48. Local Implementation of an Antibiotic Stewardship Intervention for Asymptomatic Bacteriuria Through Centralized Facilitation Required Minimal Costs and Effort

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Session: P-04. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background. The cost of an antibiotic stewardship intervention is an important yet often neglected factor in antibiotic stewardship research. We studied the costs associated with successful implementation of the "Kicking CAUTI" intervention to decrease treatment of asymptomatic bacteriuria (ASB).

Methods. A central coordinating site facilitated roll-out of an audit and feedback intervention to decrease unnecessary urine cultures and antibiotic treatment in patients with ASB in four Veterans Affairs medical centers. Each site had a physician site champion, a part-time research coordinator, and 1-2 additional participants (often pharmacists). Participants kept weekly time-logs to collect the minutes associated with intervention tasks, and percent full-time effort (FTE) and costs were computed. For weeks with missing logs the average minutes for each activity associated with each type of professional was imputed. Salary information was obtained from the Bureau of Labor Statistics and Association of American Medical Colleges.

Results. Research coordinator time comprised of majority of the personnel time, followed by the physician site champions (Figure 1). Each intervention site required about 10% FTE/year of a research coordinator, and 3.5% FTE/year and 3.8% FTE/year of a physician and pharmacist respectively. The coordinating site required 37% FTE/year of a research coordinator, and 9% FTE of a physician to spearhead the intervention. Research coordinators predominantly spent their time on chart-reviews and project coordination. Physician champions predominantly spent their time on delivering audit and feedback and project coordination. The intervention cost USD 22,299/year per site on average, and USD 45,359/year for the coordinating site.

Table 1: Percent Full-Time Equivalent Required per Year for the Intervention by Professional by Site						
	Site 1 Average (min-max)	Site 2 Average (min-max)	Site 3 Average (min-max)	Site 4 Average (min-max)	Intervention Sites' Average	Coordinating Site Average (min-max)
Infectious Diseases Physician	2.91 1.25 – 6.10	3.37 1.56 – 8.82	4.30 1.52 – 12.52	3.55 1.97 – 6.64	3.53 1.58 – 8.52	9.26 5.68 – 34.58
Research coordinator	8.80 5.99 – 27.07	12.27 5.98 – 26.74	10.08 5.08 – 22.19	8.46 5.26 – 20.01	9.90 5.58 – 24.00	36.93 29.17 – 47.92
Infectious Diseases Pharmacist	2.84 0.91 – 7.03	5.00 0.13 – 8.90	6.29 1.00 – 47.22	1.12 0.03 – 1.98	3.81 0.52 – 16.28	N/A
Nurse practitioner	N/A	1.37 0.15 – 2.82	N/A	N/A	1.37 0.15 – 2.82	N/A
N/A=Not Applicable (this professional type was not on the local site's team)						

Conclusion. The Kicking CAUTI intervention was successful at reducing urine cultures and associated antibiotic use, with minimal time from the local team members. The research coordinators' time was primarily spent on collection of research data, which will not be necessary outside of a research project. Our model of centralized facilitation makes economic sense for widespread scale-up and dissemination of antibiotic stewardship interventions in integrated healthcare systems.

Disclosures. Barbara Trautner, MD, PhD, Genentech (Consultant, Scientific Research Study Investigator)

49. Impact of a Rapid Genotypic Platform for Gram-negative Bloodstream Infections, Paired with an Antimicrobial Stewardship Intervention, on Time to Optimal Antimicrobial Therapy

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Session: P-04. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background. Gram-negative bacteremia is associated with significant morbidity and mortality. Development of an algorithm for antimicrobial selection, using institution-specific antibiogram data and rapid diagnostics (RDT), achieves timely and appropriate antimicrobial therapy. The objective of this study is to assess the impact of a pharmacy-driven antimicrobial stewardship initiative in conjunction with ePlex® BCID on time to optimal antimicrobial therapy for patients with gram-negative bloodstream infections.

Methods. This retrospective, observational, single-center study included adult patients with a documented gram-negative bloodstream infection in whom the ePlex® BCID was employed. A pharmacist-driven antimicrobial stewardship intervention was initiated on December 1, 2020; pre-intervention (December 2019 – March 2020) was compared to the post-intervention (December 2020 – February 2020) period. The following organisms were included: *Citrobacter spp.*, *Escherichia coli*, *Klebsiella aerogenes/pneumoniae/oxytoca*, *Proteus spp*, *Enterobacter spp.*, *Pseudomonas aeruginosa*, and *Acinetobacter baumannii.* Polymicrobial bloodstream infections or those who had an ePlex® panel performed prior to admission were excluded. The following clinical outcomes were assessed: time to optimal antimicrobial therapy, length of stay (LOS), and inpatient-30-day mortality.

Results. One hundred and sixty-three met criteria for inclusion; 98 patients in the pre-intervention group and 65 patients in the post-intervention group. The mean Pitt Bacteremia Score was 1 in both groups (p=0.741). The most common organism identified by ePlex® BCID was *E. coli* (65.3% vs 70.8%; p=0.676). Eight *E. Coli* isolates were CTX-M positive; no other gene targets were detected. The most common suspected source of bacteremia was genitourinary (72.5% vs 72.3%; p=1.0). Time to optimal therapy was reduced by 29 hours [37 (31 – 55) vs. 8 (4 – 28); p=0.048). Length of stay and mortality was similar between groups.

Conclusion. Implementation of a rapid blood culture identification panel along with an antimicrobial stewardship intervention significantly reduced time to optimal therapy. Further studies are warranted to confirm these results.

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50. Impact of Antibiotic Stewardship Interventions on Colistin Use and Acinetobacter Resistance

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Session: P-04. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background. Our hospital had a widespread use of colistin and tigecycline, and very high resistance of Acinetobacter Spp. to colistin. The hospital did not have any infectious disease (ID) pharmacist and had only one ID consultant physician. The objective of this study was to evaluate the impact of our intervention on the utilization of colistin and tigecycline and resistance of Acinetobacter Spp.

Methods. This was a before an observational before-and-after study at a tertiary medical center. An ID pharmacist trained in antibiotic stewardship program (ASP) was invited by a tertiary hospital to help create an ASP. The hospital also hired four ID assistant consultants to help the primary ID consultant and pharmacists. The ASP started by restriction of colistin and tigecycline. The study outcomes were antibiotic consumption and resistance of *Acinetobacter* spp.

Results. Colistin utilization decreased by 60%, and the resistance of *Acinetobacter* spp. to colistin significantly decreased from 31% to 3% in a year. In addition, tigecycline utilization decreased by 46%. On the other hand, there were no significant changes in carbapenem utilization and resistance, which could be explained by switching from colistin and tigecycline to carbapenems.

Conclusion. Adding an ID pharmacist and ID assistant consultants to the ASP team, and the strict restriction of colistin use was associated with significant reduction in colistin use and Acinetobacter resistance.

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51. Sustained Impact of an Antimicrobial Stewardship (AS) Initiative Targeting Asymptomatic Bacteriuria and Pyuria in the Emergency Department (ED)

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Session: P-04. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background. The sustainability of unique AS initiatives are largely unstudied. A multi-faceted initiative to reduce inappropriate treatment of asymptomatic pyuria (ASP) and asymptomatic bacteriuria (ASB) in the ED was implemented at our institution in 2016. A pre-post intervention analysis demonstrated reduction in the inappropriate treatment (tx) of ASP/ASB from 100% to 32% (p< 0.001) following the intervention. The purpose of this present study was to determine the sustained impact of the initiative and determine if re-education provided in Oct 2020 could further reduce inappropriate tx.

Methods. This was a retrospective, interrupted time series study conducted at an 885 bed academic medical center. Patients (pts) discharged from the ED in Nov 2019 – Feb 2020 (group 1) and Nov 2020 – Feb 2021 (group 2) were retrospectively screened in chronologic order until 50 pts in each group met study criteria. Similar to the 2016 study, pts were included if they were ≥ 18 years old and had a positive urine culture or pyuria. Pts were excluded if they had symptoms of a urinary tract infection (UTI), another infection requiring antibiotics (ABX), indwelling catheter, ureteral stent, or nephrostomy tube, or if pregnant or immunocompromised. The primary outcome was the proportion of pts prescribed ABX within 72 hrs of ED discharge. The secondary outcome was the number of pts returning to the ED with symptomatic UTI within 30 days of discharge. Group 1 was compared to the 2016 study's post group