Purpose: The current process for matching medical students into residency programs does not include an evidence-based approach for the identification and assessment of non-cognitive attributes associated with success in a given Graduate Medical Education (GME) program. This inefficiency contributes to excessive resource expenditure by students and programs on in-person interviews, as well as attrition rates up to 20-30% in some specialties. While Entrustable Professional Activities (EPA’s) have defined the clinical skills expected of graduates, there are other behavioral attributes that faculty, healthcare team members and hospital administrators are looking for in trainees. These attributes will differ based on the culture of the program and the institution. This project contributes to an enhanced understanding of the key characteristics of effective residents, using processes from Industrial-Organizational Psychology to identify desired attributes in medical school graduates applying to three GME programs within a Department.

Approach/Methods: Subject matter experts (SME) were identified from each GME program, and from medical education leaders and hospital staff. Semi-structured interviews were conducted around desired attributes in GME trainees, critical incidents observed with successful trainees, and reasons for trainees not completing training. Interview transcripts were analyzed for themes by two trained reviewers. Themes were compared across programs, to ACGME competencies and Entrustable Professional Activities (EPA’s).

Results/Outcomes: Thirty-eight interviews were conducted, with 42 attribute themes identified. Of the top 25 attributes, 6 specifically mapped to an ACGME competency, and 8 partially mapped; 6 overlapped with descriptions of EPA’s and 6 partially overlapped. The most commonly cited key characteristics of successful trainees that are not encompassed by current trainee assessment frameworks include: perceptive, grit, driven, initiative, intellectual curiosity, positivity, diversity of interests, work/life balance, resilience, transformative healthcare orientation, and teaching orientation.

Discussion: GME programs have specific attitudinal and behavioral attributes associated with effective resident performance, and the current system of selecting applicants does not contain evidence-based practices for efficiently identifying applicants with these key characteristics. Some attributes are program-specific, and some apply to multiple programs at a given institution. In addition, the attributes valued by GME programs include attitudes and behaviors that are not currently included in the evolving frameworks used to teach and assess medical students or residents.

Significance: GME programs have specific attitudinal and behavioral attributes associated with effective resident performance, and the current system of selecting applicants does not contain evidence-based practices for efficiently identifying applicants with these key characteristics. Some attributes are program-specific, and some apply to multiple programs at a given institution. In addition, the attributes...
valued by GME programs include attitudes and behaviors that are not currently included in the evolving frameworks used to teach and assess medical students or residents.

References: N/A
Title: Factors Program Directors Value Most in Prospective Candidates: A National Survey of Internal Medicine Directors

Submission Type: Research Highlights in Medical Education

Submitting Author: Steven Angus, MD, FACP

Submitting Author Institution: University of Connecticut School of Medicine

Purpose: The transition to residency is stressful for medical student. Perhaps no part of this transition is more stressful than the application process. Application inflation, the successive increase in the number of applications submitted with each subsequent ERAS application cycle has been well-documented and adds to the stress not only for students but for program directors as well. As program directors have little control over the number of applications submitted to their programs and limited resources with which to review these applications, they have likely addressed application inflation by other means, developing a list of high priority characteristics that they hope to find in their applicants. The aim of our study was to determine how important internal medicine program directors found certain factors when determining who, or who not to, extend an interview invitation to and how they may have altered their recruitment practices to accommodate the increasing number of applications.

Approach/Methods: Questions developed by the Alliance for Academic Internal Medicine’s Medical Student to Resident Interface committee were selected for inclusion on the 2017 APDIM Spring Survey which was sent to 373 program directors of ACGME accredited programs via QuestionPro Version 18.1 survey software. The survey was deployed between March 20 and May 20, 2017 with four email reminders sent to non-respondents. Frequency distribution was used to assess responses among programs and t-test and Chi-Squared were used to assess differences in responses based on program and program director characteristics. A p-value of 0.05 was used to identify statistical significant differences.

Results/Outcomes: 236 of 373 program directors responded to the survey (63%) Factors deemed very important in deciding who to invite for an interview with the highest frequency included: USMLE Step 2 CK score (57%), the Medicine Clerkship grade (53%), USMLE Step 1 score (44%), Chair’s ranking on departmental letter (37%) and ranking on the MSPE (36%). Factors identified as very important in deciding who not to offer an interview invitation to at the highest frequencies included: hints at unprofessional behavior on MSPE (67%), failure on USMLE Step 2 CK (46%), negative comments on MSPE (38%) and failure on USMLE Step 2 CK (34%) and failure on USMLE Step 1 (34%). Program directors identified higher USMLE cut-offs for international graduates as compared to US graduates. Statistically significant differences were noted in how important several factors were rated based on differing program and program director characteristics.

Discussion: In response to the increasing number of applications, internal medicine program directors have altered their recruitment practices and have identified certain characteristics as more important than others when determining which applicants to invite for interviews. Nearly two-thirds of programs have altered their recruitment practices in response to the increasing number of applications, forcing a reliance on filters rather than performing holistic review.
Significance: Understanding what factors are seen as important by program directors in the application and selection process may help medical students better determine which programs they are competitive for, altering application patterns and allow program directors to decrease their reliance on filters, fostering a more holistic review process.
Title: Medical Student Specialty Choice: Congruency from Pre-Matriculation to Match

Submission Type: Research Highlights in Medical Education

Submitting Author: Rebecca Cantone, MD

Submitting Author Institution: Oregon Health & Science University

Purpose: Undergraduate Medical education is evolving to prepare students for practice, and educators are seeking ways to predict which students may choose certain fields early in training (1, 2). National efforts aim to use competency-based education to decrease time in medical school and promote early residency acceptance (3, 4). The researchers aimed to describe rates of congruence in specialty choice from admission to match, in order to better understand which specialties may be best suited for accelerated training. Data from residents (5) and on primary care congruency in medical school graduates in 2003 (6) have been published, but do not focus on how to identify fields for accelerated tracks. The researchers also aim to help specialty advisors understand the rates at which students maintain interest to better target advising goals.

Approach/Methods: Medical Doctorate students at one School of Medicine who matriculated in the years 2009-2013 were surveyed upon entry regarding the medical specialty they believed they were most likely to pursue. Six hundred and fifty-four students received the matriculation survey and were eligible for inclusion. Students were excluded if they: did not complete the survey (n=53), did not finish medical school (n=19), were still enrolled as a student (n=38), or were admitted to the combined Oral Maxillofacial Surgery Program (n=9). The data were analyzed by initial specialty interest and ultimate specialty match to assess which specialties have the highest versus the lowest rates of congruence.

Results/Outcomes: A total of 535 students met the criteria for data analysis. The median congruence across all specialties was 30.8% with five specialties showing greater than 40% congruence and 8 specialties showing less than 20% congruence. The top specialty with congruence from matriculation to match was Physical Medicine and Rehabilitation, though the total number was small (100% congruent, n=3 congruent/3 initial). The next three with highest congruence in matriculation and match specialties were Psychiatry (57.1%, 4/7), Internal Medicine (48.5%, 47/97), and Family Medicine (47.7%, 41/86). The specialties with the least congruence were Pathology (0% 0/2), Preventive Medicine (0%, 0/4), Dermatology (12%, 1/8), Neurology (16.7% 3/18) and Radiation Oncology (16.7%, 1/6). (Full data to be presented in a table.)

Discussion: Overall, this data supports that while there is higher congruence for some specialties, no specialty choice is fixed across the medical school experience. This suggests a need for advisors to support those with strong early interest in a specialty as well as foster opportunities for robust career exploration across all medical students, particularly when considering accelerated training tracks. While specialty choice rates at this institution mirror national data (7), additional studies at different institutions with different curricula are needed to validate this data for wider use.
**Significance:** Specialties with congruent interest before and after medical school, such as psychiatry, internal medicine, and family medicine, may be best served to be longitudinal or accelerated training tracks in a competency-based manner. All specialties may benefit from continued career advising.
Title: Impact of Gender, Experiences, Reflectivity, and Critical Analysis on Multiple Mini Interview Scores in Admissions

Submission Type: Research Highlights in Medical Education

Submitting Author: Laura Greene, MD

Submitting Author Institution: Larner College of Medicine at the University of Vermont

Purpose: UVM Larner College of Medicine (LCOM) implemented the Multiple Mini-Interview (MMI), structured to assess AAMC Core Personal Competencies[1]. Previous studies demonstrated that, on average, females receive higher MMI scores[2-4], and increased age influences MMI score[2]. Preliminary analyses of LCOM data replicated the literature. Years since undergraduate degree attainment (YSUD; proxy for life experience) was associated with higher MMI scores, particularly in females. However, YSUD did not measure quality or impact of experiences. This study investigated the influence of Gender, Experiences, Reflectivity, and Critical Analysis on MMI scores. We explored two application components – Experiences (ED) and Reflective writing (RD) domains. We hypothesized domain scores were positively associated with MMI scores and investigated gender differences. As success on the MMI requires critical thinking skills[5], we hypothesized MCAT critical analysis and reasoning skills (CARS) scores correlated with MMI scores and explored gender differences.

Approach/Methods: 1795 LCOM applicants (52% female) received MMI scores. 1790 applicants received ED scores (1-3) and 597 received RD scores (1-3) using multiple independent sampling methodology. 682 applicants’ CARS scores were included. Correlations examined associations between MMI scores and ED, RD, and CARS scores, respectively. Independent samples t-tests examined gender differences in ED, RD, and CARS scores separately.

Results/Outcomes: The t-test indicated females had higher average ED scores (M = 2.19) than males (M = 2.08, t = -3.64, p < .001). ED scores correlated with MMI scores overall (r = .16, p < .001), as well as for females (r = .16, p < .001) and males (r = .13, p < .001), separately. The t-test indicated females had higher average RD scores (M = 2.08) than males (M = 1.96, t = -2.44, p < .05). RD scores correlated with MMI scores overall (r = .13, p < .01), as well as for females (r = .17, p < .01), but not males (r = .04, p = .51). The t-test indicated CARS scores did not differ between females (M= 126.70) and males (M = 126.84, t = 0.82, p = .41). CARS scores correlated with MMI scores overall (r = .09, p < .05), and for females (r = .09, p < .05), but not males (r = .04, p = .53).

Discussion: Findings suggested breadth of experiences, measured by ED scores, was associated with MMI scores. However, females received higher ED and RD scores, as well as had unique associations between RD and CARS scores, respectively, with MMI scores. These associations suggest a gender-specific mechanism may exist for females. Potentially, females described more relevant experiences and offered more compelling reflections. As CARS scores did not differ by gender, there may be an unmeasured mediator that explains gender differences in the association between CARS and MMI scores.
Significance: Findings extend previous international work to the US and provide potential explanations for replicated gender differences. One limitation is the smaller applicant subset used to evaluate RD and CARS scores due to changes in domain scoring and MCAT format. Future research should explore additional variables to explain gender differences, including station-specific competencies.