The Conundrum of the United States Medical Licensing Examination Score Reporting Structure

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The United States Medical Licensing Examination (USMLE) is a 3-part test designed to assess the application of medical knowledge to patient care. Medical students usually complete the first 2 components (Steps 1 and 2) during the second and third years of medical school. Step 3 is taken after graduation, typically after the first year of residency training. The official purpose of the examination is to assist state authorities in granting medical licenses, but it also reassures various groups, including employers, educators, and patients, that licensed physicians have attained a minimum standard of medical knowledge.

The examination has grown in significance beyond the intended pass-fail indication of competence. Step 1, Step 2 Clinical Knowledge, and Step 3 scores are reported in a 3-digit format. Scores provide a standard to compare physicians educated throughout the world. However, the reporting format has broad implications.

The Federation of State Medical Boards and the National Board of Medical Examiners have released joint preliminary recommendations, which suggest consideration of a move to pass-fail score reporting.[1] The purpose of this Viewpoint is to discuss how the 3-digit reporting structure affects different groups, including residency program directors, medical schools, students, and society.

The USMLE score is widely used by residency training programs to determine which applications to review. The numbers of applications have increased,[2] particularly in some specialties, and many programs receive a larger number of applications than they can feasibly evaluate and applicants to interview.

Application inflation is especially prominent for programs evaluating international medical graduates, who fill approximately 20% of positions in US residency programs. To manage this volume, program directors use filters in the Electronic Residency Application Service. Filters exclude applications below a requested standard, leaving fewer to be evaluated. Applications can be filtered based on discrete fields (ie, demographics, publications), whereas scanned documents (personal statements, recommendation letters) must be manually reviewed.

For example, residency program directors can ask to review all applicants graduating in 2019, born in a particular state, or who have 3 letters of recommendation. Programs cannot similarly search personal statements or recommendation letters for qualities of interest, such as leadership or professionalism. The USMLE scores are currently the only nondemographic continuous variable by which applicants can be rapidly screened.

Although there may be a correlation between 20-point differences in USMLE scores and eventual disciplinary action, overall disciplinary action is rare.[3] Furthermore, the narrow differences in examination scores used by some programs to exclude many applicants are arbitrary with neither clinical, nor statistical meaning.

Changing the USMLE to a pass-fail format would require residency programs to find other, potentially more meaningful, ways of evaluating applicants. Although a more thorough review of applications would be resource intensive, programs might identify outstanding applicants who would have been overlooked based on a numerical cutoff.

The benefits of the USMLE reporting structure extend beyond residency program leadership to medical schools responsible for ensuring a successful match for their graduating students. In the landscape of resident selection, 3-digit scores provide some amount of transparency. Advisors can assess how likely a candidate is to have a successful match, and use that knowledge to suggest an appropriate application strategy.

Students who perform well on the USMLE can distinguish themselves for competitive programs. Students with lower scores are recommended to apply more broadly. Moving to a pass-fail system for USMLE could make it more difficult to counsel students because each residency program would develop independent review standards. Furthermore, the movement over the past decade to pass-fail grading in many medical schools could exacerbate this problem, making it difficult to predict success in the match.

Unless the Electronic Residency Application Service significantly improves the capacity for programs to screen applicants based on individual characteristics (key words, research area, etc), program directors may use the variables they have access to such as placing more emphasis on medical school reputation or location. Changing such a complex system must be addressed carefully because it is a crucial factor in determining the specialty training of thousands of medical school graduates.

At the same time, it is clear there are significant costs to maintaining the status quo. It is possible that otherwise qualified students are excluded from their preferred subspecialties and programs, or from matching completely, based on a number with unproven predictive accuracy. It may be difficult for some students to adjust expectations after receiving a low, but passing score. One number seems to nullify years of study, research, leadership, and service.

Medical students are aware that their USMLE score will be pivotal to their residency match. Because a medical doctorate has limited utility without postgraduate training, many students begin to become concerned about the examination early in medical school or even

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before matriculation. Students may purchase external resources to enhance their school's curriculum at significant cost, adding to their debt burden. The pressure to perform on this single high-stakes examination can contribute to isolation, anxiety, and depression.[4]

In some cases, solitary test preparation, which is inconsistent with the important skill of collaborative patient care, can replace class attendance. Some students become isolated from each other and potential faculty mentors. They may focus exclusively on testable material. The stakes could be higher for international medical graduates, who may not match in US-based residency programs without exceptional scores.

In this context, innovation and curiosity may fade into the background, along with other essential competencies such as professionalism and interpersonal skills. Will students be prepared to contribute to a future system in which electronic medical databases and clinical decision support are freely available to both physicians and patients? Medical knowledge may not be the most important skill required to meet the needs of patients and society.

However, future physicians may have an essential role in addressing the social determinants of health. Racial and ethnic minority populations experience excess mortality from many conditions, including cancer and childbirth. Promoting diversity in the physician workforce may help address these disparities. Physicians from backgrounds that are underrepresented in medicine are more likely to practice in underserved areas and care for disadvantaged populations.

Moreover, patients from minority groups are more satisfied with their care and more adherent to medical recommendations when the physician shares his or her race/ethnicity.[5] While diversity may be essential for primary care, adherence to subspecialty recommendations for surgery, radiation, and chemotherapy may be as important for reducing cancer mortality as adherence to primary care screening guidelines.

Furthermore, minority patient attitudes about clinical trial enrollment may be related to physician race.[6] Academic faculty recruit the next generation of medical students and lead research studies. For these reasons and others, trainees throughout graduate medical education should reflect the population they serve. However, the proportion of medical students from backgrounds that are underrepresented in medicine already lags behind the general population, with a significant lack of diversity in competitive postgraduate specialties.[7] Evidence suggests the USMLE may exhibit bias against racial/ethnic minority students[8]; emphasis on USMLE scores during resident selection may contribute to this phenomenon and affect the specialty decisions of medical students from backgrounds that are underrepresented in medicine.

Because assessment drives learner priorities, it should be aligned with medical practice and the goals of the health care system. Overemphasizing medical knowledge may limit the time focused on innovation, humanism, and wellness. Changing the USMLE to a pass-fail format could be an important step toward restoring balance. But there are challenges. How would residency applicants be assessed without a 3-digit USMLE score?

Some emergency medicine residency programs are piloting standardized video interviews for resident selection, but it is unclear if additional standardized methods will be less stressful, biased, or costly. More promisingly, program directors could take the opportunity to create individual mission-based holistic criteria for reviewing applications. This approach is being used in medical school admissions,[9] and the same principles can be applied to graduate medical education. In holistic review, attributes and experiences of a candidate are given equal weight with metrics such as grades and scores. Holistic review allows programs to define excellence based on their institutional mission, and does not necessarily need to be complex or time intensive.[10]

To help incorporate holistic review into the residency application process, medical schools could become more transparent with respect to applicants' strengths, professionalism, and performance on workplace-based assessments. The Electronic Residency Application Service could facilitate extraction of this information in a way that allows programs to screen large numbers of students. A standard method for applicants to demonstrate interest in a particular program could be established, such as an early application cycle. Although many changes would be required, the current USMLE 3-digit scores may be distracting the medical education system from the goal of building an innovative, diverse, and resilient physician workforce.

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