Quarterly - Medical Education - UPdate

COUNCIL OF RESIDENCY DIRECTORS IN EMERGENCY MEDICINE

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Avoiding the Virtual Pitfall: Identifying and Mitigating Biases in Graduate Medical Education Videoconference Interviews

Marbin J, Hutchinson YV, Schaeffer S. Acad Med. 2021 Jan 12 PMID: 33464743

A continuation of video conference interviewing (VCI) is a reality for resident recruitment this year. While VCI may promote diversity in some ways, reliance on technology may also introduce new sources of bias. Digital redlining with reduced access to broadband internet, time zone differences, and the tendency for video camera technology algorithms to normalize whiteness, may all be factors that disproportionately affect diverse populations. Video interviewing inherently increases cognitive load, which magnify implicit biases as interviewers default to implicit associations leading to affinity bias, leniency bias, accent bias, performance attribution bias, among many others. In order to mitigate bias inherent in VCI, programs must take intentional steps as we prepare for the interview season ahead. Structural bias may be mitigated by following AAMC recommendations to avoid a hybrid virtual and in-person model, and supporting policies to promote equitable access to broadband internet and technology hardware. Technology biases may be mitigated through tip sheets, "tech check" opportunities, standardized video backgrounds, among other options. Reducing the cognitive load of VCIs to mitigate bias may be accomplished by spacing out interviews, minimizing speaker windows, preparing interviewers for the possibility of technology glitches, and having interviewers acknowledge their own risk of bias and the technology inequities often inherent in VCIs. Utilization of these strategies and others listed in the article will help promote equity and inclusion in VCI-based residency recruitment.

- Carmen Wolfe, MD

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Types and Timing of Teaching During Clinical Shifts in an Academic Emergency Department

Baugh JJ, Monette DL, Takayesu JK, Raja AS, Yun BJ.West J Emerg Med. 2021 Jan 29;22(2):301-307. PMID: 33856316

For every academic emergency medicine physician, teaching medical students and residents is one of their many on-shift tasks to complete. Although this is a universal responsibility, the amount of time on shift dedicated to teaching and the method employed varies among physicians. This observational study aimed to establish how much time on shift is spent on education and the various forms of teaching that occur. This study involved 10 different attendings at a large, urban, quaternary care, academic Level I trauma center with an emergency medicine residency. Observers were used to identify and quantify the attendings tasks, while the attendings were unaware of what was being studied. The authors found that teaching accounted for on average 25% of the attendings time on shift or 15 minutes per hour. These activities were further broken down to explicit teaching, which accounted for approximately 5 minutes of the teaching time per hour, and implicit teaching, which accounted for about 10 minutes of the teaching time per hour. Implicit teaching was defined as discussions about patients but did not involve didactic teaching or clear directives regarding the patients' care. Explicit teaching occurred when education was the main intent of the attendings words or actions, which are separate from the care of the patient. Explicit teaching was further broken down into case-based teaching, occurring the majority of the time, followed by bedside teaching, procedural teaching, and topic based teaching. The study also reported that on average residents had on average 3.1 minutes per hour of instruction, while physician assistants received 2.3 minutes of instruction. The breakdown of attendings activities was 32% on direct patient care, 25% on teaching, 12% on documentation, 7% socializing or taking breaks, 6% on chart review, 6% on sign out, and 10% on other activities. Three task management styles were used by attendings in the study. They were described as 'in-series,' 'in-parallel with supervision,' and 'in-parallel with modeling.' 'In-series' was attendings seeing patients separately after listening to the learner. 'In-series,' which accounted for 40% of the encounters, led to implicit teaching during the presentation and explicit teaching after the attending saw the patient. The 'in-parallel with supervision' involved the attending watching the learner conduct the patient interview and interjecting when necessary. The 'in-parallel with modeling' involved the attending conducting the patient interview, while the learner observed. The 'in-parallel' styles involved more bedside teaching compared to 'in-series' style. Time is a limited resource and there are many demands on your time while on shift. This study describes some of these demands, quantifies them, and presents methods by which they are most often addressed. It does not, however, identify what learning methods the residents prefer or how effective the different methods are in educating our residents. It would be interesting to replicate this study with learner perceptions of teaching time and overall quality of teaching to see if they match the observed results. With such a large amount of implicit teaching occurring, it begs the question: If you teach a resident but they did not know it, does that count as teaching?

- Christopher Freeman, MD
  Kris Hendershot (PGY 2)

The prevalence of lesbian, gay, bisexual, and transgender health education and training in emergency medicine residency programs: what do we know?

Moll J, Krieger P, Moreno-Walton L, Lee B, Slaven E, James T, Hill D, Podolsky S, Corbin T, Heron SL. Acad Emerg Med. 2014 May;21(5):608-11. PMID: 24842513

LGBTQ+ patients are commonly seen in the ED and have unique health issues; in 2016 this group was designated by the NIH as a health disparity population. Education on disparities in healthcare is an essential and required component of EM curriculum. Additionally,gender identity, sexual orientation, and transgender care were added to the 2019 Model of the Clinical Practice of Emergency Medicine adopted by ABEM. Despite increased awareness of this important topic, knowledge and education gaps are known to exist in medical training. The authors primary objective was to identify the percentage of EM programs providing LGBTQ+ education; secondary outcomes included quantifying the amount of education residencies are providing and correlating with program type and demographics. Results were compared to a prior study done in 2013. A 14-question survey was sent out to EM PDs utilizing the ACGME database of emails with a 49% response rate. Results showed a marked increase in the number of programs

offering LGBTQ+ education from 2013 (75% from 26%). The quantity of education provided also increased (median 2 hours from 0 minutes) and was provided in a variety of ways including traditional didactics, incorporated into simulation, and journal clubs. Amount of education provided did not differ by region but was higher in university and county programs as compared to private programs. Programs with LGBTQ+ faculty or resident members were significantly more likely to provide LGBTQ+ education. Most programs reported that they would prefer more time devoted to the topic than provided; the largest barrier cited was lack of time. Notably, lack of need was minimally cited as a barrier (15%) as compared to the 2013 results (59%). Limitations to the study included response rate; it's certainly possible the programs who did not respond could have changed the results, however there was representation from each region and type of program. The authors suggest refining quality and content of curriculum as next steps. However, these results are encouraging as awareness and education about this important topic has clearly increased. It also highlights the ongoing need for diverse faculty and residents as programs with these members were also more likely to provide LGBTQ+ education for their trainees.

- Amy Stubbs MD

The Price of Fear: An Ethical Dilemma Underscored in a Virtual Residency Interview Season

Antono B, Willis J, Phillips RL Jr, Bazemore A, Westfall JM. J Grad Med Educ. 2021 Jun;13(3):316-320. PMID: 34178252

As the pandemic rages on, all signs point towards another virtual interview season for the more than 45,000 residency applicants. There have been many debates about the pros and cons of another virtual interview season, but despite the reduction in travel costs for applicants, an increase in applications occurred for some. This led to the "behavioral economics rabbit hole" with increased applications despite no proven benefit to applicants or programs. A recent publication in aptly titled "The Price of Fear" in the *Journal of Graduate Education* sought to contextualize the dangers of application inflation.

Using data from the Electronic Residency Application Service, the authors noted an 87% increase in applications when comparing US senior medical students from 2009 to 2019. This was even prior to the all virtual season of last year. International medical graduates only showed a 44% increase in application numbers over the same period. Despite these massive increases, little benefit has been seen with US seniors maintaining a match rate of 92-95%. What has increased is the financial costs to the students who spent an average of $1409 on 2019 ERAS fees, an 149% increase compared with a decade ago. The increased expenses have led to increased revenue for the Association of American Medical Colleges (AAMC), the managers of ERAS. ERAS is their largest single revenue stream, which according to IRS filings have doubled in the past decade to$94.2 million.

The implementation of virtual interviews combined with the loss of away electives last year is thought to have contributed to a fear among medical students in regards to their match likelihood. The increase in individual applications can lead to a disproportionate interview season with the same small pool of candidates being interviewed by programs. On example was seen in 2016, where 2.6% of all family medicine applicants received 22% of the total interview spots.If this event occurred when travel was still required, a virtual interview season can only exacerbate the situation. Another driver of increased applications is peer pressure and conformity. Despite being faced with historical data showing no benefit to increased applications, the numbers continue to rise. Despite the increased costs of interviewing the authors note many students consider this a "drop in the bucket" compared to their medical school debt which often exceeds $200,000.

A call for solutions has been echoed by not only the authors but multiple specialties. Some suggestions include standardized windows for interview offers or the use of a token system to signal interest in a program. Ultimately the authors point out that the main harbinger of change needs to be the AAMC itself but could suffer economic implications if they attempt to limit application numbers among the students.

The ethical reasons to limit application numbers and provide students with actionable data is the burden all in residency recruitment must bear especially with another virtual interview season looming. We must be the protectors of future generations of doctors by reducing the fear surrounding application season.

- Christopher Sampson, MD

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Multiple United States Medical Licensing Examination Attempts and the Estimated Risk of Disciplinary Actions Among Graduates of U.S. and Canadian Medical Schools

Arnhart K, Cuddy MM, Johnson D, Barone MA, Young A. Acad Med. 2021 Jun 15. PMID: 34133346.

USMLE performance and it's prediction of resident/physician quality has been hotly debated, and the transition to P/F reporting of Step 1 has raised concerns about increased reliance on Step 2 and the paucity of predictive data available to select residency applicants. This paper is therefore timely as it links the number of USMLE attempts to state board disciplinary actions, the latter being a potentially patient-facing and high-value outcome. The authors used the best available, national dataset (from USMLE and FSMB), considered exam attempts between 1994 and 2011, and licensure before 2018. They found a small but statistically significant link between the number of attempts on Step 1, Step 2 CK or Step 3, and disciplinary action. Every additional attempt at Step 1 increased the risk of discipline by 7%, Step 2 attempts increased the risk by 9% and Step 3 by 11%. The authors point out that the effect size is small, disciplinary events are rare, and that most trainees with repeated attempts do not have any disciplinary action. Based on this study, it may be reasonable to consider using the number of attempts as one of the metrics used for applicant selection. ERAS may also want to provide the attempt count as a data field.

- Nikhil Goyal, MD

What is the association between student well-being and high-stakes examination scores?

Monrad SU, Wolff M, Kurtz J, Deiorio NM, Sabo R, Stringer JK, Santen SA. Med Educ. 2021 Jul;55(7):872-877. PMID: 33501719.

The goal of this study was to explore the association between student wellbeing and performance on USMLE Step 1. The study population was end of second-year medical students studying for USMLE Step 1 at the University of Michigan between 2014 and 2016. During this time frame students were offered the Medical School Wellbeing Index (MSWBI), a seven-question evaluation of wellbeing. Data from this evaluation was initially used for program evaluation. The authors used logistic linear regression to evaluate the association between performance on the MSWBI and USMLE Step 1. Analyses were performed to adjust for MCAT and cumulative medical school performance during the second year (M2) of medical school. 68% (n=354) students had complete data sets. In simple linear regression lower MSWBI score correlated with lower USMLE score. MSWBI score accounted for 5% of score variability. In multi-variant analysis when MCAT and M2 scores were added to the model MSWBI score was no longer associated with USMLE score. The fully adjusted model explained 51% of score variance. The authors conclude that lower wellbeing as defined by a high MSWBI score was not associated with lower USMLE Step 1 performance.A high stress level prior to a high-stakes exam does not necessarily predict poor performance. Of note 49% of score variance was unexplained by this model.

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