Distinguished Contribution

William B. Graham Prize for Health Services Research

Addressing Inequities in Health and Healthcare: Challenges and Opportunities

David R. Williams, PhD, MPH✉

I was pleasantly surprised when I got a call informing me that I had received this award. And then I became profoundly humbled when I looked at the list of the prior awardees. I could not imagine a more illustrious collection of giants in the field. So I am truly honored to be here. And I will share with you some of my research findings that I think are as timely now as they ever have been.

I want to begin by telling you a story about Dr. Amanda Calhoun, a physician at Yale University. She was speaking to a group of Black high school students in her local community (Calhoun, 2021). She asked them, "What do you think of when you hear the word 'doctor'?" And one student responded, "Hero." And another said, "Medicine," and a third responded, "Caretaker." She took a double take when one of the students said "death." And she said, "Tell me more about that." The student went on to explain, "Well, I think about family members I've lost to the medical system. A system that failed to treat them with dignity and respect." And another added, "Yeah, I really want to be a doctor but I'm terrified to be a patient." And a third quipped, "Yeah, and doctors don't think we feel pain the same as white people do, so they give us less medicine." Dr. Calhoun wanted to talk about their aspirations to become doctors, but they had changed the subject to their fears of being a patient. She

Author Affiliation:

Harvard T. H. Chan School of Public Health

Correspondence to:

David Williams
Harvard T.H. Chan School of Public Health, 677 Huntington Avenue, Boston, MA 02115

dwilliam@hsph.harvard.edu

wanted to tell them that they do not need to worry, that they would be safe within the healthcare system, but she did not. She wanted to let them know that they could trust all doctors but she could not. Dr. Calhoun was unable to do so, and I, too, cannot.

And the COVID-19 pandemic has shone a bright light on racial and ethnic inequities in health. Let us consider the age-adjusted odds ratios for mortality from COVID-19 through March 2, 2021 (APM Research Lab, 2021). The data indicate that Native Americans, Latinos (or Hispanics), Blacks (or African Americans), and Native Hawaiians and other Pacific Islanders all had death rates from COVID-19 that were at least twice as high as the rate for Whites. It is important to emphasize that although the death rates were higher for populations of color, almost 60% of all deaths were White. One recent study found that greater awareness among Whites that there were racial disparities in COVID-19 was associated with reduced fear of COVID-19 and reduced support for taking precautions with regard to the pandemic (Skinner-Dorkenoo et al., 2022). And COVID-19 has led to the largest decline in life expectancy in the United States that we have seen since 1944. In 2020, life expectancy declined from 2019 for over 1 year for White males and females, over 3 years for African American and Latino males, and over 2 years for Black and Hispanic females (Arias et al., 2021).

I served on the Institute of Medicine's (now the National Academy of Medicine) committee that released a report some 20 years ago entitled Unequal Treatment that documented that racial bias in medical care contributed to racial disparities in health (Smedley et al., 2003). And Lisa Cooper's research reminded us that implicit bias contributed to not only racial and ethnic inequities in the quality of care received, but also the quality of patient-provider interaction and communication (Cooper et al., 2012). Recently, the Unequal Treatment Committee's co-chair Risa Lavizzo-Mourey, fellow committee member Joseph Betancourt, and I spoke at an Urban Institute Conference in Washington, DC, that was organized by the committee's staff director, Brian Smedley. At this conference, evidence was presented that, 20 years later, racial inequities in health care persist in the U.S. However, healthcare alone is not the driver of racial and ethnic inequities in health. Compelling data illustrating this view come from the UK. England has the National Health Service, which guarantees everyone access to medical care. Yet, the racial disparities in COVID-19 mortality were larger in the UK than in the U.S. A 2020 report revealed that compared to the COVID-19 death rates for White males, the age-adjusted mortality rates were 4.2 times higher for Black males, 3.6 times higher for Bangladeshi and Pakistani males, and 2.4 times higher for Indian males (Office for National Statistics, 2020). For females, a very similar pattern

was evident. This leads us to the question of what else drives these large racial inequities in health, in addition to problems within the healthcare system?

What Drives Racial Disparities in Health?

While in graduate school I read an influential book by sociologist Stanley Lieberson (1985). In discussing research methods, Lieberson indicated that in seeking to understand any social phenomenon, it was important to identify the "basic or fundamental causes." Those are the factors that are responsible for generating an outcome. And changes in those factors produce changes in the outcome. In contrast, "surface or intermediate causes"—although they are related to the outcome, changes in these factors would not produce changes in the outcome, as long as the basic or fundamental causes remained operative. My dissertation research focused on socioeconomic status, and health. And, in 1990, I published a paper (Williams, 1990) in which I argued that socioeconomic status (SES)—income, education, occupational status, and wealth—is a fundamental cause of inequities in health. Bruce Link and Jo Phelan have elaborated on the concept of SES as a fundamental cause, first in their 1995 paper and in subsequent empirical work.

And this helps us to understand racial inequities in health, because there are large racial differences in SES. To illustrate, consider national data on median household income by race for the year 2018 (Semega et al., 2019). I am standardizing the actual household income, using the median income of White households as one dollar. For every dollar of household income White households receive, Asian households receive one dollar and 23 cents. It is important to keep in mind that almost 70% of Asians in the U.S. are immigrants and most have come to the United States with high levels of education, with Asians having higher rates of college completion than Whites. Asian households are also more likely to be multigenerational than any other racial group, so that they have more persons contributing to household income than other groups. But as we look at the historically disadvantaged groups, we observe that for every dollar of household income that White households received in 2018, Latino households received 73 cents, and African American households received 59 cents. What is stunning about the 59 cents figure for Blacks is that it is identical to the Black-White gap in income in 1978. 1978 was the peak year of the narrowing of the Black-White gap in income as a result of the civil rights policies of the '60s and '70s, and anti-poverty policies of the '60s and '70s. The gap was reduced then to 59 cents. And in 2018, it is still 59 cents. Has it been stuck at 59 cents since then? No, it worsened throughout the decade of the 1980s.

And it was not until the mid-1990s that it got back up to 59 cents and it has been a penny up and down since then. Importantly, these data indicate that racial differences in income (and other indicators of SES) are larger than most Americans think and, as a society, we have made much less progress in reducing racial inequities. And, as large as these income gaps are, they markedly understate the racial gap in economic status. This is because income only captures the flow of resources into the household, and it provides no information about the economic reserves that households have that can cushion shortfalls in income. That information comes from data on wealth, which capture savings, home equity, investments, and other financial assets that individuals have. The Federal Reserve Board indicates that for every dollar of wealth that White households have, Black households have 10 pennies and Latino households have 12 pennies (Dettling et al., 2017). This means that although all Americans were in the storm of the COVID-19 pandemic, groups that were low in income and low in wealth could have been one paycheck away from being homeless or unable to feed their family. Importantly, although all Americans were in the same storm, we were in different boats, and some boats had an easier time weathering the storm than others.

In 1995, I co-authored a paper outlining the complex relationship between race and SES, indicating that SES is a major contributor to racial and ethnic differences in health (Williams & Collins, 1995). At the same time, there are factors other than SES that contribute to racial inequities in health. I will illustrate this point with findings from an analysis of national data for the U.S. reported in a 2010 paper that I wrote with other colleagues, where we examined race and SES simultaneously (Braveman et al., 2010; United States Census Bureau). We examined life expectancy by race and SES. At age 25, there was a 5-year racial gap in life expectancy, with the average White person living 5 years longer than the average African American (Murphy, 2000). However, Whites with a college degree or more education, lived 6.4 years longer than Whites who had not finished high school. Similarly, Blacks who completed college lived 5.3 years longer than those who had not finished high school. Thus the gap within each race by education (and also for income) was larger than the racial gap. At the same time, race mattered at every level of education and income. Whites who had not completed high school lived 3.1 years longer than their Black peers, and the gap widened as education increased, with college-educated Whites living 4.2 years longer than their Black counterparts. A stunning finding, using national statistics for the U.S., was that the most advantaged African Americans, those with a college degree or more education, had lower life expectancy than Whites with a college degree, lower life expectancy than Whites with some

college, and lower life expectancy than whites who had graduated from high school. So these data tell us, profoundly, that there is something about income and education that matters for one's health regardless of their race. But there is something else about race that matters for health, even after we have taken income or education into account.

Understanding the Role of Racism in Health

And, in a 1997 paper, applying the fundamental cause perspective, I argued that racism was a fundamental cause, in addition to SES, of racial inequities in health (Williams, 1997). That is, in the United States context, although there were other fundamental causes such as culture, political and legal structures, economic resources, and geographic and biological factors that drive health, racism was an under-appreciated fundamental cause of racial inequities in health. I use the term "racism" to refer to an organized societal system that categorizes and ranks population groups, devalues and disempowers some groups, and differentially allocates opportunities and resources to groups based on whether they are ranked as inferior or superior (Bonilla-Silva, 1997; Williams, 2004). This can lead to negative attitudes and beliefs (prejudice and stereotypes) to outgroups, and to differential treatment (discrimination, by individuals or social institutions); but fundamentally racism is a system. One of the things that I did was work on developing the empirical evidence documenting the role of racism in health. And so back in 1995, I contacted Richard Cooper, the editor of the journal *Ethnicity and Disease*, a journal that specialized in examining racial, ethnic differences in health and requested that he allow me to serve as the guest editor of a special issue of the journal on the topic of racism and health. He agreed, and 14 papers describing multiple ways in which racism could affect health and articulating the needed research to move the field forward were published in a special double issue of that journal in 1996. To the best of my knowledge, that was the first ever special issue of a scientific journal focused on racism and health.

Pathways by Which Racism Can Affect Health

And I will share with you some of the findings from my own work and the work of others documenting upstream mechanisms that have pervasive adverse consequences for health. In 2001, I wrote a paper with Dr. Chiquita Collins that indicated that racial residential segregation was a fundamental cause of racial inequities in health (Williams & Collins, 2001). And someone might well ask, what does segregation have to do with health? John Cell, a historian at Duke University, wrote a book about the origins of segregation in the U.S. and

South Africa (Cell, 1982). He showed that the framers of Apartheid in South Africa in the early 20th century looked across the Atlantic and got the idea of Apartheid from seeing how well segregation was working in the United States. Importantly, he argues that segregation was one of the single most successful domestic policies of the 20th century in the United States. It is beneath the radar screen but it is having pervasive adverse effects on access to opportunity for African Americans. And someone says, but what does segregation have to do with anything? Think of segregation as a burglar at midnight. It slips into the community, awakens no one—but once it shows up, valuables disappear, like quality schools, and safe playgrounds, and access to good jobs and a healthy environment, and safe housing, and good transportation and even access to high-quality medical care. Research shows that all of these desirable resources vary by where you live in the United States. And that is why some in public health today are saying that your zip code is a stronger predictor of how long and how well you will live than your genetic code.

Let's consider some empirical data. Two of America's most eminent sociologists, William Julius Wilson and Robert Sampson, studied the 171 largest cities in the United States and concluded that because of segregation there is not even one city where Whites live in equal conditions to those of Blacks (Sampson & Wilson, 1995). And they concluded that the worst urban context in which Whites reside is considerably better than the average context of Black communities. That was a 1995 publication. Have things gotten better over time? Professor Dolores Acevedo-Garcia and colleagues from Brandeis University created a neighborhood opportunity index, ranking counties and Census tracts in the United States on 29 different indicators of access to opportunities for kids, including indicators of things like the quality of elementary schools, the high school graduation rate, median household income, home ownership rates, the quality of the air, water, and soil, and access to resources for health like green space and healthy food outlets (Acevedo-Garcia et al., 2020). And using this index, these researchers showed that in the 100 largest metropolitan areas in the United States, 67% of all Black children, 58% of all Latino kids, and 53% of all Native American kids live in very low or low opportunity neighborhoods compared to one in five White and Asian kids (Acevedo-Garcia et al., 2020). At the opposite end, almost two-thirds of all White and Asian children, compared to about one in five Black and Latino children, live in high and very high opportunity neighborhoods. So, one's residential location is a powerful driver of access to opportunity in the United States. Further, studies show that segregation is the central driver of the racial, ethnic differences in income and education that we observe in the first place. Analysis of national data of Black and White young adults revealed that if one could eliminate residential

segregation, there would be the complete erasure of Black-White differences in income, education, and unemployment, and the reduction of Black-White differences in single motherhood by two-thirds (Cutler & Glaeser, 1997). All of those striking differences are driven by opportunity at the neighborhood level. Harvard economist Raj Chetty and colleagues (2020) analyzed some 25 years of U.S. Census data. They compared Black and White adults who began life in families with equivalent levels of household income. They found that even after controlling on parental income, Black boys had lower income than White boys in 99% of Census tracts in America. Why? They live in neighborhoods that differ in access to opportunity. Black boys do as well as White boys if they are in neighborhoods with good resources, but very few Black children reside in such neighborhoods. So what do these studies tell us? They clearly indicate that the large racial inequities that we see in SES data do not reflect a broken system. Instead, they reflect a carefully crafted system, functioning as planned, successfully implementing social policies, many of which were rooted in racism. These inequities are not random events, accidents or acts of God. They reflect the extent to which racism has produced a truly rigged system in the United States.

And segregation also shapes access to care and the quality of care in the United States. A review of this research finds that in segregated neighborhoods, the low-income residents have low levels of health insurance coverage, providers report a reduced ability to refer their patients to specialty care, pharmacies have less medication, and hospitals are more likely to close (White et al., 2012). All of these factors result in delays in care and the receipt of suboptimal care. One example of a segregated community is South Los Angeles. This community has elevated levels of preexisting comorbidities, an epidemic of poorly controlled chronic diseases, fewer physicians, a shortage of primary care doctors, a severe shortage of specialists, and three times more diabetes than the rest of California (Batchlor, 2021). At the local Martin Luther King Hospital, diabetic amputation is the most frequent surgical procedure performed. And there are dramatic differences in reimbursement for medical care. Medicaid is the most common insurance in that community. The average ER visit in LA gets reimbursed $2,000 from commercial insurers, 650 from Medicare, and 150 from Medicaid (Batchlor, 2021). So, in segregated communities, lifelong reduced access and quality of care contributes to poorer management of disease and worse outcomes. And the historic and ongoing underfunding of care in segregated communities has truly created a separate and unequal healthcare system in the United States. Research also shows that residence in segregated communities is associated with exposure to higher levels of stressors: economic stressors such as difficulty making ends meet

at the end of the month or losing a job; acute psychosocial stressors like the death of a loved one; and physical and chemical stressors.

A second mechanism of racism is discrimination at the individual level. Martin Luther King (1967) said that "discrimination is a hellhound that gnaws at Negroes in every waking moment of their lives to remind them that the lie of their inferiority is accepted as truth in the society dominating them." That is a hypothesis that I and many other have been testing. Our argument has been that the subjective experience of being treated badly or unfairly is a type of stressful life experience that has been historically neglected by the larger literature on stress and health. One of the measures to capture interpersonal discrimination that colleagues and I at the University of Michigan developed is called the Everyday Discrimination Scale (Williams et al., 1997). This scale does not capture all aspects of discrimination—just little day-to-day indignities: being treated with less courtesy and respect than others, receiving poorer service than others at restaurants or stores, people acting as if they think you are not smart or they are afraid of you, or they think you are dishonest—just little indignities. I have been stunned by the findings! Today, there are more than 450 published peer-reviewed papers from around the world, linking everyday discrimination to poor health.

For example, a recent review noted that studies have documented that a high score on Everyday Discrimination is associated with incident metabolic syndrome, cardiovascular disease, breast cancer, and Type 2 diabetes (Williams et al., 2019). In addition, Everyday Discrimination is positively associated with multiple high-risk behaviors that lead to poor health and to higher scores on multiple indicators of subclinical disease like coronary arterial calcification , intima- media thickness, inflammation, stress hormones, visceral fat, heart rate variation, and shorter telomere length. This review also found positive associations between Everyday Discrimination and high blood pressure, poor sleep quantity and quality, obesity, poorer mental health (both DSM-defined disorders and symptoms of distress), and less engagement with the healthcare system. The findings for the Everyday Discrimination Scale appear to affirm the view expressed by Chester Pierce, an African American psychiatrist at Harvard University in the 1970s. Writing about interpersonal discrimination, he said:

> what the reader must bear in mind is that that these assaults to black dignity and black hope are incessant and cumulative. Any single one may not be gross. In fact, the major vehicle for racism in this country is offenses done to blacks by Whites in this sort of gratuitous, never-ending way. These offenses are microaggressions. (Pierce, 1974)

Research also indicates that there are hidden ways in which stressors linked to race and racism also adversely affect health. For example, one study of Black women found that over 70% said they were very concerned that their children might be harmed by the police (Vines & Baird, 2009). Thus, the threat of police encounters may be an unrecognized source of stress. A study of over 3,000 Black mothers of youth in 20 cities confirms this (Jackson & Turney, 2021). It found that 23% of their children had been stopped by the police by the age of 15, and mothers of youth who were stopped by the police were more than twice as likely to report depression and anxiety-related sleep difficulties. In another study, my colleagues and I linked a database of every police shooting in the United States for 3 years with another database that provided information about the mental health of the population in every state (Bor et al., 2018). We were able to document that every police shooting of an unarmed Black person led to worse mental health, not just for the family and friends, but for the entire Black population in the state in which it occurred for the next 3 months.

An emerging body of evidence suggests that discrimination may also be having a striking negative impact on African American children. A study examined national data on suicide among elementary school children (age 5 to 11) between 1993 and 2012 (Bridge et al., 2015). It found that the overall rate of suicide was stable for children during this timeframe. However, disaggregation of the data revealed that the stable rate was evident only for Hispanic and Asian children. The suicide rate had markedly declined for White children, but it had doubled for Black children. A follow-up study, published in 2018, examined data through 2015, and found that both Black boys and girls, age 5 to 13, had a suicide rate that was twice as high as their white peers, up through 2015 (Bridge et al., 2018). These data raise prompts us to ponder what it feels like to be a Black child growing up in America today. A recent paper from the ABCD study of 11,235 children (mean age: 11 years) found that Black youth reported higher levels of both discrimination and suicidality than any other racial group (Argabright et al., 2022). Importantly, additional analyses revealed that the higher discrimination reported by Black children is responsible for the elevated rates of suicide. In matched analyses, Black race was unrelated to the suicide rate, with racial discrimination being the predictor of suicide risk. These data are quite disturbing to me because I try to think back to when I was in elementary school and I do not think that I even knew what suicide was. So to think that very young Black children are committing suicide at such a high rate, and this is driven by experiences of discrimination, is very troubling.

A third pathway by which racism can adversely affect health is through racism that exists within the larger culture that can affect racial differences in quality of medical care. In 2003, the Unequal Treatment report from the National Academy of Medicine documented that across a broad range of indicators, Blacks and other minorities received fewer procedures and poorer medical care than Whites (Smedley et al., 2003). I served on that committee and was actively involved in raising awareness levels of the challenge of racial inequities in healthcare in the U.S. In the wake of the report, there was considerable media coverage of the report's findings and recommendations, and many professional organizations reported on and developed programs to raise awareness of their members to the findings. But that was 20 years ago and recent studies reveal that this pattern persists. I will give two examples. First, a study done at Brigham and Women's Hospital (a hospital where I receive care) in Boston examined all patients admitted with heart failure between 2008 and 2015 (Eberly et al., 2019). It found that, compared to Whites, Blacks and Latinos were more likely to be admitted to the general medical service and less likely to be admitted to cardiology. The amenities were better on the cardiology unit but the care also appeared to be better, given that those who were treated in the general medical service had higher 30-day readmission rates. Second, a striking study published in 2020 examined 1.8 million hospital births in the State of Florida between 1992 and 2015 (Greenwood et al., 2020). It found that when cared for by White doctors, Black babies were three times more likely than White newborns to die in the hospital. That disparity was cut in half when Black babies were cared for by Black doctors.

Healthcare Interventions to Address Inequities in Health

So what can we do? What are the solutions? Strategy number one is to make improvements in the delivery of medical care. A basic thing that we need to do is to ensure access to care for all. There is an important study from the State of Delaware that documents the striking impact that access to care can have on reducing some health inequities (Grubbs et al., 2013). In 2002, Delaware decided to implement a colorectal cancer (CRC) screening program for everyone. The state provided reimbursement for uninsured residents up to 250% of poverty. Other state residents were eligible through their insurance. And, 2 years later, Delaware added free treatment for CRC for all persons with incomes up to six and a half times the poverty level. Importantly, the program included a nurse navigator system and special outreach to the African American population to ensure that everyone was aware of the availability of this program. By 2009, this program had eliminated the racial gap in screening disparities for colorectal cancer, the racial gap in the incidence of CRC, and

90% of the racial gap in mortality from CRC. And, for each outcome, there were improvements for both Blacks and Whites but the improvements were larger for Blacks than for Whites so that the gap had narrowed or been eliminated. And, although the annual cost of the screening ($1M) and treatment ($6M) program was $7 million, the annual savings (due to reduced incidence and earlier diagnosis) was $8.5M, so the state actually had net savings from the program of $1.5M per year. And, it was estimated that if this program were implemented nationally, 4,200 fewer Blacks would get colorectal cancer each year, and 2,700 fewer would die. Simply improving access to care will not eliminate racial inequities in health for every health outcome, but we need to identify the health outcomes for which it would work, and implement it.

What else do we need to do? We need to diversify the workforce to meet the needs of all patients. In a randomized control trial in Northern California, Black men were given a coupon to go to a Saturday clinic for a health screening. When they got to the clinic, they were randomized to see a Black physician or a doctor of another race (Alsan et al., 2019). The study found that men who saw a Black doctor were more likely to talk about other health problems (29% more likely), to do the screening for diabetes (47% more likely), to get the flu vaccine (56% more likely), and to do the screening for cholesterol (72% more likely). This study revealed that there was greater engagement with the healthcare system when there was racial concordance between the patient and the provider. We face a challenge. In the mid-1960s, 2.9% of all practicing physicians in the U.S. were Black, and in 2019, 5% are Black, 6% Latino, and three-tenths of 1% are Indigenous (Association of American Medical Colleges, 2019; Deville et al., 2015).

We also need to build trust to improve patient-provider relationships and the quality of care. Often, we think of mistrust as a characteristic of individuals, but we need to think of it as part of a system that is linked to the experiences that individuals and groups have had in other domains of life. Thus, any initiatives to address mistrust should be informed by the recognition that mistrust and its determinants reflect, in part, historical and ongoing injustice that racially disadvantaged populations have experienced (Jaiswal & Halkitis, 2019). It was noted earlier that individuals who have frequently experienced everyday discrimination in their lives are less likely to follow through on their provider's recommendations. Mistrust is thus a social determinant of health, not just the opposite of trust or the absence of trust. And it is not merely interpersonal trust, but it is linked to an individual's prior experiences with social institutions. And for many individuals, it is a protective response against inequities that they have experienced in their life. Not surprisingly, research indicates that mistrust is associated with lower utilization of routine healthcare, lower

adherence to medical regimens, poorer management of health conditions, lower likelihood of long-term relationships with health providers, and racial disparities in care (Jaiswal & Halkitis, 2019). It is a proximal social determinant that influences behavioral responses and health outcomes. Importantly, mistrust should be understood and addressed in the context of other social determinants of health, including the central role of racism (Benkert et al., 2019).

A study of racial disparities in the treatment of HIV suggests that even when there is a failure to have racial concordance between patients and providers, if the provider is high in cultural competence, there are no racial inequities in health (Saha et al., 2013). This was a study of patients with HIV, where there were racial disparities in the receipt of treatment, in the patients adherence to the treatment provided, and in the treatment producing the desired results. However, the researchers had administered a cultural competence scale to the providers and found that when cultural competence was high, there were no racial disparities, regardless of the race of the provider. What did it mean to score high on cultural competence? Providers who scored high on cultural competence had agreed with the following statements (among others): (a) family and friends were as important to health as doctors, (b) social history contributes to how I care for my patients, (c) I am familiar with the lay beliefs my patients have, (d) I ask my patients about alternative therapies they use, (e) I find out what my patients think is the cause of their illness, and (f) I involve my patients in decisions about their healthcare. So what emerges is a picture of providers who respect their patients, listen to them and have meaningful dialogue as they include them in decisions about their care. So more attention needs to be given to developing cultural competence in providers.

Sir Michael Marmot began his 2015 book, *The Health Gap*, with the line: "What good does it do to treat people and send them back to the conditions that made them sick?" It is an important reminder that health care that will meet the needs of patients must also address the social context of their lives. A 2019 report from the National Academy of Medicine suggests that there are many opportunities for healthcare systems and health professionals to address the social needs of their patients (National Academies of Sciences, 2019). Similarly, the Robert Wood Johnson Foundation's Commission to Build a Healthier America, which I served as the staff director of, made the point that there is more to health than healthcare (Robert Wood Johnson Foundation Commission, 2009). It argued that when most Americans think about health, they think only about medical care and its affordability, personal responsibility, coverage, and access. While all of these are critical, it argued that, in order to improve population health and reduce social inequities in health, we also

need to focus on social and economic opportunities and resources (income, education, social status and racial bias) and living and working conditions in homes and communities (neighborhood conditions, working conditions, housing and community resources).

Moving Further Upstream

There is an urgent need to create communities of opportunity to minimize, neutralize and dismantle the systems of racism that have created inequities in health (Williams & Cooper, 2019). This includes place-based strategies that seek to improve neighborhood environments, build economic development in poor areas and improve housing quality. The needed strategies include investing in early childhood, reducing childhood poverty, enhancing income and employment opportunities for youth and adults, improving neighborhood and housing conditions, enhancing economic opportunities to build strong families and reducing disparities in marriage, and implementing strategies to raise awareness levels of racial inequities and building political will to address them (Williams & Cooper, 2019). I will elaborate briefly on two of these strategies. First, the Carolina Abecedarian project illustrates the enormous promise in investing in early childhood interventions (Campbell et al., 2008; Campbell et al., 2014). This project took poor children—80% of them African American, and randomized them at birth to attend an early childhood enhancement program. This early childhood intervention provided the infants a safe and nurturing environment, good nutrition, good intellectual stimulation, and good pediatric care. By age 21, the children in the program from birth through five, had fewer depressive symptoms, lower marijuana use, a more active lifestyle, better grades in school, and better job skills and opportunities. By the mid-30s, compared to the children in the control group, participants in the early childhood intervention had lower levels of risk factors for heart disease and metabolic disease (blood pressure, obesity, metabolic syndrome, and dyslipidemia). So, this study clearly documents that early childhood interventions can lay a solid foundation for socioeconomic and academic success as well as good health in adulthood.

Improving neighborhoods and housing conditions is another priority. We have high-quality scientific evidence from randomized control trials that indicates that if we simply move poor people, to a better neighborhood, with no health intervention, we will improve their health. For example, the Moving to Opportunity Program randomized poor families with children in high-poverty public housing to move to less poor neighborhoods. Research has documented that 10 to 15 years later, persons who moved had lower levels of obesity, severe obesity, and diabetes risk (Ludwig et al., 2011). There are

also very innovative initiatives from some healthcare institutions to address underlying challenges that communities face. For example, the Boston Medical Center, a safety-net hospital, converted the roof of its hospital into a rooftop farm to address food insecurity within its community (Musicus et al., 2019). With one fulltime farmer, a part-time assistant, and hospital employee volunteers, the farm is providing produce for the hospital and the community. Another creative idea comes from Loma Linda University Health. This is an academic medical center that is located next to San Bernardino, CA—a very disadvantaged community in the United States. Loma Linda recently built a new facility for its large federally qualified health center. In San Bernardino, only about 20% of high school graduates go on to any higher education. Creatively, the university reserved the top floor of its new building to address unemployment in the San Bernadino community. Viewing providing a job as a strategy to improving community health, the top floor is a Gateway College that is providing training for entry-level jobs within the healthcare system (Hart, 2016). The 6 to 18 month–long certificate programs offered include Certified Nurse's Assistant, Pharmacy Tech, Surgical Tech and Community Health Worker. Dignity Health is another example of innovation. This health care system has invested $90 million in low-interest loans to expand affordable housing in the communities in which it works. And finally, and most dramatically, Rush University Medical Center, an academic medical center in Chicago, has made a commitment to cut the life expectancy gap by half within its service area (Ansell et al., 2021). The leaders of this health system discovered that there were life expectancy gaps as large as 14 to 16 years from one neighborhood in their service area to another. And it has implemented an ambitious program. Working closely with the community, it is focusing all of its business units on promoting economic activity and wealth building in its disadvantaged neighborhoods. It will hire locally and develop talent, attempt to use local labor, and buy and source supplies and other goods locally.

So what is holding us back? We have considerable scientific evidence regarding what we should prioritize and rapidly growing evidence supporting strategies that actually work. I think that there are three barriers that we need to address (Williams & Cooper, 2019). First, we need to raise awareness levels regarding the large inequities in health that exist. Large segments of the American population are unaware of the existence of inequities in health. Second, we need to develop political will to implement the needed interventions. And third, relatedly and importantly, we need to build empathy for the challenges faced by disadvantaged populations. That is, we need to learn to tell the story of the plight of disadvantaged groups in a way that the general population can identify with, and feel the pain so that they are motivated to take action to change the status quo.

As I close, I want to acknowledge that I am standing here on the shoulders of those who have invested deeply in me. In spite of my hard work and the support of my family and friends and divine blessings, I would not have had a successful career were it not for a minority fellowship from the University of Michigan. Yes, I am an affirmative action baby! Without affirmative action, I would not be here to deliver this lecture. And then, I had a mentor who cared. Professor James S. House went out of his way to support and mentor minorities and women. And I credit him for a lot of the success that I have experienced in my career. And I also had a distinguished dissertation committee comprised of Professors Ronald C. Kessler, Walter Allen, Barbara Israel, and Victor Hawthorne, in addition to Jim House. But it took a village to mentor me. Three African American scholars provided key advice at critical points in my academic journey. Professor Norman Miles advised me to pursue my graduate studies at University of Michigan. Without his advice I would have gone to another university, just because it was closer to where I lived. As a graduate student, without Professor Aldon Morris's advice, I would not have even applied to Yale University, where I began my academic career. And then, Professor James S. Jackson served as a midcareer mentor, providing critical advice and support as I worked to develop measures to assess racial discrimination in health studies. So an important priority as we look to the future, in the wake of recent Supreme Court rulings, is to identify how institutions and individuals can identify, nurture, and mentor the next generation of scientists, including scientists from diverse and socially disadvantaged backgrounds. Academic, research, and practice institutions need to creatively put structures in place that ensure that everyone has access to the opportunities provided by our society.

I end with two quotations. Martin Luther King said, "True compassion is more than flinging a coin to a beggar, but it understands that an edifice which produces beggars needs restructuring." My lecture has identified multiple entrenched edifices that are producing and reproducing inequities in access to care, the quality of care, and to all of the other determinants of health in the United States and globally. We need to commit to restructuring them. And finally, I leave you with the words of Robert F. Kennedy:

> Each time a man (or woman) stands up for an ideal, or acts to improve the lot of others, or strikes out against injustice, he (or she) sends forth a tiny ripple of hope, and those ripples build a current which can sweep down the mightiest walls of oppression and resistance.

There are mighty walls that produce inequities on a large scale in the U.S. and globally, but each one of us can resolve today to be a ripple of hope. And together we can build the needed current to sweep down the mighty walls of oppression and resistance. Thank you so very much.

References

Acevedo-Garcia, D., Noelke, C., McArdle, N., Sofer, N., Hardy, E. F., Weiner, M., Baek, M., Huntington, N., Huber, R., & Reece, J. (2020). Racial and ethnic inequities in children's neighborhoods: Evidence from The New Child Opportunity Index 2.0. *Health Affairs, 39*(10), 1693–1701. https://doi.org/10.1377/hlthaff.2020.00735

Alsan, M., Garrick, O., & Graziani, G. (2019). Does diversity matter for health? Experimental evidence from Oakland. *American Economic Review, 109*(12), 4071–4111.

Ansell, D. A., Oliver-Hightower, D., Goodman, L. J., Lateef, O. B., & Johnson, T. J. (2021). Health equity as a system strategy: The Rush University Medical Center Framework. *NEJM Catalyst Innovations in Care Delivery, 2*(5). DOI: 10.1056/CAT.20.0674

APM Research Lab. (2021). Covid-19 deaths by race and ethnicity in the U.S. https://www.apmresearchlab.org/covid/deaths-by-race

Argabright, S. T., Visoki, E., Moore, T. M., Ryan, D. T., DiDomenico, G. E., Njoroge, W. F. M., Taylor, J. H., Guloksuz, S., Gur, R. C., Gur, R. E., Benton, T. D., & Barzilay, R. (2022). Association between discrimination stress and suicidality in preadolescent children. *Journal of the American Academy of Child and Adolescent Psychiatry, 61*(5), 686–697. https://doi.org/10.1016/j.jaac.2021.08.011

Arias, E., Tejada-Vera, B., Ahmad, F., & Kochanek, K. D. (2021, July). *Provisional life expectancy estimates for 2020. Vital statistics rapid release report no. 015.* National Center for Health Statistics.

Association of American Medical Colleges. (2019). *Diversity in medicine: Facts and figures 2019, Fig. 18*. https://www.aamc.org/data-reports/workforce/report/diversity-medicine-facts-and-figures-2019

Batchlor, E. (2021, May 4). Were COVID-19 patients in the wrong hospital—or the wrong community? What really drove Covid-19 outcomes in South Los Angeles. *Health Affairs Blog*. https://www.healthaffairs.org/do/10.1377/forefront.20210430.501118

Benkert, R., Cuevas, A., Thompson, H. S., Dove-Meadows, E., & Knuckles, D. (2019). Ubiquitous yet unclear: A systematic review of medical mistrust. *Behavioral Medicine, 45*(2), 86–101. https://doi.org/10.1080/08964289.2019.1588220

Bonilla-Silva, E. (1997). Rethinking racism: Toward a structural interpretation. *American Sociological Review, 62*(3), 465–480.

Bor, J., Venkataramani, A. S., Williams, D. R., & Tsai, A. C. (2018). Police killings and their spillover effects on the mental health of Black Americans: A population-based, quasi-experimental study. *Lancet, 392*(10144), 302–310. https://doi.org/10.1016/s0140-6736(18)31130-9

Braveman, P. A., Cubbin, C., Egerter, S., Williams, D. R., & Pamuk, E. (2010). Socioeconomic disparities in health in the United States: What the patterns tell us. *American Journal of Public Health, 100 Suppl 1*(Suppl 1), S186–196. https://doi.org/10.2105/ajph.2009.166082

Bridge, J. A., Asti, L., Horowitz, L. M., Greenhouse, J. B., Fontanella, C. A., Sheftall, A. H., Kelleher, K. J., & Campo, J. V. (2015). Suicide trends among elementary school–aged children in the United States from 1993 to 2012. JAMA pediatrics, 169(7), 673–677.

Bridge, J. A., Horowitz, L. M., Fontanella, C. A., Sheftall, A. H., Greenhouse, J., Kelleher, K. J., & Campo, J. V. (2018). Age-related racial disparity in suicide rates among us youths from 2001 through 2015. *JAMA Pediatrics, 172*(7), 697–699. https://doi.org/10.1001/jamapediatrics.2018.0399

Calhoun, A. (2021). The pathophysiology of racial disparities. *New England Journal of Medicine, 384*(20), e78. https://doi.org/10.1056/NEJMpv2105339

Campbell, F., Conti, G., Heckman, J. J., Moon, S. H., Pinto, R., Pungello, E., & Pan, Y. (2014). Early childhood investments substantially boost adult health. *Science, 343*(6178), 1478–1485. https://doi.org/10.1126/science.1248429

Campbell, F. A., Wasik, B. H., Pungello, E., Burchinal, M., Barbarin, O., Kainz, K., Sparling, J. J., & Ramey, C. T. (2008). Young adult outcomes of the Abecedarian and CARE early childhood educational interventions. *Early Childhood Research Quarterly, 23*(4), 452–466.

Cell, J. W. (1982). *The highest stage of white supremacy*. Cambridge University Press.

Chetty, R., Hendren, N., Jones, M. R., & Porter, S. R. (2020). Race and economic opportunity in the United States: An intergenerational perspective. *The Quarterly Journal of Economics, 135*(2), 711–783.

Cooper, L. A., Roter, D. L., Carson, K. A., Beach, M. C., Sabin, J. A., Greenwald, A. G., & Inui, T. S. (2012). The associations of clinicians' implicit attitudes about race with medical visit communication and patient ratings of interpersonal care. *American Journal of Public Health, 102*(5), 979–987. https://doi.org/10.2105/ajph.2011.300558

Cutler, D. M., & Glaeser, E. L. (1997). Are ghettos good or bad? *The Quarterly Journal of Economics, 112*(3), 827–872.

Dettling, L. J., Hsu, J. W., Jacobs, L., Moore, K. B., & Thompson, J. P. (2017, September 27). *Recent trends in wealth-holding by race and ethnicity: Evidence from the survey of consumer finances, FEDS Notes.* Washington, DC: Board of Governors of the Federal Reserve System.

Deville, C., Hwang, W. T., Burgos, R., Chapman, C. H., Both, S., & Thomas, C. R., Jr. (2015). Diversity in graduate medical education in the United States by race, ethnicity, and sex, 2012. *JAMA Internal Medicine, 175*(10), 1706–1708. https://doi.org/10.1001/jamainternmed.2015.4324

Eberly, L. A., Richterman, A., Beckett, A. G., Wispelwey, B., Marsh, R. H., Cleveland Manchanda, E. C., Chang, C. Y., Glynn, R. J., Brooks, K. C., Boxer, R., Kakoza, R., Goldsmith, J., Loscalzo, J., Morse, M., Lewis, E. F., Abel, S., Adams, A., Anaya, J., Andrews, E. H., . . . Zon, R. (2019). Identification of racial inequities in access to specialized inpatient heart failure care at an academic medical center. *Circulation: Heart Failure, 12*(11), e006214. https://doi.org/10.1161/circheartfailure.119.006214

Greenwood, B. N., Hardeman, R. R., Huang, L., & Sojourner, A. (2020). Physician-patient racial concordance and disparities in birthing mortality for newborns. *Proceedings of the National Academy of Sciences of the United States of America, 117*(35), 21194–21200. https://doi.org/10.1073/pnas.1913405117

Grubbs, S. S., Polite, B. N., Carney, J., Jr., Bowser, W., Rogers, J., Katurakes, N., Hess, P., & Paskett, E. D. (2013). Eliminating racial disparities in colorectal cancer in the real world: It took a village. *Journal of Clinical Oncology, 31*(16), 1928–1930. https://doi.org/10.1200/jco.2012.47.8412

Hart, R. (2016). Notes from the president -- Success in San Bernardino. https://myllu.llu.edu/newsoftheweek/story/?id=27057

Jackson, D. B., & Turney, K. (2021). Sleep problems among mothers of youth stopped by the police. *Journal of Urban Health, 98*(2), 163–171. https://doi.org/10.1007/s11524-021-00518-1

Jaiswal, J., & Halkitis, P. N. (2019). Towards a more inclusive and dynamic understanding of medical mistrust informed by science. *Behavioral Medicine, 45*(2), 79–85. https://doi.org/10.1080/08964289.2019.1619511

King Jr., M. L. (1967). The crisis in America's cities. *The Atlantic*. https://www.theatlantic.com/magazine/archive/2018/02/martin-luther-king-jr-the-crisis-in-americas-cities/552536/

Lieberson, S. (1985). Making it count: *The improvement of social research and theory*. University of California Press.

Link, B. G., & Phelan, J. (1995). Social conditions as fundamental causes of disease. *Journal of Health and Social Behavior*, Spec No, 80–94.

Ludwig, J., Sanbonmatsu, L., Gennetian, L., Adam, E., Duncan, G. J., Katz, L. F., Kessler, R. C., Kling, J. R., Lindau, S. T., Whitaker, R. C., & McDade, T. W. (2011). Neighborhoods, obesity, and diabetes—A randomized social experiment. *New England Journal of Medicine, 365*(16), 1509–1519. https://doi.org/10.1056/NEJMsa1103216

Murphy, S. L. (2000). *Deaths: Final data for 1998, national vital statistics reports.* Centers for Disease Control and Prevention.

Musicus, A. A., Vercammen, K. A., Fulay, A. P., Moran, A. J., Burg, T., Allen, L., Maffeo, D., Berger, A., & Rimm, E. B. (2019). Implementation of a rooftop farm integrated with a teaching kitchen and preventive food pantry in a hospital setting. *American Journal of Public Health, 109*(8), 1119–1121. https://doi.org/10.2105/ajph.2019.305116

National Academies of Sciences, Engineering, and Medicine. (2019). *Integrating Social care into the delivery of health care: moving upstream to improve the nation's health.* The National Academies Press.

Office for National Statistics. (2020). Coronavirus (COVID-19) related deaths by ethnic group, England and Wales: 2 March 2020 to 10 April 2020. https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/coronavirusrelateddeathsbyethnicgroupenglandandwales/2march2020to10april2020

Pierce, C. M. (1974). Psychiatric problems of the Black minority. In G. Caplan (Ed.), *American handbook of psychiatry, 2nd ed*. (Vol. 5, pp. 512–523). Basic Books.

Robert Wood Johnson Foundation Commission. (2009, April 1). *Beyond health care: New directions to a healthier America.* https://www.rwjf.org/en/insights/our-research/2009/04/beyond-health-care.html

Saha, S., Korthuis, P. T., Cohn, J. A., Sharp, V. L., Moore, R. D., & Beach, M. C. (2013). Primary care provider cultural competence and racial disparities in HIV care and outcomes. *Journal of General Internal Medicine, 28*(5), 622–629. https://doi.org/10.1007/s11606-012-2298-8

Sampson, R. J., & Wilson, W. J. (1995). Toward a theory of race, crime, and urban inequality. In *J. Hagan & R. D. Peterson* (Eds.), Crime and inequality (pp. 37–56). Stanford University Press.

Semega, J., Kollar, M., Creamer, J., & Mohanty, A. (2019). Income and poverty in the United States: 2018. *Current population reports*, P60-266 (RV). U.S. Census Bureau.

Skinner-Dorkenoo, A. L., Sarmal, A., Rogbeer, K. G., André, C. J., Patel, B., & Cha, L. (2022). Highlighting COVID-19 racial disparities can reduce support for safety precautions among White U.S. residents. *Social Science and Medicine, 301*, 114951. https://doi.org/10.1016/j.socscimed.2022.114951

Smedley, B. D., Stith, A. Y., & Nelson, A. R. (2003). *Unequal treatment: Confronting racial and ethnic disparities in health care*. National Academy Press.

United States Census Bureau. *National Longitudinal Mortality Study 1988-1998,*. https://www.census.gov/topics/research/nlms.html

Vines, A. I., & Baird, D. D. (2009). Stress of caring for children: The role of perceived racism. *Journal of the National Medical Association, 101*(2), 156–160. https://doi.org/10.1016/s0027-9684(15)30829-4

White, K., Haas, J. S., & Williams, D. R. (2012). Elucidating the role of place in health care disparities: The example of racial/ethnic residential segregation. *Health Services Research, 47*(3 Pt 2), 1278–1299. https://doi.org/10.1111/j.1475-6773.2012.01410.x

Williams, D. R. (1990). Socioeconomic differentials in health: A review and redirection. *Social Psychology Quarterly, 53*, 81–99.

Williams, D. R. (1997). Race and health: basic questions, emerging directions. *Annals of Epidemiology, 7*(5), 322-333. https://doi.org/10.1016/s1047-2797(97)00051-3

Williams, D. R. (2004). Racism and health. In K. E. Whitfield (Ed.), *Closing the gap: Improving the health of minority elders in the new millennium* (pp. 69–80). The Gerontological Society of America.

Williams, D. R., & Collins, C. (1995). US socioeconomic and racial differences in health: patterns and explanations. *Annual Review of Sociology*, 349-386.

Williams, D. R., & Collins, C. (2001). Racial residential segregation: a fundamental cause of racial disparities in health. *Public Health Reports, 116*(5), 404.

Williams, D. R., & Cooper, L. A. (2019). Reducing racial inequities in health: Using what we already know to take action. *International Journal of Environmental Research and Public Health, 16*(4). https://doi.org/10.3390/ijerph16040606

Williams, D. R., Lawrence, J. A., Davis, B. A., & Vu, C. (2019). Understanding how discrimination can affect health. *Health Services Research, 54* Suppl 2(Suppl 2), 1374–1388. https://doi.org/10.1111/1475-6773.13222

Williams, D. R., Yan, Y., Jackson, J. S., & Anderson, N. B. (1997). Racial differences in physical and mental health: Socio-economic status, stress and discrimination. *Journal of Health Psychology, 2*(3), 335–351. https://doi.org/10.1177/135910539700200305