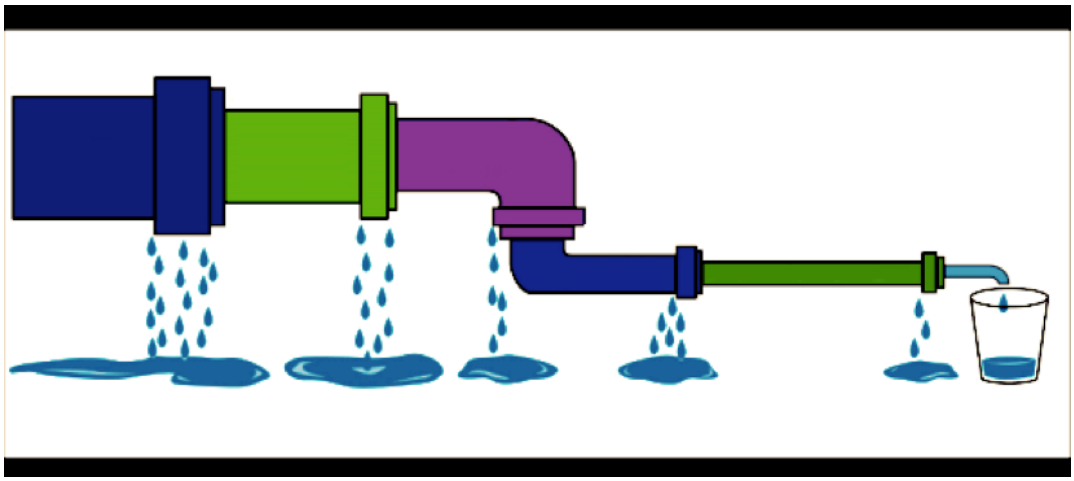
Diverse Medicine

Developing a Sustainable Medical Workforce to Meet the Needs of Our Patient Population



Dale Okorodudu, MD

Assistant Professor, Internal Medicine

Division of Pulmonary & Critical Care Medicine

UT Southwestern Medical Center

Dallas, Texas

This is to acknowledge that Dale Okorodudu, M.D. has disclosed that he does have financial interests or other relationships with commercial concerns related directly or indirectly to this program. Dr. Okorodudu will not be discussing off-label uses in his/her presentation.

Dale Okorodudu, MD
Assistant Professor, Internal Medicine
Division of Pulmonary & Critical Care Medicine
Co-Director Housestaff Emerging Academy of Leaders
UT Southwestern Medical Center
Dallas, Texas

Brief Bio

Dr. Dale Okorodudu was raised in League City, Texas just outside of Houston. He completed both his undergraduate and medical training at the University of Missouri then relocated to Durham, North Carolina where he did his Internal Medicine residency training at Duke University Medical Center. Following his time at Duke, Dr. Okorodudu returned to Texas and completed his Pulmonary & Critical Care Fellowship here at UT Southwestern Medical Center. His clinical practice is at the Dallas VA Medical Center. Dr. Okorodudu has a passion addressing healthcare disparities which he has done via promoting diversity in the medical workforce. As an Amazon best-selling author, Dr. Okorodudu publishes books focused on equipping parents and youth in pursuit of careers in healthcare. He is also the founder of DiverseMedicine Inc. and Black Men In White Coats. Dr. Okorodudu and his team's work has been nationally featured in several media outlets including NBC's The TODAY Show, Forbes, and NPR. Outside of medicine, he enjoys spending time with his wife, 3 children, and church family.

Brief Summary

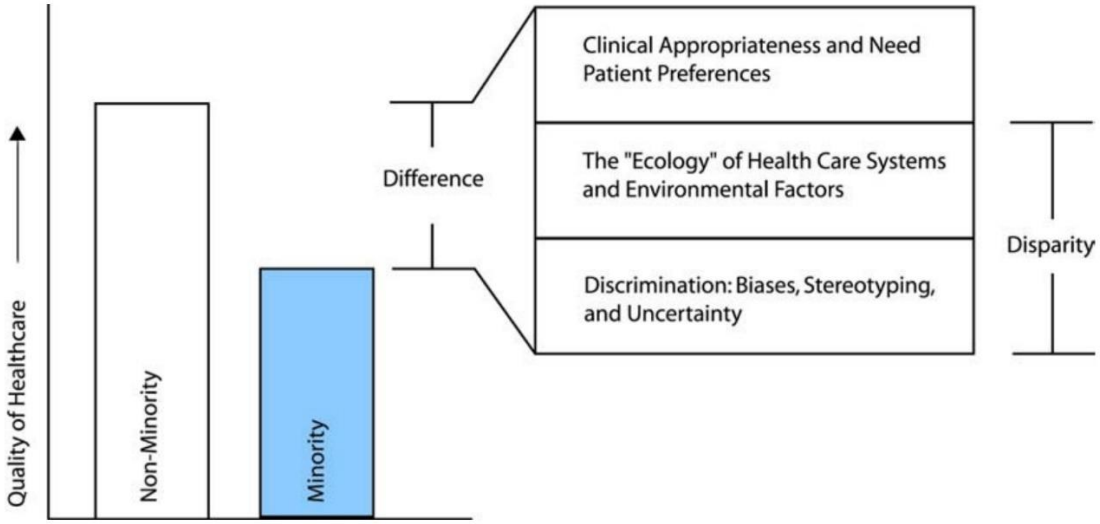
As our nation becomes more diverse, disparities in health care persist. Eradicating the precipitating etiologies has long been at the forefront of public health, however, we continue to fall short of our nation's health goals. A proposed strategy to better address these disparities is to establish a medical workforce that ethnically reflects the patient population which it serves. To this end, several initiatives have sought to achieve this with minimal overall progress. Noting an association between faculty diversity at academic medical centers and student body diversity, an intentional focus on increasing the number of underrepresented minority faculty at academic medical centers could serve as an impetus for workforce diversity. With an appreciation of this potential, we seek to implement innovative programs focused on preparing URM housestaff for careers in medical academia.

At the conclusion of this presentation, the listener should:

1. Understand the state of diversity in our current medical workforce
2. Understand and appreciate the benefits of having a medical workforce that reflects its patient population
3. Appreciate the challenges and difficulties in increasing diversity in the medical workforce
4. Become familiar with the Housestaff Emerging Academy of Leaders program.

Introduction

The population of the United States grows more diverse every day. By 2055, the United States will no longer have an ethnic majority.[1] As these demographics change, the medical field must adapt to serve the population which it cares for. As our nation increases in racial and ethnic diversity, disparities persist in many areas of society. Of particular interest is that of healthcare where underrepresented minorities have poorer outcomes in an abundance of metrics.



Differences, Disparities, and Discrimination: Populations with Equal Access to Healthcare.
SOURCE: Gomes and McGuire, 2001

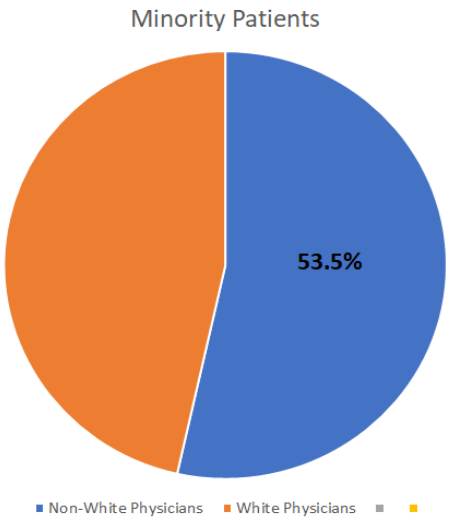
The Case for Diversity

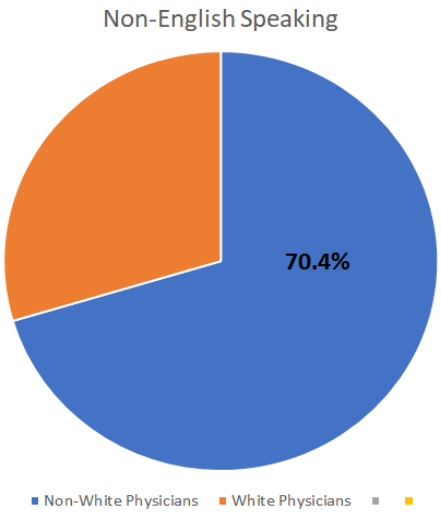
In order to garner the support and resources necessary to increase diversity in the medical workforce, we must first understand the true value of achieving this cause. In 2002, Cohen et al published a landmark article titled, "The Case for Diversity in The Health Care Workforce."[2] In this article, the authors identified four essential reasons why increasing diversity in healthcare must be a priority:

1. To advance cultural competency. As our population diversifies, it is evident that an increasing number of clinicians will need to care for individuals of different cultural background than their own. While it's true that many patients would prefer to have a clinician of similar ethnic origin, from a practical standpoint, this likely will not be achievable. That being the case, in attempt to provide the highest levels of trust and comfort to our patients, it is in the system's best interest that we train culturally competent clinicians. A 2008 study by Saha et al in JAMA sought to evaluate the educational benefits of diversity within the medical school student body[3]. Using survey data from the AAMC of over 20,000 graduating allopathic students, the found that students at more diverse institutions felt better prepared to care for patients with racial and ethnic backgrounds

different than their own. This would suggest that even having a more diverse student body contributes to a perceived and presumably true sense of higher cultural competency.

2. Increasing access to high-quality health care services. Given disparities in insurance among other infrastructural challenges, access to high quality health care services is limited for many individuals of underrepresented minority background. As the so called "baby boomer" generation continues to retire from the practice of medicine, the physician shortage will continue to worsen, and it has been suggested that the negative impact of this will unequally affect URM patients. As the health care system seeks to prevent this, one question must be asked. Who are the clinicians taking care of these individuals from "disadvantaged" backgrounds? A 2014 JAMA study sought to address this exact question in a cross-sectional analysis of 7,070 patients in the Medical Expenditure Panel Survey[4]. From this they found that 53.5% of minority patients where cared for by non-white physicians and 70.4% of Non-English speaking patients where cared but Non-White physicians.





3. Strengthening the medical research agenda. In order to advance the general health and wellness of our nation and world, an appropriate research agenda is needed. Inherently, this agenda will be set primarily by those individuals who are conducting the work. That being the case, the agenda by default will focus on those issues deemed important and interesting by the investigators. Furthermore, noting historic events such as the Tuskegee Syphilis experiment, the means by which the studies are executed may also be biased and prejudiced, leading to negative outcomes for those not involved in establishing the global research agenda.

4. Ensuring optimal management of the health care system. This fourth reason proposed by Cohen et al pertained to developing a medical workforce leadership that has the best interest of all people in mind. This goes beyond direct patient care and into areas such a public policy and hospital administrations. Having diverse leadership allows the interest of all parties to be considered when implementing system changes that often times can exacerbate disparities.

Project 3000 by 2000

With an understanding of why diversifying the medical workforce is important, appreciating the difficulties in achieving this is essential. To illustrate the magnitude of effort that has been focused on diversifying the medical workforce, one project in particular must be examined. In 1991, the Association of American Medical Colleges launched *The 3000 by 2000 Project*[5]. The goal was to increase the annual underrepresented minority medical student (defined as blacks, Mexican Americans, mainland Puerto Ricans, and Native Americans, which includes American Indians, Alaska Natives, and Native Hawaiians in medical school) enrollment to 3,000 by the year 2000. To accomplish this, Project 3000 by 2000 focused on establishing a strong education pipeline by forming partnerships between local medical schools, high schools, and universities. Each participating medical school appointed a project administrator who was responsible for executing the program agenda. Beyond forming such partnerships, the administrator worked to provide unique educational enrichment opportunities for students recruited to the pipeline.

Ultimately, Project 3000 by 2000 did not achieve its goal. Many reasons have been cited for this, some pertaining to court decisions impacting the implementation of the program. Nonetheless, medical academia did gain useful insight and strategies from via this effort[6]. To start, we learned that pipeline program could be developed in partnership across educational systems. No one institution can solve the issues pertaining to diversity in the medical field alone. In order to make progress, this must be a collaborative effort. Second, this project demonstrated the impact that a national campaign can have. While the goal was not, progress was achieved. Through these coordinated activities and shared resources, Project 3000 by 2000 produced substantial enrollment gains during the 1990s, resulting in the expansion and establishment of educational partnerships and pipeline programs, many of which exist today.

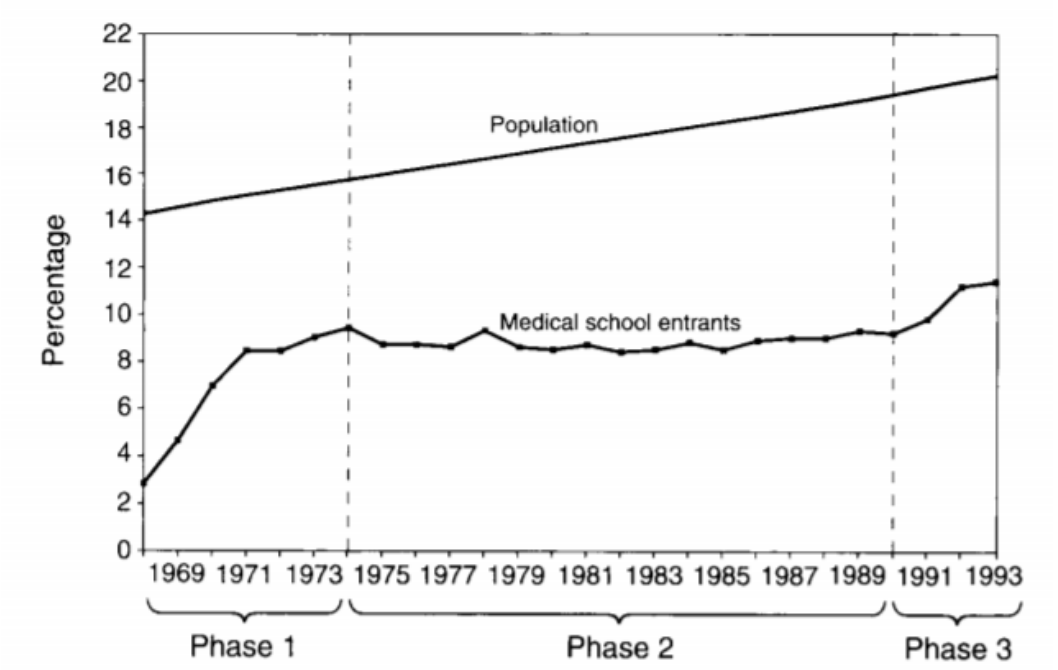
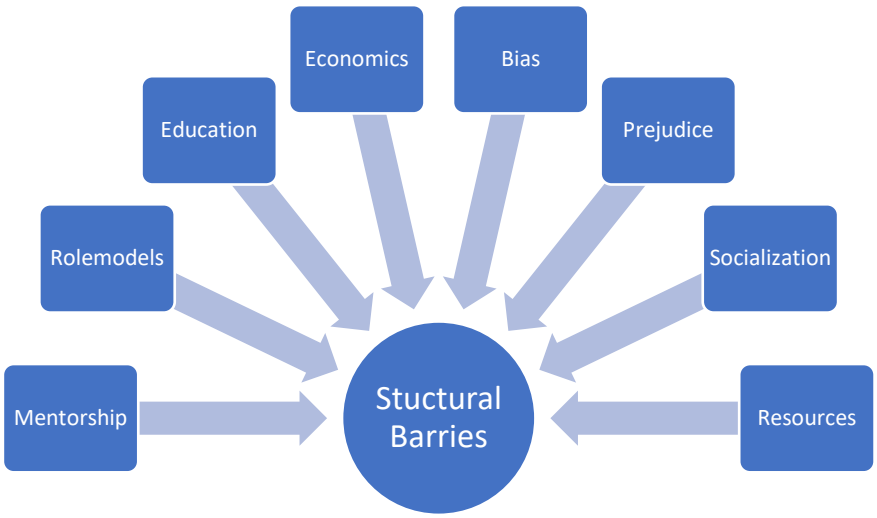


Figure 1. Members of Underrepresented Minority Groups as a Percentage of the U.S. Population and of Students Entering U.S. Medical Schools, 1968 through 1993. Underrepresented minority groups are defined here as blacks, Mexican Americans, mainland Puerto Ricans, and American Indians.

Nickens et al. NEJM

Another key point to be deduced from Project 3000 by 2000 is there are many layers to the problem of diversity in medicine. These layers go beyond identifying students with high potential then providing them with resources. Furthermore, many such barriers and challenges are structural in nature and arise years before high school, which is tends to be the target age range for establishing medical pipelines.

Consider the impact of basic economics and financial strain on a child's upbringing. Gaining admission to medical school demands one to perform well on an academic and extracurricular level. The foundational blocks for a strong performance in higher education is established during grade school. Consider a child who has tremendous academic potential, however, this is confounding by financial instability within the home which leads to an often times unappreciated stress in this individual's life, subsequently impacting academic performance.



An understanding of the abundant structural barriers to medical school matriculation for individuals from "disadvantaged" backgrounds allows up appreciate the extent of investment needed to achieve a diverse medical workforce. Leveraging lessons learned from Project 3000 by 2000, the opportunity remains for the medical workforce to strategically collaborate with focused attention on the multitude barriers hindering progress to establish a medical workforce reflecting its patient population.

Academic Medicine & Diversity.

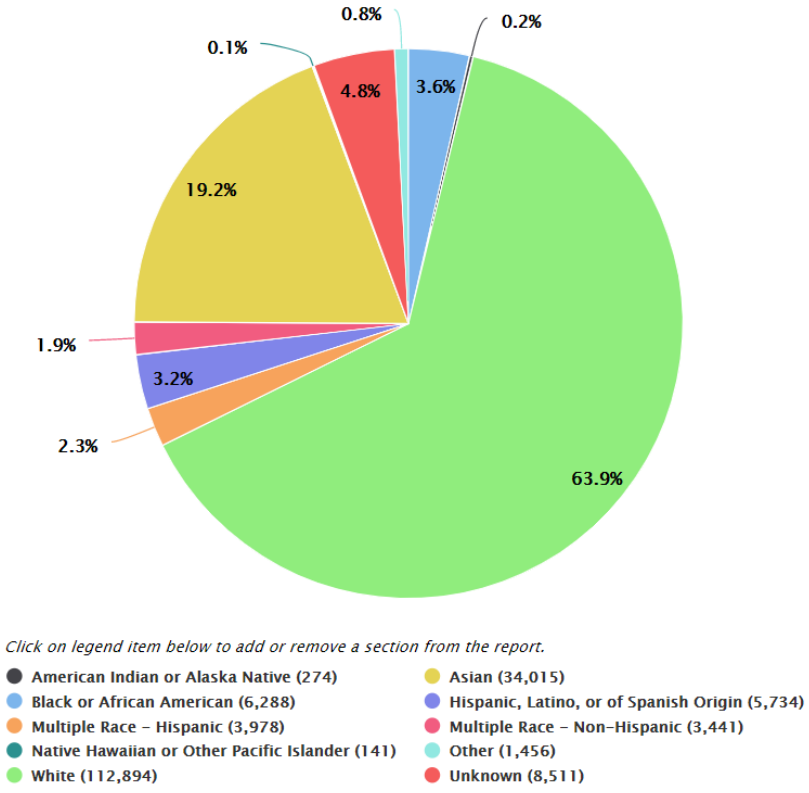
As our nation's demographics change, the medical field must adapt to serve the population. In particular, fostering diverse racial and gender representation in academic medical faculty is crucial for our medical establishment to be able adequately to serve similarly evolving patient populations in the United States. An increase in the number of minorities in academic medicine will allow future physicians to learn from individuals diverse experiential backgrounds. Unfortunately, American medical education has not been able to retain resident physicians of underrepresented minorities (URMs), including women, as academic medical faculty. Association of American Medical College (AAMC) data demonstrate that the number of faculty from minority backgrounds has become stagnant, even with an increase in the number of faculty appointments overall.[7]

URM housestaff who are interested in academic medicine at the beginning of their residency programs lose their sustained interest in pursuing academic medicine careers at higher rates than white housestaff.[7] This attrition—while multifactorial—is partly believed to be secondary to a lack of mentors available to help guide students and residents through the pursuit of a career in academic medicine. A Vanderbilt study found that, while the number of minority students graduating with biomedical doctorates has increased, the number of minority faculty members at these institutions remained stagnant at 6%. In majority-white academic

institutions, low numbers of URM medical and biomedical faculty make it difficult to establish a community of support and academic mentorship for URM housestaff.[7]

A study by Yehia et al. showed that, of residents interested in academic medical careers, 93% reported that mentorship positively influenced their ability and decision to pursue a career in academic medicine; however, only 70% believed that they had adequate mentorship along the way. Qualitatively, residents reported that gender and race/ethnicity concordance in their mentors was encouraging and added value to the mentor-mentee relationship.[8]

Figure 15. Percentage of full-time U.S. medical school faculty by race/ethnicity, 2018.



The dearth of diverse representation in academic medicine should be addressed by fostering the development of more mentorship programs at every level of medical education. Many studies have shown that medical residents with mentors report higher career satisfaction, as well as better preparedness in achieving future career goals.[9,10,11] Residents with mentors also report receiving crucial guidance on career decisions, clinical work, research, and employment positions after residency. With the knowledge that mentors can have such positive influences on the careers of their mentees, it is imperative that we foster the building of these relationships in the world of academic medicine.

Housestaff Emerging Academy of Leaders (HEAL) Program.

As with the rest of the country, achieving a diverse medical workforce is a critical priority at the University of Texas Southwestern Medical Center, which led to the implementation of strategic initiatives to diversify our physician workforce, including the Housestaff Emerging Academy of Leaders (HEAL) program. Underrepresented minority housestaff in academic medicine experience an increase in their interest in academic medicine if trainees meet on a regular basis and are equipped with the tools necessary for leadership and career success; this essentially allows targeting of the academic pipeline transition from residency training to first faculty appointment.

Our initial HEAL assessment validated the suspected needs of our URM housestaff. A representative sample of 18 housestaff surveyed showed that 78% felt the need to have social gatherings with other African American trainees while 94% indicated they would be interested in participating in an affinity group for African American trainees at our institution. All 100% of those surveyed indicated they could attend a monthly meeting, and 83% said they would be more likely to attend if virtual meetings were an option.

Following this needs assessment, HEAL was specifically designed to:

1. Assist housestaff in establishing a network of individuals from diverse backgrounds
2. Provide housestaff with mentorship opportunities
3. Provide housestaff with access to professional development resources
4. Provide housestaff with leadership training
5. Increase housestaff familiarity with academic medicine

Date	Topic
Sept. 18, 2019	Stay on Your G.R.I.N.D. (Goals, Reasons, Information, Network, and Discipline): Intro to HEAL and Ways to Build a Successful Career
Oct. 23, 2019	How to be an Effective Housestaff
Nov. 20, 2019	Crucial Conversations Pt. 1 - Deciding Your Future and Making Tough Choices
Dec. 2, 2019	Preparing to Apply
Jan. 22, 2020	Making S.M.A.R.T. Money - (**S**pecific, **M**easurable, **A**ttainable/Assignable, **R**ealistic, **T**ime-based)
Feb. 19, 2020	Wisdom for the Journey: Insight and Guidance Tips from Sr. Leaders
Mar. 25, 2020	Stay In the Loop: Delegation, Feedback, and Follow-up
Apr. 15, 2020	Crucial Conversations Pt. 2 - Conflict Management, Reconciliation & Resolution
May 27, 2020	Recognizing and Experiencing Diverse Perspectives
June 17, 2020	4th Annual Resident Diversity & Inclusion Reception **(5-7 p.m.)**

Appreciating that the primary duties of housestaff are education and patient care, we designed our curriculum to be as minimally invasive to their aforementioned responsibilities. General member sessions are held on a monthly basis in the evening to allow time for housestaff to complete clinical duties. Dinner is also provided. Sessions last one and a half hours and are structured as follows

- 10% networking, 20% didactic, and 70% interactive discussion.

Since the inception of HEAL in 2013 ~180 trainees have attended om addition to ~75 UT Southwestern faculty members. To the best of our knowledge, six participants have become faculty here at UT Southwestern medical center. Acknowledging the youth of this program, many participants are still currently in training.

HEAL Texas

In January 2017, the Office of Faculty Diversity and Development was awarded the Kenneth Shine Grant for Innovation to expand HEAL in a pilot program including other Texas medical institutions. Two institutions were identified to partner with us, UT Health San Antonio and Baylor College of Medicine. A total of 10 housestaff were internally nominated then selected from these academic centers to participate in HEAL-Texas.

Given the distance limitations and requirement for virtual meeting sessions, we opted to shorten the duration of HEAL-Texas to six months. During this time frame, participants would meet monthly via Zoom.us video software. Sessions were selected from the UT Southwestern HEAL curriculum and facilitated by UT Southwestern staff. To provide further guidance, housestaff were asked to meet with the program mentor (Dr. Dale Okorodudu) two times during the six months, and also meet with the program coach (Dr. Christina Ahn) twice during this period.

Appreciating the importance of in person interaction, a leadership summit day was held at the conclusion of the HEAL-Texas program. Participants from all institutions gathered on the campus of UT Southwestern Medical Center for a half day leadership summit, during which time they engaged in workshops designed to develop team work and expand perspective.

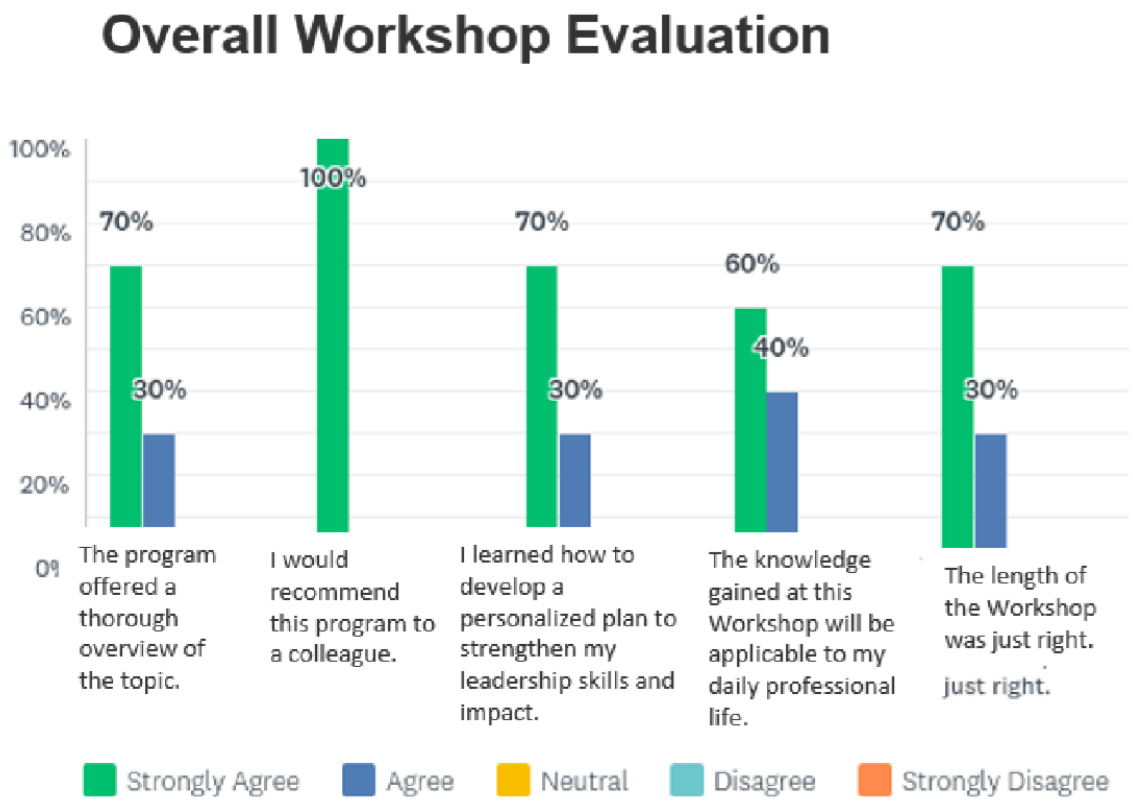


Figure: HEAL-Texas Leadership Summit Evaluations

HEAL USA

Following the success of HEAL-Texas, appreciating the ease of scale attributable to leveraging technology, the Office of Faculty Diversity and Development decided to extend the HEAL program to academic medical centers nationwide. HEAL-USA is based on the same precepts as HEAL-Texas, however, this program better engages faculty from institutions beyond UT Southwestern medical center. As oppose to all presented being from one institution, HEAL-USA allows faculty from partner program to lead the monthly sessions. Furthermore, in attempt to strengthen the network of participants, housestaff are partnered with faculty mentors from institutions other than their own.

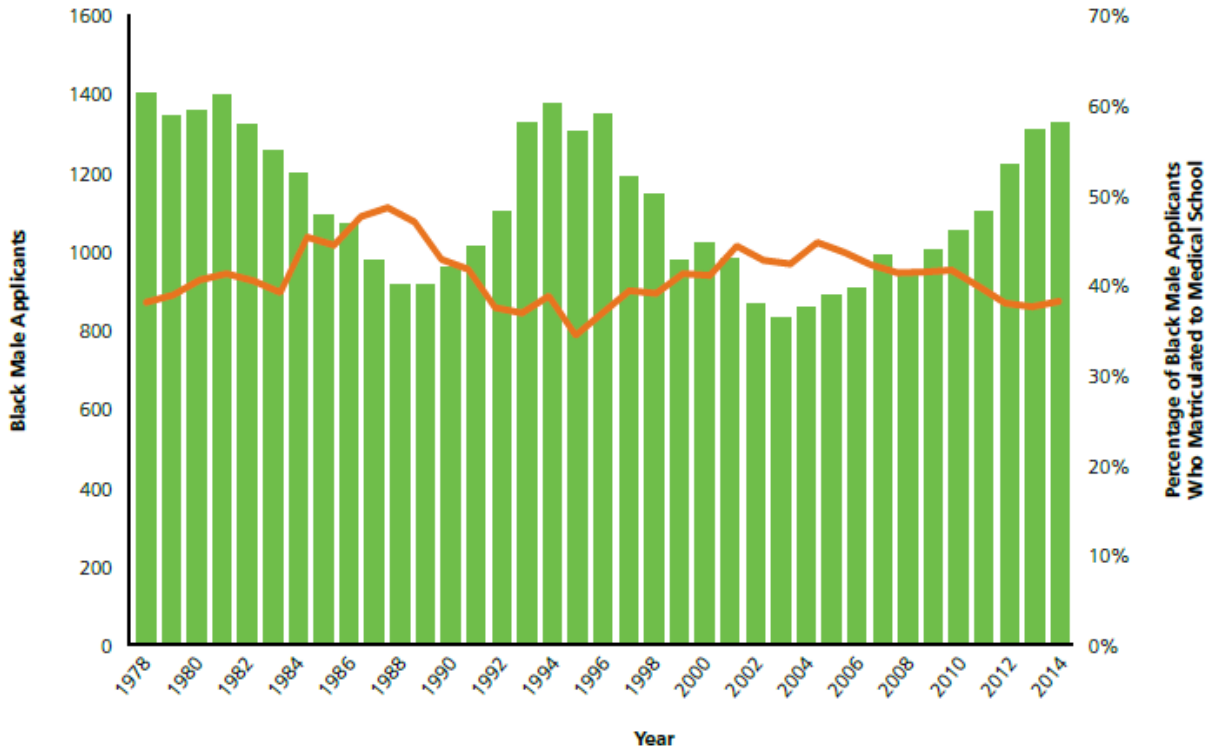
At the time of this writing, HEAL-USA is currently in it's year of inception. The program has 39 participating housestaff, from 18 academic medical centers nationwide. Of note, we did request each institution limit its number of participants to two housestaff. There are 16 faculty mentors from across the nation participating in the program as facilitators and mentors.

Our ultimate goal is to establish an intramural collaboration focused on providing URM housestaff with the network, resources, and guidance needed to make an informed decision to pursue a successful career in academic medicine.

A Brief Focus on the Lack of Black Men In Medicine.

In 2015, a study released by the AAMC highlighted the dearth of Black males applying to medical school, despite initiatives intended to increase the diversity of students applying to medicine.[12] In 1978, 542 Black men matriculated into medical school in the United States, yet, in 2014, almost forty years later, the number of Black male matriculants had decreased, rather than increased, to 515.[12] This decline, which occurred during a period that saw multiple diversity initiatives focused on increasing URM medical school matriculation, was found only in Black men and no other underrepresented minority (URM) group, making black males the URM of URM groups.[13]

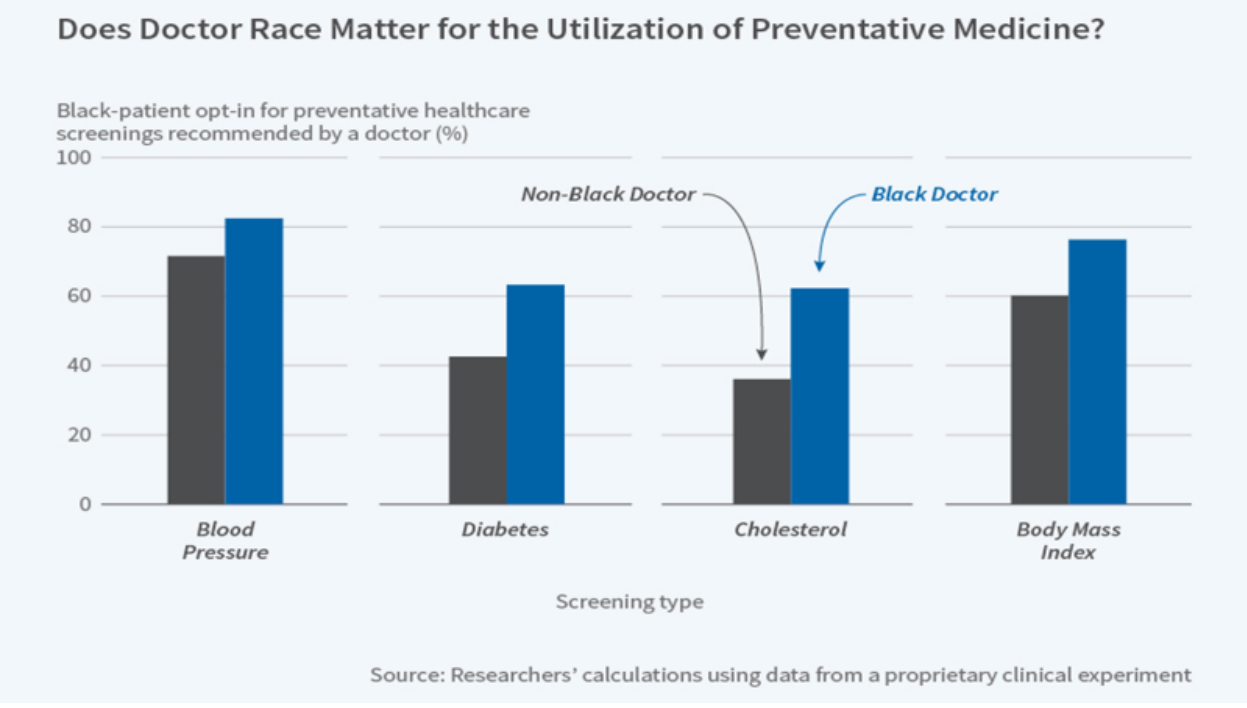
This lack of diversification of medical school matriculants raises the question, 'why aren't more Black men applying to medical school?' There are a myriad of key reasons to explain this finding, including but not limited to, underperforming schools, media stereotypes, financial costs of medical education, and the lack of role models.[12,13] Black males are more likely to attend impoverished and underperforming schools as compared to their white counterparts. Studies have also shown that Black males are less likely to be encouraged to participate in college preparatory courses in comparison to their white counterparts, thereby increasing the likelihood they would be less prepared for college. [13,14,15]



Source: AAMC Data Warehouse: Applicant and Matriculant File, as of 5/11/2015.

The status of black men in higher education is all too familiar. They make up barely 4 percent of all undergraduate students, the same proportion as in 1976. They come into college less prepared than their peers for the rigors of college-level academic work, and their completion rates are the lowest of all major racial and ethnic groups in the U.S. Furthermore, once enrolled in higher education, the costs of an increasingly expensive undergraduate and graduate medical education deter many Black men from continuing to pursue careers in medicine.

So why should the medical community care if Black males are the underrepresented minority of underrepresented minorities? Studies have highlighted the importance of having a diverse medical workforce to improve patient outcomes.[12] For example, a 2017 study by the National Bureau of Economic Research demonstrated that Black men who had Black primary care physicians were 18% more likely to adhere to their doctor's preventative health care recommendations when compared to those assigned to non-Black physicians.[17] It is hypothesized that improved communication between providers and patients, because of better cultural understanding is responsible for this outcome. Also, increased provider effort contributes to improved communications and adherence outcomes in settings of racial concordances between physician and patient.[17] URM physicians are increasingly willing to work with URM patients as reported in the *Journal of the American Medical Association* in 2013 when 53.5% of URM and 70.4% of non–English-speaking patients in the United States were cared for by nonwhite physicians.[4] By 2050, most people in the United States will self-identify as non-white. [1] In a time of changing demographics, addressing disparities in the medical profession is of critical urgency. Given this info increasing the number of Black men in medicine would be beneficial for reducing the health disparities in medicine. Unfortunately, as stated above there is still a lack of Black men in medicine relative to the numbers populating the country. Furthermore, once reaching medical school there are unique obstacles Black males must face to continue to struggle with.



Importance of Mentorship

What or who is a mentor? A mentor is an older, more experienced individual who helps guide the career of a younger individual. The term comes from the epic Greek poem, "The Odyssey", specifically when Odysseus was departing to fight in the Trojan War and entrusted the care of his son, Telemachus, to his friend, Mentor. [18] In medicine, it is generally agreed that having a mentor is an important component toward career advancement. In 2006, JAMA released a systemic review about mentoring in academic medicine, which reviewed five studies where mentors were listed by participants as a career enhancing factor for career advancement. [19,20,21,22,23,24,25] A group of 15 Canadian obstetrics-gynecology department chairs found that those who had a mentor were more likely to achieve a promotion. The study concluded that mentorships can have an impact on personal development, career choice, and research productivity. Additional studies have shown that the lack of career mentorship hinders career progress. These studies support the conclusion that mentorship is key to reach one's full potential in a career in medicine.

Unfortunately, studies have also found that URM in medicine receive less mentorship than their majority counterparts. [25] This is particularly distressing when considering the challenges of black men in medicine, detailed earlier in this paper, and the benefit of a diverse medical staff.

Who should mentor Black men pursuing careers in medicine?

The medical literature is lacking as it pertains to who should mentor Black men in medicine. In 2014, Yehia et al. published a study which evaluated the mentorship of medical residents from diverse backgrounds.[7] One emergent theme from the study focus groups was the desire of African Americans, Latino/Hispanics, and females to identify mentors of the same race/gender. Residents reported that gender and race/ethnicity concordance in their mentors was encouraging and added value to the mentor-mentee relationship. Yet, finding mentorship concordance proved difficult for many trainees. Yehia et al. noted that lack of mentor concordance presented an obstacle for URM mentees who were challenged to provide additional contextual explanations to their mentors to more fully illustrate their unique circumstances, a circumstance that would be unnecessary with mentor concordance. [24] Unfortunately, it can be a difficult task for Black male trainees to achieve mentorship concordance that decreases the burden of contextual explanations, given that approximately only two percent of faculty in academic medicine are Black men. The study further showed that, of residents interested in academic medical careers, 93% reported that mentorship positively influenced their ability and decision to pursue a career in academic medicine; however, only 70% believed that they had adequate mentorship along the way.

While anecdotally there appears to be desire for racial concordance in the mentor-mentee relationship, there is little evidence that it is necessary. Despite the facts listed above, there is a dearth of substantive studies and data over time to support this conclusion, although it may be surmised that this is again a consequence of a lack of URM diversity as well as a lack of desire to diversify within the medical community. The dilemma is whether the benefit conferred by mentorship concordance outweighs the other benefits of mentorship, such as

experience in the field, sponsorship and directed career advice. Small mentorship studies in the fields on psychology and social work suggest that mentees do not perceive additive benefit or increased quality derived from mentorship by a mentor of similar race/ethnicity.

Cross cultural mentorship between Black men and individuals from other backgrounds, including honest and open discussions of race, can bridge historical, contemporary, and cultural differences to establish trusting relationship between a mentor and mentee. These cross-cultural exchanges not only help the mentor-mentee relationship but can also help the mentor learn more about different cultures and improve his or her own patient care. We believe that race or ethnicity should be addressed during the mentoring process of an URM student.

Conclusion Pertaining to Mentoring Black Men In Medicine

Mentoring is associated with many benefits. Undeniably, mentoring plays a significant role in one's career choice. A large effort in improving representation of Black men in the medical field has been expended toward increasing awareness of medicine as a career option. Increased awareness is an early critical step which drives increased applications from Black men to medical schools. However, medical school graduation reflects a dynamic between medical school matriculation and medical school attrition. An additional benefit of effective mentorship of Black men will be to minimize medical school attrition. A study published in the *Journal of Blacks in Higher Education* found that African American students graduate at above average rates at many top medical schools, while at other institutions, the rate of graduation for African Americans was lower than for all other ethnic groups. Though the reasons for these differences are not known, effective mentorship will play a significant role in improving graduation rates of Black men at all medical schools.

A focus on the deficiency of Black men in medicine will greatly assist successful attainment of our medical workforce diversification goals. Black males are underrepresented in medicine and face unique obstacles when pursing medical careers. Having a mentor to advise URMs on how to endure, navigate, and overcome obstacles can be critical in the URM's successful completion of medical training. As it pertains to Black men, the most effective mentor takes into the account the unique challenges that Black men encounter. However, effective mentors do not have to be a person of African descent nor need they be male. Willingness to mentor, availability, desire to impart wisdom and insight into the unique circumstances of the Black male trainee are essential mentor qualities.

Professional Acknowledgments

Christina Ahn, Ph.D.
Traci Barros
Breanna Cantley, MBA
Byron Cryer, M.D.
Carolee Estelle, M.D.
Vanessa Evoh, M.D.
Eva Galvan, M.D.
Marissa Hansen, M.A.
David Johnson, M.D.
Marc Nivet, Ed.D., MBA
Kelvin Oliver, M.D.
Lance Terada, M.D.
Helen Yin, Ph.D.

Clinical Partners

John Battaile, M.D.
Sylvain DeLisle, M.D.
Tamim Hamdi, M.D.
Paul Lederer, M.D.
William Yarbrough, M.D.

References

1. Colby, Sandra L. and Jennifer M. Ortman, Projections of the Size and Composition of the U.S. Population: 2014 to 2060, Current Population Reports, P25-1143, U.S. Census Bureau, Washington, DC, 2014.
2. Cohen et al. The Case for Diversity in the Health Care Workforce. Health Affairs. 2002
3. Saha et al. Student Body Racial and Ethnic Composition and Diversity-Related Outcomes in US Medical Schools. JAMA. 2008
4. Marrast et al. Minority Physician's Role in the Care of Underserved Patients. JAMA. February 2014.
5. Nickens, H.W. Ready, T.P. & Petersdorf, R.G. (1994). Project 3000 by 2000 -- Racial and Ethnic Diversity in U.S. Medical Schools. N Engl J Med, 331:472-476.
6. Terrell et al. 3000 by 2000 and Beyond: Next Steps for Promoting Diversity in the Health Professions. Journal of Dental Education. 2003.
7. Yehia, Baligh R, et al. "Mentorship and pursuit of academic medicine careers: a mixed methods study of residents from diverse backgrounds." BMC Medical Education, vol. 14, no. 1, Sept. 2014, doi:10.1186/1472-6920-14-26.
8. Jeffe, Donna B., et al. "Reaping What We Sow: The Emerging Academic Medicine Workforce." Journal of the National Medical Association, vol. 100, no. 9, 2008, pp. 1026–1035., doi:10.1016/s0027-9684(15)31439-5.
9. Ramanan, Radhika A., et al. "Mentoring Matters: Mentoring and Career Preparation in Internal Medicine Residency Training*." Journal of General Internal Medicine, vol. 21, no. 4, 2006, doi:10.1111/j.1525-1497.2006.00346_1.x.
10. Cain, Joanna M., et al. "Effects of Perceptions and Mentorship on Pursuing a Career in Academic Medicine in Obstetrics and Gynecology." Academic Medicine, vol. 76, no. 6, 2001, pp. 628–634., doi:10.1097/00001888-200106000-00015.
11. Flint, John H, et al. "The Value of Mentorship in Orthopedic Surgery Resident Education: The Residents' Perspective." The Journal of Bone and Joint Surgery-American Volume, vol. 91, no. 4, 2009, pp. 1017–1022., doi:10.2106/jbjs.h.00934.
12. Altering the Course: Black Males In Medicine. In: Association of American Medical Colleges 2015-08-08; 2015.
13. Laurencin, C.T. & Murray, M. (2017). An American Crisis: The Lack of Black Men in Medicine. *J Racial Ethn Health Disparities*, 4(3):317-321.
14. Palmer, R., Davis. R., Iii J., & Hilton, A. (2010). A Nation at Risk: Increasing College Participation and Persistence Among African American Males to Stimulate U.S. Global Competitiveness. *Robert T Palmer, PhD,* 1.
15. Jackson, JFL & Moore, JL. (2006). African American males in education: Endangered or ignored? *Teach Coll Rec,* 108(2):201-205.
16. Moore, J.L., Ford, D.Y., & Milner, H.R. (2005). Underachievement among gifted students of color: Implications for educators. *Theor Pract,* 44(2):167-177.
17. Alsan, M., Garrick, O., & Graziani, G.C. (2018). Does Diversity Matter for Health? Experimental Evidence from Oakland. *NBER Working Papers,* 1.
18. Alpert, J.S. (2009). The Importance of Mentoring and of Being Mentored. *Am J Med,* 122(12):1070-1070.

19. Sambunjak D, Straus SE, Marusic A. Mentoring in academic medicine: a systematic review. JAMA. 2006;296(9):1103-1115.
20. Aagaard EM, Hauer KE. A cross-sectional descriptive study of mentoring relationships formed by medical students. J Gen Intern Med. 2003;18(4):298-302.
21. Coleman VH, Power ML, Williams S, Carpentieri A, Schulkin J. Continuing professional development: racial and gender differences in obstetrics and gynecology residents' perceptions of mentoring. J Contin Educ Health Prof. 2005;25(4):268-277.
22. Leppert PC, Artal R. A survey of past obstetrics and gynecology research fellows. J Soc Gynecol Investig. 2002;9(6):372-378.
23. Stubbe DE. Preparation for practice: child and adolescent psychiatry graduates' assessment of training experiences. J Am Acad Child Adolesc Psychiatry. 2002;41(2):131-139.
24. Yu EH. Regimented research: a recipe for success? Can J Cardiol. 2003;19(5):553-558.
25. Beech BM, Calles-Escandon J, Hairston KG, Langdon SE, Latham-Sadler BA, Bell RA. Mentoring Programs for Underrepresented Minority Faculty in Academic Medical Centers: A Systematic Review of the Literature. *Acad Med.* 2013;88(4):541-549.