

# Pathways to Family Medicine Careers: An Annotated Bibliography

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## Contents

Introduction.....	3
Bibliography Organization.....	3
Summary.....	3
Early Childhood.....	4
Elementary and Secondary Education .....	5
Medical School and Residency.....	6
Pathway Programs .....	13
Post-Residency.....	17
Post-Residency Education .....	20
Commentary and Editorial.....	22

## Introduction

Expanding pathways to medical school and family medicine, particularly among underrepresented minorities, is a current policy priority within academic medicine, medical societies, and public entities. Therefore, HealthLandscape and the Robert Graham Center have created this annotated bibliography to summarize recent literature on pathways to medical school and careers in family medicine. We've examined 30 resources, including two web-only reports and 28 peer-reviewed journal articles.

## Organization

This bibliography is organized into eight sections:

1. Early Childhood
2. Elementary and Secondary Education
3. Secondary Education
4. Post-Secondary / Undergraduate Education
5. Medical School & Residency
6. Post Residency
7. Pathway Programs
8. Commentary and Editorial

By design, some literature will appear in more than one section, such as original research that evaluates a specific post-secondary pathways program.

## Summary

The literature shows that while there have been gains in the numbers of under-represented minorities in medicine, those numbers still far short of population proportions and health outcomes in these populations continue to lag. A wide variety of programs have been instituted to address these gaps ranging from early childhood exposures to creating new medical schools and residencies to post-medical school opportunities.

## Early Childhood

Baugh, A. D., Vanderbilt, A. A., & Baugh, R. F. (2019). The dynamics of poverty, educational attainment, and the children of the disadvantaged entering medical school. *Advances in Medical Education and Practice*, 10, 667–676. <https://doi.org/10.2147/AMEP.S196840>

The authors note that AAMC uses SES EO (parental income and occupation) to assess medical applicant disadvantage, but state that many racial and ethnic groups make less than whites for the same job, so many “false negatives” occur. Additionally, these measures do not account for familial wealth. Social disadvantage is important to measure because it can be as detrimental to academic performance as alcoholism or 24-hour sleep deprivation. Accordingly, children in disadvantaged households fail to graduate from college at five times the rate of children from middle-income families and at six times the rate of children from high-income families. The authors state disadvantage also differs by location, including unemployment being more common in rural areas and living in a poor neighborhood being more likely in an urban area, also limiting educational success. Financial aid is not mitigating these issues; the Great Recession led to massive cuts in financial support and need-based scholarships, leading to fewer disadvantaged children enrolling in colleges, with the downstream effect of limiting these student’s presence in medical school. The authors also state that educational debt decreases the likelihood of a college graduate applying to medical school, and disadvantaged students are more likely to carry higher debts. The authors conclude that we need to fix these issues in childhood as wider medical school pathways will increase access to health care for the underserved and improve patient satisfaction. The authors recommend addressing structural inequality, starting a uniform definition of “disadvantaged,” acknowledgment of underrepresentation of the disadvantaged in medicine, and widening pathways to medicine for the disadvantaged, as other countries have successfully done. The authors note that while some pipeline programs have worked, they eventually lost support. Quotas, affirmative action, and other deliberate admissions policies could help, as they have in other countries, but the authors state that we need to start by addressing childhood poverty. The article presents the unique perspective of addressing downstream factors such as poverty as part of a successful pathways program for the disadvantaged.

## Elementary and Secondary Education

Muppala, V. R., Janwadkar, R. S., Rootes, A., & Prakash, N. (2021). Creating a Pipeline for Minority Physicians: Medical-Student-Led Programming. *Cureus*.  
<https://doi.org/10.7759/cureus.14384>

The authors describe the components and outcomes of a medical student-led pipeline program aimed at increasing racial and ethnic diversity in the medical professions. Medical School Outreach Programming targets middle and high school students from diverse backgrounds, including minority students, low-income students, students for whom English is a second language, and future first-generation college students. Specific program goals include increasing interest in health professions, increasing science proficiency, and measuring health care career preference using surveys. Tactics include medical student-led labs, use of patient simulators, and Saturday workshops on writing, interviewing, college, and oral communication. In 2018-2019, 54 students worked 470 hours with 823 economically disadvantaged and/or underrepresented minority 6-12 graders. Survey results show an increased interest in STEM careers, increased connection to health care, and increased confidence. This article serves as a succinct description of a unique medical student-led pipeline program with demonstrated positive outcomes.

Parsons, M., Caldwell, M., Alvarez, A., Davenport, D., Gallegos, M., Landry, A., Gottlieb, M., & Natesan, S. (2022). 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. *Western Journal of Emergency Medicine*, 23(4), 514–524.  
<https://doi.org/10.5811/westjem.2022.2.54875>

The authors describe the importance of diversity in medicine, citing benefits such as increased professionalism, improved patient care, and better health outcomes. While this article was supported by the Council of Residency Directors in Emergency Medicine, the subject is applicable to all medical specialties. The authors begin by stating that pipeline and pathway programs increase diversity in medicine by supporting physicians underrepresented in medicine (UIM), and they describe different types of these programs. The authors combine elementary and high school programs into one category, and describe effective aspects of these programs, including exploring health care careers, increasing research exposure, and improving science knowledge through mentorship, health professions clubs, physical exam practice, and test preparation. At the college level, the authors list effective program components such as summer programs, internships, pre-med dorm floors, and BS-MD programs, which have high rates of graduating UIM. Post-baccalaureate programs typically involve one or two years of MCAT prep, research options, and clinical options, and have a high success rate (83%

of graduates enter medical school with 53% of these working in primary care and 40% in medically underserved areas). Finally, the authors mention the success rate of historically Black colleges, universities, and medical schools in developing UIM. The authors conclude with recommending extensive best practices for each program category. This thorough review is an important source of information on different levels of pathways programs, characteristics of each level, and specific program components and best practices, and is applicable to all medical specialties.

Weiner, S. (2018, January 8). Pre-Premed: Pipeline Efforts Steer Elementary School Students into Medicine. AAMC. <https://www.aamc.org/news-insights/pre-premed-pipeline-efforts-steer-elementary-school-students-medicine>

In this AAMC News piece, the author describes programs such as the Dell Medical School Health Sciences Summer Camp in Austin, Texas, that prepare students as young as age six for a career in medicine. Activities in these programs include medical school visits, increased science and math programming, and guest speakers. Most students in these programs are members of groups underrepresented in medicine, including children identifying as Black or Native American. The author states that these programs benefit others as well; medical students gain communication skills and anti-bias training, and programs aim to fill workforce gaps in medically underserved communities. This piece is a succinct, persuasive endorsement of early childhood pathways programs.

## Medical School and Residency

Alavi, M., Ho, T., Stisher, C., Richardson, E., Kelly, C., McCrory, K., Snellings, J., Zurek, K., & Boltz, M. W. (2019). Factors That Influence Student Choice in Family Medicine: A National Focus Group. *Family Medicine*, 51(2), 143–148. <https://doi.org/10.22454/FamMed.2019.927833>

In an effort to understand what influences medical students to become family physicians, the authors, as part of the Family Medicine for America's Health (FMAHealth) Workforce and Education Team, conducted focus groups with medical students throughout the United States. The three main themes that emerged among students matching into family medicine were perspective, choice, and exposure. Participating students stressed the importance of high-quality, enthusiastic family medicine preceptors; experience in rural areas, which exposed them to a broad scope of practice; and the involvement and support of family medicine faculty during pre-clinical instruction. Students also discussed stigma against family medicine, including lack of prestige and underappreciation. The authors recommended addressing the barriers above and reiterated the importance of high-quality preceptors, varied clinical exposures, and institutional support. This article is a concise summary of qualitative research into why students select family medicine and potential barriers.

Bunker, J. (2009). Choosing general practice as a career—The influences of education and training. *Australian Family Physician*, 38(5).

In this literature review, the authors explore the factors that influence Australian medical students' choice of general practice. They include conventional literature, stakeholder interviews, reports, position papers, opinion summaries, and marketing and consumer choice literature, both from within and outside Australia. The authors use five categories of influence. First, under the "Primary and Secondary Education" influences category, they state that exposure to primary care before medical school matriculation is the strongest predictor of a career in general practice. Interestingly, the authors also point out that in Australia, funding and other supports are geared toward attracting students of rural origin, rather than targeting resources at general practice recruitment. Second, the authors explore the influence of a student's selected medical school on career choice. Research shows that some medical schools focus on producing primary care physicians and a school's selection criteria and location are also factors. The authors suggest more research is needed on incoming students' financial situations and their specialty selection. In the third category of influence, "During Medical School," the authors cite school location, birthplace rurality, and role models as factors contributing to specialty choice, though financial and staffing resources must be sufficient to positively impact the latter factor. Fourth, during prevocational training, peer opinion and professional exposure to general practice are the strongest influences on specialty choice. Finally, the authors state that more research is needed to explore influences during vocational training, the fifth category, as this stage often occurs after a student has selected a specialty. The authors do cite ease of entry into training and duration of training as positive influences on general practice specialty choice in this stage. The authors close by stating that most specialty decisions are made in the prevocational years, and high school or early medical school training must be linked with general practice exposure and positive experiences in later stages of training. While this is a relatively older article from Australia, it serves as an important literature review on the stages of influence on medical specialty selection and remains relevant in 2023.

Burm, S., Deagle, S., Watling, C. J., Wylie, L., & Alcock, D. (2023). Navigating the burden of proof and responsibility: A narrative inquiry into Indigenous medical learners' experiences. *Medical Education*, 57(6), 556–565. <https://doi.org/10.1111/medu.15000>

In this small Canadian qualitative study, the authors interview five Indigenous learners (medical students, residents, and a working physician) to learn more about their medical education experiences. Their goals are to understand the effectiveness of Indigenous medical pathways programs and ascertain the learning barriers Indigenous populations face. Based in theories of narrative inquiry and Indigenous research traditions, the authors used in-depth interviews and elicited photographs from participants. The combination of words and photographs allowed the subjects to convey their

experiences as medical learners, including motivations and barriers. The authors identified common themes, including the burden of proving one's Indigenous status, the burden of representing Indigenous identity combined with the typical medical school stressors, and the importance of connecting with other Indigenous learners. The authors conclude that strong mentorships and clustered admissions would improve the experiences and increase retention of Indigenous learners, while institution-wide mandatory training around trauma-informed care, anti-racism, and anti-colonialism can improve the experiences of all learners. This article offers important insight on the experiences of Indigenous medical learners and suggests tactics to improve these experiences.

Campbell, K. M., Corral, I., Infante Linares, J. L., & Tumin, D. (2020). Projected Estimates of African American Medical Graduates of Closed Historically Black Medical Schools. *JAMA Network Open*, 3(8), e2015220. <https://doi.org/10.1001/jamanetworkopen.2020.15220>

The authors explain that while historically Black medical schools have consistently and proportionately graduated more underrepresented minority physicians than white institutions, 13 historically Black medical schools were closed between 1874 and 1923, five of these at the behest of the landmark 1910 Flexner Report. The authors created a hypothetical scenario in which these five schools remained open and estimated the number of graduates the schools could have produced. The authors obtained the mean number of annual program graduates from historical documents and created models to estimate program growth since closure. The authors estimated that the five schools could have produced between 27,773 and 35,315 underrepresented minority graduates between their year of closure and 2019. The authors theorize that keeping these schools open could have increased the availability of available Black physician mentors, increased the diversity of physician workforce, decreased health disparities, and increased health services to underserved communities. The authors conclude by recommending the creation of new medical schools at historically Black colleges and universities. This article presents a unique perspective on the closing of historically Black medical schools, quantifying the potential loss of underrepresented minority medical school graduates and offering recommendations to mitigate this loss.

Chen, C., Petterson, S., Phillips, R. L., Mullan, F., Bazemore, A., & O'Donnell, S. D. (2013). Toward Graduate Medical Education (GME) Accountability: Measuring the Outcomes of GME Institutions. *Academic Medicine*, 88(9), 1267–1280. <https://doi.org/10.1097/ACM.0b013e31829a3ce9>

The authors review the U.S. GME system, emphasizing the influence that GME program location and setting have on the likelihood physicians will practice in rural or underserved areas. They then describe how U.S. GME is funded, stating that while Medicare and Medicaid spent nearly \$13 billion on GME in 2009, care-limiting shortages persist. Additionally, federal funding does not stipulate training specialty or outcomes,



despite the urging for more GME accountability. To this end, the authors analyzed 2006-2008 American Medical Association (AMA) Masterfile data, NPI data, Medicare claims, and NHSC data to quantify graduate medical education program workforce outcomes, particularly for high-need specialties and underserved areas. They found a negative association between program size (number of graduates and number of specialties) and graduates practicing in rural areas and graduates in primary care, and a positive association between program rurality and graduates practicing in rural areas. The authors conclude by recommending outcomes such as these be measured and reported to increase federal accountability, inform policy, and evaluate “the results of changes in the GME system.” This article proposes measuring GME accountability from the perspective of how well a program serves the public’s health needs and suggests indicators to assist with this measurement.

Drowos, J. (2019). New Allopathic Medical Schools and Family Physicians. *The Journal of the American Board of Family Medicine*, 32(5), 651–652.  
<https://doi.org/10.3122/jabfm.2019.05.190245>

In this commentary, the author describes her experience building a new medical school, and agrees with the article she comments on, which states that new medical schools train fewer family physicians than older ones. The author mentions that leadership opportunities, student interest groups, and strong mentors influence student choice of family medicine, and that academic leaders should serve as mentors. She also suggests more equitable medical school admissions processes, more innovative primary care-oriented curricula, more exposure to family medicine throughout medical school, and further research. This article is an interesting perspective on how opening new medical schools is not necessarily an ideal solution for workforce shortages, and the author suggests tactics that may be more effective in building a diverse, sufficient primary care workforce.

Evans, D., Jopson, A., Andrilla, C. H., Longenecker, R., & Patterson, D. (2020). Targeted Medical School Admissions: A Strategic Process for Meeting Our Social Mission. *Family Medicine*, 52(7), 474–482. <https://doi.org/10.22454/FamMed.2020.470334>

Medical school class size and the number of medical schools has increased, yet a U.S. physician shortage remains, particularly in rural, urban underserved, and primary care settings. The authors’ objective was to describe the use of medical school admissions strategies that target students most likely to practice in these underserved settings, and they note that these admission strategies may be more effective at filling workforce gaps than traditional efforts. They used medical school directories from the Association of American Medical Colleges, the American Association of Colleges of Osteopathic Medicine, and the American Osteopathic Association to create a list of medical schools and sent questionnaires on admissions strategies to key personnel at each school, yielding a 71.8% response rate. The responses indicated that 69.2% of schools used rural

targeted admissions strategies, 67.4% used urban underserved targeted admissions strategies, and 45.3% used primary care practice targeted admissions strategies. The authors grouped strategies into four categories: mentorship and career exploration, academic enhancement (e.g., MCAT preparation), admissions preparation (e.g., mock interviews, application assistance), and formal agreements between the medical school and community or technical colleges, universities, and postbaccalaureate programs, with most schools stating they participated in career exploration and mentorship. Surveys also indicated that schools use evidence-based applicant characteristics like growing up in a rural area, stated interest in family medicine or primary care, taking a non-continuous path from high school, and positive rural exposure to predict whether a student is more likely to enter rural, urban underserved, or primary care practice. The authors conclude that targeted admissions processes varied widely, and more research is needed on these processes and how schools target students most likely to practice in rural, urban underserved, or primary care settings. This article is a useful synopsis of targeted medical school admissions practices, their prevalence, and the need for future research.

Jetty, A., Hyppolite, J., Eden, A. R., Taylor, M. K., & Jabbarpour, Y. (2022). Underrepresented Minority Family Physicians More Likely to Care for Vulnerable Populations. *The Journal of the American Board of Family Medicine*, 35(2), 223–224. <https://doi.org/10.3122/jabfm.2022.02.210280>

Authors analyzed 2016–2020 American Board of Family Medicine (ABFM) Certification Examination data to determine whether family physicians who identify as an underrepresented minority (URM) are more likely than non-URM family physicians to serve vulnerable populations. They authors found that patient panels of family physicians identifying as Black, Hispanic, or Native Hawaiian/American Indian Alaska Native are between 20% and 50% vulnerable populations, which include people who are uninsured, insured by Medicaid, homeless, non-English-speaking, or a racial or ethnic minority, while white family physician patient panels are composed of less than 10% vulnerable populations. The authors recommend increasing the National Health Service Corps program, increasing residency program rotations that serve vulnerable populations, and enacting policies that encourage URM to apply to and succeed within medical school. This short article is a useful summary of recent research on URM family physician patient panel composition.

Kost, A., Evans, D., Dobie, S., & Sanders, E. (2018). What Is the Impact of the Underserved Pathway Program on Graduates Entering an Underserved Family Medicine Residency? Five-Year Findings From the University of Washington School of Medicine: *Academic Medicine*, 93(7), 1042–1047. <https://doi.org/10.1097/ACM.0000000000002073>

The authors estimated the effect of the University of Washington School of Medicine's (UWSOM) Underserved Pathway (UP), an extracurricular medical school program that

includes online content, a preclinical underserved preceptorship, underserved course electives, mentoring from a physician with experience caring for the underserved, service learning, an underserved-focused academic project, and clinical clerkships in underserved settings, including federally qualified health centers (FQHC) or critical access hospitals (CAH). The authors used UWSOM application records and student survey data to access information on student demographics, backgrounds, and career aspirations, and an American Academy of Family Physician residency database with information on whether a residency setting included an FQHC or CAH. The authors found that, between 2010 and 2015, UP graduates were more likely than non-UP graduates to indicate a preference to practice in rural, small town, low-access, and/or outpatient practice, and were more likely to list family medicine as a top residency choice. Non-UP graduates were more likely than UP graduates to indicate a preference to practice in military, academic, tertiary care, and city settings. When the authors controlled for sources of self-selection bias, they found UP graduates were 3.58 times more likely to enter an underserved residency setting compared to non-UP graduates. The authors theorized the reason for this may be (1) the UP may have generated interest in caring for the underserved which was maintained through the match, (2) the UP supports and focuses on altruism which may help students select careers caring for the underserved, and (3) that students who spend extracurricular time learning about underserved populations may be more likely to serve them. The authors conclude that the UP may be an important part of the pipeline to family medicine careers in underserved settings and recommend a full evaluation of UP outcomes. This article serves as a favorable initial evaluation of the UP program, noting UP graduates are more likely than non-UP graduates to practice in underserved settings.

Longenecker, R. L., Andrilla, C. H. A., Jopson, A. D., Evans, D. V., Schmitz, D., Larson, E. H., & Patterson, D. G. (2021). Pipelines to Pathways: Medical School Commitment to Producing a Rural Workforce. *The Journal of Rural Health*, 37(4), 723–733.  
<https://doi.org/10.1111/jrh.12542>

The authors compiled a list of 182 allopathic and osteopathic medical schools in the U.S. and examined the ways medical schools worked to expand the rural physician workforce. The authors found that while only 8.2% of medical school mission statements mentioned a commitment to producing rural physicians, 21.4% of schools had a formal rural workforce program and 64.8% of medical schools offered rural clinical experiences. Additionally, only 4.9% of medical schools were located in ZIP Codes classified as rural, meaning they were assigned Rural-Urban Commuting Area (RUCA) codes between 4 and 10. The authors stressed the need for further research, including surveying individual program leaders, staff, and students, to better understand the most effective rural training methods, coursework, student placements, and rotation length. This article quantifies strategies to expand the rural physician workforce from a medical school perspective, giving a useful synopsis of current policies and programs.

Montgomery Rice, V. (2021). Diversity in Medical Schools: A Much-Needed New Beginning. *JAMA*, 325(1), 23. <https://doi.org/10.1001/jama.2020.21576>

The author reviews research findings regarding the disproportionate number of Black physicians (only 5% of physicians identify as Black, yet Black Americans comprise over 13% of the U.S. population) and the health outcome improvements seen when Black Americans are cared for by Black physicians. The author also mentions that Black men are particularly underrepresented in medical school. The authors review the history of Black medical school closures since the Flexner Report, and the ways in which these closures contributed to a potential loss of nearly 28,000 Black physicians over time. The author cites studies that show the Medical College Admission Test (MCAT) is a barrier to Black medical school matriculants, even though the MCAT does not accurately predict medical school success. Additionally, while many medical schools claim to embrace diversity, leadership concerns over U.S. News and World Report-type rankings and an overemphasis on MCAT scores perpetuates the exclusion of Black students. The author suggests actions such as identifying potential undergraduate students for training, particularly at Historic Black Colleges and Universities (HBCU), yet she stresses that HBCU's should not bear the entire responsibility for widening medical school pathways for Black students. This is an informative, well-researched piece, adding insight and valuable suggestions to the literature on the underrepresentation of Black Americans in medicine.

Raymond, J. R., Maurana, C. A., & Kerschner, J. E. (2017). Expanding the Health-care Pipeline through Innovation: The MCW model. *Transactions of the American Clinical and Climatological Association*, 128, 90–107.

In this article, the authors describe three approaches the Medical College of Wisconsin (MCW) took to expand the health care pipeline in Wisconsin to decrease workforce shortages. The approaches consisted of creating regional medical campuses, establishing new rural family medicine and psychiatry residency programs, and creating a new pharmacy school. In the first approach, MCW established medical schools in central Wisconsin and Green Bay, each with innovative guiding principles. These principles include community immersion (students live and work within the local community), health system cooperation (competitors came together to offer resources, board members, and expertise), a hybrid three-year accelerated curriculum, cutting costs (sharing space, hiring local science professors, and grant seeking), local advisory boards (citizens and academic, health care, business, government, and philanthropic professionals), community-informed admissions processes (prioritizing the most caring, collaborative-minded, compassionate students) with preference for Wisconsin students, and enhanced student support and faculty development (community service, student affinity groups and joint research and professional development, respectively). As of publication, the regional medical campuses had enrolled over 25 students. MCW's

second approach was to work with the Wisconsin Rural Physicians Residency Assistance Program, the Wisconsin Medical Society, and the Wisconsin Hospital Association to establish two new psychiatry residencies and one new family medicine residency located in rural areas. The new programs offer local medical school graduates the opportunity to continue training nearby and interact regularly with local residents. Stakeholders are hopeful that these experiences will encourage trainees to practice in rural Wisconsin. Finally, the MCW established a new pharmacy school that specifically prepares graduates to “triage in retail pharmacy settings, or to provide chronic disease management in retail pharmacy or clinic settings.” As of publication, the school had not yet admitted any students. This descriptive piece is an important resource on strategies at the medical school level that may widen pathways to medical school to alleviate workforce shortages.

## Pathway Programs

Campbell, K. M. (2018). Slow Progress and Persistent Challenges for the Underrepresented Minority Family Physician. *The Journal of the American Board of Family Medicine*, 31(6), 840–841. <https://doi.org/10.3122/jabfm.2018.06.180235>

Dr. Campbell comments on Peabody et al. (2018), stating that while the proportion of racial and ethnic minority family physicians has increased, growth has been stymied by historic race and class-based divisions, escalating racism under President Trump, and lower-than-proportionate recruitment from historically minority serving medical schools. Dr. Campbell points out that these institutions suffer challenges including mentorship and faculty development, isolation, and racism. Because family medicine is a leader in physician diversity, and physician diversity can reduce health care costs, improve patient satisfaction, and improve health, family physicians must work to increase numbers of board certified Black and Hispanic or Latino physicians. Dr. Campbell recommends advocacy, increasing pipeline and outreach programs, further exploration of community college as a pathway to family medicine, and the creation of new medical schools and residency training programs at HBCUs. This short piece is a thoughtful synopsis of the recent political climate, physician diversity, and the need for more advocacy and other programs.

Kost, A., Evans, D., Dobie, S., & Sanders, E. (2018). What Is the Impact of the Underserved Pathway Program on Graduates Entering an Underserved Family Medicine Residency? Five-Year Findings from the University of Washington School of Medicine. *Academic Medicine*, 93(7), 1042–1047. <https://doi.org/10.1097/ACM.0000000000002073>

The authors estimated the effect of the University of Washington School of Medicine’s (UWSOM) Underserved Pathway (UP), an extracurricular medical school program that includes online content, a preclinical underserved preceptorship, underserved course

electives, mentoring from a physician with experience caring for the underserved, service learning, an underserved-focused academic project, and clinical clerkships in underserved settings, including federally qualified health centers (FQHC) or critical access hospitals (CAH). The authors used UWSOM application records and student survey data to access information on student demographics, backgrounds, and career aspirations, and an American Academy of Family Physician residency database with information on whether a residency setting included an FQHC or CAH. The authors found that, between 2010 and 2015, UP graduates were more likely than non-UP graduates to indicate a preference to practice in rural, small town, low-access, and/or outpatient practice, and were more likely to list family medicine as a top residency choice. Non-UP graduates were more likely than UP graduates to indicate a preference to practice in military, academic, tertiary care, and city settings. When the authors controlled for sources of self-selection bias, they found UP graduates were 3.58 times more likely to enter an underserved residency setting compared to non-UP graduates. The authors theorized the reason for this may be (1) the UP may have generated interest in caring for the underserved which was maintained through the match, (2) the UP supports and focuses on altruism which may help students select careers caring for the underserved, and (3) that students who spend extracurricular time learning about underserved populations may be more likely to serve them. The authors conclude that the UP may be an important part of the pipeline to family medicine careers in underserved settings and recommend a full evaluation of UP outcomes. This article serves as a favorable initial evaluation of the UP program, noting UP graduates are more likely than non-UP graduates to practice in underserved settings.

Parsons, M., Caldwell, M., Alvarez, A., Davenport, D., Gallegos, M., Landry, A., Gottlieb, M., & Natesan, S. (2022). 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. *Western Journal of Emergency Medicine*, 23(4), 514–524.  
<https://doi.org/10.5811/westjem.2022.2.54875>

The authors describe the importance of diversity in medicine, citing benefits such as increased professionalism, improved patient care, and better health outcomes. While this article was supported by the Council of Residency Directors in Emergency Medicine, the subject is applicable to all medical specialties. The authors begin by stating that pipeline and pathway programs increase diversity in medicine by supporting physicians underrepresented in medicine (UIM), and they describe different types of these programs. The authors combine elementary and high school programs into one category, and describe effective aspects of these programs, including exploring health care careers, increasing research exposure, and improving science knowledge through mentorship, health professions clubs, physical exam practice, and test preparation. At the college level, the authors list effective program components such as summer programs, internships, pre-med dorm floors, and BS-MD programs, which have high

rates of graduating UIM. Post-baccalaureate programs typically involve one or two years of MCAT prep, research options, and clinical options, and have a high success rate (83% of graduates enter medical school with 53% of these working in primary care and 40% in medically underserved areas). Finally, the authors mention the success rate of historically Black colleges, universities, and medical schools in developing UIM. The authors conclude with recommending extensive best practices for each program category. This thorough review is an important source of information on different levels of pathways programs, characteristics of each level, and specific program components and best practices, and is applicable to all medical specialties.

Poll-Hunter, N. I., Brown, Z., Smith, A., Starks, S. M., Gregory-Bass, R., Robinson, D., Cullins, M. D., Capers, Q., Landry, A., Bush, A., Bellamy, K., Lubin-Johnson, N., Fluker, C. J., Acosta, D. A., Young, G. H., Butts, G. C., & Bright, C. M. (2023). Increasing the Representation of Black Men in Medicine by Addressing Systems Factors. *Academic Medicine*, 98(3), 304–312.  
<https://doi.org/10.1097/ACM.0000000000005070>

In this *Academic Medicine* perspective article, the authors describe the work of the Action Collaborative for Black Men in Medicine (BMIM) and its importance in increasing access to medical school for Black men, whose medical school matriculation rates have actually dropped since 1978. The goal of the Association of American Medical Colleges (AAMC) and National Medical Association (NMA)-led Collaborative is to complement existing workforce pathway programs by focusing on systems change-related strategies. The Collaborative aims to address the following premedical systems factors that often stymie medical career aspirations for Black men: lack of financing and debt load, information access, pre-health advising challenges, stringent MCAT requirements, inadequate support systems, and pre-K – grade 12 academics. The Collaborative suggests tactics like eliminating “educational redlining” using MCAT scores, as research suggests that students scoring in the middle third range are most likely to be first-generation college graduates or identify as Black/African American, yet actually do succeed in medical school. The authors also identified four main areas in which medical schools can make systems-level improvements to increase BMIM. First, they laud pre-college pathways programs, mentioning the Young Doctors DC program which offers information and mentoring to middle and high school students. The second area of action is medical school recruitment, and authors suggest engaging with two- and four-year colleges, particularly those with large Black male student bodies, via their premedical programs. Third, the authors recommend that medical school admissions offices prioritize diversity and recognize and eliminate implicit biases that prevent Black men from gaining medical school admittance. Finally, the authors stress the importance of leadership accountability and suggest data transparency, a critical evaluation of institutional diversity efforts, and integrating performance management into the tenure and promotion process. This article is a thorough review of existing efforts and potential strategies to increase representation of Black men in medicine.

Shi, H., & Lee, K. C. (2016). Bolstering the pipeline for primary care: A proposal from stakeholders in medical education. *Medical Education Online*, 21, 10.3402/meo.v21.32146. <https://doi.org/10.3402/meo.v21.32146>

The authors discuss and recommend an accelerated pathway through undergraduate programs into medical school to increase the number of primary care physicians. This would be implemented in publicly funded allopathic and osteopathic medical schools in the United States. This would reduce total time in medical school to six years. The shortening of the undergraduate program is accomplished through summer instruction, pre-internships, clerkships, and a family medicine sub-internship. It is suggested that these undergraduate programs more fully integrate the students into a family medicine career path. They cite earlier tests of this at universities around the U.S. They acknowledge that this would be difficult to negotiate and would require additional Federal and state funding. This timing is not dissimilar to what is currently in place in the United Kingdom and Canada, as cited by the authors. The expectation is that the accelerated program would mitigate the financial burden of unpaid years, as well as the apparent stigma of Family Medicine amongst non-family medicine medical school departments (although the mechanism for this is unclear).

Wheat, J. R., & Leeper, J. D. (2021). Pipeline Programs Can Support Reforms in Medical Education: A Cohort Study of Alabama's Rural Health Leaders Pipeline to Engage Community Leaders. *The Journal of Rural Health*, 37(4), 745–754. <https://doi.org/10.1111/jrh.12531>

In this cohort study, the authors examine a program in Alabama designed to alleviate rural health workforce shortages. The University of Alabama Rural Health Leaders Pipeline (RHLPL) consists of three programs aimed at increasing the number of rural students who become rural health professionals, including the Rural Health Scholars Program (RHS) for high school students, the Rural Minority Health Scholars Program (RMHS) for high school graduates, and the Rural Medical Scholars Program (RMS), which is five-year graduate/medical school program. The authors aggregated participant data from the RHLPL (1993-2017) to the county level and quantified the number of health professionals and family physicians produced from each program for each county in Alabama. They also examined association between program exposure and occupational outcome, controlling for county-level characteristics such as poverty and percent Black. The authors found that for every four RMS participants, a county gained one family physician. The authors suggest that communities offer local scholarships, shadowing opportunities, and social recognition to attract students, and that local leaders could advocate for increased financial and networking incentives for students. The authors conclude by stressing that reforms such as those that led to the RHLPL have improved population health, and subsequent forms can contribute to these positive community health gains.



## Post-Residency

Addressing and Eliminating Racism at the AAMC and Beyond. (2020). AAMC.  
<https://www.aamc.org/addressing-and-eliminating-racism-aamc-and-beyond>

In this website piece, the Association of American Medical Colleges (AAMC) outlines their plan of action to address and eliminate racism, both within the AAMC and in all of academic medicine. The AAMC's plan consists of four sets of action. First, AAMC calls for all involved in academic medicine to self-reflect and educate themselves on their own racial biases and stereotypes. Second, internally, the AAMC will hire anti-racism consultants; establish diversity, equity, and inclusion (DEI) advisors; establish a DEI council; make data driven decisions regarding recruitment, hiring, retention, and staff advancement; and hold the entire organization accountable for continuous equity improvement. The third set of actions fall under the category "collaborate with communities," and include researching the effectiveness of anti-racism interventions and identifying best practices for equitable enrollment, inclusive environments, and decreasing the "subtle manifestations of structural racism" that exclude populations from medical schools and residency programs. Finally, as part of the broader community, the AAMC pledges to speak out about systemic racism and foster community-based collaborations within member institutions.

Coe, C., Piggott, C., Davis, A., Hall, M. N., Goodell, K., Joo, P., & South-Paul, J. E. (2020). Leadership Pathways in Academic Family Medicine: Focus on Underrepresented Minorities and Women. *Family Medicine*, 52(2), 104–111. <https://doi.org/10.22454/FamMed.2020.545847>

Despite research demonstrating that physician diversity improves health outcomes and patient satisfaction, the physician workforce remains less diverse than the general population. The authors state that this is also true in academic family medicine, where gender and racial diversity in leadership positions is rare. They then describe the efforts of the Council of Academic Family Medicine (CAFM)'s Leadership Development Task Force to identify challenges for underrepresented minorities and women in achieving leadership positions and resources to improve access. The Task Force identified barriers including application, costs, and/or travel associated with leadership development activities, inconsistent promotion of leadership development opportunities, and the external nomination processes. The Task Force recommends multidimensional mentoring teams as opposed to single institutional mentors; the inclusion of corporate and academic culture, team building, communication, and negotiating strategies in leadership development; and stronger partnerships between family medicine organizations and relevant student associations (e.g., the Latino Medical Student Association, the Student National Medical Association). The authors also mention challenges such as higher minority faculty attrition rates and gender-based salary

disparities. In conclusion, the authors recommend increased outreach to underrepresented minorities and women and reducing gender and racial biases, in addition to the Task Force recommendations.

Peabody, M. R., Eden, A. R., Douglas, M., & Phillips, R. L. (2018). Board Certified Family Physician Workforce: Progress in Racial and Ethnic Diversity. *The Journal of the American Board of Family Medicine*, 31(6), 842–843. <https://doi.org/10.3122/jabfm.2018.06.180129>

The authors examined 1987-2017 ABFM Family Medicine Certification Exam data and found that, while the percentage of Black family physicians has increased from 1.3% to 7.8% and Hispanic/Latino family physicians have increased from 2.3% to 9.1%, both groups are underrepresented compared with their proportion of the general population. Of all specialties, racial/ethnic proportions within family medicine are most like the general population, but the authors state that family medicine can do more to increase diversity in medical schools. The authors suggest medical schools work closely with their associated universities to increase diverse applicants, and that pipeline programs such as the Health Center Opportunities Program also be increased.

Raymond, J. R., Maurana, C. A., & Kerschner, J. E. (2017). Expanding the Health-care Pipeline through Innovation: The MCW model. *Transactions of the American Clinical and Climatological Association*, 128, 90–107.

In this article, the authors describe three approaches the Medical College of Wisconsin (MCW) took to expand the health care pipeline in Wisconsin to decrease workforce shortages. The approaches consisted of creating regional medical campuses, establishing new rural family medicine and psychiatry residency programs, and creating a new pharmacy school. In the first approach, MCW established medical schools in central Wisconsin and Green Bay, each with innovative guiding principles. These principles include community immersion (students live and work within the local community), health system cooperation (competitors came together to offer resources, board members, and expertise), a hybrid three-year accelerated curriculum, cutting costs (sharing space, hiring local science professors, and grant seeking), local advisory boards (citizens and academic, health care, business, government, and philanthropic professionals), community-informed admissions processes (prioritizing the most caring, collaborative-minded, compassionate students) with preference for Wisconsin students, and enhanced student support and faculty development (community service, student affinity groups and joint research and professional development, respectively). As of publication, the regional medical campuses had enrolled over 25 students. MCW's second approach was to work with the Wisconsin Rural Physicians Residency Assistance Program, the Wisconsin Medical Society, and the Wisconsin Hospital Association to establish two new psychiatry residencies and one new family medicine residency located in rural areas. The new programs offer local medical school graduates the opportunity to continue training nearby and interact regularly with local residents.

Stakeholders are hopeful that these experiences will encourage trainees to practice in rural Wisconsin. Finally, the MCW established a new pharmacy school that specifically prepares graduates to “triage in retail pharmacy settings, or to provide chronic disease management in retail pharmacy or clinic settings.” As of publication, the school had not yet admitted any students. This descriptive piece is an important resource on strategies at the medical school level that may widen pathways to medical school to alleviate workforce shortages.

Wang, T., O’Neill, T. R., Newton, W. P., Hall, K., & Eden, A. R. (2022). Racial/Ethnic Representation Among American Board of Family Medicine Certification Candidates from 1970 to 2020. *The Journal of the American Board of Family Medicine*, 35(1), 9–17.  
<https://doi.org/10.3122/jabfm.2022.01.210322>

Researchers use ABFM certification data from 1970 to 2020 to study the diversification of the primary care physician workforce. Data are compared to American Community Survey data as well as decennial census data for the same years. The authors proposed the use of a new metric referred to as logRQ which measures the extent of over or underrepresentation of race/ethnicity groups when compared to a base geographic area. A negative logRQ represents underrepresentation, and a positive logRQ shows over representation of a particular race group. The data show trends over time indicating that the family medicine workforce became more diverse between 1970 and 2020. African American and Hispanic populations experienced the largest underrepresentation during the early decades, though levels of underrepresentation dropped dramatically through 2020, particularly with younger cohorts. There are significant geographic differences in underrepresentation for African American and Hispanic groups. This article proposes a unique tool, the logRQ, which may prove useful to assess progress in representation over time.

## Post-Secondary Education

Beinhoff, P., Prunuske, J., Phillips, J. P., Edwards-Johnson, J., Holihan, S., Gomez, M., & Wendling, A. L. (2023). Associations of the Informal Curriculum and Student Perceptions of Research with Family Medicine Career Choice. *Family Medicine*.  
<https://doi.org/10.22454/FamMed.2023.862044>

This is original research based on the Family Medicine Attitudes Questionnaire (FMAQ), a tool developed by researchers at the Medical College of Wisconsin. This research specifically assesses the impact of an informal curriculum on family medicine career choices. An informal curriculum specifically focuses on attitudes, competencies, and perceptions of students. The sample was drawn from students at 16 medical colleges. Previous research has shown that overall, the survey had a 44% response rate. The FMAQ provides an overall score, as well as six sub-scores examining relationships between patients and providers, competency and expertise, physician lifestyle, family medicine research, the importance of family medicine, and the degree of family physician shortages in the U.S. The analysis was conducted at the aggregate medical school level, and researchers calculated correlations between attitude scales and family medicine graduation rates by medical school. Overall attitude was positively related to graduation rates. Of the six sub-scales, research was the most important sub-scale, based on correlation with family medicine graduation rates. Authors attributed this to exposure to clinician researchers as role models, research creating a positive institutional environment, and improvements to medical school overall due to higher family medicine research rates. These explanations did not fully match with the text of the research question sub-scales. The authors suggest that strengthening family medicine research would increase participation in the primary care workforce, and recommend further research and assessment of the sub-scales. This article serves as an evaluative summary of the FMAQ, and a demonstration of the FMAQ based on 16 medical schools, and a call for further research.

Bunker, J. (2009). Choosing general practice as a career—The influences of education and training. *Australian Family Physician*, 38(5).

In this literature review, the authors explore the factors that influence Australian medical students' choice of general practice. They include conventional literature, stakeholder interviews, reports, position papers, opinion summaries, and marketing and consumer choice literature, both from within and outside Australia. The authors use five categories of influence. First, under the "Primary and Secondary Education" influences category, they state that exposure to primary care before medical school matriculation is the strongest predictor of a career in general practice. Interestingly, the authors also point out that in Australia, funding and other supports are geared toward attracting

students of rural origin, rather than targeting resources at general practice recruitment. Second, the authors explore the influence of a student's selected medical school on career choice. Research shows that some medical schools focus on producing primary care physicians and a school's selection criteria and location are also factors. The authors suggest more research is needed on incoming students' financial situations and their specialty selection. In the third category of influence, "During Medical School," the authors cite school location, birthplace rurality, and role models as factors contributing to specialty choice, though financial and staffing resources must be sufficient to positively impact the latter factor. Fourth, during prevocational training, peer opinion and professional exposure to general practice are the strongest influences on specialty choice. Finally, the authors state that more research is needed to explore influences during vocational training, the fifth category, as this stage often occurs after a student has selected a specialty. The authors do cite ease of entry into training and duration of training as positive influences on general practice specialty choice in this stage. The authors close by stating that most specialty decisions are made in the prevocational years, and high school or early medical school training must be linked with general practice exposure and positive experiences in later stages of training. While this is a relatively older article from Australia, it serves as an important literature review on the stages of influence on medical specialty selection and remains relevant in 2023.

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Using 2010-2012 AAMC matriculant files, the authors found that U.S. medical school graduates who attended community college at any point (during high school, after high school, or after receiving a 4-year undergraduate degree) were more likely to train in family medicine than U.S. medical school graduates who did not attend community college. The authors suggest strengthening community college pathways, including mentoring programs and multifaceted collaborations, to increase primary care physician diversity and increase family physician supply.

## Commentary and Editorial

Addressing and Eliminating Racism at the AAMC and Beyond. (2020). AAMC.  
<https://www.aamc.org/addressing-and-eliminating-racism-aamc-and-beyond>

In this website piece, the Association of American Medical Colleges (AAMC) outlines their plan of action to address and eliminate racism, both within the AAMC and in all of academic medicine. The AAMC's plan consists of four sets of action. First, AAMC calls for all involved in academic medicine to self-reflect and educate themselves on their own racial biases and stereotypes. Second, internally, the AAMC will hire anti-racism consultants; establish diversity, equity, and inclusion (DEI) advisors; establish a DEI council; make data driven decisions regarding recruitment, hiring, retention, and staff advancement; and hold the entire organization accountable for continuous equity improvement. The third set of actions fall under the category "collaborate with communities," and include researching the effectiveness of anti-racism interventions and identifying best practices for equitable enrollment, inclusive environments, and decreasing the "subtle manifestations of structural racism" that exclude populations from medical schools and residency programs. Finally, as part of the broader community, the AAMC pledges to speak out about systemic racism and foster community-based collaborations within member institutions.

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Campbell, K. M. (2018). Slow Progress and Persistent Challenges for the Underrepresented Minority Family Physician. *The Journal of the American Board of Family Medicine*, 31(6), 840–841. <https://doi.org/10.3122/jabfm.2018.06.180235>

Dr. Campbell comments on Peabody et al. (2018), stating that while the proportion of racial and ethnic minority family physicians has increased, growth has been stymied by historic race and class-based divisions, escalating racism under President Trump, and lower-than-proportionate recruitment from historically minority serving medical schools. Dr. Campbell points out that these institutions suffer challenges including mentorship and faculty development, isolation, and racism. Because family medicine is a leader in physician diversity, and physician diversity can reduce health care costs, improve patient satisfaction, and improve health, family physician must work to increase numbers of board certified Black and Hispanic or Latino physicians. Dr. Campbell recommends advocacy, increasing pipeline and outreach programs, further exploration of community college as a pathway to family medicine, and the creation of new medical schools and residency training programs at HBCUs. This short piece is a thoughtful synopsis of the recent political climate, physician diversity, and the need for more advocacy and other programs.

Drowos, J. (2019). New Allopathic Medical Schools and Family Physicians. *The Journal of the American Board of Family Medicine*, 32(5), 651–652. <https://doi.org/10.3122/jabfm.2019.05.190245>

In this commentary, the author describes her experience building a new medical school, and agrees with the article she comments on, which states that new medical schools train fewer family physicians than older ones. The author mentions that leadership opportunities, student interest groups, and strong mentors influence student choice of family medicine, and that academic leaders should serve as mentors. She also suggests more equitable medical school admissions processes, more innovative primary care-oriented curricula, more exposure to family medicine throughout medical school, and further research. This article is an interesting perspective on how opening new medical schools is not necessarily an ideal solution for workforce shortages, and the author suggests tactics that may be more effective in building a diverse, sufficient primary care workforce.

Hayashi, A. S. (2022). Support Physicians Who Identify as Underrepresented Minorities—But All Physicians Should Care for Vulnerable Populations. *The Journal of the American Board of Family Medicine*, 35(2), 398–399. <https://doi.org/10.3122/jabfm.2022.02.220036>

The author begins this commentary by summarizing research on the importance of physicians who identify as underrepresented minorities (PURM). PURM, including family physicians, serve more vulnerable populations than other physicians, tend to practice within underserved communities, and are often sought out by patients who identify as minorities. Many PURM have benefited from Pell grants for low-income medical students, as well as high school or university medical pipeline and debt-reduction programs like the National Health Service Corps. While the author acknowledges the importance of these programs and PURM in caring for the underserved, he stresses that all clinicians should share these responsibilities. He lauds the HRSA Teaching Health Center Program which funds graduate medical education programs within community health centers, increasing the likelihood a family physician will go on to work in underserved settings. The author proposes that all medical trainees, not just PURM, be exposed to safety net settings, as caring for vulnerable populations should be the sole responsibility of minority physicians. Finally, the author notes that while universal health insurance coverage and increased public insurance reimbursement rates will alleviate care access issues for some patients, all physicians should establish “diverse and inclusive” practices.

Montgomery Rice, V. (2021). Diversity in Medical Schools: A Much-Needed New Beginning. *JAMA*, 325(1), 23. <https://doi.org/10.1001/jama.2020.21576>

The author reviews research findings regarding the disproportionate number of Black physicians (only 5% of physicians identify as Black, yet Black Americans comprise over 13% of the U.S. population) and the health outcome improvements seen when Black Americans are cared for by Black physicians. The author also mentions that Black men are particularly underrepresented in medical school. The authors review the history of Black medical school closures since the Flexner Report, and the ways in which these



closures contributed to a potential loss of nearly 28,000 Black physicians over time. The author cites studies that show the Medical College Admission Test (MCAT) is a barrier to Black medical school matriculants, even though the MCAT does not accurately predict medical school success. Additionally, while many medical schools claim to embrace diversity, leadership concerns over U.S. News and World Report-type rankings and an overemphasis on MCAT scores perpetuates the exclusion of Black students. The author suggests actions such as identifying potential undergraduate students for training, particularly at Historic Black Colleges and Universities (HBCU), yet she stresses that HBCU's should not bear the entire responsibility for widening medical school pathways for Black students. This is an informative, well-researched piece, adding insight and valuable suggestions to the literature on the underrepresentation of Black Americans in medicine.

Phillips, R. L., George, B. C., Holmboe, E. S., Bazemore, A. W., Westfall, J. M., & Bitton, A. (2022). Measuring Graduate Medical Education Outcomes to Honor the Social Contract. *Academic Medicine*, 97(5), 643–648. <https://doi.org/10.1097/ACM.0000000000004592>

In this perspective piece, the authors make the case that traditionally-measured GME outcomes, including specialty and geographic distribution, are not adequate in assessing whether the \$19 billion in public GME funds are being used to produce a workforce that effectively meets the needs of communities. The authors call for new types of accountability, which they categorize as outcome assurance and outcome improvement. Outcome assurance data include workforce distribution, workforce diversity, physician competence, and trainee-associated health care costs. Outcome improvement data include key educational outcomes and patient outcomes for a program's graduates. The authors suggest strategies to implement GME accountability, including standardized assessments, data sharing, payor mandates, sharing best practices, and cross-agency coordination (e.g., CMS, VHA, HRSA). The authors conclude by stating that increasing the types of accountability discussed will help ensure that public funds are being used to honor an implicit social contract – that training programs serve communities' and society's needs. This piece offers a strong argument for revamping the measurement of GME outcomes in order to ensure payors are best serving community needs.

Poll-Hunter, N. I., Brown, Z., Smith, A., Starks, S. M., Gregory-Bass, R., Robinson, D., Cullins, M. D., Capers, Q., Landry, A., Bush, A., Bellamy, K., Lubin-Johnson, N., Fluker, C. J., Acosta, D. A., Young, G. H., Butts, G. C., & Bright, C. M. (2023). Increasing the Representation of Black Men in Medicine by Addressing Systems Factors. *Academic Medicine*, 98(3), 304–312. <https://doi.org/10.1097/ACM.0000000000005070>

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(AAMC) and National Medical Association (NMA)-led Collaborative is to complement existing workforce pathway programs by focusing on systems change-related strategies. The Collaborative aims to address the following premedical systems factors that often stymie medical career aspirations for Black men: lack of financing and debt load, information access, pre-health advising challenges, stringent MCAT requirements, inadequate support systems, and pre-K – grade 12 academics. The Collaborative suggests tactics like eliminating “educational redlining” using MCAT scores, as research suggests that students scoring in the middle third range are most likely to be first-generation college graduates or identify as Black/African American, yet actually do succeed in medical school. The authors also identified four main areas in which medical schools can make systems-level improvements to increase BMIM. First, they laud pre-college pathways programs, mentioning the Young Doctors DC program which offers information and mentoring to middle and high school students. The second area of action is medical school recruitment, and authors suggest engaging with two- and four-year colleges, particularly those with large Black male student bodies, via their premedical programs. Third, the authors recommend that medical school admissions offices prioritize diversity and recognize and eliminate implicit biases that prevent Black men from gaining medical school admittance. Finally, the authors stress the importance of leadership accountability and suggest data transparency, a critical evaluation of institutional diversity efforts, and integrating performance management into the tenure and promotion process. This article is a thorough review of existing efforts and potential strategies to increase representation of Black men in medicine.

Prunuske, J. (2019). America Needs More Family Doctors: 25 × 2030 Collaborative Aims to Get More Medical Students into Family Medicine. *American Family Physician*, 101(2), 82-83.

This editorial introduces the “25x2030 Collaborative.” The Collaborative was developed by eight Family Medicine organizations to address the shortage of primary care physicians. The author acknowledges that accomplishing the 25x2030 goal is ambitious and would require changes to medical education, practice environments, funding for physicians, identifying new family physician mentors, and increased attention to medical student clerkships. The 25x2030 Collaborative established several guiding principles and working groups related to evaluation, Family Medicine brand, Family Medicine pipeline, and student learning. The most actionable items discussed in this editorial are 1) encouraging recruitment before medical school including childhood and young adult engagement, and 2) making specific modifications or enhancements to the medical school experience such as preceptors and mentors. This article is a short introduction to an important family medicine initiative.

Talamantes, E., Henderson, M., Fancher, T., & Mullan, F. (2019). Closing the Gap—Making Medical School Admissions More Equitable. *New England Journal of Medicine*, 380(9), 803–805. <https://doi.org/10.1056/NEJMp1808582>

The authors state the proportion of underrepresented groups entering medical school decreased between 1997 and 2017, while these same populations continue to experience poorer health outcomes. The authors stress that these outcomes improve when underrepresented groups are cared for by racially and linguistically concordant physicians, and that payers and health plans are paying attention. To reduce these health disparities by increasing the proportion of underrepresented groups in the medical workforce, medical schools need to change how they evaluate applicants. The authors recommend that medical schools give more consideration to students who attended community college, and that academic health centers designate “communities of commitment,” where resources are targeted to reduce health and educational disparities. The authors also recommend special programs that recruit and value underrepresented groups. The authors describe tools like the AAMC’s new holistic admissions process and how it incorporates socioeconomic status and other measures of disadvantage. The authors conclude that these creative measures should be used to diversify our physician supply and better serve communities throughout the U.S. This important article ties together current research and recommendations on making medical school a viable career possibility for members of underrepresented groups.