

VIEWPOINT

Economic Disparity and the Physician Pipeline — Medicine’s Uphill Battle



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In 2005, The National Academy of Medicine made the widely accepted case for physician racial/ethnic diversity in its landmark report, *In the Nation’s Compelling Interest*. Despite the spotlight, the past two decades have seen no meaningful progress in closing the US racial/ethnic diversity gap. The pending Supreme Court case, *Students for Fair Admissions Inc. vs. President & Fellows of Harvard College*, in which the plaintiffs allege that Harvard University discriminates against Asian American applicants through its race-conscious admissions process, further places progress in peril. Black and Hispanic-identifying individuals comprise most of this gap, together making up one-third of the US population but less than 15% of the matriculating medical student body¹ and 12% of the physician workforce.² This observation partly stems from the economic obstacles of becoming a physician.

The journey toward physicianhood presents distinct economic challenges, culminating with the price tag of a medical education, which has outpaced inflation by over 700% in the past half-century.³ As a result, low-income students have lower rates of medical school application and matriculation.⁴ These students are often the first in their families to attend college and are disproportionately Black and Hispanic.⁴

The link between socioeconomic status and race is rooted in centuries of institutional and structural racism — contemporary examples of which include residential segregation and income inequality.⁵ These factors, among others, are responsible for the generation, maintenance, and growth of prominent wealth gaps across racial lines. As the cost of pursuing a career in medicine rose, racial economic disparities worsened.⁵

For decades, around one-quarter of medical students have hailed from “high-income” (top 5%) households.³ The socioeconomic diversity gap persists across races and ethnicities. Notably, high-income Black and Hispanic individuals

— while fewer in absolute number — are overrepresented in medical school to a greater degree than their high-income White and Asian counterparts.¹

The data are clear: medicine in the US is a profession accessible disproportionately to the affluent. Only structural economic reform may remedy this disparity. That said, a collective focus on improving socioeconomic diversity could elevate students from racial/ethnic groups under-represented in medicine — while at the same time abiding by statutes, such as *Grutter v. Bollinger* that deemed an applicant’s race as a valid consideration in admissions policy that may be overruled by the pending litigation. Failing to do so places the ideal of a workforce that understands the experiences of diverse patients at the mercy of rectifying broader economic inequality.

To meaningfully improve socioeconomic diversity in medicine, academic medical institutions, such as medical schools and teaching hospitals, must consider how poverty affects the education continuum (see Table 1). Simultaneously, they must understand how to influence it — from the moment a child enters grade school to the moment they become a physician.

Low-income students grow up in systematically underfunded communities due to existing policies and systems, such as linking property values with tax revenues, resulting in less funding for school districts in poorer neighborhoods. Therefore, low-income students often rely on under-resourced caregivers and institutions to provide them with the tools required to academically excel. Though expanding social welfare programs such as child tax credits will not compensate for historical underinvestment in low-income neighborhoods, it could begin to correct this injustice and supply students with resources to succeed in early education. Progressive taxes could further lift families out of poverty as their distributional effect could more equitably allocate resources. Academic medical institutions are well-positioned to advocate for such policies, particularly those that could bolster and diversify the physician workforce. For example, Mass General Brigham supported state legislation to allow municipalities to collect taxes on specific real estate transactions for the development of affordable housing.

In college, low-income students face several barriers to advance to medical school, chief among them being financial

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Table 1 Economic Interventions for Academic Medical Institutions to Target Students and Trainees of Low-Socioeconomic Status Across the Education Continuum

Educational stage	Economic challenges	Possible interventions for academic medical institutions
Prior to college	Caregivers (e.g., parents, other family) are financially insecure Institutions (e.g., schools, social welfare programs) are under-resourced	Use political clout to advocate for state and federal anti-poverty legislation and regulation, such as expanded child tax credits and food programs
Undergraduate/pre-medical	Students have inadequate mentorship Students lack opportunities for meaningful pre-medical experiences Students lack financial capital required to apply to medical school	Partner with colleges and universities in need of greater mentorship services Offer observation/shadowing opportunities specifically for low-income students
Application and admissions	Students struggle to put together a pristine application, given long-standing structural barriers Admissions departments place weight on metrics heavily influenced by socioeconomics	View applications in the context of the applicant's socioeconomic status using any of the available tools (e.g., AAMCs parental education and occupation indicator, or numerically adjust GPA and MCAT scores using validated formulas); evidence-based implicit bias training
UME	Students face ancillary costs beyond just tuition and living expenses, including expensive board preparatory materials, examination fees, transportation, that can add up to thousands of dollars	Offer discount programs (e.g., through a USMLE-medical school partnership) Directly offer discount pricing or fee waivers Income sharing agreements (ISAs) for students who have exhausted financial aid or do not wish to take on more risk themselves
GME	Residents do not have the savings required to stave off sudden, high-cost expenses	Create a "rainy day" fund for residents to utilize in the event of personal medical or family emergencies
Attending/Beyond	Social norms (e.g., not talking about money) make it difficult for attending physicians who have been through this process to identify students who are most in need of mentorship	Create affinity groups to connect previously low-income faculty with current low-income students Normalize conversations on finances, including salaries, bonuses, and secondary income streams (e.g., diversity committee work)

Abbreviations: UME, - undergraduate medical education; GME, - graduate medical education

costs. The Association of American Medical Colleges (AAMC) and other medical institutions could alleviate some financial pressure that students face through the expansion of fee assistance application waivers and travel stipends or virtual interview options. Other barriers lie within the domain of knowledge and exposure — some low-income students may be unaware of and unable to access the pre-medical experiences required to become competitive medical school applicants because they lack mentors and resources. At some colleges, this knowledge gap is filled with mentorship pairings between undergraduates and medical students. However, at other institutions, low-income students may struggle to secure a meeting with overstretched pre-medical advisors.

To bridge this mentorship gap, resource-constrained universities could partner with resource-replete universities or medical schools. One model to adapt includes the Cal-Bridge pilot in California, where California State University (CSU) under-represented students are paired with mentors at CSU and University of California campuses — so far, 87% of participants have enrolled in graduate programs of which 66% are first-generation college students. To help medical schools establish Cal-Bridge-like programs, the AAMC could recommend best practices (e.g., virtual meetings) and a mentorship toolkit, as done for the Group on Women in Medicine and Science. Another model is the Veterans Affairs Pilot Program for Clinical Observation, which aims to increase clinical exposure

among first-generation college students. Establishing and scaling either of these programs requires careful considerations, such as finding appropriate partner institutions and educational programs; nonetheless, they provide a starting point.

During the medical school application process, low-income students risk rejection based on factors rooted in unequal opportunity, including fewer premedical experiences, and lower GPA and MCAT scores, which are unlikely to predict clinical performance.⁶ In response, medical schools could assess metrics like GPA and MCAT in the context of socioeconomic status. This can be done through secondary writing samples, validated numerical adjustments to GPA and MCAT, or use of the AAMCs parental education and occupation indicator (a validated and readily available proxy for socioeconomic status) in the review process.¹ Alternatively, US medical schools could adopt specific practices from international institutions, such as the University of Toronto, which created an optional application stream for Black applicants. Admissions committees should be diverse and, though inadequate alone, undergo evidence-based implicit bias training as done at Ohio State University School of Medicine.

Upon medical school matriculation, secondary expenses — including third-party exam preparatory resources, licensing exams, and clinical equipment — can be prohibitively costly. One study found that medical students spent an

average of \$7499 for board exam preparation and examination alone.⁷ Medical schools together with the National Board of Medical Examiners and United States Medical Licensing Examination could test innovative solutions, such as AAMC-like fee waivers and income share agreements (ISAs). ISAs allow a provider of capital to be repaid a portion of the student's future income for a fixed period, effectively shifting borrowing risk from the already-constrained student (in the form of debt) to the capital providing entity (in the form of equity). Students entering less lucrative professions would ultimately pay less than students entering high-paying specialties. Residency programs can also help trainees from low-income backgrounds stave off one-time emergency expenses.

While academic medical institutions are not solely responsible for the success of low-income students, it is imperative that they play a lead role in supporting them, especially now given the uncertain legal landscape. Advocating for anti-poverty policies, creating a mentorship ecosystem, and ensuring the cost of a medical education is not exclusionary are meaningful steps toward having a physician workforce that reflects its patient demographic.

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