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977. An Innovative 3-Year Medical Student Spiral Curriculum in Antimicrobial Stewardship and Infectious Diseases

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Background. By 2050, infections due antimicrobial-resistant organisms are predicted to account for 10 million deaths/year worldwide. Physician antibiotic prescribing patterns are a significant factor in the development of antibiotic resistance organisms. Early, continual, and integrated medical student education may help students develop a framework for responsible antimicrobial use as they develop prescribing patterns.

Methods. We designed a spiral antimicrobial stewardship curriculum (defined as revisiting the same concept but with increasing complexity) for medical students in years 2–4. Data provided by the Graduation Questionnaire (GQ) administered by the US Association of American Colleges were used. We compared student responses during the curriculum rollout in 2013–2015 between students at our institution and other schools. We also surveyed graduating seniors in 2015 about antimicrobial stewardship training.

Results. Using GQ data for the class of 2013 (preintervention), a similar proportion of UCSF medical students compared with other US medical students rated microbiology clinical preparation as excellent (43.6% vs. 45.1%, $P > 0.20$). For the 2014 class, we developed interactive case-based sessions at the beginning of years 3 and 4. After this first intervention, a higher proportion of UCSF students rated the microbiology clinical preparation as excellent (51.3%) compared with responses at all schools (39.8%, odds ratio [OR] 1.59, 95% confidence interval [CI] 1.1–2.3, $P = 0.013$). For the class of 2015, we added content during the medicine clerkship and 1 week before graduation. For the 2015 class, an even higher proportion of UCSF students rated microbiology preparation as excellent (57.6%), compared with all schools (41.2%, OR 2.23, 95% CI 1.54–3.22, $P < 0.0001$). From our survey, 88% were very or extremely satisfied with antimicrobial stewardship training.

Conclusion. A spiral curriculum focusing on antimicrobial stewardship and infectious diseases increases student perception of clinical preparation prior to graduation. As the curriculum was incrementally introduced, students' knowledge increased indicating a dose–response pattern. Based on these positive results, we plan to introduce more content throughout UME, and link to curriculum for GME and practicing clinicians.

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978. Assessing the Impact of a Mobile Device-Based Clinical Decision Support Tool on Guideline Adherence and Mental Workload

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Background. Fever in infants <90 days old can indicate a serious bacterial infection (SBI) such as urinary tract infection, bacteremia, or meningitis. Clinical management of febrile infants varies widely. Implementing clinical practice guidelines (CPGs) can help standardize care, and electronic clinical decision support (eCDS) tools are a potential means of distributing CPGs. Little is known regarding the individual-level impact of eCDS tool use on medical decision-making. Children's Mercy Kansas City developed a mobile eCDS tool (CMPeDS: Pediatric Decision Support) that was used internationally in a practice standardization project focused on the management of febrile infants.

Methods. We conducted a prospective cross-over simulation study amongst pediatric healthcare providers. Attending and resident physicians performed simulated patient scenarios using either CMPeDS or a standard text reference (the Harriet Lane Handbook). Participants' responses in the simulation were evaluated based on adherence to evidence-based guidelines. Participants' mental workload was assessed using the NASA Task Load Index survey (NASA-TLX, in which lower scores are optimal) to assess mental, physical, and temporal demand, as well as performance, effort,

and frustration when completing a series of tasks. Paired *t*-test and ANOVA were used to determine significance for case performance scores and NASA-TLX scores, respectively. A System Usability Scale (SUS) was used to determine usability of the CMPeDS app.

Results. A total 28 of 32 planned participants have completed trial procedures to date. Mean performance scores on the cases were significantly higher with CMPeDS vs. standard reference, (87.7% vs. 72.4% [$t(27)$ 3.22, $P = 0.003$]). Participants reported lower scores on the NASA-TLX when using CMPeDS compared with standard reference tool (Figure 1). Mean score on SUS was 88.2 (scale 0–100) indicating excellent tool usability (Figure 2).

Conclusion. Using the eCDS tool CMPeDS was associated with significantly increased adherence to evidence-based guidelines for febrile infant management and decreased mental workload in simulation. Our findings highlight the potential value of eCDS deployment as part of CPG implementation projects.

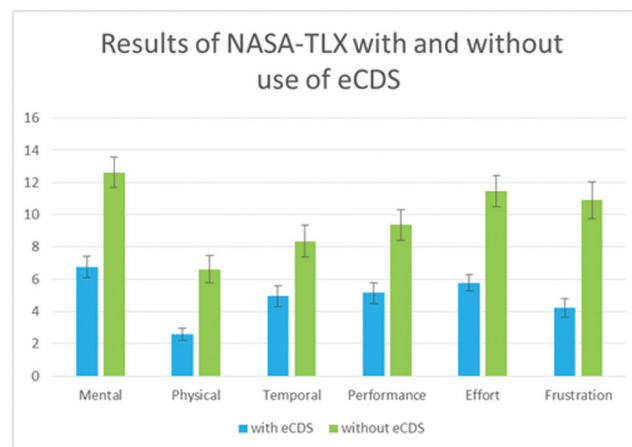


Figure 1

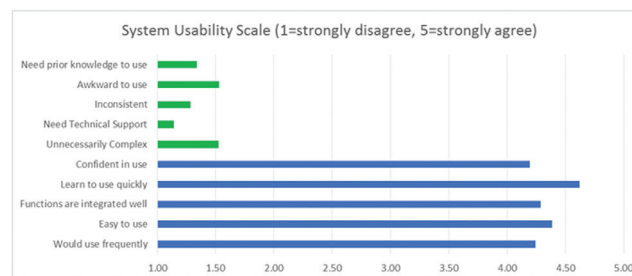


Figure 2

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979. Standardizing Medical Student Learning for Infectious Diseases Consult Electives: Prioritizing Content

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Background. The goals of 4th-year medical student electives vary, and students' learning during clinical electives may occur solely through the subspecialty cases that students encounter. We aim to standardize learning during electives by creating a toolkit to guide elective directors in the development of curricula that reinforce basic science principles, highlight areas for high-value care, and provide opportunities for further inquiry. The first step is to determine the core specialty topics applicable to students regardless of career choice. Here, we describe this content prioritization process within the context of an infectious diseases (ID) elective pilot curriculum.

Methods. We conducted a modified, 2-round Delphi process to develop consensus on ID topics that all graduating medical students should know. Through review of the literature for common diagnoses and high value care, and the medical school curriculum, the authors generated an initial list of 16 topics. An interdisciplinary group of 90 expert faculty educators from Internal Medicine, Family Medicine, Emergency Medicine, and Surgery rated these topics' importance using a 5-point Likert scale, from 0 (absolutely do not include) to 4 (very important). We considered items rated at least 3 (important) by at least 80% of participants to have reached consensus.