          | 1.84%                                        |
| B                           | 3.73                      | 99.9740%                      | 120                             | 120                           | 23.3                      | 263.3                         | 0.38%                                        |
| C                           | 5.56                      | 99.3105%                      | 6.0                             | 3.0                           | 4.8                       | 13.8                          | 2.22%                                        |
| D                           | 3.55                      | 99.2812%                      | 18.8                            | 0                             | 12.0                      | 30.8                          | 2.24%                                        |
| E                           | 2.54                      | 99.6481%                      | 10.0                            | 3.0                           | 4.0                       | 17.0                          | 3.85%                                        |

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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 20 SOP MB-35-00) and in a simulated patient room. Carriers were exposed to each disinfectant for 1 and 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 4306 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) procedures are challenging to clean thoroughly. Outbreaks of carbapenem-resistant Enterobacteriaceae (CRE) 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 CRE 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 ERCPs performed were calculated and compared pre (ERCP performed January 2012 through February 2015) and post-implementation (ERCP performed March 2015 thru December 2018) of routine ETO sterilization of duodenoscope following high-level disinfection (HLD) with an automatic endoscope processor (AER) rather than HLD alone.

Results. Between 2012 and 2018, 44 patients had first clinical culture with CRE within 90 days of ERCP (36% blood, 34% wound/surgical, 25% urinary and 7% respiratory sources). ETO sterilization of duodenoscopes following manufacturer recommended HLD was implemented March 2015. Rates of first CRE clinical culture within 90 days of ERCP decreased from 0.80 with HLD alone to 0.25 per 100 ERCP procedures with HLD plus ETO (unadjusted IRR 0.31 ETO vs. HLD alone, 95% CI 0.16–0.57, p-value < 0.001). This decrease occurred despite implementation of updated CLSI carbapenem breakpoints in July 2016. Figure 1 shows post-ERCP CRE clinical culture trends over time

Conclusion. Implementation of ETO sterilization for duodenoscopes following HLD reduced our rates of post-ERCP CRE in clinical cultures within 90 days of the procedure.

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