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Letter to the Editor

Considerations regarding the future of Step 2 CK and the neurosurgery residency match

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To the Editor,

With the United States Medical Licensing Examination Step 1 converted to a pass/fail system, discussions surrounding the de facto need for an alternate standardized measure of performance have indicated that increased emphasis will be placed on the numeric Step 2 clinical knowledge (CK) score for future residency application cycles.^[1,2,7,8] While this remains the leading consensus at present, this purported increased weight of Step 2 CK has generated another interesting discussion: with the move toward basing candidate selection on factors other than standardized examination scores, how would residency candidate selection be impacted if the National Board of Medical Examiners transitions Step 2 CK to a pass/fail scoring system (eliminating any numerically scored board exams for medical students before residency)?^[2] In considering this scenario, we herein provide an overview of the potential outcomes of such a change with respect to both parties involved in the match – the programs and their respective residency applicants.

Without standardized exam scores, programs would no longer be able to implement score cutoff screens and, therefore, would be challenged to filter through a large volume of applications lacking board exam metrics. Further compounding this challenge, it is possible that there could be an increased number of applicants into neurosurgery based on the reasoning that the previous barriers of entry (high numeric scores on board exams) would be eliminated. While this is beneficial for students that did not perform as well but have geared their applications to neurosurgery, the sheer volume of applicants would be difficult to holistically analyze. In addition, when it comes to seeking alternative metrics, further emphasis may be placed on research publications, further perpetuating the “arms race” to stand out among residency applicants.^[6] Research would become of particular importance in the most competitive specialties such as neurosurgery, a specialty in which the baseline successful applicant has already been expected to produce significant quantities of research, even before board exam score changes. In 2020, for example, successful neurosurgery applicants had an average of 23.4 presentations, publications, and abstracts, and this number (as well as average number of research items in other specialties) would be expected to grow if both step exams become pass/fail.^[4] For the purpose of adjusting to the new demands of “standing out in the match,” completion of a research year within medical school (which is already popular among neurosurgery applicants) could become virtually standardized, an endeavor that further contributes to the already-large financial burden of

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medical education. A transition to pass/fail board exams could also increase importance of pre-clinical performance, possibly manifesting as counterproductive to the goal of decreasing stress associated with standardized examinations, and potentially placing students from schools that have pass/fail preclinical grading at a disadvantage. Increased emphasis on medical school prestige is also predicted, potentially creating difficulties for students that do not attend highly ranked medical schools.^[7] Altogether, this points back to the intended function of scored board exams to provide a standardized measure of knowledge and irrespective of medical school prestige.

With respect to the topic of equity in the match, populations underrepresented in medicine, such as first-generation physicians, females, students without home residency programs, osteopathic medical graduates, and international medical graduates, would likely be negatively impacted by a Step 2 CK scoring change. Dependence on nonstandardized metrics such as medical school prestige and research publications may provoke rather than palliate bias, since subjective metrics have been shown to discriminate against students from underrepresented groups.^[5] Performance on board exams has been a way to even the playing field and has been correlated with the ability to successfully complete residency and pass qualifying examinations.^[3] Elimination of objective scoring of board exams could cause even more difficulties for applicants underrepresented in medicine. Further suppression of underrepresented groups could potentially bottleneck the much-needed increase in diversity of the medical workforce.

To overcome the challenges this change would pose, residency programs could develop a standardized specialty-specific entrance exam for neurosurgery, allowing for assessment of genuine interest, commitment, and competency in applicants. However, the feasibility of such an assessment – if made specialty-specific in content – is low as certain specialties (including neurosurgery) are not a core component of medical school preclinical or clinical education. In addition, sub-internships and audition rotations would have further weight in assessing applicant fit for a program, alongside letters of recommendation, and research production. Elimination of all scored board exams would require a complete restructuring of the application process for residency, a change that would undoubtedly pose new challenges with respect to selecting the next generation of physicians.

Declaration of patient consent

Patient's consent not required as there are no patients in this study.

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Conflicts of interest

There are no conflicts of interest.

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