The March to Health Equity and Justice in Pulmonary and Critical Care Medicine

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ABSTRACT

Training programs in pulmonary and critical care medicine have greatly expanded in the past decade, yet they do not reflect the racial/ethnic and economic diversity of the United States, which has significant implications for health equity. The lack of representation across medical education is likely to worsen with the recent Supreme Court decision banning affirmative action. The authors review health disparities in pulmonary and critical care medicine, the relationship of the workforce to health equity, and 10 tactics for addressing this urgent public health issue.

Keywords:
workforce diversity; health equity; pulmonary disparities; affirmative action; holistic recruitment; graduate medical education

The U.S. Centers for Disease Control and Prevention define health equity as "the state in which everyone has a fair and just opportunity to attain their highest level of health" (1). The main determinants of health include living and working conditions, education, income, neighborhood characteristics, social inclusion, and access to medical care (1). Achieving health equity requires tackling health disparities—those preventable health differences linked to social, economic, and/or environmental disadvantage, including structural racism.

(Received in original form April 1, 2024; accepted in final form July 3, 2024)

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ATS Scholar Vol 5, Iss 4, pp 492–499, 2024

DOI: 10.34197/ats-scholar.2024-0028PS

Disparities, including premature mortality, are more prevalent in certain racial and ethnic groups than others. However, race is not a risk factor for disease—racism is (2). Achieving health equity requires leveling this uneven playing field because it is the right and just thing to do (3).

Absent major social reforms, one way to address disparities is to include members of historically marginalized communities in the health workforce, including in pulmonary and critical care medicine (PCCM). In the past decade, the number of subspecialty training programs and fellowship positions has doubled (4). However, between 2009 and 2018, the percentage of PCCM fellows from underrepresented in medicine (UiM) groups decreased from 12.1% to 10.3% (5). In 2023, PCCM fellowship programs were filled by <10% identifying as Latino or Hispanic and <5% identifying as Black or African American, compared with 19.5% and 13.6% of the U.S. population, respectively; more than one in three of those who matched were Asian, 36% had a physician parent, and only 11% were first-generation college students (6).

This stunning lack of representation has devastating health consequences for underserved communities. Asthma, chronic obstructive pulmonary disease, and lung cancer disproportionately affect racial/ethnic minorities and patients of low socioeconomic status (SES) through air pollution, allergen exposures, tobacco, respiratory infections, and poor access to medical care (7). Higher SES indicators, including educational attainment and income, typically reduce the risk of chronic lung diseases; however, the protective effects are smaller for Black and Hispanic individuals, suggesting that factors beyond SES are at play (8). Critical care disparities (e.g., sepsis outcomes) are magnified during pandemics, with racial/ethnic minorities and low SES populations facing greater risks because of differential exposure rather than individual susceptibility or healthcare access (9). Sepsis-related mortality data suggest that race alone cannot fully explain the disparities observed in outcomes (10). These data underscore the pervasive nature of pulmonary health disparities, highlighting the need for comprehensive strategies to address the root causes and improve health equity.

Physicians who share experience, culture, and language with their patients have better outcomes, including improved communication and lower healthcare costs (11–14). Physicians from UiM racial and ethnic groups are more likely than White physicians to practice in medically underserved communities (15, 16). Native American primary care physicians are the most likely to practice in rural communities, where nearly one in four Americans live (17). Representation matters in health care.

Unfortunately, physicians from UiM groups have become less well represented in medicine. While the number of women physicians increased by 300% between 1980 and 2000, the annual number of Black males entering medical school decreased from 542 to 515 between 1978 and 2014 (18, 19). As U.S. medical schools expanded enrollment (by >50%) between 1997 and 2017, the proportion of UiM matriculants declined by 16% (20). Majority applicants benefited most from expansion.

The story is the same in graduate medical education (GME), a public enterprise funded largely by Medicare, Medicaid, and the U.S. Department of Veterans Affairs. In 2020, Medicare made $16.2 billion in GME payments, mostly to hospitals (21). In 2022, Medicaid

provided >$7 billion in GME funding to 43 states (22, 23), ostensibly to train future physicians to care for its 70 million enrollees, with little financial or social accountability (24). Half of Medicaid enrollees (and one in three Americans) are Hispanic or Black (25), compared with <13% of physicians. Two-thirds of practicing physicians are White, 20.6% Asian, 0.3% American Indian or Alaska Native, and 0.1% Pacific Islander (26), compared with 58.9%, 6.3%, 1.3%, and 0.3% of the population, respectively.

HOW DID WE GET HERE?

Although the recent decision by the Supreme Court of the United States banning affirmative action has focused the nation's attention on the issue of diversity and equity in higher education, the story begins much earlier.

Racial disparities in standardized testing performance begin in elementary school and span the entire educational continuum (27), including high stakes entry examinations such as the Medical College Admission Test, owing in part to structural racism (28). Access to extracurricular, athletic, and other enriching activities highly sought by admissions committees is strongly tied to resources and economic opportunity (29). Thus, the American dream is not available to members of many low-income, rural, and minoritized communities.

Medicine has always viewed itself as a meritocracy, rewarding individuals based on their accomplishments or excellence. However, medical schools are economically segregated, largely excluding low-income, first-generation, and underrepresented students—flying in the face of equal opportunity. One in four U.S. medical students come from families in the top 5% of income, the same proportion coming from all incomes at or below the median (30). The ability to excel takes more than talent and effort; it requires investment in individuals, and often privileged, wealthy and white individuals have much more invested in their success from birth onward (29). Inequitably distributed social, structural, and political resources make meritocracy a flawed concept in U.S. society (31).

In the University of North Carolina and Harvard University versus Students for Fair Admissions decision, Chief Justice John Roberts asserted that "College admissions are zero-sum, and a benefit provided to some applicants but not to others necessarily advantages the former at the expense of the latter." (https://www.supremecourt.gov/opinions/22pdf/20-1199_hgdj.pdf). Zero-sum thinking focuses on winners and losers, a duality blatantly reflected in health care: members of under-resourced communities, including Medicaid beneficiaries, get less care, whereas the privileged get more and, frankly, better care. But health disparities affect us all, exacting an economic toll of $451 billion (defined as excess medical expenditures, premature death, and lost labor market participation) in 2018 (32). Education-related disparities cost nearly a trillion dollars per year (32). These are, in fact, positive-sum propositions. Medical education must rise above this dichotomous thinking to promote public health and the health of all Americans.

Increasing representation in education and training is crucial, because a diverse workforce is better equipped to address the health needs of a multicultural population, including improving access to care for underserved populations. A more inclusive PCCM workforce can improve health equity, but achieving this goal requires action by the entire PCCM community.

HOW DO WE MOVE FORWARD

Previous affirmative action bans in eight states brought dramatic reductions in enrollment of Black, Hispanic/Latino, and Native American medical students (33). We predict similar losses across the United States, unless medical educators fundamentally change how they assess candidates for entry into the workforce. Addressing this challenge requires a renewed commitment to diversity, equity, and inclusion throughout medical education. We suggest 10 practical tactics for PCCM program leadership and faculty to enhance representation within the field.

1. Alternative metrics for candidate evaluation: Traditional metrics, such as test scores and grade point averages, are confounded by economic or educational opportunity and do not fully capture an applicant's potential or commitment to diverse communities. Drawing from the popular Michael Lewis book, *Moneyball* (34), which highlights the importance of undervalued attributes in baseball players, training programs can adopt alternative metrics to recruit trainees committed to reducing health disparities. These could include measures of resilience or distance traveled (35), community service, leadership, and the ability to work effectively in diverse teams.
2. Holistic or mission-based recruitment: Holistic admissions processes evaluate candidates based on a broad range of factors, including personal experiences, socioeconomic background, and prior contributions to diversity and health equity (36). PCCM programs should develop mission-based criteria that include serving diverse populations, which will help attract trainees committed to improving care in underserved communities (37).
3. Implicit bias mitigation: The pervasive effects of implicit bias in health care (38) are well described in candidate selection (39), in letters of recommendations (40), and in narrative assessments of both students and residents (41–43). Strategies to mitigate implicit bias in GME selection include mandatory committee member and interviewer training and removing "biasing" information, such as United States Medical Licensing Examination scores, from applicant files (44).
4. Dismantling legacy preferences: The legacy admissions system, which favors children of physicians or applicants with other institutional ties, often perpetuates racial and socioeconomic disparities (45). PCCM programs should consider eliminating or reducing the weight of such preferences in their ranking decisions. This change would help level the playing field for all candidates, particularly those from underrepresented backgrounds who may not have the same opportunities or historical connections to medicine.
5. Inclusive environments: To cultivate a truly inclusive environment for trainees from diverse backgrounds, attention to issues like stereotype threat (46) and more equitable assessment practices are needed (44). A renewed commitment to social justice is required, including community outreach and adoption of clinical practices that promote antiracism (47). Curriculum reform emphasizing health disparities, cultural humility, and social determinants of health will better prepare trainees to serve diverse populations (48). Diversity and inclusion training for faculty and staff should promote open dialog about the impacts of race and racism on health and the importance of a diverse workforce to health equity (49, 50).
6. Community partnerships: Establishing strong partnerships with local communities can help programs nurture a talented pool of diverse future physicians while improving community health. PCCM programs can collaborate with schools, community organizations, and neighborhood healthcare facilities to provide mentorship, education, and clinical services. During the coronavirus disease (COVID-19) pandemic, many residents and fellows participated in community vaccination efforts, highlighting the role that PCCM physicians and other specialists can play in addressing public health challenges. Such efforts also help trainees understand the barriers to health that members of their local communities face.

7. Addressing the cost of education: The financial burden accrued over the long medical education pathway is a significant barrier for trainees from low-income backgrounds and may deter them from pursuing subspecialty training (51). Programs can advocate for increased financial support, such as scholarships, grants, and loan forgiveness, for physicians committed to working in underserved areas or assist trainees in applying for federal programs such as the Public Service Loan Forgiveness Program. Financial counseling services from trusted institutional resources can help trainees navigate the costs associated with their lengthy educational journey.
8. Facilitating transitions: The long road from high school to college, then from medical school and residency to subspecialty fellowship, contains many transitions where underrepresented candidates may be lost. Programs can become involved with local precollege preparatory programs or college-to–medical school bridge programs to demystify the process and reduce barriers for underrepresented students, especially within their own affiliated medical schools.
9. Longitudinal mentoring: To close the workforce diversity gaps, robust mentoring throughout the educational continuum is needed (52). Programs should implement structured mentoring that pairs diverse students and residents with seasoned PCCM professionals (ideally from similar backgrounds) who can provide guidance, support, and advocacy. Mentoring often occurs in the context of a scholarly project, but should also include navigating financial and professional challenges, which represent significant barriers to diversity and inclusion within PCCM.
10. Research opportunities: Offering research opportunities for UiM high school students, undergraduate students, medical students, and residents can inspire them to consider PCCM as a career (52). Engaging these individuals in research on health disparities and quality improvement may help maintain their sense of purpose and commitment to improving health equity as part of an Academic Learning Health System (53).

CONCLUSIONS

The lack of representation in PCCM is a vexing problem that requires a renewed commitment to health equity across the educational continuum and practice environment. Tackling this issue will not only benefit trainees from underrepresented backgrounds but also enhance the care of all patients, particularly those affected by racial, ethnic, and socioeconomic disparities.

Author disclosures are available with the text of this article at www.atsjournals.org.

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