Addressing the Absence of African American Men in Chicago-Area Medical Schools

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"I know that what I'm asking is impossible. ***But in our time, as in every time, the impossible is the least that one can demand****—and one is, after all, emboldened by the spectacle of human history in general, and American Negro history in particular, for it testifies to nothing less than the perpetual achievement of the impossible.*

Everything now, we must assume, is in our hands; we have no right to assume otherwise.

If we – and now I mean the relatively conscious whites and the relatively conscious blacks, who must, like lovers, insist on, or create, the consciousness of the others – do not falter in our duty now, we may be able, handful that we are, to end the racial nightmare, and achieve our country, and change the history of the world."

~James Baldwin

The Problem

Research shows that Black men are increasingly less likely to attend medical school and hold careers as doctors in the United States, and that this decline in the availability of Black doctors exacerbates racial disparities in access and quality of health care. Data on the physician workforce and medical school enrollment demonstrates the depth of the problem. Blacks make up 14% of the general population but just 4% of physicians, and between 1997 and 2007 the number of Black male medical students declined in absolute terms. Furthermore, the percent of African American men entering medical school is roughly 6%, but only 5% of the graduating class is African American. During the same period, the overall proportion of medical school enrollment from under-represented minority groups, including Black, Hispanic, and Native American students, declined from 15% to 13% (Talamantes 2019). As of 2015, matriculation rates for Black male medical school applicants had not risen above their 1978 levels, despite the expansion in medical school positions over the same period. **The U.S. is failing to attract and retain a diverse workforce and that crisis is**

This paper was developed in response to a grant from the Otho S. A. Sprague Memorial Institute and focuses on one specific health workforce challenge: the absence of African American men in medicine.

As a health workforce policy and practice leader in Illinois, Health & Medicine recognizes that the workforce challenges we face locally and nationally are multifaceted. There is a need for more healthcare workers and a more diverse workforce across all fields. This paper largely addresses challenges and solutions beginning at the high school level, however we are acutely aware that comprehensive solutions must begin earlier in the pipeline.

While this paper examines one facet of the challenges faced by the health workforce, we believe the potential solutions presented here can be applied across sectors, disciplines, and geographies to expand and diversify the sector.

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particularly acute with respect to Black males in medical education and practice (Laurencin 2017).

The U.S. health care workforce faces an overall shortage of physicians, with recent projections estimating a shortage of 46,000 to 90,000 physicians by 2025 (*Altering the Course: Black Males in Medicine* 2015). This specific shortage of Black male physicians is a crisis in itself, especially given that racial disparities in health care outcomes have persisted or worsened alongside the decline in Black physicians (*Altering the Course: Black Males in Medicine* 2015*;* Orsi 2010). Research indicates that there is an association between diversity in health care professionals and quality of care in racial and ethnic minority populations (Betancourt 2006; Jackson 2014). Studies also show that Black men are more likely to listen to their physicians and take care of their health if their doctor is also a Black man (Alsan 2018).

Recognizing that Black men have the lowest life expectancy and highest mortality rate in the U.S. is crucial for us to understand why and how to solve this problem. Racial inequities in health care continue to cost lives, and national calls to action from the Institute of Medicine have pointed to expanding healthcare workforce diversity as a strategy to reduce racial health disparities (*Altering the Course: Black Males in Medicine* 2015). Yet the decline in matriculating Black male medical students has not changed. As one of the speakers at the recent Diversity in Medicine Conference in Chicago stated, "We have lost our moral compass, and we must treat this as the crisis it is" (Murray, 2019).

A National Challenge: Barriers to Progress

The lack of effective access to pipeline programs at many traditional public schools and private charter schools acts as a major barrier. Black students are more likely to attend underperforming primary and secondary schools with limited resources to support pre-medical and STEM studies. This educational disparity is exacerbated by a lack of Black teachers or teachers with the cultural awareness to recognize barriers to Black students' career aspirations and to embrace strategies to counter social and cultural barriers to pursuing careers in medicine (Laurencin 2017). Community colleges can service as a pathway to overcome these impediments to academic preparation for medical school, but attendance at community colleges is undervalued in the medical school admissions process (Talamantes 2019). Thus a strategy to overcome structural barriers of poverty and unequal early educational opportunities is undermined by another set of structural obstacles within medical education.

"Diversity cannot truly be achieved until we recognize and attend to issues of past and pervasive present discrimination in charting our future course."

Pipelines are not the whole story, however. The surgeon and disparities researcher Cato Laurencin has concluded that, "diversity cannot truly be achieved until we recognize and attend to issues of past and pervasive present discrimination in charting our future course" (Laurencin 2017). Barriers to Black men becoming physicians are just one element of a web of interrelated symptoms of systemic racial discrimination that include racial disparities in health status and outcomes and in educational attainment. Generations of systematic pushout from schools and into prison systems, for example, has a large role to play in the lack of Black male access to

careers in the field of medicine (Toldson 2008; Toldson 2011). The larger forces of racial discrimination that impact Black male participation in the physician workforce include:

- **Reduced access to quality education**
  - "Underfunding of schools in African American communities is a serious problem. In 2007, spending per Black student in the U.S. was only 82% of what was spent per White student. On average, Black boys are more likely to attend the most segregated and poor public schools than other racial, ethnic, and gender groups in the U.S." (Xantos 2010). These schools are less likely to have robust STEM and AP programs and teachers who are prepared to teach them. Furthermore, these schools are less likely to have supportive and informed college prep counselors and advisors.
- **Reduced access to employment**
  - A 2017 analysis by the St. Louis Federal Reserve found that the rate of unemployment for Black workers was 93% higher than that of their white counterparts. Even when comparing only workers with a college degree, the Black unemployment rate was 65% higher than the rate for white workers, indicating the complex interplay of race, education, and economic opportunity. One lesson, therefore, is that simply improving educational attainment may reduce, but will not eliminate, racial disparities (Andolfatto 2017).
- **Disproportionate rates of incarceration**
  - Zero tolerance policies, born out of the 90s political movement to be "tough on crime," created punitive environments, moved policing practices into the classroom, and affected predominantly low income Black youth. Small acts of disobedience by youth in schools are often met with suspension/expulsions, that eventually push youth into the juvenile justice system. (Toldson 2011). Black youth are more likely than their white counterparts to be labeled as disruptive and difficult thereby increasing their social isolation and likelihood of suspension, and justice system involvement.

Although the structural and cultural barriers are powerful, research has identified several promising interventions, including educational support, mentorship, and financial assistance.

- **Mentorship**
  - Mentorship for Black men in the field is pivotal for their ability to succeed within it. Mentorship allows Black men to feel supported through a long and sometimes arduous journey to and through medical school. This kind of relationship is especially important for first generation students or those who may not have access to relationships with mentors otherwise (*Altering the Course: Black Males in Medicine* 2015).
- **Educational support**
  - Along with mentorship, a clear pathway through school is important for Black men to be able to access the field. Historically Black Colleges and Universities (HBCUs) offer Black students a space where they can feel supported throughout their educational careers. HBCUs can tailor education and social support to

ensure their students succeed to their greatest potential. The school with the greatest success at moving college students to medical school is Xavier in New Orleans. Xavier wraps students in educational support, summer internships, conference support, social support, and financial support. However, even at HBCUs the enrollment of Black students tends to decrease from undergraduate to Medical School. For example, Morehouse School of Medicine, which graduates the fifth most Black and African American students, has an enrollment of 70% Black or African American students. Asian students make up 9.55%, Hispanic or Latino makeup 9.80%, Native Hawaiian or Other Pacific Islander make up .25%, and 5.03% are white. Comparatively, its 2016 undergraduate fall enrollment consisted of 94.7% Black or African American students with .1% Asian, .9% Hispanic or Latino, no Native Hawaiian or other Pacific Islander, .2% American Indian or Alaska Native, and .3% White (*Morehouse College Fall Enrollment 2016)*.

- **Financial assistance**
    - One of the greatest barriers holding Black men back from taking advantage of educational opportunity is financial assistance. Generational poverty and systematic racism have created many barriers to Black people's ability to achieve economic mobility. Stagnant economic mobility and poverty has widespread consequences, including the inability to pay increasingly expensive college tuition. Furthermore, there is pressure on young people of color to contribute to the stagnant and often declining income of their families. This has significant impact on students' ability to concentrate their time and effort on school.

Programs Addressing Barriers

The chart below describes several representative pipeline programs that try to address a few of the systemic barriers mentioned above (some local and some in other parts of the U.S.). The Association of American Medical Colleges (AAMC) has a searchable database of Medical School Summer Pipeline Programs, available here.

Barrier	Promising Interventions	Description of Representative Program
Academic preparation in middle school, high school, and college	University of Chicago Pritzker School of Medicine • Chicago Academic Medicine Program (CAMP) • The Pritzker School of Medicine Experience in Research (PSOMER) • Training Early Achievers for Careers In Health (TEACH)	**TEACH**: High school students are recruited from the University of Chicago Collegiate Scholars, a program for high achieving Minority students in Chicago Public Schools. Through exposure to careers in medicine and mentored research with faculty and residents, TEACH aims to encourage interest in health care research and better prepare minority high school students for health care careers.

	Florida State University (FSU) ● SSTRIDE©: Science Students Together Reaching Instructional Diversity & Excellence ● Master's Bridge to Clinical Medicine Program, M.S. in Biomedical Sciences	**Master's Bridge to Clinical Medicine at FSU:** College of Medicine applicants from underrepresented groups who are not initially admitted may be invited to participate in a three semester Bridge program in bio-medical sciences. If completed successfully, students receive an M.S. degree and medical school admission.
	The Student National Medical Association's Pipeline Mentoring Institute	
	Morehouse College of Medicine - Road to 100	
	Urban Bridges Medical Mentoring program for pre-med students	
	Black Men In White Coats	**Black Men In White Coats**: Produces short documentary videos for public schools to raise awareness of the decline in Black male physicians. Black Men In White Coats also operates an eMentoring program to provide virtual mentors to Black male pre-medical students across the country.
	UIC Hispanic Center of Excellence	**UIC Hispanic Center of Excellence:** Bridges high school to college to medical school through academic, exposure, experiential, mentorship, social, family, and financial supports.
Financial barriers to applying, attending, and matriculating	The AMA's Doctors Back to School Program (DBTS) and Minority Scholars Award	**Minority Scholars Award**:The AMA Foundation's Minority Scholars Award has provided $1.5 million in tuition assistance to nearly 150 medical students since the award was founded in 2004
	AAMC MCAT Fee Waivers	

	National Health Service Corp Loan Repayment UIC office of Diversity and Inclusion scholarships for MCAT prep and test Northwestern Medicine: • CHEC program • NU Scholars Program	**The National Health Service Corp Loan Repayment Program:** Offers partial loan repayment for physicians who practice in Health Professional Shortage Areas.
Systemic racism	Holistic Review	**Holistic review:** A holistic review in medical school admissions broadly assesses each applicant's capacity to contribute value as a medical student and as a physician. The AAMC advocates for including "distance travelled" in holistic review to consider applicants' efforts in overcoming discrimination or lack of resources in the admissions process.

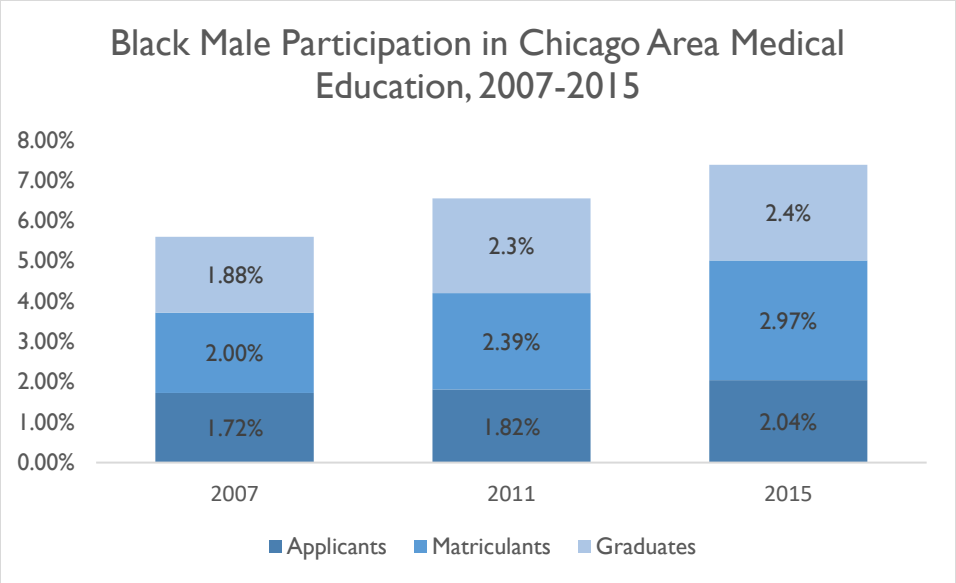
Local Lens: Chicago Medical Education Landscape for Black Men

The shortage of Black male physicians in the United States has been described as a crisis, and Chicago is no exception to the national trend of disproportionately low rates of Black male application, matriculation, and graduation from medical schools (Laurencin 2017).

There are six accredited MD programs in Chicago and suburban Cook County:

- Chicago Medical School at Rosalind Franklin University of Medicine and Science
- Loyola University Chicago Stritch School of Medicine
- Northwestern University Feinberg School of Medicine
- Rush Medical College of Rush University Medical Center
- University of Chicago Division of the Biological Sciences, Pritzker School of Medicine
- University of Illinois Chicago College of Medicine (Liaison Committee on Medical Education 2019)

The AAMC regularly collects data on diversity in medical education. The latest AAMC Diversity in Medical Education Report, from 2016, breaks down medical school demographics by race and sex, and showed that fewer than 3% of Chicago-area medical schools' applicants, matriculants, or graduates identified as Black or African-American men in 2015



Sources: AAMC Diversity in Medical Education: Facts & Figures 2016, Tables 32, 33, and 34
AAMC Diversity in Medical Education: Facts & Figures 2012, Tables 31, 32, and 35
AAMC Diversity in Medical Education: Facts & Figures 2008, Tables 26, 27, and 30

Even with increasing Black participation in medical education in Chicago, the gap between the Black population as a proportion of the city's residents and the proportion of its medical school students and graduates remains wide. Approximately 30% of Chicagoans, but only 6.3% of its 2018 medical school graduates, are Black according to AAMC data (Association of American Medical Colleges 2018, Table B6-1). These statistics indicate years of ostensible progress, but at too slow a pace to bridge the gap. The lack of progress is particularly stark for Black men, whose rates of medical school matriculation have not risen above where they were in 1978 (Laurencin 2017). Dowin Boatright, a physician-researcher who studies diversity in medical education concluded, "If we're trying to get some degree of representation that matches the proportion of Black people in the population as a whole…we're talking 20 to 50 years" (Gordon 2018).

…A failure to train Black physicians results in a failure to ensure access for Black patients, as the physicians who are trained choose to practice elsewhere.

The goal of matching the proportion of Black physicians to the overall proportion of Black people in Chicago is not merely a convenient yardstick with which to measure progress. The experience of health and health care in Black communities is shaped by the absence of Black physicians. Minority physicians are more likely to practice in underserved areas—twice as many minority physicians choose to practice in a designated Health Professional Shortage Area as non-minority physicians—and to serve areas with higher proportions of minority, low-income, and Medicaid patients. Underrepresented minority physicians are also more likely to choose primary care practice than white physicians (Kington 2001). Thus, a failure to train Black physicians results in a failure to ensure access for Black patients, as the physicians who are trained choose to practice elsewhere. Furthermore, minority patients may prefer to seek care from a physician of their own race or ethnicity and tend to give higher satisfaction ratings to racially concordant patient-physician relationships (Powe 2004; Saha 2000). A data-driven approach that also listens to the people most affected by disparities in medical education leads to the conclusion

that the proportion of Black students in medical school ought to match the proportion of Black people who may need health care in the population.

In Chicago, that process must address inequities in Chicago Public Schools (CPS), where we expect all students to receive the academic preparation to pursue a career of their choice, including medicine. Black male students graduate Chicago public high schools at lower rates than any other group, and twice as many Black male graduates attended alternative schools in 2018 than in 2013. Alternative schools have lower standards for graduation and only 25% of their graduates attend college. The official graduation rate does not distinguish between traditional and alternative schools, nor does it include students who transfer to out-of-district schools before their senior year or students who die. Again, Black males are overrepresented in these categories. Black males are the most likely to transfer out of CPS, often to suburban schools with low funding and poor graduation rates, and four times more Black male students who started high school in 2013 died than students from any other demographic group. After accounting for transfers, alternative school graduates, and student deaths, the Black male graduation rate is 48% and has only increased 6% since 2013. The official CPS statistics show a 65% Black male graduation rate and an 18% improvement (Karp 2019).

A general lesson for policymakers and advocates is to interrogate the data that are presented as measures of progress or failure…Just as CPS high school graduation data capture different views of Black male school success depending on how it is analyzed, data on medical school participation will only ever approximate the lived experience of current and prospective Black medical students in Chicago.

This is significant because there is evidence that physicians who train in their hometowns are more likely to choose to remain there to practice (Watson 1980). Therefore, to improve access to care for Chicago's Black communities and eliminate pervasive racial inequities in health care, Chicago must invest in the Black male students in its public schools. A hard look at recent statistics from CPS high schools shows that progress may be elusive and that deep structural problems in public education cross school district boundaries and intersect with other social-environmental factors such as community violence.

A general lesson for policymakers and advocates is to interrogate the data that are presented as measures of progress or failure, and to communicate with the communities that the data seek to describe. Just as CPS high school graduation data capture different views of Black male school success depending on how it is analyzed, data on medical school participation will only ever approximate the lived experience of current and prospective Black medical students in Chicago. For example, the data on student racial and ethnic identity used in the chart above includes U.S.-born African-Americans and immigrants from Africa and the Afro-Caribbean in the category of 'Black.' Data from 2015 show less than half of applicants categorized as 'Black' identify as African American alone; 19% identify as African, 10% as Afro-Caribbean, and 14% as Black or African American in combination with another race or ethnicity (Association of American Medical Colleges 2016, Figure 6). Yet the educational background, experiences of discrimination, and social-political environments of those groups, and of subgroups within each, differ in ways that are not captured in aggregate datasets. Similarly, a student's decisions to identify as multi-racial may be motivated by a complex assortment of personal, familial, political, and social forces.

Researchers who collect and process student responses will attempt to account for those changes in order to produce meaningful and useful data tables, and in so doing they inevitably interact with those same forces and unintentionally affect the narrative conveyed by future data analysis. Quantitative data such as those collected by AAMC and CPS are indispensable tools for evaluating policies, intervening to reform poorly performing programs, and holding leadership accountable. Listening to voices from affected communities is a prerequisite for accurately understanding and interpreting those data sets and also for developing policies that can take root and produce change that communities can see and feel for themselves.

Strategic Investments

The research conducted for this project, including a literature review, interviews, and conference presentations, suggests many opportunities for philanthropy and other to support an increase in the number of African American men in Chicago-area medical schools. "Intentional investments will yield the outcomes we want to see," according to one interviewee at an area medical school.

The recommendations below are not exhaustive, and do not address investment in structural societal issues (e.g. investment in public schools in under-resourced Chicago neighborhoods) that undergird all of the other barriers identified. Investing in these changes likely requires public financing at dramatically higher levels than philanthropy can or should contribute. Rather the recommendations represent promising practices identified during this research project.

Convenings

Gatherings of several different cohorts in the Chicago-area should be organized. Interested parties could work collaboratively with the recently launched Creating Pathways and Access for Student Success (CPASS) and others on such events.

- **Funders:** While local funders are not working to specifically address this issue, the Progressive Pathways funders collaborative and the Pathways to Employment organizations are good examples of funders addressing common problems together. These groups have identified improving college culture to be more inclusive and honoring all students as high priorities for student success. Health funders should be brought together to explore developing a collective strategy to address the lack of African American men, or more broadly, the low representation of men of color in local medical schools.
- **Pipeline programs:** Many stakeholders identified the need for regular meetings of area pipeline programs to share learnings and improve alignment. Most are functioning in silos, unaware of what else is in our environment, with little evaluation data, and little knowledge of what is working across the region.
- **Hospitals:** Several of those interviewed suggested that hospitals should have "skin in this game," i.e., they should share resources to improve outcomes. Research shows a connection between patient compliance and outcomes to being treated by a provider of similar race/ethnicity. Health disparities persist if there is not equity in C Suites, clinical trials, labs, and patient care.
- **Medical school diversity officers:** This group can leverage their collective wisdom about developing holistic admissions processes. Until admissions criteria are modified to value more than test scores and grades, progress will be limited. Several area medical schools are attempting to do this, but together they would have more power and

knowledge to change the status quo. The AAMC stands ready to help groups like this and should be included.

- **College advisors:** College advisors and counselors can play a strong role in supporting students' success. They are often working alone and do not have the tools to best advise and support students. They can be levers of change to build inclusive learning environments on their campuses. Regular convenings of this group can sharpen their skills, teach them practices to identify struggling students, and support successful students.
- **Payor community:** Insurance companies and managed care organizations can come together to develop summer experiences and mentorship programs.
- **College pre-med students:** Focus groups of local African American male pre-med college students at local universities could illuminate ideas for mentoring, exposure, financial assistance, and more that have heretofore not been raised.

Recommendations at a Glance:
Opportunities to Support Black Men in Chicago-area Medical Schools

Convenings: Support gatherings of key sector stakeholders including funders, pipeline programs, hospitals, medical schools, college advisors, payors, and pre-med students.

Trainings: Expand training on implicit bias and trauma to create an environment of inclusion within institutions.

Financial support for students: College students need a comprehensive menu of supports, from MCAT preparation and application support, to tuition assistance, and stipends for basic necessities like backpacks and food.

Program support: Chicago has a multitude of promising pipeline programs. Invest in programs that link high school students with hospital experiences, college exposure, and mentoring. Invest in programs that support college pre-med students to succeed. Consider expanding online tools for teachers, career counselors, and administrators.

Funder collaborations: Unite funders to develop a collective strategy to address the lack of African American men and low representation of men of color in local medical schools.

Research and evaluation: Evaluate pipeline programs to better gauge effectiveness and gather feedback from students to shed light on root causes of low retention.

Training

- **Implicit bias training:** Admissions committees in particular should be trained on implicit bias. When Ohio State did this training, it immediately increased the number of accepted students from diverse backgrounds. Medical school students should also be offered this training as it will help support an environment of inclusion, which is necessary for students of color to succeed. This training should also be available to college and high school counselors and post-secondary success teams (every CPS school must have a team in place) who research shows have lower expectations of students of color, and more alarming, white teachers (80% of all teachers) have even lower expectations of their black students than their black counterparts (HUB 2018).
- **ACEs/trauma training:** College and high school counselors as well as medical school leadership should be trained to understand the biological and experiential impact of historical, environmental, community, and individual trauma on student performance and life experience. Understanding these issues will help them to better support students to

overcome the negative messages they have received, and the "imposter syndrome" many experience.

Financial supports

College students need a comprehensive program of cohort development, academic supports, financial support, and mentoring. they students need summer paid programs, MCAT preparation and application support, interviewing skill development, and research experience to be successful medical school applicants:

- **MCAT prep and test taking:** Prep classes and test registration are expensive. Classes cost from about $2,000 to $7,000. The office of Diversity and Inclusion at UIC offers scholarships for some students for both test prep and test taking. Foundations can expand the availability of these scholarships at UIC and other regional schools.
- **Basic necessities:** Financial challenges face students at all levels every day. As one Dean of Diversity and Inclusion at a medical school shared, small investments in iPads, backpacks, food (40% of the undergraduate students at UIC identify as food insecure), fees, and expenses would help ease the burden these aspiring doctors face daily. Many are under immense pressure to help support their families and forego the simple necessities that would help them succeed.
- **Tuition assistance:** This is paramount for all students, but particularly for students of color. The level of support from traditional federal grants for college and medical school is decreasing and private grants are pernicious in their hidden interest costs that stay with students for decades. Students of color are likely to enter medical school with more substantial debt than their white counterparts. For these students, lack of financial resources and social isolation are the leading causes of dropping out.
- **Stipends for conferences:** Students in high school, college and medical school who can afford to attend conferences strengthen their knowledge and are exposed to new opportunities.

Opportunities for replication include:

- Replicating the model used at Xavier College in New Orleans that provides wrap around educational, social, and financial supports for a promising cohort of students.
- Expanding and replicating the Hispanic Center for Excellence model that develops and supports promising college students at UIC beginning early in the freshman year and staying with them throughout college.
- Encouraging local foundations, health systems, and hospitals to jointly develop a POSSE Program to recruit, nurture, and mentor a cohort of college students aspiring to attend medical school.

Other areas for investment:

- **Capacity building for grant writing:** Additional funding and capacity building support (i.e. to hire development and other administrative staff) for pipeline programs could help maintain and expand of these impactful programs.
- **Bridge programs:** Programs such as the one identified above at Florida State University help aspiring medical students who may not have the credentials to get into medical schools. Another local example that has had some success is at Rosalind Franklin Medical School which has developed a post-bac program, in collaboration with

DePaul University, to provide academic and social support to a cohort of aspiring physicians.

Program and Evaluation Support

Chicago has a multitude of promising pipeline programs (including exposure, immersion, mentoring, cohort development, and long-term investment programs) that support students through high school, the transition from high school to college, throughout college, and from college to medical school. All are important and longer-term investments that support several components will have the greatest impact. Key elements of success include African American role models, continuous mentoring, financial support, and academic support. At the same time, simple exposure programs have been shown to instill lasting interest among some students. The career pipeline is "leaky" at many points along the continuum, so there are many points of entry, and all can have lasting impact.

Promising programs and components that should be supported and replicated include:

- **High school programming:** Teachers and counselors do not have the time or resources to support students in the ways many need to be successful in science and math. Advocacy efforts should involve pushing all high schools to offer four years of science. Important gaps in exposure, internship, and experiential learning exist for boys in particular. Bringing African American male speakers into classrooms to expose students to health careers as well as supporting youth to visit hospitals, clinics, and medical schools for hands-on exposure to clinicians who look like them can be powerful motivators. One interviewee suggested developing a quarterly program for African American males to gather 10 promising high school students (from CPS Careers in Technical Education health careers schools), 10 medical students, and 10 physicians. These gatherings would provide exposure (activities could include presenting case studies, tours of simulation labs and hospitals, etc.) and mentoring for the students. Health & Medicine's Chicago Area Health Education Center (AHEC) continues to make important contributions to exposure and job shadowing programs at CPS high schools and should be supported to expand this work.
- **Pipeline programming:** Programing that links high school students with hospital experiences and college exposure and mentoring are effective. Some strong local programs include:
    - *CHEC Research Fellows Program*, in collaboration with Northwestern and Lurie, it develops academic, technical, and professional skills of college and post-bac students at several local colleges
    - *Hispanic Center of Excellence at UIC*, supports high school students through college and into medical school
    - *Rush Education and Career Hub*, a collaboration with Crane high school, it provides enrichment, engagement, internships, and mentoring
    - *NU Scholars*, a collaboration between Northwestern and Westinghouse College Prep supports on-campus exposure and internships, paid summer opportunities, quarterly exposure during high school, and engagement with parents
    - *Chicago AHEC*, supports exposure, job shadowing, internships, and skill-building for high school and college students

    - *University of Chicago*, offers a buddy system that pairs medical students of color with promising college students, and college students with promising high school students
- **Online tools:** Funding is needed for online tools and supports for teachers, career counselors, and administrators. Northwestern Medical School has begun to develop Massive Open Online Courses (MOOCs) specifically directed at increasing the healthcare workforce.
- **Funder collaborations:** Creating Pathways and Access for Student Success Foundation (CPASS) is a newly created foundation that will provide mentoring, educational events, and a STEM/STEAM search engine database that helps families identify classes, activities, and summer camps in the Chicago-area.
- **Recruitment:** Replicate the model used by the financial services sector to increase diversity through research, exposure, internships, and education about the industry and develop a toolkit for recruiting college students to medical school.
- **Research and evaluation:** Evaluate pipeline programs that assess granular metrics (like graduation rates or the number of students served who apply to medical school) and gather feedback from students/participants to shed light on root causes of low retention and reveal effective solutions that could be replicated and expanded. Conduct process evaluation at smaller pipeline programs that might be difficult to evaluate in a more quantitative manner.
- **Wrap-around services:** Explore financial support for the Resurrection Project to provide housing and support services for a cohort or two of pre-med African American male college students (from UIC, DePaul, or NEIU).

Conclusion

These initiatives must complement rather than replace efforts to address systemic racism in classrooms, workplaces, and communities. As Cedric Bright, MD, the former president of the National Medical Association, emphasizes, “Before institutions create new solutions, they should first understand societal barriers.”

In their recruitment efforts, pipeline programs tend to overlook the most marginalized Black people, such as low-income students, students attending lower-performing schools, and especially Black men (Shaneah, 2018). Funders should not ignore structural issues like the school-to-prison pipeline, Black male incarceration rates, or the disproportionate involvement of Black youth with the juvenile justice system. Justice involvement can interfere with graduating high school, enrollment in undergraduate or community college, and eligibility for financial aid. There may be programs that focus on the justice-involved African American population, but our literature review did not uncover research on interventions that address mass incarceration as a cause of the decline in Black male physicians.

Another limitation of current pipeline programs is the lack of detailed evaluations that would reveal whether they led to changes in the number of Black male medical students and physicians. Data from UChicago’s TEACH program, for example, shows an enrollment of 56% women and 45% African Americans. It would be beneficial to know how many of the program’s African American students are women. This is important because 64% of African American graduates of STEM programs are women, while African American men are the majority among high school freshmen. Retention of African American men in college STEM programs and medical school programs must be addressed.

Addressing the serious problem of the lack of male African American medical students in the Chicago-area cannot wait. Solving this complex problem will take time and commitment from medical schools, funders, colleges, high schools, and government. Changing decades of exclusion, racism, disinvestment, and lack of opportunity will not be fixed in the short run, but rather requires long-term investment and an eye to structural barriers. This report does not reflect the entirety of existing local programs, rather it is reflective of the array of options available across the region. Nonetheless, investments in the processes and programs identified here, or others like them, will move us toward a more diverse workforce, reflecting the population of our region, and improving the health and vitality of our community.

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Appendix I: Interviewees

Rhonda Bell - Partnership Development Liaison, Office of College and Career Success, Chicago Public Schools

Mara Botman - Program Officer, Circle of Service Foundation

Cynthia Boyd, MD, MBA - Vice President and Chief Compliance Officer, Associate Dean, Admissions and Recruitment, Rush Medical College

Matt Bruce - Executive Director, Chicagoland Workforce Funders Alliance

Rukiya Curvey Johnson - Director, Rush Education and Career Hub (REACH)

Rebecca Durkin, MA - Vice President for Student Success and Inclusion, Rosalind Franklin University

Wayne Giles, MD, MS - Dean, UIC School of Public Health

Jorge Girotti, PhD - Research Assistant Professor and Director of the Hispanic Center of Excellence, Associate Dean for Admissions and Special Curricular Programs, Department of Medical Education, University of Illinois College of Medicine

Sarah Heinert - Research Director, UIC Champions

Melissa Martin, MPH - Director, Chicago Area Health Education Center (AHEC)

Steven Martin, PhD - Executive Director, Creating Pathways & Access for Student Success (CPAS) Foundation

Linda Rae Murray, MD, MPH - Professor, University of Illinois School of Public Health, former President, American Public Health Association

Joanna Michel, PhD - Associate Director, Urban Medicine Program, University of Illinois College of Medicine, Department of Medical Education

Darryl Pendleton, DMD - Associate Dean for Student and Diversity Affairs, Director, College of Dentistry Urban Health Program, Clinical Associate Professor, UIC Honors College Faculty and Fellow, University of Illinois College of Dentistry

Mandee Polonsky - Program Director, Community Affairs, Northwestern University Feinberg School of Medicine

Melissa Simon, MD - Vice Chair for Clinical Research, Department of Obstetrics and Gynecology, Director, Institute for Public Health and Medicine (IPHAM) - Center for Health Equity Transformation, Professor of Obstetrics and Gynecology (General Obstetrics and Gynecology)/Preventive Medicine and Medical Social Sciences, Northwestern University Feinberg School of Medicine

Terry Vanden Hoek, MD, FACEP - Professor and Head, Department of Emergency Medicine, University of Illinois College of Medicine

K. Michael Welch, MB, ChB, FRCP - Professor Emeritus and past President at Rosalind Franklin University

Clyde W. Yancy, MD, Msc, MACC, FAHA, MACP, FHFSA - Vice Dean, Diversity & Inclusion, Northwestern University Feinberg School of Medicine