

# Pathways to Medicine

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## ABSTRACT

Early exposure to health careers has the potential to improve diversity in the health professional workforce and reduce health provider shortages in Rhode Island and across the United States. Rhode Island alone has 13 federally designated Primary Care Health Professional Shortage Areas (PCHPSA) and 12 Medically Underserved Areas (MUA). To help increase healthcare access for individuals residing in these areas and promote diversity within the RI health workforce, The Warren Alpert Medical School of Brown University established and/or supports multiple pathway programs to provide early health career exposure to students. This approach empowers and supports students from various backgrounds to see themselves as future healthcare professionals. These programs work to create a more well-rounded healthcare workforce equipped to serve the state's diverse patient population.

**KEYWORDS:** Medical Education, Pathway Programs, Diversity

## INTRODUCTION

Increasing the number of underrepresented in medicine (UiM) trainees is essential for diversifying the healthcare workforce and providing high-quality care for the growing diverse patient population in Rhode Island (RI) and nationwide. The Association of American Medical Colleges defines UiM as "those racial and ethnic populations that are underrepresented in the medical profession relative to their numbers in the general population."<sup>1</sup> Despite comprising 9.1% and 17.6% of the RI population, Black and Hispanic individuals only make up 3.4% and 4.6% of the RI physician workforce, respectively.<sup>2,3</sup> Providing early exposure to health careers may help increase diversity in the physician workforce by encouraging students from UiM, economically, and educationally disadvantaged backgrounds to pursue medical careers.

Promoting diversity within the medical workforce has the potential to foster health equity and mitigate disparities for patients. Health equity provides individuals with equitable and fair opportunities to achieve optimal health.<sup>4</sup> Racial and ethnic disparities in disease prevalence, morbidity,

and mortality exist for racial/ethnic minorities compared to non-Hispanic Whites.<sup>5</sup> Minority providers play a pivotal role in reducing these racial/ethnic health disparities.<sup>6,7</sup> For example, in a study by Greenwood et al evaluating nearly two million hospital births in Florida between 1992 and 2015, physician-patient race concordance was associated with a significant decrease in the mortality of Black newborns.<sup>6</sup> Promoting diversity in the medical field may help foster health equity and reduce racial/ethnic disparities.

Additionally, minority healthcare providers are crucial in promoting the health of minority patients and individuals living in federally designated Health Professional Shortage Areas (HPSA) and Medically Underserved Areas (MUA). For example, physicians from minority backgrounds provide a greater proportion of care to minority and non-English speaking populations.<sup>7</sup> Moreover, results from a study by Xierali et al found that among primary care physicians, Black, Native American, and Hispanic doctors were more likely than White doctors to practice in primary care HPSA, MUA, and rural areas.<sup>8</sup> Minority physicians' role in delivering healthcare to underserved communities underscores the importance of increasing diversity in the medical profession.

In light of the U.S. Supreme Court's decision on affirmative action in higher education, efforts are needed to establish initiatives to expose students from diverse backgrounds to health careers before they apply for college and medical school.<sup>9</sup> To increase early exposure, nationwide pathway/pipeline programs for UiM, economically, or educationally disadvantaged students have been established, beginning as early as elementary school.<sup>10-12</sup> These programs typically focus on early exploration of health careers, standardized exam preparation, research exposure, mentorship, and basic science education.<sup>10,11</sup> They have been shown to help increase the number of UiM and other historically disadvantaged students' interest and pursuit of health careers.<sup>10-12</sup>

## PATHWAY PROGRAMS

To help increase the diversity of healthcare providers in Rhode Island, The Warren Alpert Medical School of Brown University has established and supports several pathway programs designed to promote early exposure to health careers for RI students. Led by the Center for Community Engagement and Pathway Programs (CCEPP) in the Office

of Belonging, Equity, Diversity, and Inclusion at The Warren Alpert Medical School, these initiatives prioritize exposing students to diverse healthcare careers, facilitating access to activities that foster their interest in the medical field, and ensuring participants receive the essential support for their journey to success. While these programs welcome students from all backgrounds, students from HPSA and MUA, UiM, and economically and educationally disadvantaged backgrounds are strongly encouraged to apply. The vision of these programs is to create a longitudinal network of pathway programming that assists students across various educational stages, from middle school to college. These programs are designed to provide structured and supportive foundational experiences through mentorship, academic support, and clinical skills development. Through continuous and longitudinal programming, the pathway initiatives seek to enhance support and facilitate access to health career fields throughout a student's educational journey in hopes of increasing the diversity of the RI health workforce, which, in turn, may aid in promoting health equity for the state's growing diverse population.

### Middle school

For middle school students, The Warren Alpert Medical School developed Meeting in the Middle (MIM), a semester-long after-school program for students at a public middle school in Central Falls, RI. Central Falls was chosen given its federal designation as a HPSA and MUA. MIM is part of the School Health Model for Academics Reaching All Transforming Lives (SMART) Plus. SMART Plus is a Warren Alpert Medical School initiative, in collaboration with the Ginn Group Collaborative and funded by the Warren Alpert Foundation, that seeks to integrate health career exposure into schools. MIM consists of bi-monthly interactive sessions that include lectures about healthcare careers, interactive clinical skills lessons, and a health career fair.

### High school

CCEPP also supports five pathway programs for high school students with the goal of creating longitudinal programming for MIM students electing to continue their exposure to healthcare careers while also creating additional opportunities for other high school students. Like MIM, the high school programs aim to spark an early interest in medical careers and also focus on college preparation, clinical skills exposure, and research involvement. For example, Week of Medical School is a week-long summer program where students from RI come to Warren Alpert Medical School for five hours a day to participate in medicine and science workshops and receive mentorship from faculty and medical students.

### Undergraduate programs

Building on the high school programs, three undergraduate pathway programs continue to offer tailored clinical, mentorship, and research opportunities. These programs focus on preparing students for successful applications and matriculation to health professional schools through clinical exposure, professional development, Medical College Admission Test (MCAT) preparation, and other related opportunities. One such program is Rhode to Medicine, a nine-month program that offers clinical skills' workshops, health professional seminars, MCAT funding, pre-medical school counseling and advising during the summer program and throughout the student's undergraduate career. The program also provides students with a summer stipend, recognizing that participating in the program may present challenges in securing summer employment.

### Healthcare professionals' volunteer efforts

Since the establishment of the Pathways to Medicine medical student-led program in 2013, to date over 500 students have participated in various health careers exposure activities organized and supported by the medical school. While the CCEPP leads and/or supports each pathway program, the involvement of medical students, residents, attending physicians, and other healthcare professionals is essential for their successful implementation. Healthcare professionals volunteer their time to serve as clinical mentors for undergraduate students in the Rhode to Medicine program, while medical students play a significant role in coordinating various high school and middle school programs. Additionally, public health professionals, nurses, advanced practice providers, community health workers, dentists, and other health professionals are integrated into programs to provide students with insights into the daily lives of a variety of healthcare professions.

### CONCLUSION

The Warren Alpert Medical School pathway programs aim to cultivate a more diverse healthcare workforce in Rhode Island. Through early exposure to healthcare careers, mentorship opportunities, and academic support, the programs provide students with opportunities for longitudinal exposure to medical careers. This approach empowers and supports students from various backgrounds to see themselves as future healthcare professionals. By also fostering future collaboration with other RI health professional schools, the programs will work to create a more well-rounded healthcare workforce equipped to serve the state's diverse patient population.

## References

- Ogunyemi D. Affinity Group Unique Populations. AAMC. Accessed February 16, 2024. <https://www.aamc.org/professional-development/affinity-groups/gfa/unique-populations>
- Association of American Medical Colleges. Rhode Island Physician Workforce Profile. Published online 2019. <https://www.aamc.org/media/58316/download>
- United States Census Bureau. U.S. Census Bureau QuickFacts: Rhode Island. Accessed November 1, 2023. <https://www.census.gov/quickfacts/fact/table/RI/PST045222>
- Centers for Disease Control and Prevention. What is Health Equity? Published December 16, 2022. Accessed February 16, 2024. <https://www.cdc.gov/nchhstp/healthequity/index.html>
- National Center for Health Statistics. NCHS Data on Racial and Ethnic Disparities. Published 2020. Accessed July 30, 2023. [https://www.cdc.gov/nchs/data/factsheets/factsheet\\_disparities.htm](https://www.cdc.gov/nchs/data/factsheets/factsheet_disparities.htm)
- Greenwood BN, Hardeman RR, Huang L, Sojourner A. Physician–patient racial concordance and disparities in birthing mortality for newborns. *Proc Natl Acad Sci*. 2020;117(35):21194-21200. doi:10.1073/pnas.1913405117
- Marrast LM, Zallman L, Woolhandler S, Bor DH, McCormick D. Minority Physicians' Role in the Care of Underserved Patients: Diversifying the Physician Workforce May Be Key in Addressing Health Disparities. *JAMA Intern Med*. 2014;174(2):289-291. doi:10.1001/jamainternmed.2013.12756
- Xierali IM, Nivet MA. The Racial and Ethnic Composition and Distribution of Primary Care Physicians. *J Health Care Poor Underserved*. 2018;29(1):556-570. doi:10.1353/hpu.2018.0036
- Rubin R. How the SCOTUS Affirmative Action Ruling Could Affect Medical Schools and Health Care. *JAMA*. 2023;330(6):492-494. doi:10.1001/jama.2023.13603
- Parsons M, Caldwell MT, Alvarez A, et al. Physician Pipeline and Pathway Programs: An Evidence-based Guide to Best Practices for Diversity, Equity, and Inclusion from the Council of Residency Directors in Emergency Medicine. *West J Emerg Med*. 2022;23(4):514-524. doi:10.5811/westjem.2022.2.54875
- Stephenson-Hunter C, Strelnick AH, Rodriguez N, Stumpf LA, Spano H, Gonzalez CM. Dreams Realized: A Long-Term Program Evaluation of Three Summer Diversity Pipeline Programs. *Health Equity*. 2021;5(1):512-520. doi:10.1089/heq.2020.0126
- Mains TE, Wilcox MV, Wright SM. Medical Education Resources Initiative for Teens Program in Baltimore: A Model Pipeline Program Built on Four Pillars. *Educ Health*. 2016;29(1):47. doi:10.4103/1357-6283.178935

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