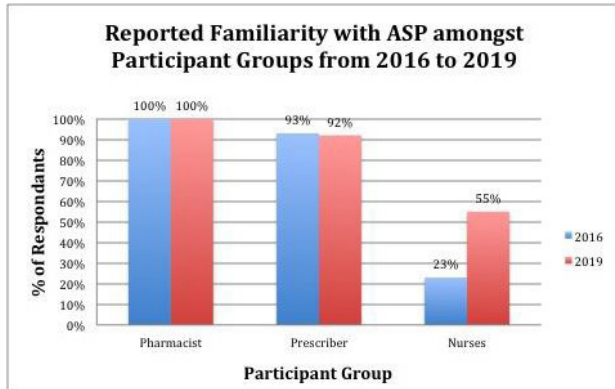


Methods: Distinct surveys were distributed to three participant groups: Nurses, Pharmacists, and Prescribers (Housestaff, Advanced Practice Providers, and staff physicians). Questions were developed to assess familiarity, perceived value, and overall satisfaction with the ASP. Additional items included questions on the current use of ASP resources and educational engagement. Survey results were compared to a similar survey conducted 3 years amongst the same participant groups.

Results: The survey was delivered electronically to 3367 Prescribers, Nurses and Pharmacists. 403 responders completed the survey (208 Nurses, 181 Prescribers, and 18 Pharmacists). Familiarity was lowest amongst Nurses, but almost doubled compared to 2016 (Figure). Prescribers cited “restricted antibiotic approval”, “de-escalation”, and “alternative therapies relative to allergies” as the three most common interaction types, similar to 2016. ASP interactions continued to be rated “moderate” or “high” value (88.4% vs 89.15% in 2016), however, face-to-face interactions were preferred by only 4% of responders (unchanged compared to 2016). Prescribers also responded uncommon use of ASP online resources (20%) and clinical decision support tools (34%). 78% of responders expressed desire for increased ASP-related education.



Conclusion: As ASPs evolve, it is important to constantly evaluate impact and value, and identify areas for growth. Despite ASP familiarity being high and interactions valued, we need to further optimize ASP provided resources, clinical support tools, and educational offerings.

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166. Barriers to implementing antimicrobial stewardship programs in low- or middle-income country settings: findings from a multi-site qualitative study

Robert J. Rolfe, Jr., MD DTMH¹; Charles M. Kwobah, MBChB, MMed²; Florida Muro, MD, PhD³; Anushka S. Ruwanpathirana, MBBS⁴; Furaha Lyamuya, MD⁵; Champica K. Bodinayake, MBBS MD⁶; Ajith Nagahawatte, MBBS MD⁶; Dammalage Lasanthi Bhagya Piyasiri, MBBS, DipRCPath, MD⁷; Tianchen Sheng, MSc⁸; John W. Bollinger, MS⁹; Chi Zhang, n/a⁹; Richard H. Drew, PharmD, MS¹; Peter S. Kussin, MD¹; Deverick J. Anderson, MD, MPH¹⁰; Christopher W. Woods, MD, MPH¹; Melissa H. Watt, PhD¹¹; Blandina T. Mmbaga, MD, Mmed, PhD⁵; L Gayani Tillekeratne, MD, MSc¹; ¹Duke University, Durham, North Carolina ²Moi Teaching and Referral Hospital, Eldoret, Rift Valley, Kenya; ³Institute of Public Health (IPH), Moshi, Kilimanjaro, Tanzania; ⁴Colombo North Teaching Hospital- Sri Lanka, Cincinnati, Ohio; ⁵Kilimanjaro Christian Medical Centre, Moshi, Kilimanjaro, Tanzania; ⁶University of Ruhuna, Galle, Southern Province, Sri Lanka; ⁷Teaching Hospital Karapitiya, Galle, Southern Province, Sri Lanka; ⁸Duke University Medical Center, Durham, NC; ⁹Duke Global Health Institute, Durham, North Carolina ¹⁰Duke Center for Antimicrobial Stewardship and Infection Prevention, Durham, NC; ¹¹University of Utah School of Medicine, Salt Lake City, Utah

Session: P-6. Antimicrobial Stewardship: Program Development and Implementation

Background: Antimicrobial resistance has been named as one of the top ten threats to health in the world. The World Health Organization has endorsed the implementation of hospital-based antimicrobial stewardship programs (ASPs) to reduce antimicrobial resistance. We conducted a qualitative study to determine perceived barriers to the development and implementation of ASPs in low- and middle-income countries (LMICs).

Methods: We conducted 46 interviews with medical doctors at tertiary care hospitals in Sri Lanka (22 doctors), Kenya (12), and Tanzania (12). Interviews assessed knowledge and receptiveness to ASPs and barriers to implementing ASP protocols. Interviews were conducted in English, audio recorded, and transcribed. The interviews discussed knowledge of antimicrobial resistance and ASPs, current antimicrobial prescribing practices, access to diagnostics, receptiveness to ASPs, and perceived barriers to implementing ASPs. Data analysis followed procedures of applied thematic analysis, and used NVivo software. A codebook included structural themes based on the interview questions and emerging inductive themes. Two independent reviewers coded the interviews, and the coding was combined and reviewed for consensus. Themes were synthesized, with comparisons made across the three sites.

Results: Medical doctors from all three sites discussed multiple barriers to improving antimicrobial prescribing: prohibitively expensive antimicrobials, limited antimicrobial availability, resistance to change current practices regarding

antimicrobial prescribing, and limited diagnostic data. The most frequent of these barriers discussed in all three locations was limited drug availability, mentioned by 12/22 physicians in Sri Lanka, 5/12 in Tanzania and 8/12 in Kenya. Improved education was a suggested component of ASPs in all three sites: 7/22 in Sri Lanka, 6/12 in Tanzania, and 6/12 in Kenya.

Conclusion: The study highlighted several important issues in determining the next steps for the implementation of ASPs in these LMIC hospitals. Improving drug availability and improving education to change physicians’ antimicrobial prescribing practices are important targets that could be addressed by ASPs in these facilities.

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167. Communication is Key: A Multifaceted Approach to Improving Essential ASP Metrics in Surgical Services

Rachel S. Britt, PharmD¹; David Reynoso, MD, PhD¹; Philip H. Keiser, MD¹; R. Scott Ferren, PharmD, BCIDP¹; ¹University of Texas Medical Branch, Galveston, Texas

Session: P-6. Antimicrobial Stewardship: Program Development and Implementation

Background: Despite widespread antimicrobial resistance, suboptimal antimicrobial use is common, particularly among surgical services. Studies show that antimicrobial stewardship programs (ASPs) effectively improve antimicrobial use and decrease adverse events. However, evidence for optimal ASP intervention in surgical departments is lacking, and some surgical services perceive ASPs negatively. This study aimed to evaluate the effect of several collaborative ASP interventions and workflow changes on the non-acceptance rate (NAR) of ASP recommendations and antimicrobial use among surgical services.

Methods: This was a retrospective, pre-post study of services in the department of surgery at a 681-bed, academic medical center between 12/01/2018 and 5/31/2020. Throughout 10/2019 and 11/2019, the core ASP, which consists of two infectious diseases physicians and two infectious diseases pharmacists, performed several interventions with surgical services. These included meetings with the chairman, vice chairs, and division chiefs of the surgery department, a grand rounds presentation to surgical house staff, and monthly surgeon NAR reporting to the chairman. Also, per feedback from surgeons, the ASP began to communicate recommendations directly to attending surgeons instead of residents or via ASP notes in the medical record. Data for the pre-period was collected from 12/2018 to 9/2019; data for the post-period was collected from 12/2019 to 5/2020. Wilcoxon rank sum, chi-square, and Fisher’s exact tests were used to compare outcomes.

Results: The ASP communicated 353 recommendations to surgical services in the pre-period, and 181 in the post-period. ASP offered most recommendations to trauma (n=244), cardiothoracic (n=60), and plastic surgery (n=54) during the study periods. NAR decreased post-intervention overall (43% vs 29%, p=0.0013) and in trauma surgery (63% vs 47%, p=0.03). Mean monthly days of therapy per 1000 patient days trended towards a decrease post-intervention (1105 vs 1044, p=0.26). Cost per 1000 patient days decreased post-intervention (\$27,677.91 vs \$19,766.31, p=0.0075).

Conclusion: A communicative and adaptive approach to ASP in surgical services improved NAR and antimicrobial costs and trended towards a reduction in antimicrobial use.

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168. Creation and Internal Validation of a Clinical Predictive Model for Fluconazole Resistance in Patients with Candida Bloodstream Infection

Adriana M. Rauseo, MD¹; Margaret A. Olsen, PhD, MPH²; Lindsey Larson, MPH³; Dustin Stwalley, MA²; Kevin Hsueh, MD⁴; William Powderly, MD⁵; Andrej Spec, MD, MSc⁵; ¹Washington University at St. Louis, St. Louis, MO; ²Washington University in St. Louis, Saint Louis, Missouri; ³Washington University School of Medicine, St. Louis, MO; ⁴Washington University School of Medicine at St. Louis, St. Louis, Missouri; ⁵Division of Infectious Diseases Washington University in St. Louis, St. Louis, Missouri

Session: P-6. Antimicrobial Stewardship: Program Development and Implementation

Background: IDSA guidelines on candidemia recommend fluconazole as first-line therapy in patients considered low risk for fluconazole resistant infections. However, there is currently no mechanism to determine risk of resistance, and most community hospitals cannot perform rapid sensitivity testing, leading to prolonged use of echinocandin therapy. This study aims to develop a clinical predictive model to identify patients at low risk for fluconazole resistance where first-line use of fluconazole therapy would be acceptable without requiring resistance testing.

Methods: We performed a retrospective cohort analysis of all hospitalized adult patients with a positive blood culture for *Candida* spp. from 2013 to 2018. Fluconazole resistance was determined using Sensititre™ YeastOne™ YO9 AST Plate, with cutoffs defined for each *Candida* species based on Clinical and Laboratory Standards Institute performance standards for antifungal testing (M60) in all patients. Using backwards stepwise regression, we developed a multivariable logistic regression model to identify factors associated with fluconazole resistance in patients in *Candida* bloodstream infection, including only variables with clinical plausibility and $p < 0.1$ in bivariable analysis. Stepwise regression was performed on bootstrapped samples to test individual variable stability and estimate confidence intervals. We used graphs of observed vs expected values to assess model performance across the probability spectrum.

Results: We identified 539 patients with *Candida* bloodstream infection from 2013–2018, of which 13.4% (72/539) were fluconazole resistant. Increased risk of fluconazole resistance was associated with age (1.12 [1.01, 1.24]), bacterial septicemia