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Addressing Disparities in Medication Access and Adherence

Building a more just, equitable
health care system



Key Take-Aways

- 1 Access to prescription medications helps patients manage their health conditions, decreases avoidable health care utilization and costs, and reduces mortality. However, **longstanding inequities in medication access and adherence** reinforce health disparities, and these inequities have a disproportionate impact on underserved populations.
- 2 There are persistent **racial and ethnic disparities** in receipt of prescription drugs, the types of drugs that are prescribed, drug dosing and administration, and wait times to receive prescription medications. These disparities are well-described in Black and Brown communities, but they extend to Native American, LGBTQ, rural, and other underserved populations.
- 3 **Social determinants of health** such as economic instability, limited health care access and unfavorable neighborhood environments are linked to medication access and have a disproportionate impact on underserved populations.
- 4 Multi-stakeholder solutions are needed to address disparities in **medication access and adherence**.



By pursuing multi-stakeholder strategies, diverse stakeholders – government, academia, patient advocates, physicians, and the biopharmaceutical industry – can work together toward addressing medication access disparities, ultimately improving health and well-being for everyone.

Introduction

In the United States, disparities in health and well-being are evident across sociodemographic factors such as race, income, rurality, and education. For example, in 2019, life expectancy among Black Americans was 4.1 years lower than among whites, but by 2020, the COVID-19 pandemic had increased this difference to 6.0 years.¹ People who live in high poverty urban neighborhoods are 24% more likely to have an unplanned hospital readmission within 30 days of discharge,² and among both men and women, there is an inverse relationship between years of educational attainment and mortality from chronic conditions, injuries, and communicable diseases.³

Patients' inability to access and adhere to medications is linked to poor health outcomes – and potential disparities in health outcomes.^{4,5,6} A large body of research shows that access and adherence to prescription drug regimens reduces hospitalization, mortality, and other unfavorable health outcomes. For example, among people with diabetes, increased adherence to hypoglycemic medications cuts the risk of poor glucose control by 46%, and interventions to increase medication adherence among heart failure patients reduces mortality by 11% and hospital readmissions by 21%.^{7,8}

Medication Access Drives Health Equity

Because medications play a fundamental role in health management, equal access to needed medicines is a key component to ensuring equal opportunities for good health. But there are marked inequities in medication use and adherence, especially among historically underserved populations.

Disparities exist even among people with equal access to resources like health insurance. For example, among privately insured Americans, the odds of non-adherence to antihypertensive medications were 47% and 44% higher among Black and Hispanic patients compared to whites, and for antihyperlipidemic medications, the odds

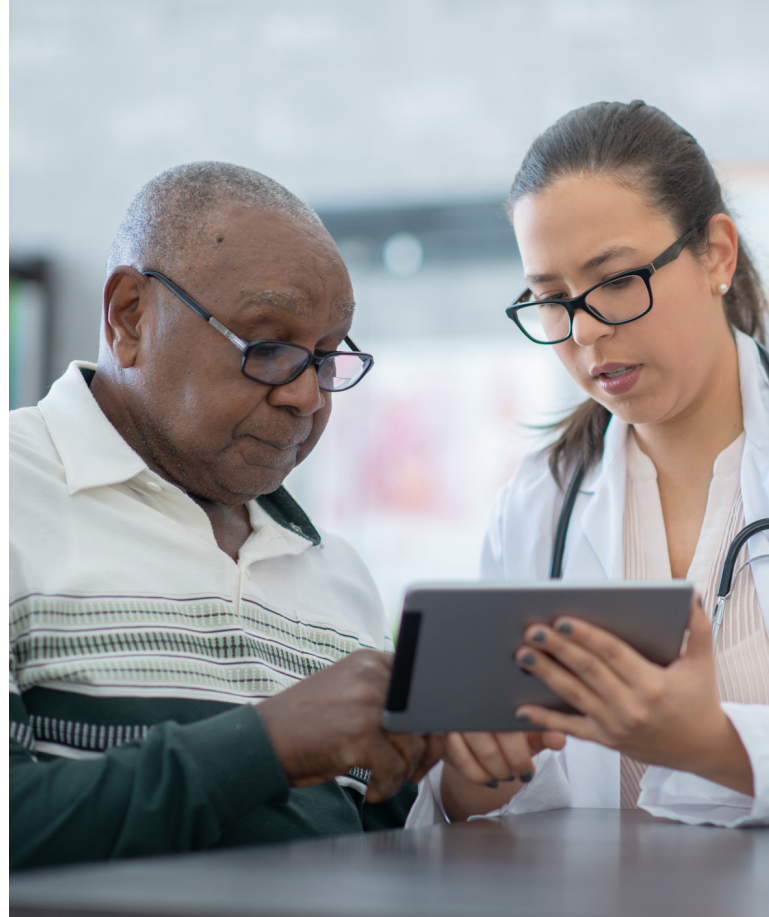
Equitable access to needed medicines is a key component of improving health outcomes.

of non-adherence were 45% and 59% higher among Blacks and Hispanics, respectively. Although some of these differences were attenuated by health status, out-of-pocket costs, and socioeconomic factors, significant racial disparities persist even when these factors are taken into account.⁹

Lower medication adherence among Black and Brown communities is not limited to one or a few health conditions – these disparities have been demonstrated in communities of color across a wide array of diseases, and among people with all types of insurance coverage:



- **Atrial fibrillation:** A study of more than 111,000 patients with atrial fibrillation in the Veteran's Health Administration showed that compared to whites, the odds of initiating anticoagulant therapy were 18% lower for Asians and 10% lower for Blacks.¹⁰
- **Hypertension:** Among hypertensive Medicare beneficiaries with Part D prescription drug coverage, the odds of adherence to antihypertensive medications were 47% and 42% lower among Black and Hispanic beneficiaries, respectively, compared to whites.¹¹
- **Hepatitis C:** In a population of more than 14,000 privately insured people with hepatitis C, the odds of initiating direct-acting antiviral agents were 20% and 30% lower for Hispanic and Black patients, respectively, compared to whites.¹²
- **Diabetes:** Among pediatric Medicaid patients with type 2 diabetes, white children were twice as likely to be adherent to their medication regimens as Hispanic children, and among adult Medicaid patients with diabetes, adherence to diabetic medications was 12% lower among Black, compared to white patients.^{13,14} Black patients with diabetes were nearly twice as likely as whites to have uncontrolled diabetes, and Blacks were 19% less likely to receive innovative diabetes medications.^{15,16}
- **HIV/AIDS:** Among HIV positive men in the U.S., Hispanic and Black men were 2.16 and 1.37 times more likely than white men to report less than 100% adherence to antiretroviral therapies.¹⁷
- **Heart Failure:** Among Medicare beneficiaries with heart failure, all non-white race/ethnicity groups have lower medication adherence than their white counterparts, but improved medication adherence reduces heart failure mortality by 11% and hospitalization readmissions by 21%.^{8,18}



- **Cancer:** Across many forms of cancer, risk of mortality, late-stage diagnosis, and lower quality care is higher among communities of color, with one study showing that regardless of insurance type, Blacks are less likely than whites to receive innovative immunotherapies for lung cancer.^{19,20}

A literature review of disparities in medication access reflects these findings, with 240 of 311 articles showing medication treatment disparities by race and ethnicity.²¹ The most common disparity was receipt of prescription drugs, but differences by race, ethnicity, and gender were also observed for the type of drugs that were prescribed, drug dosing or administration, and wait time to receive prescription medications.

Underserved Populations Affected By Barriers To Access To Medicines And Other Health Care

Disparities in access to prescription drugs and adherence to drug regimens are not limited to Black, Hispanic, and Asian communities. These challenges are present for an array of historically underserved populations.

Native American communities

Despite access to care through the Indian Health Service, there are profound health disparities among Native Americans, whose life expectancy is 5.5 years less than the U.S. population as a whole.²² Some of these disparities are linked to health care access. Although 72.8% of whites report having a regular doctor, the corresponding figure is only 63.1% among Native Americans.²³ Even among Native Americans with a regular source of care, an array of cultural, communication, and other issues impact medication adherence, with one study showing that 48.7% of Native American patients reported that their doctors never asked them about problems with their medications.²⁴

LGBTQ communities

Data from the California Health Interview indicate that LGBTQ people are more likely to delay getting medication or go without needed medications entirely. Although 10.3% of heterosexual respondents reported delaying or going without prescriptions in the past year, 15.2% of gay men and lesbians, 22.2% of bisexual respondents, and 27.8% of transgender respondents reported these access issues.²⁵

Pharmacy accessibility

Rurality is another factor that has a profound impact on medication access. Pharmacy closures, inadequate public transportation, and shortages of medical professionals are all more common in rural areas. Transportation is an especially pressing challenge. One study of nearly 4,000 people in 150 rural counties showed that the odds of non-adherence were 1.78 times higher among respondents who had problems with transportation compared to those who didn't.²⁶ Transportation challenges are exacerbated by pharmacy closures, which are more common in rural areas. One study showed that 630 rural communities that had at least one retail pharmacy in 2003 had none



In California, 10.4% of cisgender adults reported delaying or not getting medicines in the past year, but this figure was 27.8% among transgender or gender nonconforming adults.²⁵

in 2018.²⁷ It is not surprising that pharmacy closures have been associated with lower adherence to prescribed medications.²⁸ Rural, LGBTQ, and people of color are only a few of many vulnerable and underserved communities whose unequal access to care leads to health disparities. Lack of pharmacy accessibility is not limited to rural areas. A recent study on the geographic accessibility of pharmacies based on their racial/ethnic composition in the thirty most populous cities in America found persistently fewer pharmacies located in Black and Hispanic/Latino neighborhoods than in white or diverse neighborhoods. In 2015 there were disproportionately more “pharmacy deserts” in Black or Hispanic/Latino neighborhoods than in white or diverse neighborhoods, and Black and Hispanic/Latino neighborhoods were more likely to experience pharmacy closures compared with other neighborhoods.²⁹

High Out-Of-Pocket Costs Diminish Medication Access And Adherence

Patients’ out-of-pocket (OOP) health care costs are a key determinant of their ability to secure needed medications, including the cost of visiting a provider, screenings or diagnostic tests, and filling a prescription at the pharmacy.

Not only do high OOP costs reduce the likelihood that patients will initiate treatment, but among patients who fill an initial prescription—especially for an expensive medication—high OOP costs increase the likelihood that they will delay refilling their prescription, stop treatment early, skip doses, or cut pills to make their prescriptions last longer.^{30,31,32} In a study of more than 38,000 patients who used any of 38 oral anticancer medicines, prescription abandonment increased as out-of-pocket costs went up. Abandonment was 10.0% among patients with ≤\$10 in out-of-pocket costs, but it rose to 49.4% for patients with >\$2,000 in out-of-pocket costs (box).³³

FIGURE 1. Prescription abandonment of anticancer medications, by out-of-pocket cost category³³

OOP Cost	% abandonment
<\$10	10.0%
\$50.01-\$100	13.5%
\$100.01-\$500	31.7%
\$500.01-\$2,000	41.0%
>\$2,000	49.4%

Although out-of-pocket costs are driven in part by types of insurance coverage, racial disparities persist even among patients with similar levels of insurance coverage. Relative to their white counterparts with Medicare, Medicaid, and commercial insurance, Black and Brown people with each of these types of health insurance experience greater challenges accessing and adhering to prescription medications for common conditions like chronic obstructive pulmonary disease, diabetes and high cholesterol.^{34,35,36,37} One study of Medicare beneficiaries who reported adequate access to physicians showed that Black and Hispanic patients with Part D coverage were still 3.2 and 4.3 times more likely than whites to report prescription access problems.³⁴ Racial disparities in medication access extend beyond common chronic conditions to less common diseases like rheumatoid arthritis and multiple sclerosis.^{38,39,40}

Among Medicare beneficiaries with Part D prescription drug coverage, Black and Hispanic beneficiaries were 3.2 and 4.3 times more likely than white beneficiaries to report problems accessing prescription medications.³⁴

One explanation for persistent racial disparities in medication access is pharmacy benefit designs that increasingly shift costs to patients, creating significant challenges with affordability for lower-income individuals who are disproportionately non-white.³⁷ A growing body of research shows that enrollment in high deductible health plans (HDHP) is associated with lower levels of medication adherence for common conditions like cardiovascular disease.⁴¹ However, the impact of enrollment in HDHPs is not limited to medication access. One study of more than 3,700 cancer survivors showed that Black patients who were enrolled in HDHPs were not only more likely to report skipping doses and delaying filling their prescriptions, but these patients were also more likely to report being unable to afford specialist care.⁴² Other work has shown that among people enrolled in HDHPs, Black, Hispanic, and low-income enrollees are less likely than white and high-income enrollees to have a health savings account to help defray the OOP costs of their HDHP.⁴³

Social Determinants of Health Drive Medication Access and Adherence

Insurance coverage and out-of-pocket costs are two of the many factors that impact access to medicines and other health care. Social determinants of health (SDoH) are characteristics of the environments in which people are born, live, work, play, and worship

that affect an array of health risk factors and associated outcomes.⁴⁴ SDoH are frequently grouped into **five categories**:

- 1 Economic stability**
Poverty, employment, food security, and housing stability
- 2 Education access and quality**
Educational attainment, language and literacy, and early childhood education and development
- 3 Health care access and quality**
Access to primary and specialty care, insurance coverage, and health literacy
- 4 Neighborhood and the built environment**
Housing quality, transportation, air and water quality, and neighborhood violence
- 5 Social and community context**
Community cohesion, civic engagement, discrimination, and the workplace environment





As summarized in a comprehensive report from the National Academy of Sciences,⁴⁵ SDoH affect the health of millions of Americans, and these factors have a bigger impact than clinical care.^{46,47,48,49,50,51,52} Although 10-20% of health outcomes are linked to variation in formal health care, SDoH account for the remaining 80-90% of modifiable factors impacting these outcomes.^{53,54} The ability of patients to access prescription medications and adhere to their medication regimens once a prescription is filled are two fundamental aspects of effective health care, and both are linked to SDoH.^{55,56,57,58,59}

Black and Brown Communities Are Disproportionately Impacted by Social Determinants of Health

SDoH have an outsized impact in communities of color. For example, a review of 61 studies examining transportation barriers and health care access showed that these barriers were largest for people with lower incomes, the uninsured or underinsured, and communities of color.⁶⁰ Another report showed that Blacks spent 50% more time traveling for care compared to whites (29.1 minutes vs. 20.6 minutes) and that Blacks were three times as likely as whites to have health care travel of 30 minutes or more.⁶¹

The impact of SDoH on access to care in communities of color is not limited to the ambulatory setting—these factors also create challenges in access to hospital-based services.⁶² In recent years, rural hospitals have been closing their doors at higher rates than urban facilities, and these closures have had a substantial impact on communities of color because they increase the distance patients need to travel for both acute and emergency care.^{63,64,65}

But even patients who can access their health care providers need to fill prescriptions, and this can present additional barriers that disproportionately impact Black and Brown communities. In many large cities, “pharmacy deserts” are concentrated in Black and Hispanic neighborhoods,^{66,67} and among urban Blacks and Hispanics, insurance coverage and out-of-pocket costs drive the likelihood that patients can use the nearest pharmacy to access needed medications.⁶⁸

There is ample evidence that Black and Brown communities experience SDoH-related challenges at considerably higher rates than their white counterparts, and these disparities are evident across all SDoH categories:

- **Economic stability:** There is consistent evidence supporting a strong association between unemployment and poor mental and physical health outcomes, and in 2019, 12.3% of all Americans were living below the poverty level.^{69,70,71,72,73} However, in that year, 21.2% of Black and 17.2% of Hispanic/Latino residents were living below poverty, compared to 9.0% of whites.⁷³
- **Education access and quality:** People with lower levels of educational attainment and those with diminished access to education have less favorable health profiles and outcomes.^{74,75,76,77} In 2018, 90.2% of white adults had finished high school and 35.2% had earned a college degree, but the corresponding figures were 87.9% and 25.2% among Blacks, and 71.6% and 18.3% among Hispanics.⁷⁸

- **Health care access and quality:** Diminished access to quality health care results in less favorable outcomes.^{79,80,81,82,83} In 2019, 10.9% of all non-elderly Americans were uninsured. However, this figure was 7.8% among non-elderly whites, compared to 11.4% among non-elderly Blacks and 20.0% among non-elderly Hispanics.⁸⁴ Even among Medicare beneficiaries who have the same basic health care benefits, people of color are less likely to have supplemental insurance to cover out-of-pocket medical expenses.⁸⁵ Removal of cost sharing barriers for treatment of common conditions like cardiovascular disease has a marked impact on the health and well-being of non-white patients because these groups often have high baseline risk and lower adherence, the latter driven in part by financial hurdles.⁸⁶
- **Neighborhood and the built environment:** Many features of neighborhoods and built environments—such as lack of sidewalks and high crime rates—unfavorably impact health and health behaviors.^{87,88,89} Racial disparities in pedestrian environments are well-known, and African Americans and Hispanics are far more likely to be the victims of violent crimes than their white counterparts.^{90,91} Neighborhoods with large shares of non-white residents, and those with poor housing and transportation are also more likely to have larger numbers of drinking water violations and fewer pharmacies.^{92,93,94}
- **Social and community context:** Food insecurity is associated with increased risk of poor health for people of all ages, and children who have parents in prison are at considerably higher risk of a wide array of unfavorable health outcomes.^{95,96,97} Black and Hispanic communities have consistently faced hunger at higher rates than whites, and these disparities were exacerbated by the COVID-19 pandemic.^{98,99,100} One in nine Black children and one in 28 Hispanic children has a parent in prison, compared to one in 57 white children.¹⁰¹

We Need a Multi-Stakeholder Approach to Finding Solutions

The legacy of structural racism in the U.S. continues to have a devastating impact on health outcomes in communities of color and other underserved populations. The root causes of these disparities are complex and layered, but biopharmaceutical companies are committed to advancing solutions that drive equity.

We must capitalize on opportunities to work together across the health care community to advance policies and programs that improve health by addressing SDoH that impact access and adherence to treatment. Biopharmaceutical companies are committed to working with other health care stakeholders to create a more just and equitable U.S. health care system, including addressing the impact of SDoH on the health of communities of color.

Through creative problem-solving and by harnessing ideas and evidence from government, researchers, patient advocates, physicians, and the biopharmaceutical industry—together, we can work toward addressing health disparities and improving outcomes for everyone.



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