Revolutionizing Health Professions Admissions to Achieve an Inclusive Workforce

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ABSTRACT

This article describes the "The Admissions Revolution: Bold Strategies for Diversifying the Healthcare Workforce" conference, which preceded the 2022 Beyond Flexner Alliance Conference and called for health professions institutions to boldly reimagine the admission process to diversify the health care workforce. Proposed strategies encompassed 4 key themes: admission metrics, aligning admission practices with institutional mission, community partnerships to fulfill social mission, and student support and retention. Transformation of the health professions admission process requires broad institutional and individual effort. Careful consideration and implementation of these practices will help institutions achieve greater workforce diversity and catalyze progress toward health equity.

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INTRODUCTION

The time to change how students are admitted into health professions schools is now. No less than a revolution will be necessary to strengthen the health care workforce by including clinicians committed to improving care for all populations—especially the medically marginalized. Physicians from historically excluded backgrounds are underrepresented compared to the US population, resulting in lower satisfaction, health outcomes, and access to care for patients from marginalized groups.[1] Clinicians with a direct or shared identity with underserved populations are more likely to serve these populations.[2] When patients connect with their clinicians in a salient way (such as racial identity), there is greater trust, respect, communication, self-advocacy, intention to adhere to medical advice, and patient satisfaction.[3] Therefore, diversifying the health care workforce to better reflect the patient population is a critical step to addressing health care disparities for medically underserved communities.[2,4] From a societal perspective, it is imperative that health professions institutions recruit and admit a cohort of future practitioners to eliminate those health care disparities. Institutions that value equality, inclusion, and belonging should implement admissions processes that promote comprehensive population representation—it is simply the right thing to do for the communities they serve.[5]

To share existing best practices in admissions, the University of California (UC) Davis School of Medicine Center for a Diverse Healthcare Workforce hosted a national conference entitled, "Admissions Revolution: Bold Strategies for Diversifying the Healthcare Workforce" on Sunday, March 27, 2022, immediately preceding the Beyond Flexner Alliance Conference. We convened an interdisciplinary group of thought leaders to share knowledge and best practices across health professions, assess current gaps, and generate actionable recommendations for all health professions institutions using a methodology described in the Supplemental Appendix. In this article, using illustrative case examples, we discuss 4 key themes: Admission Metrics; Aligning Admission Practices with Institutional Mission; Community Partnerships to Fulfill Social Mission; and Student Support and Retention. Case studies are used to illustrate themes, and methodology information is included in the Supplemental Appendix.

Admission Metrics

Traditional Metrics

The primary medical school application traditionally prioritizes 2 quantitative metrics: Medical College Admissions Test (MCAT) scores and undergraduate grade point average (GPA). Although admission committee members often view these

metrics as a proxy for academic readiness, it is widely recognized that these metrics often bely privilege rather than aptitude and cannot account for structural barriers impacting an applicant's access to health professions education.[6] MCAT scores do not reliably predict future performance in medical school or residency,[7,8] yet are still widely used in medical school admissions. Other health professions schools use similar quantitative metrics, including the Pharmacy College Admission Test, Dental Admission Test, Graduate Record Examination, and the new Physician Assistant-College Admission Test. There has been increasing momentum, however, toward implementing more holistic admissions and broadening the metrics used to evaluate health professions schools' applicants.

One way to mitigate this disparity is to implement a threshold or minimum "passing" MCAT score rather than using a continuous or scaled score, which implies that higher numbers equate to greater aptitude. Rather than a national pass/fail threshold,[9] many experts suggest that each school evaluate its own support system and data from current and prior students to determine a threshold that will enable a given student to succeed within the curriculum.[6]

Alternative Metrics

Waiving standardized test scores in the admissions process has been a successful tool for including traditionally marginalized students. In the past decade, many graduate programs have made the Graduate Record Examination (GRE) score optional, reducing the barrier to admission for low-income students of color.[10] To diversify the physician workforce, admissions committees should consider making the MCAT optional or pass-fail, and placing greater emphasis on other criteria.[11] Schools using holistic review are more likely to examine other non-academic criteria such as socioeconomic status,[12] experience working with disadvantaged populations, and mission alignment (eg, focus on underserved rural or urban communities).[13,14] Some physician assistant programs examine measures of humanistic and collaborative skills including applicants' experience as patient educators, community organizers, or working at community-based organizations.[15] Admissions processes should allow applicants to describe their background and experiences that potentially align with the institution's mission, as well as the opportunity to explain life circumstances that may have adversely affected their academic trajectory.[15] De-prioritizing GPA and standardized exam scores, while prioritizing other metrics is crucial for diversifying the workforce.

Examples of Alternative Admissions Metrics

The UC Davis School of Medicine utilizes a locally developed socioeconomic disadvantage (SED) score alongside MCAT and GPA in the admissions process. The SED score incorporates multiple indicators of disadvantage from the medical school common application, such as parental income and education, receipt of federal or state financial assistance, and living in an underserved area (Table 1).[2,16] Implementation of the SED score resulted in a wider matriculant MCAT and GPA ranges while increasing racial-ethnic and economic diversity among matriculants. AT Still University-Arizona School of Dentistry and Oral Health (ATSU-ASDOH) considers community service and outreach hours as its top admission metric, while GPA is considered a secondary metric (Table 1).

Aligning Admission Practices With Institutional Mission

The discussion of admissions process as it relates to racial and ethnic diversity often focuses on academic metrics. Although metrics must be considered, they should be just one of many elements within a holistic framework. Smedley and colleagues recommended 2 reform strategies that emerged prominently at the conference: (1) conforming admissions policies to the institutional mission, and (2) training and intentionally composing admissions committees.[17]

Admissions policies and practices must be aligned with the institution's mission. Social mission varies significantly across medical schools, as measured by a composite of 3 metrics: percent of graduates practicing primary care, percentage of graduates practicing in a health professional shortage area (HPSA), and racial-ethnic diversity of graduates.[18] If an institution aims to diversify the workforce and increase health care access for underserved communities, the admissions committee's charge must reflect those goals. More recent tools such as the Fitzhugh Mullan Institute for Health

Table 1. Examples of Inclusive Admission Metrics

UC Davis School of Medicine	AT Still University Arizona School of Dentistry and Oral Health
Developed a continuous, multicomponent scale from pre-existing data within the AMCAS application: • Parental education level • Family participation in public-assistance programs • Family income level • Childhood in an underserved area • Financial contribution to family income • Receipt of financial need-based scholarships for college education • Participation in the AMCAS Fee Assistance Program UC Davis School of Medicine has shared this tool with other institutions within and outside California.	The school's mission is to serve underserved populations. Therefore, the top criteria for admissions include: • Community service and outreach hours • Letter of recommendation from a community service provider • Socioeconomic status • Minimum GPA is 2.75. If students meet this minimum, GPA is no longer considered.

AMCAS = American medical college application service; GPA = grade point average; UC = University of California.

Workforce Equity's Health Workforce Diversity Tracker[19] enable the continuous tracking of progress over time by school. Furthermore, it is important for institutions to examine how their stated mission aligns with diversifying the workforce. The mission of East Carolina University (ECU) School of Dental Medicine is focused on improving the health and care of patients in North Carolina, which drives every aspect of the school from admissions to teaching and clinical practice (Table 2). The UC Davis School of Medicine admissions committee mission is: "to matriculate future physicians to address the diverse health care workforce needs of the region." An effective admissions mission statement should inform the entire process including the initial screening phase, interviews, and final decisions. Lastly, institutions should routinely examine their social mission score[18] to ensure that the school, and specifically admission committee, are furthering that mission.

Admission Committee: Who Is at the Table?

Determining the makeup of the admission committee is a critical intervention for bolstering diversity in health professions students. A 2000 study across 85 US medical schools found that only 16% of committee members were from underrepresented groups.[20] While we hope that representation has increased, little is known about the composition of admissions committees in recent years. Each institution should consider the following questions regarding admissions committees: Who is at the table? Who has been included? Who has been excluded? Answers to these questions should inform recruitment of new members to increase the diversity of perspectives and backgrounds, particularly those from underrepresented groups. Students should be included as full voting members of admissions committees as they offer a unique and important viewpoint. Students also feel ownership and autonomy over helping shape their future learning community.[21] Finally, it is important to ensure the composition of the admissions committee reflects the mission of the institution.[22] The institutional mission should include service to the local community and authentic community partnership.

Training for Admissions Committee Members

Once a diverse representative committee is composed, its members must receive adequate antibias and antiracism training. At the Washington State University Elson S. Floyd School of Medicine (WSU), admission committee members are trained extensively to look for mission-aligned applicants; applicant metrics are masked shortly after the admissions process begins. Bias must be minimized throughout the process. In a study at Ohio State where admissions committee members took the Black-White implicit association test (IAT),[23] all groups displayed a preference for White people. However, in the subsequent year's admission cycle, 48% reported being conscious of their IAT results and 21% said their results impacted their interview and admissions decisions, producing "one of the most diverse (entering classes) in the Ohio State University College of Medicine's history."[23]

The Admission Process and Exclusionary Practices

Applicants with physical/sensory, cognitive/learning, or mental health disabilities encounter many barriers in the

Table 2. Case Study: East Carolina University School of Dental Medicine

Mission	The mission of the East Carolina University School of Dental Medicine is to "develop leaders with a passion to care for the underserved and improve the health of North Carolina and the nation." Its mission is driven by the dental care needs of North Carolina residents, which informs the admission strategy, dental curriculum, patient care, research and community engagement, and service activities.
Admission committee charge	The Admissions Committee will recruit and admit diverse, academically qualified students, with particular emphasis on admitting students from rural areas, underrepresented groups, and disadvantaged backgrounds who are committed to fulfilling the mission of the SoDM through service in communities across the state of North Carolina.
Community-based recruitment strategies	Started in 2012, "Preparing Tomorrow's Dentists" is a 2.5-day summer program open to current undergraduate students and post-bac students focused on enhancing student knowledge and awareness of dentistry as a profession with the goal of increasing the diversity of the North Carolina Dental Workforce. It is a joint endeavor between the East Carolina University School of Dental Medicine, North Carolina Agricultural & Technical State University, the Old North State Dental Society, and the North Carolina historically Black colleges and universities. ECU School of Dental Medicine takes a "grow-your-own" approach, which informs their recruitment strategies as well as their community-based curriculum where matriculated students can learn clinical skills in community service-learning centers across North Carolina. Students have three 9-week rotations where they are working and living in communities of high dental need and serving patients in those areas.
Outcomes	Because of the alignment of its mission, admissions process, and curriculum, ECU School of Dental Medicine has been able to: • Matriculate dental students from 86 of North Carolina's 100 counties • Steadily increase the proportion of students from historically underrepresented groups • Report that 90% of their alumni are practicing in North Carolina

ECU = East Carolina University; post-bac = post-baccalaureate; SoDM = School of Dental Medicine.

admissions process including: the requirement to disclose disability status to obtain equitable access, inflexible technical standards, and a lack of mentors familiar with students with disabilities.[24] To make health professions education more accessible to such students, all faculty and students should receive anti-ableist training; and admission processes should be re-examined for potential exclusionary practices.[24] Technical standards (eg, observation, motor function) frequently exclude students with disabilities. Entrance exams can be a barrier for individuals with disabilities and obtaining the required documentation for accommodations can be quite costly. Other admission requirements such as shadowing can be extremely difficult to obtain for deaf or hard-of-hearing applicants. Every health profession training school should incorporate disability into their diversity and inclusion efforts.

Community Partnerships to Fulfill the Social Mission

A cornerstone of recruiting and retaining a diverse health care workforce is true community partnership, in which all members share a common goal and basis for decision-making. Community partnerships include summer enrichment programs, jointly developed curricula, and programs to nurture and develop future health professions students from the local community. Such initiatives require cross-sector collaborations with community-based organizations, local K-12 schools, community colleges, and 4-year institutions.

Community colleges are a relatively untapped source of diverse, talented future health professionals. Many marginalized and low-income students begin or complete higher education in the community college system.[18] Furthermore, medical students who attend community college are more likely to express interest in family medicine and more likely to practice in underserved areas after graduation.[25] Compared with those who matriculate directly to a 4-year university, however, students attending community college first are less likely to be accepted to medical school.[25] Health professions institutions should partner with nearby community colleges, including training their advisors about how to best prepare students for successful application.

Exemplars of Community Partnerships to Fulfill Social Mission

An exemplary community partnership comes from the University of Cincinnati, which created a Community Advisory Board (CAB) to engage community stakeholders in health equity and workforce development.[26] The CAB spurred development of a Health Workforce Diversity Workgroup, which implemented a series of programs to engage and promote recruitment of health professional trainees from the community.[21] Temple University Lewis Katz School of Medicine invited Philadelphia community members to join its admission committee as interviewers.[27] Community members can assess prospective students' readiness to work with diverse populations, and strengthen ties between the institution and the community. Community interviewers residing or working in the neighborhood were paid for their time and expertise. Ninety percent of interviewees reported that community interviewers helped them understand the community and the medical school's values.[27] Therefore, inclusion of community members benefits all stakeholders, including the community, the institution, and prospective students.

Health professions schools also partner with communities to address workforce needs.[28] Over the past decade, UC Davis School of Medicine has intentionally developed community-based training pathways that address the regional health workforce shortages, with many graduates going on to pursue primary care training and serve those communities. AT Still University-School of Dentistry and Oral Health developed a Hometown Scholars' pathway for aspiring dentists, physicians, and physician assistants.[23] A Hometown Scholar endorsement allows community health centers to highlight and endorse an applicant's experience in a community health center and intention to become a community-minded clinician.[29] Another exemplar is the Elson S. Floyd College of Medicine at Washington State University (WSU), which recruits students with ties to Washington State to train within their communities, increasing the probability they will become a part of the Washington State health workforce. Its mission is "to solve problems in challenging health care environments across the state of Washington" (Table 3).

Student Support and Retention

Pre-Matriculation

Attrition from the health professional career pathway continues well beyond matriculation. Our goal cannot be simply to admit students from underrepresented groups, but to support them to succeed throughout the entire educational continuum. Racial and ethnic minority students, as well as low-income students, are more likely to take time off during medical training[30] or leave medical school altogether.[31,32] Health professional institutions can begin supporting students during the admissions process by creating environments in which applicants feel empowered and like they belong. At the interview stage, WSU positively affirms that interviewees have made it to this point because they are qualified and able to succeed in the profession. This affirmation reduces the salience of race or ethnicity and helps create an identity safe interview process[33] which may allow students to better showcase their skills via reduction of stereotype threat.[34]

Holistic Support

Institutions must regularly collect and assess data on student experience, including unmet needs and strategies for support. Lack of basic needs such as housing and food security negatively affect academic progress, particularly for underrepresented and low-income students.[35,36] The Native American Nursing Education Center at South Dakota State University[37] emphasizes the critical importance of providing tangible wrap-around support including scholarships, financial education, and transportation. Students from underrepresented

Table 3. Case Study: AT Still University and the Elson S. Floyd School of Medicine and the Native American Health Sciences at Washington State University

At AT Still University (ATSU), the Hometown Scholars program encourages community members and community health leaders to endorse and nominate prospective medical, dental, and physician assistant students who will then have a unique, fast-tracked admission process. In essence, the Hometown Scholars endorsement allows ATSU admission committee members to know and prioritize applicants who exemplify the community-minded affinity that ATSU aims to employ. Endorsed applicants will be considered for: (1) School of Osteopathic Medicine, (2) Arizona School of Dental and Oral Health, or (3) Arizona School of Health Sciences.
The Elson S. Floyd College of Medicine at Washington State University (WSU) was created to "fill critical health care gaps across the state" and has a mission to "solve problems in challenging health care environments across the state of Washington." It intentionally recruits students with ties to Washington to train there and increase the probability they will become a part of the Washington health workforce.
Student Support Services:
WSU provides wrap-around support to students throughout all 4 years of their medical education including holistic onboarding, financial education, career advising, coaching, and residency application and match support. Students have access to a dedicated financial advisor who provides financial literacy education, helping to minimize their debt. For the residency application process, students are situated into match teams to prepare for interviews and receive coaching from faculty.
Students also receive support through the Native American Health Sciences program at WSU Spokane via access to the Center for Native American Health, which features study rooms, a kitchen, collaborative spaces for activities with other students, and the first-ever indigenous clinical simulation center. They partner with local indigenous communities so students have access to instruction by indigenous experts and healers, providing a curriculum that honors the Native students' heritage, perspective, and health needs. It also provides an opportunity for both Native and non-Native students to gain important knowledge and skills.

ATSU = AT Still University; WSU = Washington State University.

groups have higher anticipated debt, particularly Black or African American medical students.[38] The Vanderbilt School of Nursing discussed the importance of mentorship by faculty members from similar backgrounds and peer support to aid underrepresented students' academic success and feelings of belonging. For students with disabilities, feelings of belonging are tied to student services and available accommodations; 50% of students with disabilities do not request for accommodations.[39] In addition to an infrastructure to support students with disabilities within health professional schools,[24] there should be a clear and readily available process for requesting accommodations without stigma.[39]

The learning environment is an area of unmet need for students from minoritized groups. In a national cohort study, Black, Asian, Multiracial, and female medical students were most likely to have experienced microaggressions at least weekly.[40] Such students were less likely to recommend their medical school, less likely to want to stay at their current institution for residency training, and more likely to leave medical school altogether.[40,41] To diversify the health workforce, institutions must examine their own culture and commit to making training challenging but not traumatizing. Institutions should use local data on the student experience to change policies and/or personnel to better support students. If institutions collect such data and do not use it to improve the environment, students may lose trust in the program.

CONCLUSION

What Does Success Look Like?

Calls for reform of health professions admissions have been ubiquitous over the past 2 decades but must address several key questions: What is the goal? What does short-term and long-term success look like? What are appropriate outcome measures? How can successful initiatives be sustained? What does success look like for each stakeholder: community, institution, and student?

Reforms must begin with the end in mind. Outcomes should align with the school's mission and the social mission of health professions education, whether it is to train primary care practitioners, rural practitioners, or scientists. Diversifying and building a culture of equity and inclusion in health professions institutions will bring diverse perspectives to solve complex problems, including health inequities and structural racism in health care. A diverse student body improves the educational environment for all learners.[42]

Current admission processes, particularly reliance on traditional academic metrics, need fundamental reconstruction. The Admissions Revolution Conference jumpstarted important discussions across professions, illuminating the need for diverse perspectives to drive innovation in admissions. Table 4 summarizes our recommended, overarching strategies. Collaboration between health professions programs, perhaps via communities of practice,[43] may empower schools to take their next steps toward reform.

For meaningful change to occur, institutions must be held accountable to their stated mission and diversity goals. Historically, case law has upheld the importance of diversity in admissions, starting with Grutter v Bollinger backing affirmative action. Several accreditation bodies have adopted diversity standards but there are few mechanisms to hold institutions accountable.[44] In 2019 the Liaison Committee on Medical Education (LCME) implemented standards around diversity, pipeline programs, and partnerships. While these standards purportedly attempt to change learning culture and

Table 4. Summary of Strategies for Health Professional Admission Practices

Theme	Strategies
Admission metrics	Implement threshold MCAT score specific to the health professions institution, allowing applicant metrics to be masked early in the admissions process.
	De-prioritize GPA and standardized test scores while placing greater emphasis on alternative metrics (eg, experience working with disadvantaged communities and applicant alignment with school mission).
	Examples of alternative admission metrics can be found in Table 1.
Aligning admission practices with institutional mission	Use the Health Professions admissions mission statement to inform the entire admissions process including the initial screening, interviews, and final decision.
	Evaluate your school's social mission index[18] annually to ensure the school, specifically admission practices, are advancing the mission.
	Recruit new committee members with diverse perspectives and backgrounds, particularly those from underrepresented groups. Students should be included as full voting members.
	Review and align composition of admissions committee with the mission of the institution or committee charge.
	Require anti-bias, anti-racism, and anti-ableist training for committee members and explain characteristics of mission-aligned applicants.
	Re-examine admission processes for potential exclusionary practices, particularly for students with disabilities.
Community partnerships to fulfill the social mission	Develop relationships with community-based organizations, local K-12 schools, community colleges, and 4-year institutions.
	Partner with nearby community colleges, training their advisors about how to best prepare students for a successful application.
	Include community members as interviewers or partners in the admissions process.
	Develop training pathways to address local or regional health workforce shortages.
Student support and retention	Encourage belonging and affirmation in the interview process.
	Provide tangible wrap-around support such as scholarships, financial education, and transportation.
	Implement mentorship from faculty of similar backgrounds and peer support to aid students' academic success and belonging.
	Create support services and infrastructure to support students with disabilities.
	Collect and use institutional data on the student experience to change policies and/or personnel to better support students

GPA = grade point average; K-12 = kindergarten through grade 12; MCAT = medical college admissions test.

climate, none requires measurement of diversity or inclusion outcomes in the admission process. Schools may interpret these diversity standards in ways that may or may not take into the contextual needs of local communities, and without specific metrics for success. Use of clear metrics, such as the social mission score,[45] may be the best way to both guide schools and ensure accountability.

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Supplemental materials

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