



MEDICAL EDUCATION: PART I

MEDICAL EDUCATION UPDATE

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We report on the Medical Education Update presented at the 2019 SGIM National Meeting in Washington, DC. Five members of the SGIM Education Committee reviewed all manuscript titles from 14 major medical education journals published in 2018. Two reviewers were assigned to each journal and identified articles relevant to the General Internal Medicine (GIM) medical education community (n=168). Articles were assessed on a nine-point scale based on the following criteria: relevance to a GIM audience, importance of the study question, quality of methodology, and generalizability. Two reviewers independently assessed each of the 168 articles based on these criteria. Thirteen articles were identified as finalists, and group consensus identified the six papers chosen for presentation. Manuscripts spanning the scope of undergraduate, graduate, and continuing medical education were included. The following is a brief synopsis of each of the presented papers:

Undergraduate Medical Education:

Garcia A, Kuo T, Arangua L, et al. Factors associated with medical school graduates' intention to work with underserved populations: Policy implications for advancing workforce diversity. *Acad Med.* 2018; 93(1): 82-89.

Article Focus: Garcia and colleagues analyzed the national AAMC Medical School Graduation Questionnaire to examine intent to work with underserved populations (IWUP) as it relates to underrepresented minority status (URM). The 2010-2012 survey included 40,846 graduates, of whom 49.5% were women, 16.6% were URM, and 32.4% intended to practice primary care.

Key Messages: Median educational debt was \$160,000 with URM graduates reporting higher overall debt (p<.001 for trend across several debt levels). Female gender (aOR 1.61), URM status (aOR 2.62), and intent

to practice primary care (aOR 1.81) were all significantly associated with IWUP (p<.001). Debt burden was not a barrier to IWUP—in fact, greater debt was associated with a greater likelihood of IWUP indicating a dose response relationship (aOR 1.61 for >200k debt, p<.001). URM graduates were more likely than non-URM graduates to state IWUP within all categories of career choice—primary care or specialty care, clinical or non-clinical (p<.001 for trend) – as well as all levels of debt (p<.001 for trend). Adding intention to enter into loan forgiveness programs into the multivariate model eliminated the association between educational debt and IWUP (aOR 1.1 for >200k debt, p=.07).

Strengths and Limitations: Associations between URM status, female gender, and primary care career choice with IWUP are robust. The question of whether entering into loan forgiveness programs is a cause or effect of IWUP cannot be determined in this cross-sectional study. The data informs recruitment and incentive programs for IWUP.

Graduate Medical Education:

Smith C, Newman LR, Huang GC. Those who teach can do: Characterizing the relationship between teaching and clinical skills in a residency program. *JGME.* 2018; 10(4):459-463.

Article Focus: Recognizing that residents have dual roles as both clinicians and teachers, the aim of this paper is to examine the relationship between these roles and to understand how learning about teaching might enhance clinical skills of trainees. The authors performed a two-phase qualitative analysis beginning with a literature search to identify attributes of physicians and clinical teachers. Qualitative data was extracted from 300 narrative evaluations of trainees in a large urban

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academic Internal Medicine (IM) residency program, analyzing the comments made about low, high and typical resident performers. The authors conducted a focus group of graduating trainees in their medical education track to confirm they had identified all themes and to refine their framework. They identified four main themes (relationships, communication, relationship to self, relationship with knowledge) and eighteen sub-elements of these themes that characterized the relationship between teaching and clinical skills.

Key Messages: Improving the skills of residents as teachers may jointly benefit the education of learners and improve the care of patients.

Strengths and Limitations: This is the first study to investigate overlap between clinical skills and teaching skills of residents, beginning a dialogue on this important topic for trainees and medical educators. The study was conducted at a single IM residency program, limiting its generalizability.

Abedini N, Stack S, Goodman J, et al. It's Not Just Time Off: A Framework for Understanding Factors Promoting Recovery From Burnout Among IM Residents. *JGME*. 2018; 10 (1): 26-33.

Article Focus: In this qualitative study, the authors aimed to identify factors that promoted recovery from burnout in IM residents, as well as factors that may have a role in preventing subsequent episodes of burnout during training.

Key Messages: Semi-structured interviews with PGY 2, PGY 3, and recent graduates of the University of Washington IM Residency Program demonstrated that burnout could be divided into two types: circumstantial and existential. Circumstantial burnout was due to self-limited circumstances and environmental triggers. Existential burnout referred to feelings of loss of meaning in medicine and an uncertain profes-

sional role. Interventions on circumstantial burnout focused on relieving circumstantial burnout factors while interventions on existential burnout relied on promoting longitudinal reflection practices and discussion of professional growth as a physician amongst peers.

Strengths and Limitations: Distinguishing between these two types of burnout could be beneficial to a residency program in addressing recovery of current burnout and prevention of subsequent burnout. Study conclusions are limited from this single center study, using a single item burnout screening tool and involving participants that previously experienced burnout episodes.

Raimo J, LaVine S, Spielmann K, et al. The Correlation of Stress in Residency with Future Stress and Burnout: A 10-year Prospective Cohort Study. *JGME*. 2018; 10 (5): 524-531

Article Focus: This study sought to evaluate whether stress during residency is correlated with stress and/or burnout years after one enters professional practice. The authors hypothesized that stress in residents would correlate with stress and/or burnout 10 years into practice.

Key Messages: In this prospective cohort study, validated survey instruments were used to survey all IM residents at North Shore University Hospital between 2003-05. The same physicians were surveyed 10 years later to assess current levels of stress, burnout, and career satisfaction. One hundred and forty three residents completed the initial survey and 81 physicians completed the follow up survey. There was a significant correlation with emotional stress in residency and emotional stress in professional practice ($p < .001$). Emotional stress in residency was correlated with emotional exhaustion ($p < .007$) and depersonalization ($p = .029$). A multi-variate analysis revealed emotional distress in residency is associated with emotional distress in

practice ($p = .005$) and depersonalization ($p = 0.28$). The authors conclude that emotional distress and burnout in residency can have implications on a physician's future emotional stress and association with future burnout.

Strengths and Limitations: This study is one of few that looks at implications of burnout and stress during residency with one's future career. The study used multiple validated survey instruments to measure stress and burnout. Conclusions are limited by single center data collection, lack of contact follow up for all initial participants, and potential response bias.

Rykskina KL, Holmboe ES, Shea JA, et al. Physician experiences with high value care in internal medicine residency: Mixed-Methods study of 2003-2013 residency graduates. *Teaching and Learning in Medicine*. 2018. 30(1): 57-66.

Article Focus: GME stakeholders have increasingly emphasized the importance of high value care (HVC). Residency programs have variably incorporated HVC, with unclear effects on residents' preparedness to engage in HVC practices. This study aimed to describe IM residency graduates' perspectives of HVC practices, evaluate residency program characteristics associated with HVC experiences, and identify respondent themes regarding HVC experiences.

Key Messages: Result trends reflected that respondents graduating more recently (2011-13 v. 2007-10) appeared more often to report HVC-relevant education (e.g., costs of care, justifying tests) and feeling prepared to apply HVC practices (e.g., participating in shared decision making); the only statistically significant differences were found for using overtreatment guidelines in patient conversations, and prescribing generic medications ($p < 0.01$). A higher degree of HVC-related elements correlated positively with primary care track training and less burnout at graduation ($p < 0.04$).

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Qualitative HVC education themes included HVC-relevant concerns regarding malpractice, clinical systems' alignment with teaching, and seeking more HVC training. Residency HVC exposure and content are variable, though more likely for those who trained more recently. For effective HVC training, faculty development, formal training, and collaboration with clinical partners will be critical.

Strengths and Limitations:

Strengths include structured survey development and a mixed methods approach with random national sampling of IM physicians through the AMA Masterfile with 50.6% response and a variety of practices represented. Limitations include recall bias and use of a novel HVC scale without prior validation.

Continuing Medical Education:

McDonald FS, Duhigg LM, Arnold GK, et al. The American Board of Internal Medicine and Maintenance of Certification Examination and State Medical Board Disciplinary Actions: A Population Cohort Study. *JGIM* 2018; 33(8): 1292-1297.

Article Focus: This historical cohort study compared the risk of

state medical board disciplinary action over time in physicians passing the IM Maintenance of Certification exam (IM MOC) with those who did not pass the IM MOC within 10 years of their initial American Board of Internal Medicine (ABIM) certification. The initial cohort consisted of more than 45,000 Generalists who passed their ABIM IM certification exam between 1/1/90 and 12/31/03.

Key Messages: The risk for discipline among physicians who did not pass the IM MOC examination within the 10 year requirement window was more than double that of those who did pass the examination (adj HR 2.09; 95% CI, 1.83 to 2.39). Higher disciplinary rates were also observed in: males (adj HR 1.95; CI, 1.67 to 2.27), those living in the South vs Northeast (adj HR 1.78, CI, 1.49 to 2.14), required >1 vs. 1 exam attempt for IM certification (adj HR 1.35; CI, 1.14 to 1.60), and in those who were age >30 vs. <30 at cohort year (adj HR 1.27; CI, 1.08 to 1.50). Disciplinary actions did not vary by state CME requirements (adjusted HR 1.02; 95% CI, 0.94 to 1.16), but declined with increasing MOC examination

scores (Kendall's tau-b coefficient = - 0.98 for trend, $p < 0.001$). Among disciplined physicians, actions were less severe among those passing the IM MOC examination within the 10-year requirement window than among those who did not pass the examination.

Strengths and Limitations:

Similar to associations related to initial ABIM IM certification findings, this study provides important potential quality of care and performance outcome information for patients and the healthcare profession regarding IM MOC. Independent of professionalism, it reveals a strong marker, with a demonstrated "dose-response" medical knowledge relationship (exam score), for physicians who are less likely to have disciplinary actions. While a strong design for examining prognosis of outcomes, a population-based observational cohort design such as this can neither establish causality, nor account for factors not examined in the model. Finally, only examined general internists were studied and therefore results may not be applicable to subspecialty physicians.

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