demands (55%) followed by uncertain diagnosis of bacterial infection (22%) and short appointment visit times (11%). Providers that spent ≤20 minutes per visit were more likely to feel pressured to prescribe antibiotics for upper respiratory tract infections (URI) to ensure patient satisfaction than those who spent >20 minutes (41% vs. 7%, $P = 0.024$). Additionally, providers who saw >50 patients per week were more likely to feel pressured to prescribe antibiotics for URIs than those who saw ≤50 patients (50% vs. 18%, $P = 0.009$). Only 42% of providers selected the correct answer that 90–98% of URIs are viral. The majority of providers strongly agreed that antibiotics are overused (71%) and inappropriate antibiotic use can lead to resistance (82%). Thirty-eight percent of providers never heard the term antibiotic stewardship or heard the term but were unsure about the definition. However, more than 75% of providers strongly agreed or agreed that they were interested in receiving more education regarding antibiotic stewardship.

Conclusion. Variability exists among providers' knowledge and attitudes toward antibiotic stewardship and antibiotic prescribing in rural outpatient settings. Increased educational efforts are warranted to increase consistency of these concepts and practices.

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1304. From Information Bolus to Continuous Infusion: Resident Knowledge and Satisfaction With an "Antibiotic of the Month" Educational Initiative at an Academic Children's Hospital

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Background. Medical trainees play a critical role in the prescribing of antimicrobials. Prescriber education is one of the CDC core elements of antimicrobial stewardship programs. Optimal strategies for educating residents about antimicrobials have not been identified; however, the common practice of teaching all classes of available antibiotics over a short period of time (usually a single 1–2 hour lecture or "bolus") is generally not well received and likely ineffective.

Methods. We developed a novel antibiotic of the month (AOTM) education program ("continuous infusion") for pediatric residents. It included a monthly 10-minute presentation by an infectious diseases physician or fellow about a single commonly prescribed antibiotic, a handout summarizing important aspects of the antibiotic and a display posted in the resident workroom. An anonymous survey was sent to all pediatric residents before and 6 months after implementation of the AOTM program. The survey consisted of questions on demographics, satisfaction with the program, and antibiotic knowledge. Responses were tabulated and analyzed using Microsoft Excel. Responses were summarized and reported as a proportion of total responses.

Results. Both pre- and post-implementation surveys were completed by 21 pediatric residents (51% response rate). Prior to the AOTM program, 55% of respondents felt very or somewhat uncomfortable about their current level of knowledge about antimicrobials and antimicrobial prescribing. Six months after initiation of the program, 86% and 76% agreed or strongly agreed that their knowledge of antimicrobials and antimicrobial resistance, respectively, had improved. After introduction of the program, 81% felt more comfortable or much more comfortable with antimicrobial prescribing. Fifty-seven percent had referenced the handout at some point after the teaching session and 100% agreed that the program was worthwhile continuing in the next academic year.

Conclusion. A continuous infusion of antimicrobial education in the form of an AOTM education program was well received among pediatric residents and increased their knowledge and comfort level with antimicrobial prescribing. Further studies to measure knowledge retention with this strategy are required.

Disclosures. **All authors:** No reported disclosures.

1305. Application of Standard Antibiotic Use Criteria to Evaluate Inpatient Antibiotic Use

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Background. It is estimated that 30–50% of antimicrobial agents prescribed inpatient are not optimal. Historically, antimicrobial evaluation has been based primarily upon expert opinion of ID trained individuals. Spivak and colleagues proposed standard terminology and definitions to assess antimicrobial prescribing practices. At UMass Memorial Medical Center we utilized Spivak's criteria to measure antimicrobial use within point prevalence studies (PPS) and assessed the ability of Spivak's criteria to provide consistent results between different evaluators.

Methods. A PPS was conducted in September 2017 (SEPT) by infectious disease (ID) attendings and ID trained pharmacists. A follow-up PPS was completed in November 2017 (NOV) by a pharmacy practice resident (PGY-1) and first year ID fellow. Patients were included if they were prescribed antibiotics at the time of review, greater than 18 years of age, and admitted to an inpatient unit. Patients only receiving antiretroviral therapy or antifungal prophylaxis were excluded from the study. Antibiotics, indications, days of therapy, and appropriateness or reason for inappropriateness, as defined by Spivak's criteria, were collected.

Results. Four hundred five patients in SEPT and 475 patients in NOV were reviewed. Baseline characteristics between SEPT and NOV, including sex, age, average length of hospital stay (LOS) at time of review were similar between groups, (SEPT vs. NOV: male sex: 53.2% vs. 51.1%; age: 60.4 vs. 61.7; LOS:8.55 vs. 8.36 days). Number of antibiotics per patient was different between PPS (SEPT 1.69 vs. NOV 1.28). For non-intensive care unit (ICU) patients, 64.9% of use was considered appropriate in SEPT vs. 69.3% in NOV. The top reasons for inappropriate use in non-ICU patients in both PPS were no indication and excess length of therapy. Within the ICU, 89.4% of use was considered appropriate in SEPT, with 75% of use considered appropriate in NOV. The top reason for inappropriate use in ICU patients in both PPS was overly broad therapy.

Conclusion. Application of standard antibiotic evaluation criteria can assist healthcare professionals with different levels of ID training to assess antibiotic use in non-ICU patients. Further evaluation should be considered for critically ill patients.

Disclosures. **All authors:** No reported disclosures.

1306. Antimicrobial Resistance Knowledge, Attitudes, and Perceptions Among Medical Students in Southern India

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Background. Antimicrobial resistance (AMR) is a major public health problem in India. The World Health Organization recognizes that the education of medical students on antimicrobial stewardship plays a critical role in the efforts to combat AMR, but data related to knowledge, attitudes and practices (KAP) regarding AMR is limited in India.

Methods. This cross-sectional study was conducted in July-August 2017. Medical students at K.S. Hegde Medical Academy in Mangalore, India were surveyed with an anonymous questionnaire using a convenience sampling method involving second year, third year, fourth year, and intern students ($n = 347$). Data about demographics, sources of information, and antimicrobial training were collected. In addition, AMR knowledge and attitude scores were calculated. A Mann–Whitney U test was used to determine factors that were associated with significant differences in knowledge scores and attitude scores. The primary outcome measure of this study was to determine positive predictors of increased confidence in prescribing antimicrobials in the future using multivariate analysis.

Results. A total of 347 surveys were analyzed (response rate of 98.9%). The mean total knowledge score was 11.47 out to 31 with a standard deviation (SD) of 3.39, and the mean attitude score was 5.99 out of 16 (SD = 4.207). While 13.2% of students were "very familiar" or "familiar" with the term "Antimicrobial Stewardship," and 88.2% of students said they would like more antimicrobial education in medical school. On multivariate analysis, female gender (OR 2.51, 95% CI (1.51, 4.18)), clinical vignette antimicrobial knowledge scores (OR 1.26, 95% CI (1.05, 1.51)), positive attitude scores (OR 0.94, 95% CI (0.88, 0.995)), awareness of Infection Control Policy (OR 1.87, 95% CI (1.09, 3.22)), and > 3 years of antimicrobial prescribing clinical training (OR 2.48, 95% CI (1.29, 4.75)) were predictors of confidence in antimicrobial prescribing.

Conclusion. This study identifies several possible interventions for improving confidence such as increased clinical knowledge through clinical experience, increased awareness of infection control policies and antimicrobial guidelines, and empowering students to be antimicrobial stewards to combat AMR.

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1307. Emerging Treatments in Ongoing Battle Against Community-Acquired Bacterial Pneumonia (CABP): The Positive Impact of Online Education

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Background. The leading infectious cause of hospitalization and infection-related mortality, pneumonia imparts a significant, but often underappreciated, burden. Agents in the antibiotic pipeline have the potential to improve both individual and public health, as well as support antibiotic stewardship programs

Methods. To address knowledge gaps among ID specialists, a CME/CE-certified, 30-minute, video-based, multidisciplinary panel discussion was developed and posted online on March 27, 2018. Featuring four expert faculty, the activity addressed: The evolving etiology of CABP; Emerging antibiotics for CABP treatment; and Antibiotic stewardship

Educational effectiveness was assessed with a repeated-pairs pre-/post-assessment study design, in which each individual served as his/her own control**.** Responses to multiple-choice, knowledge questions and a self-efficacy confidence question were analyzed. A chi-squared test assessed changes pre- to post-assessment. P values <0.05 are statistically significant. Effect sizes were evaluated using Cramer's V (<0.05 modest;

0.06–0.15 noticeable effect; 0.16–0.26 considerable effect; >0.26 extensive effect). Data were collected through April 23, 2017.

Results. A total of 6,146 healthcare providers, including 2,936 physicians have participated in the activity. Data from ID specialists (n = 130) who answered all pre-/post-assessment questions during the study period were analyzed. Significant improvements were observed overall (P = 0.024; V = 0.080) and in several specific areas of assessment (figure). Following activity participation, 34% of ID specialists indicated increased confidence in assessing key attributes of emerging agents and 79% of ID specialists indicated a commitment to incorporate one or more changes into practice. Lastly, the findings uncovered educational needs that require further educational intervention.

Conclusion. Participation in this online educational intervention significantly improved ID specialists' knowledge with regard to the key similarities and differences between agents in the CABP antibiotic pipeline and the potential role of these agents in patient care. These findings highlight the positive impact of well-designed online education.

Assessment of Educational Effectiveness			
Area of Assessment	% relative improvement (% of ID specialists selecting the correct response at pre- vs post-assessment)	*P*-value for change	Cramer's V for the magnitude of the change
Differentiate among MOAs and formulations for emerging antibiotics	20% improvement (76% vs 91%)	*P*=.0018	V=.202 (Considerable)
Familiarity with the activity profile for lefamulin, an emerging agent in the new pleuromutlin class of antibiotics	53% improvement (40% vs 61%)	*P*=.0019	V=.201 (Considerable)

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1308. Predictors of Career Interest in Infectious Diseases Among US Pharmacy Students

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Background. Pharmacists have a central role in infectious diseases (ID) and antibiotic stewardship efforts across multiple healthcare settings. The demand for pharmacist to fill ID and stewardship-related careers will likely increase as institutions create antibiotic stewardship programs in response to the 2016 Joint Commission standard. The objective of this study was to compare students' perceptions of their school's ID curriculum between students interested in an ID career and those who are not.

Methods. A cross-sectional survey study of students graduating from US pharmacy schools was conducted in September 2017. Students received the survey link from the ID faculty at participating schools.

Results. Five hundred thirty-seven students from 28 pharmacy schools completed surveys. Quality of ID didactic education was rated as Very Good by 220 (41%), Good by 219 (40%), Acceptable by 76 (14%), and Poor by 22 (4%) respondents. The most common career interests were ambulatory care (44%), community practice (38%), and infectious diseases (29%). The most common preferred practice settings for students with an interest in ID (n = 157) were inpatient/hospital (86%), inpatient stewardship (70%), and inpatient ID consult service (66%). Differences in responses about didactic ID education between students interested in an ID career and those not interested included: perception of education as Very Good (52% vs. 37%, P = 0.005), faculty providing handouts and/or worksheets (89% vs. 82%, P = 0.009), and the desire for more time allocated to antibiotic stewardship (47% vs. 31%, P < 0.001). Multivariate logistic regression found variables to be predictive of pharmacy student interest in an ID career including: pharmacy school curriculum (OR 2.5, 95% CI 1.5–4.0), perception of a Very Good didactic ID education (OR 1.5, 95% CI 1.0–2.3), and faculty mentor(s) (OR 1.8, 95% CI 1.2–2.7).

Conclusion. Pharmacy students expressing interest in ID as a career had positive views of their didactic ID education, were more likely to report faculty mentorship, and desired more time for antibiotic stewardship in the curriculum. These results can inform efforts to encourage pharmacy students to pursue careers in ID.

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1309. The Impact of Clinical Practice Guideline Using Educational Intervention for Improvement of Diabetic Foot Infections Treatment Outcomes

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Background. Diabetic foot infections (DFIs) are important cause of lower-extremity amputation. The inappropriate empirical antimicrobial therapy for DFI was associated with amputation. We created the Clinical Practice Guideline (CPG) of empirical antimicrobial (ATB) therapy for in-patients with DFIs. The primary outcome of present study was to evaluate the intervention using educate and training the surgeons to adhere with CPG. The secondary outcome was the decreasing of unfavorable outcome (amputations).

Methods. A prospective study of CPG implementation for treatment in adult in-patients who had DFIs was conducted at surgical and orthopedics wards. The CPG was developed by the investigator team based on the data from our previous study (submitted to publish). CPG was presented monthly to train the orthopedic and vascular surgeons for 1 year. The empirical ATB regimens were prescribed by the responsible surgeon who was trained to use CPG. Demographics data, wound characteristics, microbiological data, ATB therapy, and clinical outcome were recorded. The appropriate empirical ATB treatment was determined by investigators weather CPG matched or microbiological matched. The adherence to CPG, the appropriate empirical ATB, and the unfavorable outcome were analyzed. All data were reported by descriptive and inferential statistics.

Results. A total of 85 DFIs patients were enrolled. The patients received the appropriate empirical ATB matched to CPG and matched to microbiological data, were 87% and 67%, respectively. The unfavorable outcome was 26% while previously was 72.4% (submitted to publish data) before CPG implementation. The independent factors associated with unfavorable outcomes were (1) an inappropriate ATB and (2) infections with drug-resistant pathogens (adjusted relative ratio; aRR 2.98; 95% CI: 1.36–6.55, P = 0.007 and aRR 1.90; 95% CI: 1.05–3.43, P = 0.034, respectively).

Conclusion. The current study demonstrated that mothly training of CPG resulting in the high adherence (87%) of CPG use and resulting in high rate of appropriate empirical ATB. Educational intervention insisted the responsible physician for administration the appropriate ATB with the improvement of unfavorable outcome in DFIs.

Disclosures. **All authors:** No reported disclosures.

1310. Improving Infectious Disease Electronic Medical Records Documentation: A Quality Improvement Study in an Academic Teaching Hospital

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Background. Improving efficiency of documentation and sign outs during transitions of care were identified as areas of interest by the University of South Florida Infectious Disease (ID) Division. Our aim is by May 2018, we will achieve >50% improvement in our ID EMR note efficiency score for any adult patient at Tampa General Hospital. Note efficiency score involves listing all of the following key elements with 1 point awarded for each: active problem in the subjective section, updated hospital course under assessment, active problem prioritized first under assessment and non-relevant problems removed from assessment.

Methods. Institute of Healthcare Improvement's model with Plan-Do-Study-Act (PDSA) cycles was used for project implementation from March 2018 to May 2018 (Figure 1). Cycle 1: Conducting a needs assessment survey and education. Cycle 2: Changing the existing template and implementing a new standardized template that includes the key elements, along with removal of auto populated non relevant information. Audits of notes with a 4-point system scoring was done. A pre and post implementation physician survey was conducted.

Results. ID fellow and faculty completed the baseline survey (N = 25). Less than half (46%) felt that they could interpret patient assessments with ease and even fewer respondents (36%) felt there was adequate weekend sign out. More than one-third (36%) reported writing majority of notes after 5 pm (Figure 1). Pilot project involved nine ID faculty and fellows. We had 95% compliance with use of the standardized EMR template. Notes were evaluated at baseline (n = 190), cycle 1 (n = 85), and cycle 2 (n = 56). An increase in average note efficiency score from baseline, cycle 1 and cycle 2 occurred as follows (Mean ± SD): 2.0 ± 0.84 vs. 2.8 ± 0.95 vs. 3.6 ± 0.5 (Figure 2). Compared with baseline, cycle 2 achieved 42% improvement in the ease of interpretation of patient assessments and 41% improvement in adequate sign out. No increase in note writing after 5pm (36% vs. 30% baseline and cycle 2, respectively) reported.

Conclusion. Targeted education and changing the EMR note template can achieve improved efficiency of ID note. These efforts to improve documentation enhance physician's ease of interpretation of patient assessments and sign out during transition of care.

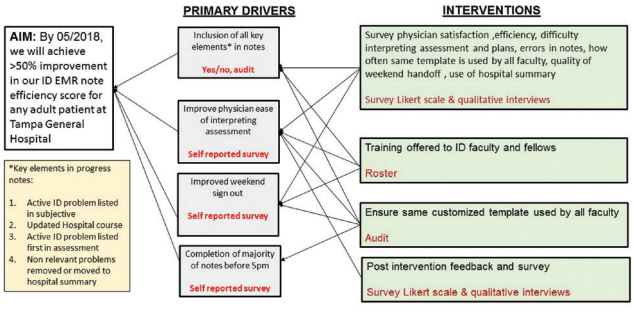

Figure 1: Key driver diagram for the QI project