

transplant, documented concern for symptoms consistent with urinary tract infection prior to the procedure, or receiving antibiotics for another condition were excluded. Both inpatient and outpatient preprocedural, intra-operative and postprocedural antibiotics were evaluated. Pre-procedural urine cultures results, attending of record, and type of procedure were correlated with prophylaxis practices using a one way ANOVA.

Results: Of the 80 patients reviewed 41.3% received only single dose pre-operative prophylaxis and 57.5% received Discussion:

Nearly half of patients who underwent urologic procedures had a prophylaxis duration of < 2 4 hours in concordance with the AUA best practice recommendations. Opportunities exist for optimizing agent selection education. No difference in length of prophylaxis was found to correlate between different procedures performed. The presence of pre-operative ASB and ordering attending were found to correlate with an increased duration of prophylaxis. A future institutional practice guideline and order set for urologic procedure antimicrobial prophylaxis may be necessary to optimize agent selection and duration for these GU procedures.

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Presentation Type:

Poster Presentation

Subject Category: Antibiotic Stewardship

Estimated Carbon Dioxide Emissions Associated with Unnecessary Intravenous Antimicrobials Administered in the Hospital Setting

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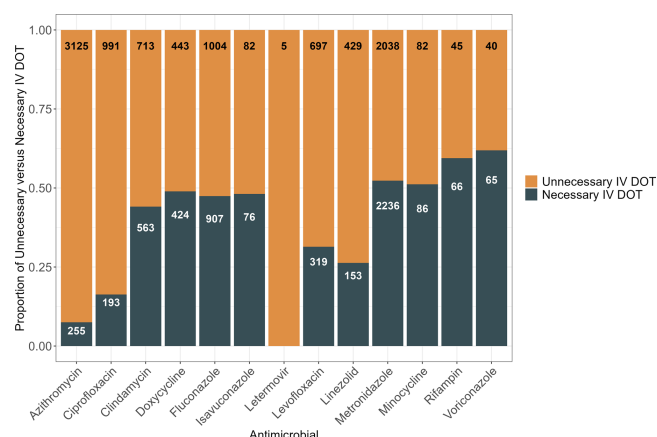
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Background: Hospitals have been recognized as major drivers of the deleterious environmental impacts of human industry. Intravenous (IV) therapy and its associated preparation and administration materials account for a large component of the plastic waste produced by hospitals. Switch therapy refers to transitioning antimicrobials from the IV to the enteral (PO) route. Despite this being a well-established practice, it has not been studied extensively in the context of reducing hospital-generated plastic waste. This study investigated the waste which could be avoided through optimization of IV to PO switch therapy. **Method:** A retrospective cohort study was performed at a large academic center in a metropolitan area. We included all adult patients receiving an IV antimicrobial with a highly bioavailable PO equivalent between October 2023 and September 2024. For a randomly selected subset of each agent we determined the total number of days during which patients would have been eligible for PO conversion based on our institution's policy. This was used to determine the mean potential IV days of therapy (DOT) saved for each agent. The mean IV DOT saved were then extrapolated to the total number of patients receiving the corresponding antimicrobial agent over the course of the year to calculate a final estimated annual IV DOT which could be saved through optimized IV to PO switch therapy. A carbon emissions estimation tool was then used to estimate the carbon dioxide equivalents of the solid waste generated from the IV DOT saved. **Result:** A total of 15,037 DOT of IV antimicrobials with a highly bioavailable PO alternative were administered over the course of a year, of which an estimated 9,694 (64%) IV DOT could have been saved had appropriate switch therapy been implemented (Figure). This amounts to 2,049 kilograms of solid waste, or 0.353 metric tons of CO₂ equivalents, generated through unnecessary administration of IV antimicrobials. This is equivalent to 904 miles driven, 40 gallons of gasoline consumed, 389 pounds of coal burned, or the energy required to maintain 23,392 fully depleted phone batteries at full charge throughout one day. **Conclusion:** Optimizing the implementation of IV to PO antimicrobial therapy can be an effective way of decreasing a hospital's impact on

the environment through reduction of solid waste generation. Future work should prioritize implementing life cycle assessments to broaden our understanding of how the use and production of IV medications impact the environment.

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1. Reduced utilization of meropenem post successful implementation of Neonatal Intensive Care Unit empiric sepsis treatment guideline

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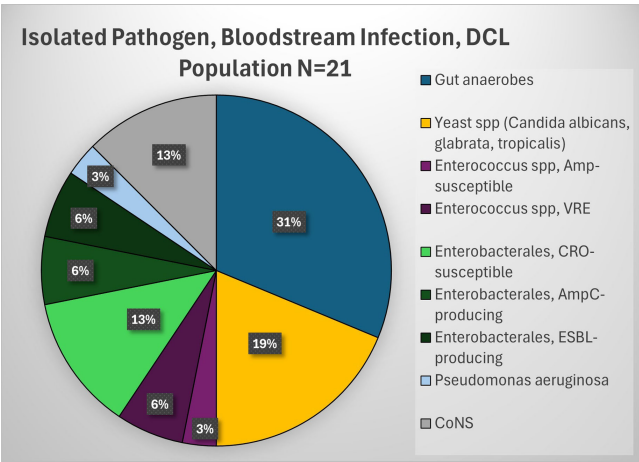
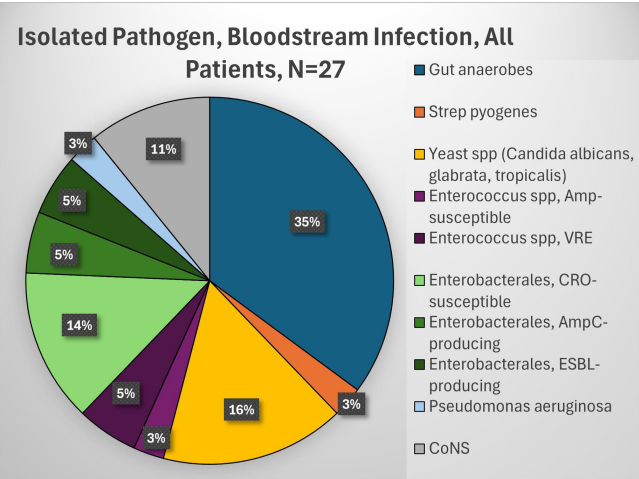
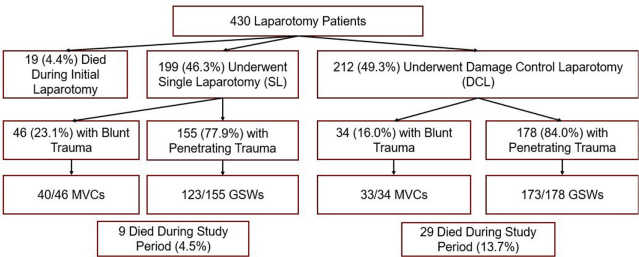
Background: Neonatal intensive care units (NICU) are associated with a high level of antibiotic consumption. Appropriate antibiotic use is crucial to minimize the emergence of resistance and unintended consequences to the patient. Our antimicrobial stewardship program (ASP) performed a baseline review of NICU antibiotic prescribing, which revealed excessive meropenem use and inconsistent empiric antibiotic prescribing practices within the unit. Third generation cephalosporins were vastly underutilized due to concerns of increased *Candida* infections resulting in the unwarranted excessive use of meropenem. **Methods:** In 2023, the ASP created an institution specific empiric NICU sepsis guideline to align empiric prescribing practices with current guidelines and reduce the unwarranted use of carbapenems. After education and guideline implementation, a retrospective review, pre (April 16, 2021 to April 16, 2023) and post (April 17, 2023 to April 17, 2024) implementation was conducted. The primary objectives were to evaluate the effect of the guideline implementation on antibiotic days of therapy (DOT) per 1000 patient-days, overall meropenem and third generation cephalosporin utilization, differences in the incidence of *Candida* infections, and variations in antimicrobial sensitivity. Microbiologic data from sterile site cultures were obtained April 2021 to March 2023 and post-implementation (April 2023 to March 2024) to evaluate cephalosporin and meropenem resistance for each period. **Results:** Meropenem DOT/1000 patient-days declined from 3.9 to 2.0 (51.3%), and an associated rise in third-generation cephalosporin DOT/1000 patient-days from 15.7 to 22.9 (69.7%) occurred post-guideline implementation. There were no observed differences in the incidence of *Candida* infections, cephalosporin resistance in Gram-negative bacilli, or the organisms isolated over the observation period. **Conclusions:**

Guideline implementation safely and successfully reduced the use of carbapenems by providing alternative antibiotic regimens encouraging the use of third generation cephalosporins and reduced antibiotic pressure in our NICU. There were no differences in the incidence of Candida infections, organisms, or resistance patterns. Implementation of this guideline resulted in safe decreases in antibiotic use in the NICU. Cotton CM, McDonald S, Stoll B, et al. The association of third-generation cephalosporin use and invasive candidiasis in extremely low birth-weight infants. *Pediatrics*. 2006;118(2):717-22.

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Incidence and Microbiology of Infectious Complications in Civilian Trauma Laparotomy Patients
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Background: Infection is a common and highly morbid postoperative complication in victims of physical trauma. Current literature analyzing the infectious sequelae of physical trauma predominately comes from military data, where blast trauma, rather than blunt or penetrating trauma, is most common. The epidemiology and management of infectious sequelae of civilian trauma are poorly understood, as is perioperative antimicrobial management of trauma laparotomy. **Methods:** We performed a single-center retrospective chart review using data from University of Chicago’s electronic medical record (Epic) and the National Trauma



Pathogen	N=	%	Pathogen	N=	%
All Bacterial, Total	105		Enterococcus spp., Total	37	
All Bacterial, DCL	71	67.6%	Enterococcus spp., DCL	28	75.7%
All Bacterial, SL	34	32.4%	Enterococcus spp., SL	9	24.3%
Enterobacteriales, Total	51		Enterococcus spp., VRE, Total	7	
Enterobacteriales, DCL	36	70.6%	Enterococcus spp., VRE, DCL	4	57.1%
Enterobacteriales, SL	15	29.4%	Enterococcus spp., VRE, SL	3	42.9%
Enterobacteriales, AmpC-producers, Total	7		Pseudomonas spp., Total	11	
Enterobacteriales, AmpC-producers, DCL	4	57.1%	Pseudomonas spp., DCL	8	72.7%
Enterobacteriales, AmpC-producers, SL	3	42.9%	Pseudomonas spp., SL	3	27.3%
Enterobacteriales, ESBL-producers, Total	6		Staph aureus, Total	15	
Enterobacteriales, ESBL-producers, DCL	5	83.3%	Staph aureus, DCL	8	53.3%
Enterobacteriales, ESBL-producers, SL	1	16.7%	Staph aureus, SL	7	46.7%
Gut anaerobes, Total	26		Staph aureus, MRSA, Total	6	
Gut anaerobes, DCL	18	69.2%	Staph aureus, MRSA, DCL	5	83.3%
Gut anaerobes, SL	8	30.8%	Staph aureus, MRSA, SL	1	16.7%

Pathogen	N=	%	Pathogen	DCL, N (%)	SL, N (%)
Yeast, Total	51		Enterobacteriales	36 (41.9%)	15 (50%)
Yeast, DCL	44	86.3%	Yeast	44 (51.2%)	7 (23.3%)
Yeast, SL	7	13.7%	Enterococcus spp	28 (32.6%)	9 (30%)
Yeast, Fluconazole-resistant, Total	2		Anaerobes	26 (20.9%)	8 (26.7%)
Yeast, Fluconazole-resistant, DCL	2	100%	Total	86	30
Yeast, Fluconazole-resistant, SL	0	0%			

Above, % indicates percentage of culture-positive patients in laparotomy category (Total)

Registry. Patients 16 years and older admitted for level 1-2 trauma who underwent laparotomy between 5/1/2018-3/18/2023 were included. Using informatics and manual chart review, we analyzed patient demographics, rates of infection, sites of infection, timing of infection from initial trauma event, and causative organisms. We compared patients based on mechanism of injury (blunt versus penetrating) and whether patients underwent damage control laparotomy (DCL)—where the abdomen is left in discontinuity after the initial laparotomy—or single laparotomy (SL). **Results:** 430 patients met criteria. The median age was 30. Patients were majority Black (80.9%) and male (80.9%). 80.5% of patients had penetrating trauma, of which 90% were gunshot wounds (GSW). 19.8% had blunt trauma, of which 89% were motor-vehicle crashes (MVC). 19 (4.4%) died during initial stabilization, 199 (46.3%) underwent single laparotomy, and 212 (49.3%) underwent DCL (Figure 1). Of patients that survived initial