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**Background:** Antibiotic resistance is a growing national threat to public health safety. Nearly 50% of antibiotic prescriptions are not necessary or appropriate in the outpatient setting. We conducted a multimodal assessment to guide antibiotics stewardship program activities and interventions.

**Methods:** A patient and a provider survey was created to assess knowledge, attitude, and behavior toward antibiotics. In addition, a verbal education and distribution of a flowchart to providers in two clinics describing the 2010-IDSA/ESCMID guidelines for treatment of uncomplicated cystitis was provided. Charts were reviewed to assess antibiotics use pre- and post-intervention for a 6-month period.

**Results:** Patient Survey: 85 patients completed the patient questionnaire. 38% recognize the relationship between over usage of antibiotics and the emergence of antibiotic-resistant organisms. Moreover, 17% of participants felt that they were wasting their time if they go to a doctor with an infection and they were not prescribed an antibiotic. Noteworthy, 86% of the patients surveyed wanted to learn more about antibiotics. Provider Surveys: Providers chose guideline-appropriate treatment for acute uncomplicated cystitis 56% of the time, and for uncomplicated pyelonephritis 44% of the time. Over 75% of the non-guideline appropriate treatments were due to an incorrect duration, with a majority (>85%) prescribing antibiotic longer than required. Intervention: During the pre-intervention 24 patients (65%) received an antibiotic with a guideline concordant dose, duration, and frequency. Post intervention 12 patients (32%) received a longer duration than recommended. Post-intervention, 55% received an overall guideline-concordant antibiotic demonstrating there was no significant change in prescribers’ practices after the intervention. Post intervention 12 patients (39%) received a longer duration than recommended.

**Conclusions:** There is an unmet need to address patient and provider knowledge deficits and behaviors towards antibiotics. Future projects will need to include a more active approach to antibiotic stewardship in order to engage both patients and providers.

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**ADS 04**

**Rates of Clostridioides difficile at an Urban Hospital During Initial COVID Pandemic Wave**

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**Background:** During the first three months of the COVID 19 pandemic, our facility cared for an influx of patients. At the peak, the daily census exceeded 200 patients with COVID 19. Surveillance for healthcare acquired infections (HAIs) continued throughout this time. Despite the acuity of the patients and the frequent use of antibiotics, the rates of Clostridioides difficile lab ID (CDI) events remained relatively stable. We sought to determine the validity of this rate.

**Methods:** To determine if cases of CDI were missed, we compared the 3-month rate per 10,000 patient days in 2020 to the same time period in 2019 (March, April, and May). The number of tests ordered during the two periods was also compared. Additionally, the Doctor of Pharmacy from our antibiotic stewardship team reviewed all orders for oral Vancomycin to determine if empiric CDI treatment was initiated without confirmatory testing.

**Results:** The CDI rate for the 3 months in 2019 was zero compared to 0.48 per 10,000 patient days during the peak of the pandemic. The number of tests increased in the 2020 period to 17.5 per 10,000 patient days versus 15.8 in the 2019 period. Three patients received oral Vancomycin, each of whom had valid indications.

**Conclusions:** Based on this data, CDI cases were not underreported. We speculate that the lack of an increase in CDI rates may be attributed to: Increased hand hygiene by staff — compliance increased to 91 % in 2020 compared to 83 % in 2019; enhanced attention to cleaning and high level disinfection, and Improved adherence to use of personal protective equipment.

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**ADS 05**

**Reduction of False-positive Blood Culture Rates Using a Passive Blood Diversion Device in an Urban Academic Pediatric Emergency Department**

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**Background:** Blood cultures contaminated with common commensals during collection contribute to antibiotics overuse, return visits to the Emergency Department (ED), and increased overall medical costs. There are published quality improvement projects aimed at implementing best practices to reduce false positive blood culture (FPBC) rates in adults, but literature is lacking in pediatrics, and few studies include the use of passive diversion devices designed to remove an aliquot of blood likely to contain skin flora. FPBC rates in our pediatric ED range from 0.45% to 5.63%. Our FPBC institutional goal is < 1.5%. Nurse educators provide targeted education for nurses to decrease FPBC results. We hypothesized that the addition of a passive diversion device would decrease FPBC rates in pediatric patients.

**Methods:** In an urban, academic, freestanding pediatric hospital, the ED has 35,000 patient encounters and obtains 2800 blood cultures annually. In each study period, passive blood diversion devices were bundled with collection supplies. Education with best practices for technique, use of the device, and instructions to record device non-use were provided. Positive blood culture results were reviewed by the Infection Preventionist to determine true infection versus FPBC.

**Results:** In the first study period, 341 blood cultures were drawn with an overall FPBC rate of 1.5%. The rate of FPBC when the device was not used was 10.5% (4 of 38). In the second study period, 905 blood cultures were drawn with an overall FPBC rate of 0.22%. The rate of FPBC when the device was not used was 6.06% (2 of 33). Zero FPBCs occurred with device use in each study period (0 of 303) and (0 of 874).

**Conclusions:** This significant reduction (by Fisher’s exact test p = 0.0001) suggests that employing a passive blood diversion device in addition to targeted education may decrease FPBCs; antibiotics overuse, costs, and return visits in the pediatric ED setting.

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**Disinfection and Sterilization**

**DS 06**

**Antiviral Activity of a Continuously Active Disinfectant Against the Human Coronavirus 229E**

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**Background:** Background: Contaminated hospital room environmental surfaces and noncritical medical devices are a potential source of transmission of healthcare pathogens including severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Technologies that provide continuous decontamination between episodes of manual cleaning and disinfection could reduce the risk for transmission of SARS-CoV-2 from surfaces in rooms of coronavirus disease (COVID-19) patients. The aim of this study was to evaluate a continuously active disinfectant (CAD) that is registered by the Environmental Protection Agency (EPA) to kill microbes (including viruses) on surfaces for >24 hours.

**Methods:** Methods: We investigated the CAD against the human coronavirus, 229E, using the EPA “Protocol for Residual Self-Sanitizing Activity of Dried Chemical Residuals on Hard, Non-Porous Surfaces”. The method simulates contact and touches by incorporating “wear” of the test surface as well as re-inoculations of the test and control surfaces over at least 24 hours. The test surfaces were inoculated with ≥5-log10 per carrier, treated with the novel disinfectant, allowed to dry, and then abraded using a standardized abrasion machine under multiple alternating wet and dry wiping conditions (6 dry cycles, 6 wet cycles, total 12 cycles [2 passes per cycle=24 passes] each 24 hours) interspersed with 6 re-inoculations (or 12 re-inoculations in 48 hours) with ≥3.75-log10 of the test pathogen. After 24 or 48 hours, the surface was reincubated with ≥5-log10 a final time, and the ability of the CAD to kill >99.9% of 229E with 1- or 5-minute contact times was measured on glass.

**Results:** Results: The CAD studied demonstrated excellent sustained antiviral activity (≥4.0-log10 reduction) against 229E with 1- and 5-minute contact times after 24 and 48 hours.

**Conclusions:** Conclusion: Based on our data using 229E, CAD may reduce or eliminate the role of contaminated environmental surfaces and noncritical equipment in transmission of SARS-CoV-2.

**DS 07**

**Assessing the Efficacy of Human Papillomavirus Disinfection and the Risk of Transmission from Clinical Lesions**

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Background: HPV genomes can be detected on medical devices following hospital disinfectant procedures. Recent reports concluded that oncogenic HPVs derived from laboratory tissue-based models are not susceptible to commonly used high-level disinfectants, intensifying concerns that medical instruments may provide transmission of nosocomial HPVs infections. Therefore, we determined the infectious load of HPVs from clinical lesions and investigated the effectiveness of disinfectants on HPV virions derived from laboratory model systems.

Methods: Infectious HPV virions were isolated from cell culture, organotypic epithelial tissue cultures, and mouse xenografts. Clinical samples from recurrent respiratory papillomas (RRPs) and anogenital warts were obtained under IRB approval. The infectivity of HPV virion stocks was measured by the detection of spliced viral E1^E4 mRNAs and with a quantitative novel focus assay in infected keratinocytes. Infections were validated by time-dependent detection of E1^E4 mRNAs, resistance to ribonuclease treatment and susceptibility to antibody-mediated neutralization. Our infectivity assay demonstrated a dynamic range of >3.5-log10. Suspension-based disinfection assays employed diluted ortho-phthalaldehyde (OPA) and 0.825% hypochlorite.

**Results:** In contrast to prior reports, we found that validated HPV virions obtained from a variety of sources were susceptible to ≥2.5 to 4 log10 reduction in infectious titer when exposed as directed to OPA or hypochlorite. Crude HPV preparations failed to meet the infectivity criteria. Such unvalidated virus stocks are likely to produce spurious results and lead to confounding conclusions. Assessment of HPV infectious titers from clinical lesions suggested that compared to common warts, clinical RRP and anogenital warts have lower levels of virions present at apical surfaces.

Conclusions: As the levels of infectious virions recovered from HPV-induced lesions fell below those used in our assays, we conclude that with proper washing of contaminated medical instruments, OPA and hypochlorite disinfection will minimize potential risk of HPV transmission in associated medical settings.

**DS 08**

**Implementation of a Successful Sterilization and High-Level Disinfection Outpatient Program**

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Background: To ensure that new acquired clinics perform sterilization and high-level disinfection (HLD) according to best practice guidelines, a comprehensive competency program was begun by our Infection Prevention (IP) Program. The competency program included a classroom session, reprocessing demonstration, and a subsequent competency checkoff. The program reviewed topics pertaining to point of care cleaning, cleaning, instrument inspection, preparation and packaging, autoclaving, logging, and biological indicators (for sterilization) and other quality control items.

Methods: IP specialists conducted a detailed inspection and comprehension assessment of the clinics’ sterilization and HLD practices that mirrored the competency program. Baseline IP surveys were completed between 2014-2016 and were compared to phase-one (2016-2017), phase-two (2017-2018) and phase-three surveys (2019-2020) to measure the competency programs impact on reprocessing practices. Only clinics that performed sterilization or HLD during all three surveys were included. For analysis, the sterilization scores were further divided into reprocessing area, point of care/cleaning, preparation/quality, and logging/storage subcategories. HLD scores were separated into reprocessing area, point of care/cleaning, preparation/quality, and after HLD/logging/storage subcategories. Kruskal-Wallis test was used to determine significance for the overall clinic average.

**Results:** A total of 38 clinics were included in the sterilization analysis, and 8 clinics in the HLD. The overall clinic scores for sterilization were baseline (65%), phase-one (93%), phase-two (94%) and phase-three (94%) (p-value: 

**Conclusions:** The competency program improved sterilization and HLD reprocessing in every category assessed and it has sustained for the next five years validating the value of a comprehensive competency program with an education, demonstration, and evaluation component.