HOW IS THE HEALTH WORKFORCE EDUCATED AND TRAINED?

An Examination of Social Mission in Health Professions Education

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Questions

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THE HEALTH WORKFORCE EQUITY EVIDENCE REVIEW SERIES

The Fitzhugh Mullan Institute for Health Workforce Equity defines health equity as *a world in which there is a diverse health workforce that has the competencies, opportunities, and courage to ensure everyone has a fair opportunity to attain their full health potential.*

At least six critically important factors drive health workforce equity, as shown in the figure below. These domains apply to workers across the health care spectrum, including home healthcare, support staff, allied health professionals, public health, physicians, nurses, and many others.

This series reviews existing literature on the nature and magnitude of each problem, the impact of this problem on health equity, and the policies and programs that affect it.

DOMAIN 2: The health education pipeline plays an important role in determining the future workforce, including which professions are produced, and whether graduates choose high-need specialties, practice in underserved populations, and have the skills and courage to advance health equity. This evidence review focuses on the role of health professions schools in ensuring that graduates have the knowledge, skills and courage to improve health equity.

The Problem

Health professions schools graduate nearly a million students annually in the United States.[1] These schools play a key role in all health workforce equity domains, including determining the diversity of the health care workforce (Domain 1), helping to determine whether these graduates are interested in going into specialties and locating themselves in settings and regions that are responsive to society's need (Domain 3), whether they serve population groups that have the highest needs, such as Medicaid patients (Domain 4), and whether they are prepared to practice in ways that address the root causes of health disparities (Domain 5). This evidence review focuses on the role of health professions schools in ensuring that graduates have the knowledge, skills, and courage to improve health equity.

One of the first studies to examine the relationship between health professions schools and outcomes aimed at achieving greater health equity was a ranking of medical schools, led by Mullan and colleagues, by the percentage of graduates who (1) are underrepresented minorities, (2) work in health professional shortage areas (HPSA), and (3) practice primary care.[2] The findings showed considerable variation and revealed that many of the most prestigious private research universities scored toward the bottom. In contrast, some rural state schools and historically Black universities ranked toward the top. Some have argued that these three outcomes are a limited measure of performance and that other contributions that schools make toward health should be considered.[3] However, the outcomes selected are squarely aligned with the federal government's health workforce strategic plan[4] and are consistent with evolving priorities in evaluating health professions education.[5]

This seminal study led to the formalization and an initial set of measurable outcomes for the concept of the social mission of health professions education (HPE). HPE is defined as "the contribution of a health professions school in its mission, programs, and the performance of its graduates, faculty, and leadership in advancing health equity and addressing the health disparities of the society in which it exists" and later to the development of an expanded framework and measures to assess health professions schools social mission performance.[6] As shown in Figure 1, the framework contains six subdomains of health professions' schools functioning. It has been used by 242 U.S. schools of medicine, dentistry, and nursing to self-evaluate their social mission performance. The results of the Social Mission Metrics Initiative suggest that schools across the country could do far more to enhance the educational approach to health equity, such as better incorporation of community health needs into educational curricula and research priorities, training of students and faculty on health equity-related skills, and advancing diversity of students, faculty, and academic leadership.[7] While health professions schools may always have had an implicit social mission, there is a wide gulf between social mission goals and actual performance in contributing to health equity. Much of this gulf can be traced directly to the effects of the 1910 Abraham Flexner report, its implicit and explicit racism and sexism, and the shift toward the focus on science and neglect of social determinants.[8,9]

Educational Programming[10-19]

Formal curriculum, extracurricular activities, and clinical training opportunities

- Race presented as a biological construct
- Lack of ambulatory and community-based training opportunities
- Underemphasis of health disparities, SDoH, IPE, and LGBTQ content in curricula

Community Engagement[20]

Bidirectional approach to building mutual trust, respect, benefit, and cultural humility across a variety of activities

- Lack of community service language in mission statements
- Community service and engagement undervalued in promotion and tenure guidelines

Governance[21-23]

Leadership and written policies that articulate and influence academic institutions' identity and management.

- Social mission themes underemphasized in medical school mission statements
- Black and Hispanic individuals and women have had poor success advancing to HPE leadership roles

Institutional Culture and Climate[24-25]

The perceptions, attitudes, and expectations that define the institution, particularly as seen from the perspectives of individuals of different racial or ethnic backgrounds.

- Less supportive and more hostile environment experienced by URM students
- Mismatch between stated diversity goals and institutional culture

Research [26-32]

The totality of a school's funded and unfunded programs of systematic investigation related to health, healthcare, or issues impacting health

- Race, gender, age, and institutional disparities in grant application success
- CBPR undervalued in research
- Omission of racial/ethnic data in research outcomes

Diversity

The composition of a health professions school's students, staff, faculty, leadership, and governance

*This domain is discussed in Who Enters the Workforce? An Examination of Racial and Ethnic Diversity

Figure 1: Measuring the Problem: Six Subdomains of Health Professions Education

Examples of the evidence for health professions schools' underperformance in advancing policies, programs, and cultures that promote health equity are reflected within the six HPE subdomains (Figure 1). Students' educational programming frequently underemphasizes or omits health equity content and experiences. A narrative literature review of cultural competence training in U.S. medical schools using a validated assessment tool concluded that, of the tool's five assessment domains, health disparities and social determinants of health (SDoH) were least frequently addressed in schools' training content.[14] Several studies have also found a lack of curricula and knowledge gaps among health professions students related to LGBTQ

health.[17–19] One survey found that a third of U.S. medical schools reported no LGBTQ-specific content in their clinical curriculum,[33] while another national survey of undergraduate nursing school faculty found LGBTQ health-related topics were never taught over the past two years by up to 63% of those surveyed.[34] Further, there is evidence that HPE curricula can reinforce race-based stereotypes, with reviews of medical school lecture materials finding that race is almost always used as a biological, rather than social, construct.[10,11]

Evidence indicates that health professions schools' governance, culture, and climate further hinder efforts to advance health equity. For example, students who identify as underrepresented in medicine (URM) experience less supportive social and less positive learning environments, are subjected to discrimination and racial harassment, and are more likely to see their race as hurting their medical school experiences than non-URM students.[24] Greater diversity in institutional leadership may help address this problem. Still, people who are Black and Hispanic account for less than 5% of deans or chairpersons in academic medicine, and women account for just 19% of chairpersons in academic medicine and 20% of deans in academic dentistry.[22,23] This may be driven by schools' advancement, promotion, and tenure (APT) criteria, which place the greatest weight on demonstrated excellence in research, despite research that shows wide racial disparities in grant funding that significantly favors White investigators over Black.[35] At the same time, community-focused research is often not rewarded as part of the APT process in academia.[36,37]

Finally, there is additional evidence for systemic underperformance of HPE in advancing health equity. By way of example, an analysis of 170 medical schools' mission statements found the prevalence of themes aligned with social mission, such as distribution, primary care, diversity, and prevention, ranged from only 5-to 24%.[21] Research has also shown that health professions students' perceptions of vulnerable populations may become more negative throughout their education. A study examining dental students' attitudes toward subgroups of patients found a decrease in their willingness to treat those who were frail, elderly, or HIV+. At the same time, a more recent meta-analysis concludes that medical students' attitudes toward treating the underserved declined significantly throughout their education.[38,39] A systematic review also found a decrease in empathy among medical students and residents, based on 18 longitudinal and cross-sectional studies assessed.[40] Student demographic trends also reflect backward movement in achieving adequate racial and ethnic diversity (Evidence Review #1), and although

Problem Statement

Institutions that provide education and training for health professionals play a critical role in determining whether clinicians graduate with the knowledge, skills, and courage to improve health equity. In the United States, there is still wide variation in their performance.

a rural background is a strong predictor of rural practice among health professionals, the proportion of medical students from rural backgrounds is declining.[41]

Relationship to Health Equity

A small but growing evidence base links HPE and training to equity-oriented outcomes. First, there is robust evidence that the type and setting of training experiences health professions students receive influences whether they practice in high need and rural settings. Second, there is also some evidence that a school's culture and governance play a role in shaping these outcomes. Third, there is some evidence that targeted educational efforts affect whether or not graduates practice in an equity-oriented manner. Lastly, limited evidence demonstrates a linear relationship between HPE and direct health equity measures, like reduced health disparities. Examination of the evidence for the effects of HPE on the diversity of the health workforce is provided in *Who Enters the Workforce? An Examination of Racial and Ethnic Diversity*.

High Need Practice Settings

Systematic reviews have found strong associations between medical and dental student residencies or clinical training opportunities in rural or underserved areas and post-graduate primary care practice in those communities,[42–44] while another reports moderate evidence for the relationship.[45] Other studies report positive associations between exposure to rural/underserved training opportunities and student attitude toward or intent to practice in rural or underserved settings but stop short of providing evidence for longer-term practice outcomes.[46,47] One meta-analysis identified experiential, community-based interventions with underserved communities as the most promising strategy for improving medical students' attitudes toward underserved communities.[48]

There is also some evidence that the culture and governance of health professions schools play a role in discouraging or encouraging graduates from practicing in high-need settings. An analysis of survey data from over 1,500 graduating medical students found that those who attended schools with a higher prevalence of disparaging comments about primary care were less likely to become primary care physicians.[49] Conversely, there is evidence that when equity concepts are included in health professions schools' mission statements, more graduates go into primary care, HPSAs, and Medically Underserved Areas/Populations.[50] Studies have also found a positive association between medical student interest and intent to work in underserved areas, or care primarily for minority patients, and a school's learning orientation toward interracial interactions, the number of interracial interactions students have, and a curriculum emphasizing minority health and disparities.[48]

School Culture

School culture has also been examined as an outcome in the HPE literature. Evidence of a relationship between school characteristics or activities and health equity culture was synthesized by Smith, who concluded that racial and ethnic diversity in institutional leadership promotes role modeling and mentorship for URM students, pedagogical changes, new kinds of institutional scholarship, educating students on social justice, and linking communities to institutions.[51] Similarly, results of a 10-year strategic planning process at the Medical University

of South Carolina to promote diversity found the effort resulted in the integration of cultural competency throughout the medical school curriculum; advancement of women and URM individuals into leadership positions; and enhanced learning for individuals from all backgrounds.[52]

Equity-oriented Practice

There is evidence that social mission factors are associated with equity-oriented clinical practice. For example, a national long-term outcomes evaluation of premedical postbaccalaureate programs (which enhance medical school academic preparedness of undergraduate college graduates from disadvantaged backgrounds) found program graduates with an average of 8 years in practice were significantly more likely to be providing care in settings that enable access to healthcare services for underserved and vulnerable populations, compared to a control group of physicians.[53] Peer-reviewed literature reviews find that curricular components, including interprofessional education (IPE); training in cultural competency and the SDoH; and community-based education, are associated with knowledge gains in interprofessional teamwork;[16] increased cultural competency scores;[14,54] deepened understanding and awareness of the SDoH and community resources;[55–57] and improved attitudes toward and readiness to treat under-resourced communities.[58,59]

A critical experimental study examined the effect of a team-based, primary care clerkship that emphasized the continuity of relationships with patients.[60] The authors found that students reported significantly more active involvement in patient care and meaningful patient relationships than the control group. In addition, a systematic review of 38 studies examining advocacy training in graduate medical education found these programs improved trainees' advocacy knowledge, attitudes, and self-efficacy.[61] Conversely, some research on the negative role health professions schools can play in shaping attitudes toward equity-oriented practice among trainees. For example, a large, longitudinal study found negative comments from attending physicians or residents about African American patients were a statistically significant predictor of increased implicit racial bias among medical students.[62]

Health Equity

The evidence base for the direct effects of HPE on proximate measures of health equity, such as community health outcomes and health disparities, is weak. However, the evidence that does exist is worth noting. For example, some community-based, interprofessional experiences for health professions students report encouraging outcomes related to service provision for medically vulnerable or complex patients, identifying patients' social needs, increased healthcare access and use of preventive health services, and decreased health system utilization.[63–66] One robust evaluation presents strong evidence for the potential impact of institution-wide investments responsive to the community's health priorities. Vision 2020, an institution-wide initiative at the University of New Mexico Health Sciences Center to "*work with community partners to help New Mexico make more progress in health and health equity than any other state by 2020,*" resulted in state-wide improvements in population health, access to healthcare, health professions workforce diversity, and national state health ranking.[67]

Health Professions Education is a Health Equity Issue

The education pipeline plays an important role in determining the future workforce - who enters it, which professions are produced, and whether graduates choose high-need specialties, practice in underserved populations, and have the skills and courage to advance health equity. A social mission orientation in health professions schools, supported by external drivers is essential to this aim.

Policies & Programs That Impact Health Professions Education

Many stakeholders play a role in advancing policies and programs to promote social mission in HPE, including the federal government, professional regulators, certification bodies, and the health professions schools themselves.

Title VII and Title VIII Workforce Development Programs

Some training programs that have been most successful at increasing access to health care for underserved communities are supported by HRSA's Title VII and Title VIII workforce development programs, authorized under the Public Health Service Act.[68] These programs help shape the supply, distribution, and diversity of the medical, dental, and nursing workforce and increase healthcare access for the medically underserved by funding initiatives including loan repayment programs, primary care training, and scholarships for disadvantaged students. A robust body of literature demonstrates these and other federally-funded health workforce development training programs successfully strengthen the primary care workforce, increase diversity, and improve access to health care for the underserved.[69–72] However, funding is time-limited, and investments are not enough to meet the population's health care needs. By increasing appropriations for Title VII and VIII and other workforce development programs, an action advocated for by scholars and HPE bodies alike,[73,74] the federal government can play a significant role in taking evidence-based action to address the priority healthcare needs of communities.

Teaching Health Centers

The Teaching Health Center Graduate Medical Education (THCGME) program, funded through federal appropriations, supports primary care medical and dental residency programs in community-based settings.[75] The program supports 60 primary care residency programs and has trained over 1,100 primary care physicians and dentists since 2011. Analyses of the program have found that THCGME residents provide care for more than half a million patients in 28 states – 72% of whom live below the federal poverty level.[76] Evidence indicates that physicians end up practicing close to their training sites.[77,78] Since THCGME training sites are predominantly located in federally designated underserved areas,[79] they offer one potential solution for addressing the

maldistribution of the health workforce (Evidence Review #3). Research supports this assumption. Compared to non-THC graduates, residents who graduate from the THCGME program are twice as likely to pursue employment in safety-net settings.[46] Evidence Review #3 provides further evidence for the effects of THCGME on increasing the high need physician workforce and the program's subsequent need for long-term federal funding.

Accreditation Standards

Accreditors can influence educational institutions' policies and practices by including new accreditation standards and expanding existing ones. Two prominent examples of this relationship are interprofessional education and diversity standards in HPE. In recent years, the Commission on Dental Accreditation and Liaison Committee on Medical Education added interprofessional education standards to prepare students for collaborative practice. The number of interprofessional collaborations and percent of schools with required IPE has subsequently increased in dental and medical education.[80–82] Additionally, accreditation's effect can be observed in the temporal association between the addition of diversity standards and increased female, Black, and Hispanic matriculants in U.S. medical schools.[83] These examples highlight the potential impact of accreditation standards. However, a 2019 analysis of accreditation standards across five health professions disciplines found wide variability in content related to social mission, highlighting areas of opportunity for accreditors to strengthen HPE in ways more squarely aligned with health equity.[84]

Certification and Licensing Exams

Health professions training programs make significant efforts to ensure students are adequately prepared to pass national licensing and certification exams. These efforts include making curricular changes to optimize student performance on exams,[85–87] a common outcome used to measure training program quality.[88] The national certification and licensing bodies that develop and administer these exams, therefore, have an opportunity to influence HPE curricula and programming and associated student competencies. Including health disparities, systems-based practice, and SDoH in health professions exams or competency assessments would incentivize schools to emphasize these areas in training. The recent decision to make Step 1 of the U.S. Medical Licensing Examination (U.S.MLE) pass/fail may facilitate this shift. Though not explicitly motivated by equity, the change may provide medical schools with greater flexibility to "redefine what it takes to train scientifically grounded and exemplary caregivers in today's world" [89] and increase the diversity of the physician workforce.[90,91]

Community-based, Experiential Clinical, or Service-learning Experiences

Health professions schools can promote health equity in educational programming by requiring community-based, experiential opportunities for all students. Best practices in community-based education for students in health professions call for these experiences to be developed in close partnership with the community, address community-identified needs, and be built on a foundation of reciprocal knowledge transfer and student reflection.[92,93] A 2021 meta-analysis concluded that community-based experiential learning opportunities are the strongest curricular factor predictive of practicing in underserved communities.[39] In contrast, a systematic review of 32 studies found service-learning experiences in medical education positively associated with

objective and self-reported student outcomes in intra-/interpersonal skills, knowledge and professional skills, civic engagement, and social responsibility.[94] Further, there is some evidence of a dose-response effect of these learning opportunities, with longer programs reported as more successful in influencing practice in rural communities.[45]

Inclusion of Social Mission in Governance Documents and Processes

Health professions schools can demonstrate commitment to health equity by embedding social mission principles in governance documents like mission statements and strategic plans. Ten years after diversity became a central element of the Medical University of South Carolina's College of Medicine, an evaluation found the effort resulted in a significant increase in diversity among students and faculty, expansion of pipeline and mentoring programs, and integration of cultural competency throughout the medical school curriculum, among other outcomes.[52] An analysis of medical school mission statements found the degree to which they reflected a social mission to address inequities was a statistically significant positive predictor of the percent of graduates entering primary care and working in medically underserved areas.[50] Yet another study comparing medical schools with research-oriented vs. social mission-oriented missions found that the latter group had a statistically significant higher proportion of underrepresented minority graduates than the former.[95] Study authors acknowledge that governance documents alone are not a solution to achieving social mission aims but view it as a starting point for institutional change and further note that the absence of any references to social mission principles may be equally telling about an institution's values.[50]

Policies and Programs that Impact Health Professions Education

Health professions schools underperform in advancing policies, programs, and cultures that promote health equity. However, evidence-based strategies to improve outcomes aimed at achieving greater health equity have been employed by the government, schools, and regulatory bodies. These policies and programs include federal Title VII and VIII workforce investments in primary care training, integration of community-based experiential learning opportunities, and increased regulatory pressure through inclusion of equity-oriented accreditation standards. Other promising approaches include modifications to certification and licensing exam content and aligning schools' governance documents with social mission values.

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