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Session: 223. Antimicrobial Stewardship: Qualitative Research
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Background. We sought to gauge provider perceptions to prepare an intervention which featured audit-feedback reports, academic detailing, and communication training to improve antibiotic treatment of acute respiratory infections (ARIs).

Methods. One-on-one interviews with providers ($n = 20$) from five VA Medical Centers were conducted in May–July 2017. Participants were recruited from emergency departments, primary care and community-based outreach clinics by e-mail. Interviews were conducted by telephone, audio-recorded, and transcribed. The Theory of Planned Behavior was used to develop semi-structured interview questions to capture attitudes, subjective norms (peer practices), planned future behaviors for managing ARIs, and intervention tools. Interviews were analyzed using codes developed from participant responses and categorized via consensus among authors. Codes were categorized into themes to map mental models.

Results. *Beliefs and Attitudes:* Providers were open to audit-feedback and tools to improve prescribing practices. *Barriers* to appropriate prescribing were perceived to include patient demand, time and resource limitations. Unfamiliarity with receipt of personal feedback and undefined roles of personnel to provide feedback within the clinic were anticipated to impede successful implementation. *Behavior Control:* Providers felt they had control to withhold or prescribe antibiotics. *Social norms:* Peer practices and lack of patient knowledge were perceived to drive patient demand. *Planned future behaviors:* The use of audit-feedback and communication strategies to address perceived patient demand were viable solutions to improve prescribing practices. However, utility of Shared Decision Making as a strategy varied due to provider expertise that antibiotics were not indicated for most ARIs; patient gaps in knowledge; and perceived patient insistence for an antibiotic.

Conclusion. Providers often intend to prescribe antibiotics appropriately yet barriers can influence practice. Potential interventions should provide tailored audit-feedback, address perceived patient demand, and support clinic structure to provide feedback. Strategies should consider time and resources available to address barriers.

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1889. A Clinical Practice Assessment on *Clostridium difficile* Infection

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Background. This study assessed physicians' current practice patterns in prevention and management of *Clostridium difficile* infection (CDI).

Methods. A 25-question clinical practice assessment survey was made available to infectious disease (ID) specialists without monetary compensation or charge. Questions evaluated knowledge, competence, and barriers related to CDI, such as current and emerging strategies for limiting risk and achieving optimal outcomes related to antimicrobial use. The survey launched on a website dedicated to continuous professional development on October 27, 2017. Data were collected until January 16, 2018. Respondent confidentiality was maintained and responses were de-identified and aggregated prior to analyses.

Results. 139 ID specialist physicians completed the survey during the study period. Key findings include: (a) 76% were not aware of CDI incidence in the United States. (b) 34% had 20 or more cases of CDI in their practice in the past year. (c) While only 7% admitted their institution had been penalized for CDI under value-based purchasing rules, 50% were unsure. (d) While 96% were correctly able to identify antibiotics most closely associated with development of CDI, only 22% reported they were very confident in recognizing host risk factors for CDI, and 64% were not aware of the risks of CDI-associated death in older patients vs. middle-aged patients. (e) 38% use PCR for CDI diagnosis; 36% use a 2-step method combining different test types. (f) 39% were not aware of the relationship of the gut microbiome and CDI, although 61% reported that they would initiate an FDA-approved agent aimed at protecting the gut microbiome from antibiotic-mediated dysbiosis. (g) About 33% were not aware of new strategies being investigated for prevention of CDI and their mechanisms of action. (h) 94% reported that achieving optimal clinical outcomes and reducing selection for antimicrobial-resistance were the most important goals of antimicrobial stewardship.

Conclusion. This research yielded important insights into current clinical practice gaps among ID specialists regarding identification and prevention of CDI, and could serve to inform needs for continuing medical education.

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1890. Healthcare Professionals' Knowledge, Attitudes, and Beliefs Regarding Factors That Contribute to Inappropriate Antibiotic Use

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Background. In 2003, the Centers for Disease Control and Prevention (CDC) launched *Get Smart: Know When Antibiotics Work*, a campaign to improve antibiotic use for common outpatient respiratory infections. Although improvements in prescribing have been observed for children, inappropriate prescribing remains a problem in all healthcare settings. To update CDC's communications materials for the new *Be Antibiotics Aware* educational effort, we sought to identify factors that influence antibiotic prescribing behavior among healthcare professionals (HCPs).

Methods. We conducted semistructured interviews with 21 HCPs using purposive sampling to target geographic regions and provider types with the highest antibiotic prescribing rates. We recorded, transcribed, and analyzed interviews using emergent thematic analysis.

Results. The HCPs interviewed included nine family practitioners (four physicians, three nurse practitioners, and two physician assistants), four emergency medicine physicians, three urgent care providers, and five hospitalists. One new theme emerged: HCPs report that concern for adverse drug events does not affect whether HCPs prescribe an antibiotic but rather which antibiotic they choose. We also identified four themes that have been previously described: (1) HCPs recognize inappropriate prescribing occurs but deny doing it frequently themselves; (2) diagnostic uncertainty and the "fear of missing something" influence HCPs' decisions to initiate (and continue) antibiotics; (3) HCPs experience a tension between adherence to guideline recommendations and individualizing patient care based on comorbidities and sociodemographic characteristics; and (4) strength and continuity of the patient-provider relationship influences how antibiotics are prescribed. Each theme spanned all specialties, although some themes were more prevalent among certain specialties.

Conclusion. Adverse drug event messaging may be most effective if the focus is on improving antibiotic selection rather than the decision to prescribe. Similar principles influence antibiotic prescribing patterns of HCPs in different practice settings, which may suggest that similar messaging can be used across specialties.

Disclosures. All authors: No reported disclosures.

1891. Assessing the Needs for Antimicrobial Stewardship Education and Acceptance Across a Spectrum of Prescribers, Nurses and Pharmacists at a Large Academic Medical Center

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Background. Regulatory bodies and quality groups have adopted the Centers for Disease Control and Prevention (CDC) Core Elements for Antimicrobial Stewardship Programs (ASP) as a measure for accreditation and scoring healthcare institutions across the United States. Multiple elements are driven by educating and integrating staff across the provider network. The ideal method of providing education and addressing gaps is unknown. The objectives of this study were to evaluate the familiarity of Nursing, Pharmacy, and Prescribers regarding local ASP activities and services, as well as perceptions regarding patient care and value. Secondary objectives were to determine what educational tools are currently utilized and the desired method for future education.

Methods. Three distinct surveys were written for each provider type for Nurses, Pharmacists and Prescribers across ambulatory and inpatient sites. Each contained basic demographic data such as years in practice and primary practice site. Questions were developed to assess familiarity, perceived value, and overall satisfaction with the ASP. Additional items included the use of online ASP resources and desire for more education. The survey was delivered electronically to 5,091 providers.

Results. In total, 443 completed the survey, 267 Nurses, 160 Prescribers, and 16 Pharmacists. A majority of Nurses (67%) and Pharmacists (56%) worked on inpatient units. Prescribers were 48% from Medicine and 16% Hospitalists. Familiarity with the ASP was lowest among Nursing staff, 53% unaware, and highest among prescribers (55% very familiar, 8% not familiar) and pharmacists (56% very familiar and none unfamiliar) as seen in Figures 1 through 3. ASP-assisted harm prevention was identified by 43% and therapy optimization by 44%. Of the highly familiar prescribers and pharmacists, 90% rated ASP as a moderate to high value service. More than 80% of all disciplines expressed the desire for more education, primarily as didactic lectures (65%), intranet portal training (37%), or emails (36%).

Figure 1: Prescriber familiarity with the ASP

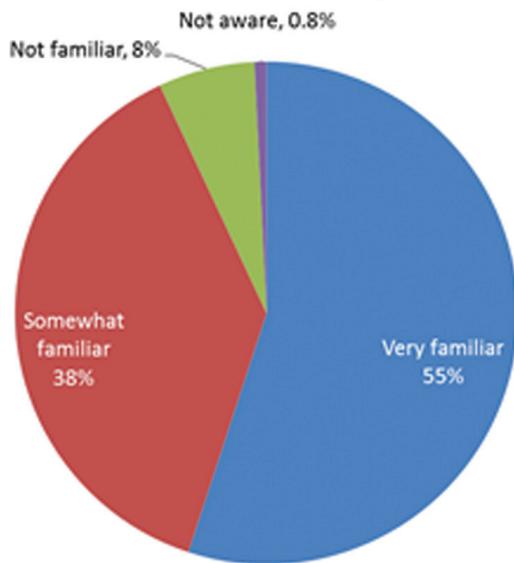


Figure 2: Pharmacist familiarity with the ASP

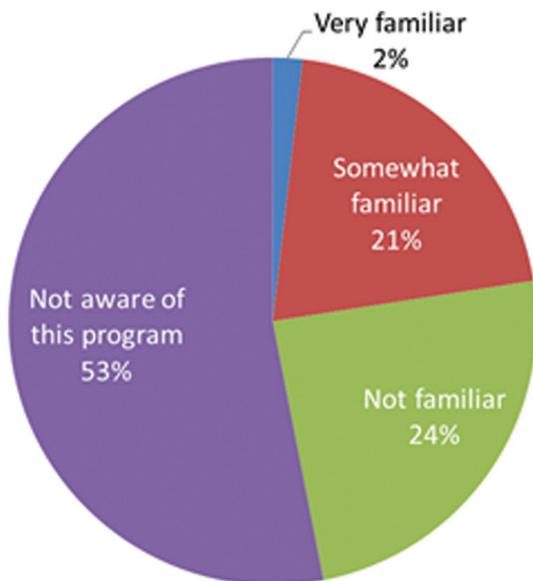
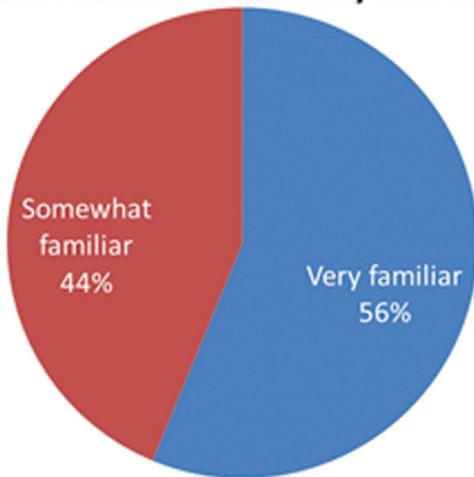


Figure 3: Nursing familiarity with the ASP

Conclusion. Nursing staff at our institution have the greatest need for orientation with the ASP. The ASP is highly valued across prescribers and pharmacists, but all disciplines desire further education. Resource allocation toward education is an important need.

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1892. Preparing for an Antibiotic Stewardship Intervention Through Nursing Surveys of Knowledge and Safety

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Background. We designed an intervention to reduce unnecessary antibiotic treatment of asymptomatic bacteriuria (ASB), by decreasing unnecessary urine cultures. Nurses and clinical nurse assistants (CNAs) play important roles in requesting urine cultures. As preparation for the intervention, we assessed knowledge of the appropriate indications for urine cultures among these personnel while measuring their safety climate.

Methods. Surveys were administered to licensed nursing personnel (RN, LPN, and NP) as well as to CNAs on all acute medical and long-term care units of four VA facilities across the nation. Surveys combined two validated subcomponents: knowledge of ASB and safety attitudes. Knowledge questions, which differed in emphasis between the licensed personnel and the CNAs, focused on indications for urine cultures. Safety questions were the teamwork climate and safety climate domains from the Safety Attitudes Questionnaire. Surveys were administered on paper during January–April 2018.

Results. We received 110 responses from licensed nursing personnel and 40 from CNAs. The response rate on distributed surveys was 110/140 (79%) for licensed personnel and 40/50 (80%) for CNAs. 94% of nurses and 73% of CNAs correctly recognized fever as an indication for urine culture. Many also endorsed incorrect triggers for urine cultures: cloudy urine (80% of nurses, 55% of CNAs), foul-smelling urine (87% of nurses, 85% of CNAs), and a change in color (44% of nurses, 73% of CNAs). 50% of nurses endorsed screening urine cultures on admission of catheterized patients. Scores on the teamwork climate (highest possible score 100) were 70 for nurses and 79 for CNAs; scores on the safety climate were 70 for nurses and 78 for CNAs.

Conclusion. This multicenter survey identified actionable gaps in knowledge about when to send urine cultures among nursing personnel in acute medical and long-term care units. However, scores on teamwork and safety climate were high, suggesting that these personnel have an effective voice in patient safety. Together our survey results indicate that empowering the personnel at the bedside to discourage unnecessary urine culturing should be a key component of our stewardship intervention.

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1893. Barriers and Facilitators to Nursing (RN) Involvement in Antibiotic Stewardship (AS): Multisite Qualitative Study of Prescribers

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Background. The Centers for Disease Control and Prevention and the American Nurses Association (CDC/ANA) outline specific responsibilities for RNs in AS efforts. Responsibilities expand traditional RN roles and are perceived to require prescriber engagement. We explored prescribers' attitudes toward RNs' involvement in AS and barriers and facilitators to the following RN responsibilities specified by the CDC/ANA: (1) RNs facilitate accurate antibiotic allergy histories; (2) RNs encourage the switch from intravenous (IV) to oral (PO) antibiotics; and (3) RNs initiate an antibiotic time out with prescribers.

Methods. Four focus groups and two interviews with 37 prescribers (10 medicine residents, 10 adult hospitalists, nine pediatricians, and eight critical care nurse practitioners) were conducted between July 2017 and March 2018 at two academic adult and pediatric hospitals. Transcripts were coded using a conventional content analysis in NVivo 11.