

## VIEWPOINT

# Improving the Residency Application and Selection Process An Optional Early Result Acceptance Program

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Interview

**The process** of securing a residency position following medical school has become increasingly arduous and complicated. The mean number of applications per applicant for US and Canadian medical school graduates has increased across all specialties in the last decade, with several specialties seeing a doubling in number of applications. For instance, from 2011 to 2019, applications per applicant increased from 15.2 to 34.8 for family medicine, from 30.5 to 61.3 for obstetrics and gynecology, and from 21.6 to 51.9 for psychiatry.<sup>1</sup> Similarly, the number of applications received by each program also has increased across all specialties, some by more than 200%. For example, from 2011 to 2019, the mean number of applications received by family medicine programs increased from 76 to 251 and received by psychiatry programs increased from 115 to 446.<sup>1</sup>

A cycle involving increased numbers of applications and increased reliance on standardized testing has resulted in behavioral changes in both applicants and residency programs. Currently, senior medical students spend large amounts of time and money during the last year of medical school applying to an increasing number of programs and meeting the demands of

when screening applications in an effort to reduce the number of applications to be reviewed. For example, 83% (89 of 107) of the 151 orthopedic surgery programs that responded to a survey reported use of a USMLE Step 1 minimum score when screening applications, and 53% of programs reported requiring a score greater than 230.<sup>4</sup> Whether this is true for all applicants, or some, is unknown.

The increased relevance of Step 1 in screening applications can be detrimental to applicants and residency programs. First, overreliance on USMLE Step 1 may have particularly negative consequences for students underrepresented in medicine, who historically have achieved lower scores on these examinations. Hierarchical linear modeling of USMLE Step 1 scores between 2010 and 2015 demonstrated that self-identified black students scored 16 points lower than white students.<sup>5</sup> Second, reliance on Step 1 scores may cause medical students to focus on preparation for Step 1 at the expense of focusing on other important aspects of their education. Third, relying on test scores as screening criteria is antithetical to finding the right resident for the right program, as program directors might miss out on students with qualities that align well with the mission of their programs.

To address the unintended consequences of use of the USMLE Step 1 score, the USMLE parent organizations (the Federation of State Medical Boards and the National Board of Medical Examiners), along with the American Medical Association, the Association of American Medical Colleges, and the Educational Commission for Foreign Medical Graduates, convened an invita-

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the residency application process. Yet, in 2019, even though the ratio of first-year positions available per active US senior medical student was 1.7 (32 194 positions offered to 18 925 US applicants), the highest on record, the percentage of all US senior medical students who matched to their first-choice programs was 47.1%, the lowest on record (down from 52.6% in 2011). Furthermore, 5.8% of students did not match, an increase from 5.2% in 2011, and more than 20% of students matched to a program they ranked fourth or lower on their list.<sup>2</sup>

Meanwhile, to process the high volume of applications received, programs are likely relying more on quantitative metrics, such as United States Medical Licensing Examination (USMLE) Step 1 scores, for screening. Results of the 2018 National Resident Matching Program's Program Director Survey showed that 94% of residency programs cited the USMLE Step 1 score/COMLEX Level 1 score as an important factor in selecting applicants to interview, an increase from 73% in 2012.<sup>3</sup> Moreover, some programs report using minimum USMLE Step 1 scores

tional conference including members of each organization with additional members representing a broad spectrum of medical education, state medical boards, examinees, and the public to discuss the complex issue of USMLE score use and to explore possible modifications to USMLE scoring.<sup>6</sup> The large number of applications submitted to residency programs was identified as a major challenge, and the discussions highlighted a pressing need to improve the quality of information transmitted in the application package as well as a need for increased transparency from programs about the key characteristics they value in applicants. This information may not reduce the number of applications submitted because of the perceived disadvantage to individuals who apply to fewer programs. An alternative approach, imposing a random cap on the number of applications an applicant may submit, might give an unfair advantage to more competitive applicants. Therefore, this problem will continue unless a strategy is developed to change the approach to the resident selection process.

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A new approach to help decrease the number of applications by giving students the option of an early application and expeditious result match program may be helpful. One possible approach might be an early result acceptance program (ERAP), in which students would be permitted to apply to a maximum of 5 programs, and programs would be limited to filling half of all their available spots. Match results could be available several months prior to the current match, and students who enter the ERAP and do not match could join the regular match. Medical students would not need to reinterview with programs to which they applied in the ERAP and could still be eligible for ranking those programs in the regular match. The interview cycle for the ERAP would need to start earlier than the current cycle, or the current cycle would need to be shortened to accommodate 2 matches. Both of these options pose challenges. Moving the cycle earlier will require applications, letters of recommendations, and away rotations to be completed earlier. This may not be possible for some students. In addition, shortening the regular cycle might be difficult for large residency programs unless a large percentage of students opt for the early match and program directors fill many of their slots early.

Nonetheless, an ERAP could help decrease the number of applications and potentially address the shortcomings of the current approach to matching for residency positions, and could help achieve a better fit between student and program as follows: First, fewer applications to programs at this phase could potentially permit program directors to spend more time reviewing applications to find individuals who are a good fit for the program based on multiple attributes, not just test scores. More comprehensive reviews may help increase diversity across specialties, especially those requiring higher USMLE Step 1 scores, as students who are underrepresented in medicine could have more opportunity to highlight their unique accomplishments and skills to the programs to which they apply. Second, deemphasizing USMLE Step 1 scores, which hopefully will occur, may allow medical students to focus on their own learning rather than on preparation for Step 1 examinations at the expense of professional development. Third, reducing the number of applications may help students focus on programs they are truly interested in and could serve to reduce the financial burden by decreasing application and interview travel costs. This could especially be of value to students from socioeconomically disadvantaged backgrounds. However, limiting the number of applications through an early match may have several challenges that would need to be addressed. These include transparency between students and programs for optimal choices, ability of medical schools to transmit student information early to programs, and participation of all programs within a specialty.

The ERAP would be similar in principle to early decision college admissions, where similar issues arise. The early decision option in which a student applies early to the top college of his or her choice and, if accepted, is bound to attend that college helps colleges decipher which applicants are genuinely interested in matriculating at their institutions. One of the major criticisms for college early decision admission is that it may negatively affect students in greater need of financial aid who have to explore financial aid packages from multiple schools before committing to attend, which benefits applicants with a stronger socioeconomic background.<sup>7</sup> This is a clear distinction from the proposed ERAP, which could provide the benefits seen in college early decision programs (fewer applications and perhaps less stress) without the arguable financial bias present in college early decision. It may aid students with greater financial need, as it will decrease the cost of applications, travel, and interviews.

The proposed ERAP option could have the potential to appeal to many types of students, including (1) highly competitive students with clear program preferences; (2) less competitive students who are concerned they may not match because of a lack of distinction in a large pool of applicants; (3) students constrained to a particular geographic area because of personal, family, or other factors; and (4) international medical graduates (IMGs) who have unique accomplishments, who are targeting programs in underserved settings that traditionally have high IMG acceptance rates, or both.

Highly competitive medical students applying to a limited number of programs may help create a fairer distribution of interviews to other students who may be more interested in the same programs. For less competitive students and for IMGs, the proposed ERAP could result in a significant decrease in the number of applications submitted because these groups tend to submit a very high number of applications, often to more than one specialty. For applicants who are limited geographically, the ERAP may provide relief from uncertainty about where they will match and consequences to their families and significant others.

The current residency application process should change to reduce the emotional and financial burden on medical students. Securing a residency position to continue training should not be as arduous and complicated as the current process appears to be. An ERAP has the potential to address many of the shortcomings of the current system and could potentially improve the fit between applicants and residency programs. If successful, the proposed ERAP could effectively limit, by student choice, the number of applications per student and per program, thus making the application process more tolerable and advantageous to all involved with the residency selection process.

#### ARTICLE INFORMATION

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#### REFERENCES

- Association of American Medical Colleges. ERAS statistics. <https://www.aamc.org/data-reports/interactive-data/eras-statistics>. Published October 2019. Accessed December 4, 2019.
- National Resident Matching Program. *Results and Data: 2019 Main Residency Match*. Washington, DC: National Resident Matching Program; 2019.
- National Resident Matching Program, Data Release and Research Committee. *Results of the 2018 NRMP Program Director Survey*. Washington, DC: National Resident Matching Program; 2018.
- Schrock JB, Kraeutler MJ, Dayton MR, McCarty EC. A cross-sectional analysis of minimum USMLE Step 1 and 2 criteria used by orthopaedic surgery residency programs in screening residency applications. *J Am Acad Orthop Surg*. 2017;25(6):464-468. doi:10.5435/JAAOS-D-16-00725
- Rubright JD, Jodoin M, Barone MA. Examining demographics, prior academic performance, and United States Medical Licensing Examination scores. *Acad Med*. 2019;94(3):364-370. doi:10.1097/ACM.0000000000002366
- United States Medical Licensing Examination. InCUS (Invitational Conference on USMLE Scoring). <https://www.usmle.org/inCus/>. Accessed November 8, 2019.
- Chapman G, Dickert-Conlin S. Applying early decision: student and college incentives and outcomes. *Econ Educ Rev*. 2012;31(5):749-763. doi:10.1016/j.econedurev.2012.05.003