Pathway Programs in North Carolina: A Historical Perspective

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To diversify the medical workforce, programs must be developed that enhance and prepare students from minoritized and underresourced communities to compete for admission to medical education. North Carolina has a rich history of providing pathway programs that assist minoritized students in developing into the physicians who will serve the communities from which they emerged.

Introduction

Medical education pathway programs are crucial for the academic preparation of students who have been negatively impacted by social determinants of health and institutional racism, such as underfunded public education, which reflects the legacy of segregation and institutional redlining and has contributed to a persistent health and wealth gap between Whites and Black, Indigenous, and other People of Color (BIPOC). Pathway and pipeline programs have great potential to address stereotype threat, improve the sense of inclusion and belonging, and lower imposter syndrome [1]. These programs help to form a crucible that allows people who are determined to gain the learning skills and clinical acumen to become more competitive in a challenging discipline.

Pathway programs have even more merit in the context of the shifting demographics of our nation and our state. These data demand that we counter the impact of health disparities on our economy, which include loss of productivity, loss of wages, and death or withdrawal from the workforce of productive employees. Additionally, more diverse medical school classes provide the opportunity to increase knowledge of health inequities and disparities and to promote the cultural humility of learners. These learners will do better as physicians in race-discordant interactions, having gained a better understanding of their biases that will allow them to treat the whole patient in all their complexities [2].

History of Medical Education for People of Color in North Carolina

North Carolina has a rich history of successful medical education for people of color (POC) dating back to the 1880s, when the Leonard School of Medicine (LSOM) admitted its first class at what is now Shaw University in Raleigh. In fact, many of the faculty of LSOM also were faculty at the University of North Carolina School of Medicine (UNC SOM). This program would go on to educate some 399 physicians for Black communities. Leonard graduates went on to form the Old North State Medical Society in 1887, which in 1895 joined with the Lone Star State Medical Society and others to form the National Association of Colored Physicians, Dentists, and Pharmacists, a precursor to the National Medical Association, in Atlanta, Georgia [3].

LSOM was the first four-year medical-degree-granting institution in the state of North Carolina, providing a four-year medical education two decades before the first attempt at a sustained four-year program at UNC in 1902. Led by Dr. Thomas S. Royster, one of the founders of LSOM's training hospital, the clinical department at UNC SOM allowed White students, like their Black counterparts at LSOM, the privilege of completing their medical education in the state of North Carolina [4]. With these changes, and the addition of a third year to the program at Davidson College School of Medicine, North Carolina seemed on track to increase its capacity to meet the medical needs of its population. Unfortunately, despite its association with UNC, the Raleigh clinical department, like LSOM, lacked state funding support and a significant endowment. Therefore, both institutions were vulnerable to the significant changes in 20th-century medical education, requiring major capital improvements. UNC reverted to a two-year program for the next four decades and Leonard closed in 1918, after the philanthropic donor-sponsored Flexner Report in 1910 changed medical school resource requirements and led to its demise [5].

The Impact of the Flexner Report of 1910

The Flexner Report defined and standardized the resources required for 20th-century American medical education. It only supported two historically Black medical schools that still exist: those at Howard University and Meharry Medical College. The other 14 medical schools that closed around the time of the Flexner report's publication

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had collectively educated 700 African American physicians. Leonard alone boasted almost 400 of these graduates, and was one of the most successful and prolific of the schools that shuttered its doors in the wake of the Flexner report.

After UNC SOM's four-year program was approved to restart in 1950, the neglect of African Americans by the state of North Carolina was formalized in an agreement with Meharry, administered by the Southern Regional Education Board and the governors of 16 southern states, making Meharry the default medical school for Black medical education in the South. Funded by southern states, the agreement served to protect 26 medical and dental schools [6]. The deadly slow pace of desegregation continued to perpetuate the health care gaps and neglect that already existed for millions of North Carolinians.

After the Frasier v UNC case, UNC SOM would admit one Black student every other year so that there would not be two in a class, until the early 1970s, when the admissions committee made a deliberate effort to include Black medical students and reach out to various colleges (especially HBCUs) to encourage more qualified students to apply (personal communication, Claudis Polk, director, Office of Scholastic Enrichment & Equity, UNC SOM, September 13, 2022). These efforts led to increasing numbers of Black applicants and admitted students at UNC SOM beginning in 1972.

By 1980, 80% of all Black doctors in the United States were graduates of Howard or Meharry. Three HBCUs—Howard, Meharry, and Morehouse—continue to bear a great deal of the burden of educating Black physicians and enroll 13% of all current Black medical students, while overall Black medical student enrollment is at 8% nationwide [7]. Most recent 2018 workforce data from the Association of American Medical Colleges (AAMC) estimated that Black physicians made up 5% of physicians in the United States [8], and, as of 2021, 3.8% of North Carolina physicians were Black [9]. Meanwhile, 2020 Census data reflect that slightly over 38% of state residents are from groups other than non-Hispanic White, with 21% identifying as African American [10].

Examining the Impact of the Loss of Historically Black Schools of Medicine

Campbell and colleagues estimated that Leonard graduated 11 clinicians per year at the time of its closing [11]. Extrapolating trends in medical school class size from those seen at Meharry and Howard, they projected that continued operation of LSOM would have resulted in over 5000 additional African American doctors in the workforce by 2019 [11]. Examining the impact of all HBCU medical schools, they also estimated that survival of the HBCU schools that had closed in the wake of the Flexner report would have led to a 29% increase in Black physicians by 2019 [11].

Founded in 1925, Duke University School of Medicine (Duke SOM) was integrated in 1963 when Delano Meriwether was admitted to the class of 1967. Dr. Meriwether, also a national champion in the 100-yard dash, went on to earn his MPH from Johns Hopkins University and to have a distinguished career as an immunologist. Pathway programs to STEM, including medicine, were for decades the purview of the undergraduate campus. The Howard Hughes Medical Institute, Mellon Foundation, Dana Foundation, and others funded programs that deepened the understanding of science and medicine for high school and college students. The Duke School of Engineering partnered with North Carolina A&T State University, an HBCU, to sustain student interest in engineering, but Duke SOM did not engage with pathway programs to help diversify the pool of applicants to medical school until 2001, when it became a site for the Robert Wood Johnson Foundation (RWJF) Minority Medical Education Program (MMEP), now known as the Summer Health Professions Education Program (SHPEP). Duke hosted a RWJF site until 2017, when Duke SOM funded its own program, the Summer Biomedical Sciences Institute. In 2005, the Burroughs-Wellcome Fund supported a partnership with Durham Public Schools for a longitudinal year-round program to foment and sustain interest in STEM and medicine among minority and/or disadvantaged middle and high school students. Over the years, this program has enjoyed funding from GlaxoSmithKline and the NIH Science Education Partnership Award. Currently, it is fully supported by the Duke SOM.

James G. "Jim" Jones, a Lumbee Indian, was the first American Indian to graduate from Wake Forest University (1955) as well as the school of medicine (1959) years before the Wake Forest University Trustees voted to end segregation in 1962. William T. Grimes integrated Bowman Gray School of Medicine at Wake Forest University in 1968 as its first Black student and earned his MD degree in 1972. At the time, he was one of approximately 400 students enrolled in the MD program.

All of the schools of medicine in North Carolina sought to have more diversity among their student body and developed summer programs as well as post-baccalaureate programs to assist individuals from underrepresented populations in pursuing medical careers. Almost all of these programs were funded by the US Health Resources and Services Administration via Health Careers Opportunity Programs (HCOP) or Center of Excellence (COE) grants.

HCOP was set up to address the needs of Black and Indigenous students going into medicine in 1972 (personal communication, Clay Simpson, deputy assistant secretary for minority health, HHS [retired], 2022). The purpose of HCOP-funded programs was to take students from HBCUs and enhance their academic preparation through an immersion into the basic science of medical school during a nine-week summer program. These grants became very successful at developing the pathway for underrepresented in medicine (URiM) students to gain confidence, knowledge, and study skills that would be pivotal in their journey to medicine.

As programs sprung up across the nation, Evelyn McCarthy worked with educators at UNC to successfully apply for the funds to start the Medical Educational Development (MED) program in 1974. Starting with a small group of less than 20 participants, the program continued to grow until it reached the size of almost 80 participants by the mid-1980s. In 1986, Larry Keith joined the MED staff and was then able to keep the program going through 2014. More than 3000 students have successfully completed the program since its inception, and as of 2016 more than 1100 students have gone on to practice medicine (personal communication, Claudis Polk, director, Office of Scholastic Enrichment & Equity, UNC SOM, July 2022).

The Medical School at East Carolina University was started in 1974 and shortly thereafter became known as the Brody School of Medicine (BSOM). In the 1980s, the Brody School launched the Summer Program for Future Doctors (SPFD) pathway program. Unlike MED, SPFD only accepts in-state students. From 2005 until 2013, there were 126 SPFD alumni, of whom 66 had completed residency by 2019 (internal data, BSOM). Of that number, 28 alumni, or 42% of those completing residency, became primary care physicians and 58% of them stayed in the state (internal data, BSOM).

Summer programming for high school students through HRSA and HCOP funding at Wake Forest was led by Dr. Velma G. Watts; hundreds of students participated in the program beginning in 1983 and it continues now through the North Carolina Area Health Education Centers (NC AHEC) and institutional funding. The Post-Baccalaureate Development Program (PBDP) began in 1987 under Dr. Watts's leadership as an additional avenue to facilitate the entry of URiM students at Wake Forest University School of Medicine (WFUSM) by offering an intensive 12-month regimen on the Reynolda Campus of Wake Forest University. The program transitioned to a nine-month full-time certificate program of graduate science classes as preparation and proving ground for readiness of matriculation into medical school. Since its beginning, approximately 300 students have completed the BPDP, with close to 90% enrolling in medical school as it has evolved from an educational preparatory program to a masters degree-granting program (internal data, WFUSM). Wake Forest continues to build on pathway programs internally as well as partnerships with community-based educational organizations.

Conclusion

The multiple barriers to obtaining a medical education are magnified in populations underrepresented in medicine. According to the AAMC, roughly three-quarters of medical school matriculants come from the top two household-income quintiles, and this distribution hasn't changed in three decades [12]. A majority of students from marginalized populations and those with lower socioeconomic status do not have the resources to adequately prepare for medical education; pathway programs continue to help prepare these students, closing the educational gap and diversifying the medical schools and medical professions in North Carolina. NCMJ

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