

practices and provide facility-level benchmarks. Further validation of both data sources in the same facilities is needed to compare antibiotic use rates and to determine the most appropriate proxy for type of nursing-home stay for facility-level risk adjustment of antibiotic use rates.

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Oral Presentation

Subject Category: Antibiotic Stewardship

The Impact of Social Role Identity on Communication in Hospital-Based Antimicrobial Stewardship

Julia Szymczak; Brandi Muller; Nikitha Shakamuri; Keith Hamilton; Elizabeth Dodds Ashley; Hilarly Babcock; Rebekah Moehring; Jason Newland and Ebbing Lautenbach

Background: Evidence-based hospital antimicrobial stewardship interventions, such as postprescription review with feedback, prior authorization, and handshake stewardship, involve communication between stewards and frontline prescribers. Hierarchy, asymmetric responsibility, prescribing etiquette, and autonomy can obstruct high-quality communication in stewardship. Little is known about the strategies that stewards use to overcome these barriers. The objective of this study was to identify how stewards navigate communication challenges when interacting with prescribers. **Methods:** We conducted semistructured interviews with antimicrobial stewards recruited from hospitals across the United States. Interviews were audio recorded, transcribed, and analyzed using a flexible coding approach and the framework method. Social identity theory and role theory were used to interpret framework matrices. **Results:** Interviews were conducted with 58 antimicrobial stewards (25 physicians and 33 pharmacists) from 10 hospitals (4 academic medical centers, 4 community hospitals, and 2 children's hospitals). Respondents who felt empowered in their interactions with prescribers explicitly adopted a social identity that conceptualized stewards and prescribers as being on the "same team" with shared goals (in-group orientation). Drawing on the meaning conferred via this social role identity, respondents engaged in communication strategies to build and maintain common bonds with prescribers. These strategies included moderating language to minimize defensive recommendations when delivering stewardship recommendations, aligning the goals of stewardship with the goals of the clinical team, communicating with prescribers about things other than stewardship, compromising for the sake of future interactions, and engaging in strategic face-to-face interaction. Respondents who felt less empowered in their interactions thought of themselves as outsiders to the clinical team and experienced a heightened sense of "us versus them" mentality with the perception that stewards primarily serve a gate-keeping function (ie, outgroup orientation). These respondents expressed deference to hierarchy, a reluctance to engage in face-to-face interaction, a feeling of cynicism about the impact of stewardship, and a sense of low professional accomplishment within the role. Respondents who exhibited an in-group orientation were more likely than those who did not to describe the positive impact of stewardship mentors or colleagues on their social role identity. **Conclusions:** The way antimicrobial stewards perceive their role and identity within the social context of their healthcare organization influences how they approach communication with prescribers. Social role identity in stewardship is shaped by the influence of mentors and colleagues, indicating the importance of supportive relationships for the development of steward skill and confidence.

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Presentation Type:

Oral Presentation

Subject Category: Antibiotic Stewardship

Optimizing Urine Collection Represents an Important Stewardship Opportunity in Primary Care

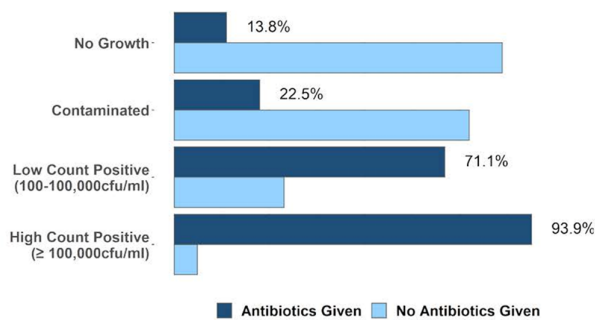
Larissa Grigoryan; Jennifer Matas; Michael Hansen; Samuel Willis; Lisa Danek; Anna Katta; Kenneth Muldrew; Mohammad Zare; Forrest Hudson; Robert Atmar; Andrew Chou and Barbara Trautner

Background: Urine cultures are the most common microbiological tests in the outpatient setting and heavily influence treatment of suspected urinary tract infections (UTIs). Antibiotics for UTI are usually prescribed on an empiric basis in primary care before the urine culture results are available. However, culture results may be needed to confirm a UTI diagnosis and to verify that the correct antibiotic was prescribed. Although urine cultures are considered as the gold standard for diagnosis of UTI, cultures can easily become contaminated during collection. We determined the prevalence, predictors, and antibiotic use associated with contaminated urine cultures in 2 adult safety net primary care clinics. **Methods:** We conducted a retrospective chart review of visits with provider-suspected UTI in which a urine culture was ordered (November 2018–March 2020). Patient demographics, culture results, and prescription orders were captured for each visit. Culture results were defined as no culture growth, contaminated (ie, mixed flora, non-uropathogens, or ≥ 3 bacteria isolated on culture), low-count positive (growth between 100 and 100,000 CFU/mL), and high-count positive ($>100,000$ CFU/mL). A multivariable multinomial logistic regression model was used to identify factors associated with contaminated culture results. **Results:** There were 1,265 visits with urine cultures: 264 (20.9%) had no growth, 694 (54.9%) were contaminated, 159 (12.6%) were low counts, and 148 (11.7%) were high counts. Encounter-level factors are presented in Table 1. Female gender (adjusted odds ratio [aOR], 15.8; 95% confidence interval [CI], 10.21–23.46; $P < .001$), pregnancy (aOR, 13.98; 95% CI, 7.93–4.67; $P < .001$), and obesity (aOR, 1.9; 95% CI 1.31–2.77; $P < .001$) were independently associated with contaminated cultures. Of 264 patients whose urine cultures showed no growth, 36 (14%) were prescribed an antibiotic. Of 694 patients with contaminated cultures, 153 (22%) were prescribed an antibiotic (Figure 1). **Conclusions:** More than half of urine cultures were contaminated, and 1 in 5 patients were treated with antibiotics. Reduction of contamination should improve patient care by providing a more accurate record of the organism in the urine (if any) and its susceptibilities, which are relevant to managing future episodes of UTI in that patient. Optimizing urine collection represents a diagnostic stewardship opportunity in primary care.

Table 1.

Table 1. Characteristics of visits (n=1265), n (%)	
Age, years	43.2 (± 15.8)
Gender and Pregnancy Status	
Male	203 (16)
Female non-pregnant	671 (53)
Female pregnant	391 (31)
Race/ethnicity	
White	40 (3)
African American	240 (19)
Latino/Hispanic	941 (74)
Other	44 (4)
Obesity	431 (34)
Elixhauser score	1.4 (± 4.9)
UTI symptoms	
Asymptomatic	152 (12)
Symptomatic	1113 (88)

Figure 1. Percent of patients treated with antibiotics per culture result



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Assessing Robustness of Antimicrobial Stewardship in Colorado Hospitals and Barriers to Improvement

Daniel Dodson; Matthew Kronman; Sarah Parker and Christopher Czaja

Background: Adherence to core elements of antimicrobial stewardship programs (ASPs) is increasing nationally but the robustness of programs and inclusion of pediatrics is poorly understood. We describe the details of ASP in Colorado hospitals and identify steps by which academic centers and public health departments can assist community ASPs. **Methods:** We invited ASP leaders at the 102 acute-care hospitals (ACHs) and critical-access hospitals (CAHs) in Colorado to participate in a web-based survey regarding their ASPs. Questions related to adherence to Centers for Disease Control and Prevention (CDC) core elements, barriers to improvement, desired resources, and extension to pediatrics. Enrollment began in August 2020. Hospital types were compared using the Fisher exact test. **Results:** As of January 1, 2021, 31 hospitals (30% of targeted hospitals) completed the web-based survey including 19 ACH and 12 CAH. Hospitals were distributed across the state. Median number of beds was 52 (range, 11–680). Of the responding hospitals, 87% were adherent to all CDC core elements. However, if action was defined as prospective audit and feedback or prior authorization, tracking was defined as measuring

Figure 1: Adherence to CDC core elements if strict criteria are used for action, tracking, and reporting. n=31. *Denotes statistical significance at <p>0.05.

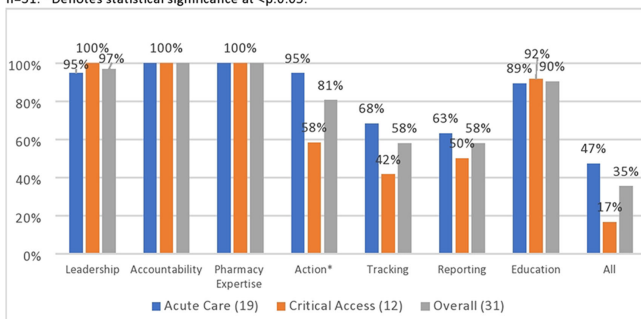


Figure 2: Barriers to providing antibiotic use reports to individual prescribers at hospitals not already providing such reports. n=26

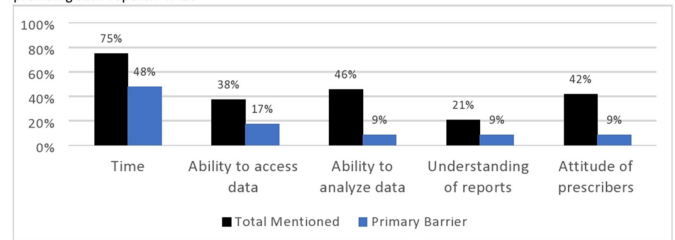
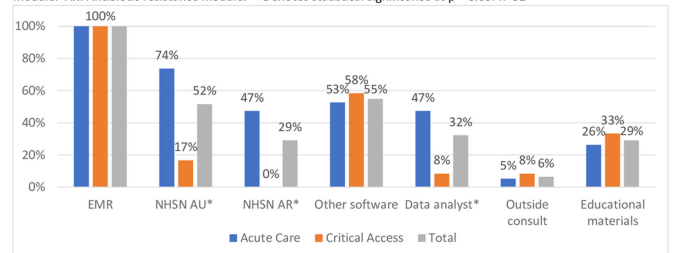


Figure 3: Available resources related to stewardship. EMR: Electronic medical record. AU: Antibiotic use module. AR: Antibiotic resistance module. * Denotes statistical significance at p < 0.05. n=31



antibiotic use in days of therapy (DOT) or defined daily dose (DDD) quarterly, and reporting was defined as providing unit- or provider-specific antibiotic use reports annually. Overall adherence fell to 35% including 81% for action, 58% for tracking, and 58% for reporting. CAHs were less likely to adhere to these strict criteria than ACHs (Figure 1). In the 27 hospitals (87% of hospitals) caring for pediatric patients, adherence to a strict action for at least 1 pediatric population was 59%. Reported barriers to improved ASP were available time and personnel, information technology support, perceived concerns about provider attitudes, and education gaps (Figure 2). CAHs were less likely to use the NHSN antibiotic use or resistance modules or have a data analyst than ACHs (Figure 3). Pediatric pharmacy expertise and guidelines were often not available in hospitals caring for pediatric patients. Desired ASP resources included assistance with data analysis, access to stewardship expertise and education, and treatment guidelines, including for pediatrics. **Conclusions:** Adherence to CDC core elements of an ASP was excellent but fell dramatically when stricter criteria were used and was worse in pediatric patients. Academic centers and public health departments can assist community hospitals by providing educational resources, assistance in analyzing data including using the NHSN ED: /AR modules, and ASP expertise and clinical care guidelines including those for pediatrics.

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Interrupted Time-Series Analysis to Evaluate the Impact of a Behavioral Change Outpatient Antibiotic Stewardship Intervention

Brittany Morgan; Larissa May and Haylee Bettencourt

Background: The Centers for Disease Control and Prevention (CDC) estimates that outpatient settings account for 85%–90% of antibiotic prescriptions in the United States, and ~30% of those prescriptions are unnecessary. One of the most common examples of inappropriate prescribing is for viral upper respiratory infections (URIs). Up to 50% of prescriptions written for URIs are deemed inappropriate, making it an important focus for Antibiotic Stewardship programs. In this study, we