Purpose: The United States Medical Licensing Examination Step 2 Clinical Skills (Step2 CS) was developed to assess students’ abilities to apply communication, clinical skills, and medical knowledge to the care of patients (1). Some medical schools have described the use of observed structured clinical examinations (OSCEs) (2) and formal preparation courses (3) to improve readiness for Step2CS. After observing an unexpectedly high Step2CS failure rate in 2016, we piloted a cumulative OSCE administered over a half-day designed to enhance preparation for Step2CS in 2017.

Approach/Methods: A 6 case (3 hour) cumulative OSCE was created using cases adapted from MedEdPORTAL, our institution’s OSCEs, and a study text (4). For each case, rubrics were developed to assess each of the Step2CS subcomponents. For communication, the SEGUE framework (5) was selected. For the data gathering component, checklists were created consistent with institutional OSCEs. Finally, a scoring rubric for each encounter note was created and then vetted by 1-2 clerkship directors for clarity. The rubrics were then piloted using 10 sample encounter notes. Encounter notes were divided for grading among clerkship directors. All data was compiled and students were provided subcomponent scores and a comparison to their peers performance. The value of the OSCE was evaluated by student reaction after Step2CS completion and comparison of Step2CS pass rates pre and post intervention.

Results/Outcomes: 172 students (93% of the class) completed the OSCE. The SP time required was approximately 576 hours over a 2 week period, and the total time required for grading was estimated at 174 hours. Additional resources required 45 SP training hours, 20 hours for exam development, and a total cost of $26,225.70. The majority of students (98.4%) felt the OSCE should be offered again the following year. The opportunity to practice was the most helpful aspect. To date, we have observed an absolute decline in the fail rate in the year following the pilot. Prior to the intervention, 5.7% of our students failed Step2CS. In the current year, our fail rate has fallen to 2.2%. The cost required to reduce the number of failures by one student was $3,746.53.

Discussion: A cumulative OSCE reduced the number of failures for Step2CS in the first year since its introduction. However, there were significant direct and indirect costs associated with the examination. For the next iteration, we will be replacing faculty grading of each encounter note with a large group debrief in which students will review their encounter notes and compare to the gold standard.

Significance: Despite recent calls to eliminate Step2CS, the examination is likely to continue serving as an important step in medical licensure (6). The examination is anticipated to become more challenging as the USMLE has recently increased the required minimum passing level for all three subcomponents (7). While the direct and indirect costs of this examination were not insignificant, we feel that the overall benefit outweighed the potential downsides. The results of our study suggest that an OSCE designed to mirror Step2CS may be helpful in promoting successful passing of the real examination.
Title: Using EPA 10 to Scaffold Independent Clinical Practice: Offering Safe Practice in Emergent Situations

Submission Type: Innovation Highlights in Medical Education

Submitting Author: Amy Bunger, Ph.D.

Submitting Author Institution: University of Cincinnati College of Medicine

Purpose: We explore the significant variation in performance on different EPAs for all entering PGY-1s prior to the start of service. We provide the opportunity for incoming PGY-1s to participate in guided practice in a safe setting, with immediate faculty preceptor feedback, to provide program directors with baseline data to make informed choices in initial supervision; resident and attending pairing; clinical setting of initial rotations; and, individualized learning.

Approach/Methods: Prior to assuming clinical responsibilities, all incoming PGY-1s participate in multi-station structured clinical encounters. Cases represent common clinical problems and require taking a history, conducting a physical, ordering and interpreting tests, generating a 5 item differential, and communicating a treatment plan. Cases range levels of acuity, and test the ability to: recognize abnormalities in results; identify decompensation; incorporate concerns from team members; administer basic life support skills; ask for help; and communicate immediate care needs to the patient or other team members. Standardized rubrics measure observable behaviors that are crosswalked to 11 of the 13 AAMC EPA's and to ACGME's competencies.

Results/Outcomes: Our IRB protocol, Baseline Resident Assessment of Clinical Knowledge (BRACK), has now generated five years of data illustrating consistently low performance in EPA 10, the ability to "recognize a patient requiring urgent or emergent care and initiate evaluation and management", in contrast to the ability to obtain a history and physical, generate a differential diagnosis, or interpret tests. More than 50% of our residency program directors have used these data to inform their Clinical Competency Committee deliberations, or intervene early, and over 70% have used these findings to alter curriculum or inform Grand Rounds.

Discussion: Questions for further study include: Does the cumulative data reveal patterns as to which schools perform consistently on which EPAs?; Does the baseline performance on EPA 10 correlate to earlier acquisition of competence?; Can a baseline score for resident performance on EPA 10 inform engaged, participatory supervision on initial rotations? Is there predictive value in a baseline score on EPA 10 and the Clinical Competency Committee's semi-annual and annual decision making in residency?

Significance: Our incoming PGY-1 classes (n= 115 per year) are comprised of trainees coming from more than fifty five different medical schools. Five years of data indicating consistently lower scores on the application of learning as evidenced by EPA-10 may help inform curriculum revision, and guide the integration of application based learning for medical schools. Low performance on EPA 10 can provide specific information to strengthen and inform attending supervision on early rotations.
**Title:** Catch Them Before They Fall: Can Clinical Simulation Boot Camp Identify Early Interns Need for Extra Support

**Submission Type:** Innovation Highlights in Medical Education

**Submitting Author:** Rebecca Andrews, MD

**Submitting Author Institution:** University of CT Medical School

**Purpose:** Completion of medical school does not always predict success in residency. Early identification and support of interns likely to face challenges in residency can reduce intern stress as well as improve patient safety. There is no marker on residency applications that can be used as a predictive instrument, as success in residency is multi-factorial. A tool that combines application characteristics with early intern performance could be used to identify interns who may need additional support and guidance.

**Approach/Methods:** A cognitive simulation “bootcamp” was implemented during orientation to engage incoming interns in activities that mirror the clinical experiences they would encounter in training. Interns were evaluated across several competencies using milestone-based criteria to determine if they could perform simple tasks under indirect supervision. We performed a retrospective analysis of data collected during simulation training, as well as core faculty inter-rater discrepancies from the interview process, to develop a system for identifying interns in need of additional training resources.

**Results/Outcomes:** 86 interns were evaluated over a two year period. Of these 86 interns, 17 were identified as having one of the following 3 concerns: professionalism/misconduct, designation as conditional in at least one ACGME core competencies at mid or end year, or a reason for being placed on a letter of deficiency. 82% (14) of the subset of 17 were identified retrospectively to possess one or more of the following: core faculty inter-observer variability on applicant preparedness at the time of interview, ambulatory clinical skills simulation, or inpatient simulation “bootcamp” performance. One of the three residents not identified early developed professionalism concerns after completion of intern year and the second had a personal/family crisis which affected performance. The third resident was not identified by our process.

**Discussion:** Medical schools employ differing pedagogies and evaluation methodologies making it difficult for residency programs to evaluate the clinical competency of applicants. While use of core EPAs in medical school is a move in the right direction, program directors are not likely to rely on this data given the variation in how competency is defined. New tools that combine application characteristics, communication skills, self-reflection and global performance across competencies in activities expected of new interns are likely to be more predictive of future performance than any single measure alone. Employing these tools early in the transition to residency can potentially identify learners in need of additional resources. A next step would be to utilize this tool prospectively, understanding a limitation may be the resources allocated to residents who would have been successful without them. There may be a significant benefit for “at-risk” residents identified in this manner rather than at the time of letter of deficiency.

**Significance:** This tool takes an early global approach to intern evaluation with the potential to identify learners in need of assistance early in their residency career. Providing this extra support early during...
training has the potential to improve an individual’s learning trajectory and mental wellness by decreasing the stress associated with early internship, and as a result improve patient care and safety.
Title: Don't Ask? or Don't Tell?: Substance Use Data Collection and Reporting by Medical Students

Submission Type: Research Highlights in Medical Education

Submitting Author: Karen Szauter, MD

Submitting Author Institution: University of Texas Medical Branch

Purpose: Tobacco, alcohol, and drugs all have potential negative impacts on health yet are used widely by people of all ages and backgrounds. Asking patients about substance use, and offering resources to assist in reduction or cessation of use, is stressed in both undergraduate and graduate healthcare curricula. As part of a larger study on substance use questions and counseling, we focused specifically on student queries and counseling about drug use.

Approach/Methods: Following approval from the IRB and Curriculum Committee, archived materials from our 2017 senior medical student standardized patient (SP)-based clinical skills assessment (CSA) were obtained. Each student participates in eight 15-minute encounters. Two scenarios, one seen by all students (core case) and one encountered by a portion of the class, were selected for study. Four trained research assistants reviewed video-recordings of student-SP interactions from the two encounters and extracted details of substance use questioning. The 10 minute post-encounter challenge for the first case was an oral patient presentation (OP), the other case required a patient note. Video recordings of the OP, and print copies of the patient note, were reviewed for substance use information. A sampling of videos and notes underwent a second review to insure data extraction accuracy. Analysis included descriptive statistics for data collection on tobacco (T), alcohol (A), and drug use (D) and the subsequent reporting of that information. Qualitative analysis focused on how the questions were asked by substance type.

Results/Outcomes: Data for 193 students on Case 1 (syncope) and 91 students for Case 2 (chronic musculoskeletal pain) was reviewed. Case 1: Ten students (5.2%) included no questions about T, A, or D during the patient encounter. The remaining students all asked about tobacco use and alcohol use. 124 (64.2%) students included drug use questions in their substance use history, of these 95 (76.6%) provided the drug use information during the OP. For Case 2, 10 students (10.9%) included no questions about T, A, or D; the remaining students all questioned about tobacco and alcohol. Seventy students (76.9%) included questions about drug use during their substance use queries; of these only 37 (52.8%) documented the drug use history in the patient note. Students most commonly asked about drug use using the terms “recreational” “illicit” or “illegal” drugs. Across both cases (284 encounters) only six students included questions about prescription drug misuse.

Discussion: Some discussion of substance use was included in the majority of patient encounters. Drugs were asked about less often than tobacco or alcohol, and even when asked, were less frequently included in the subsequent presentation of patient data. Student discomfort in discussion of drug use, assumptions or bias about who needs to be asked about drugs, or uncertainty about what to do with a potential positive response, may contribute to avoidance of this topic.
**Significance:** Similar to data on tobacco and alcohol use, information about drug use, including prescription drug misuse, has implications for patient health. The current opioid crisis highlights the need to provide training to optimize the gathering and documenting drug use information on all patients.