

When Air Isn't Fair

Inequities in Pediatric Asthma and Strategies for Reducing Them



Children's Health Fund

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Key Takeaways

Asthma [affects](#) more than 4.6 million U.S. children, but children of color and children experiencing poverty face higher prevalence and death rates than other children.

- In 2021, the [asthma mortality rate](#) per million was 7.7 for Black children and 5.6 for non-white Hispanic children, compared with 1.0 for white children.
- Non-Hispanic Black (11.6%) and Indigenous American (9.2%) children have [prevalence rates](#) more than or nearly twice, respectively, the prevalence rates of non-Hispanic white children (5.5%). Hispanic children also have a slightly higher asthma rate (5.9%) than the non-Hispanic white children.
- More than 1 in 10 people (10.4%) [living](#) in low-income households (below 100% the federal poverty level, or FPL) have asthma, a rate about 1.5 times higher than that of people living in the highest income households (greater than 450% FPL).

Lack of access to quality healthcare, higher exposure to environmental triggers, and systemic racism are drivers of pediatric asthma inequities.

- In 2021, American Indian and Alaska Native children had the highest [uninsured rate](#) at 14.1%, nearly three times as high as the national average. The uninsured rate was 7.8% for Hispanic children, 6% for Native Hawaiian and Pacific Islander children, and 4.4% for Black children. By comparison, non-Hispanic white children were uninsured at a rate of 3.9%.
- Asthma [triggers and allergens](#), from industrial pollution to densely packed motorways, to dust, cockroaches, and more, contribute to asthma inequities among children of color. Research [indicates](#) that Black renters report higher rates of exposure to indoor asthma triggers like rats, mice, cockroaches, and mold in their homes.

Reducing asthma inequities among children of color and children experiencing poverty requires a comprehensive approach that targets social drivers of health, promotes environmental protection, and improves healthcare access.

Healthcare Solutions:

- Increased support and funding for mobile medical clinics (MMCs) and telehealth.
 - Research into an asthma-based MMC for children living in low-income communities [found](#) that MMC care led to lower emergency room visits, hospitalizations, and school absences.
- Increased support for school-based programs and school-based health services.
- Increased access to language accessible and literacy-inclusive health services.
- Increased physician adherence to asthma guidelines developed by the National Institutes of Health (NIH) and the National Heart, Lung, and Blood Institute (NHLBI).

Policy Solutions:

- Passage of laws and regulations that aim to promote environmental justice, reduce air pollution, and curb the impact of climate change.
- Governmental efforts to increase access to insurance coverage and healthcare services for children from under-resourced communities.
- Investments in research efforts that focus on understanding the drivers of racial, ethnic, and socioeconomic inequities in asthma rates among children.

Executive Summary

Asthma is a chronic respiratory condition [affecting](#) more than 4.6 million U.S. children, with non-Hispanic Black (11.6%) and Indigenous American (9.2%) children having more than or nearly twice, respectively, the prevalence rates of non-Hispanic white children (5.5%). Hispanic children also have a slightly higher asthma rate (5.9%) than non-Hispanic white children. More than 1 in 10 (10.4%) people [living](#) in low-income households (below 100% the federal poverty level, or FPL) have asthma, a rate about 1.5 times higher than that of people living in the highest income households (greater than 450% FPL).

Socioeconomic status, environmental exposures, and healthcare access are three factors that contribute to the discrepancy. To achieve health equity, comprehensive approaches targeting social drivers, promoting environmental protection, and improving healthcare access are necessary.

Environmental factors, both indoors and outdoors, significantly influence asthma. Children with asthma who are more frequently exposed to triggers are more likely to have exacerbations than other children. Comprehensive policies that promote equitable environmental protection will reduce inequities in asthma rates impacting children from underinvested communities. Because children spend most of their day in school, exposure to indoor allergens in these settings may play a significant role in triggering asthma episodes or exacerbating asthma symptoms. In addition, poorly managed asthma can contribute to academic setbacks and increased school absenteeism.

Substandard housing conditions and ongoing histories of racial segregation and other discriminatory policies have further exacerbated asthma inequities. Efforts to improve housing quality and implement smoke-free policies are essential in mitigating asthma triggers. While the federal Clean Air Act, enacted in 1963, has played an important role in reducing pollution exposure in communities of color, it alone is not enough to mitigate the impact of air pollution in these communities. More needs to be done to prioritize environmental justice and address the disproportionate impact of air pollution and environmental triggers.

Access to quality healthcare is crucial for managing chronic conditions like asthma. And it starts with having insurance. The 2010 Affordable Care Act (ACA) expanded access to health insurance, reducing barriers to care for underserved populations. Medicaid and the Children's Health Insurance Program (CHIP), initially established in 1965 and 1997, respectively, further expanded coverage for children of color with asthma. However, disparities in uninsured rates persist, emphasizing the need for continued efforts to address health inequities and promote a healthier future for all children, regardless of their racial, ethnic, or socioeconomic background.

The COVID-19 pandemic has posed additional challenges for people with asthma. COVID-19 can exacerbate asthma symptoms for those facing difficulties managing their condition, and people with chronic asthma are at [higher risk](#) of severe illness from the virus. Most at risk are people with uncontrolled asthma. A [study](#) published in the *Journal of Allergy and Clinical*

Immunology found that people with well-controlled asthma had less severe COVID-19 symptoms than people with uncontrolled asthma, suggesting that appropriate asthma management may reduce risk of severe illness from COVID-19.

Furthermore, millions of Americans had increased difficulties meeting their healthcare needs during the pandemic. Families USA [estimates](#) that 5.4 million Americans lost employer-sponsored health insurance between February and May 2020, leading to difficulties accessing care and paying for medications. In addition, a July 2020 survey of 3,513 physicians [estimated](#) that 8% of physicians closed their practices due to pressures related to the COVID-19 pandemic, and healthcare [utilization](#) of in-person healthcare services decreased throughout the pandemic, as well. For some people with asthma, these pandemic-related changes may have made it difficult to access care for their conditions. For example, a [study](#) published in the journal *BioMed Central (BMC) Pediatrics* found that more than two-thirds of families in the study reported that their child's asthma care was affected because of pandemic-related barriers. Thus, the pandemic underscores the importance of effective asthma care and management to prevent worsening health outcomes due to COVID-19.

Background

Since 1987, Children's Health Fund (CHF) has been committed to ensuring children growing up in under-resourced communities have access to the resources they need to thrive and succeed. National network healthcare services are comprehensive—medical, mental, oral, and social services—and provided in a culturally sensitive manner within the very communities children live, learn, and play. This includes the management and treatment of asthma. Nearly all children served live in low-income households, and 4 in 5 are Black or brown.

CHF works with pediatric providers in its national network to develop literacy-inclusive health education materials. This includes the Family Asthma Guide, updated in 2022 and available in [English](#) and [Spanish](#). This award-winning educational tool translates National Institutes of Health (NIH) and National Heart, Lung, and Blood Institute (NHLBI) [guidelines](#) for managing asthma into applicable terms for community pediatricians, children, and parents to more effectively manage the chronic disease. It reinforces the knowledge that is given at a medical visit and provides guidance for managing the condition between visits. The guide includes an explanation of the anatomy and physiology of asthma, identification of common triggers, and the creation of action plans to prevent attacks and effectively manage them when they occur.

This policy brief provides a more comprehensive look at how asthma impacts children from under-resourced communities and provides policy options to address the inequities in asthma care affecting children of color and children from low-income communities in the United States.

Asthma: Introduction

Asthma is a chronic respiratory condition that affects [4.6 million children](#) in the United States, disproportionately burdening children of color due to various socioeconomic factors, environmental exposures, and limited access to appropriate healthcare.

Black, non-white Hispanic, and American Indian and Alaskan Native children experience higher asthma rates compared to white children. In [2021](#), 11.4% of Black children, 9.2% of American Indian and Alaskan Native children, and 5.9% of non-white Hispanic children had asthma. Comparatively, 5.5% of white children had asthma in 2021. Furthermore, children of color are more likely to die from asthma than white children. In 2021, Black children had an [asthma mortality](#) rate of 7.7 per 1 million, and non-white Hispanic children had an asthma mortality rate of 5.6 per 1 million. In comparison, white children had a mortality rate of 1.0 per 1 million. These inequities can be attributed to a variety of factors, including differences in access to healthcare services, genetic susceptibility, environmental exposures, and urban living conditions. Poverty, substandard housing conditions, and exposure to indoor and outdoor environmental allergens play a critical role in exacerbating asthma symptoms among children of color, compounding the challenges they face in managing their condition effectively.

[Systemic racism](#) and policies such as [Jim Crow laws](#) have limited resources and opportunities for communities of color, leading to reduced access to healthcare, increased exposure to environmental triggers, and inadequate development resources in communities of color. These inequities create barriers to effective asthma management, exacerbating health outcomes for communities of color.

The impact of inadequate asthma care extends beyond individual health, placing a considerable burden on the healthcare system. Asthma is an ambulatory care sensitive condition, a class of chronic conditions that when not properly treated in the outpatient setting lead to preventable hospitalizations. Asthma-related emergencies accounted for over 1.6 million emergency department visits and 439,000 hospitalizations in 2013, imposing an annual [cost](#) of \$82 billion on the national healthcare system.

Addressing asthma inequities among children of color requires a comprehensive approach that targets social drivers of health, promotes environmental protection, and improves healthcare access. By fostering collaboration between policymakers, healthcare providers, and community organizations, the nation as a whole can work toward reducing asthma inequities, promoting health equity, and ensuring a brighter, healthier future for all children in the United States, regardless of their socioeconomic, racial, or ethnic background.

Asthma and the Physical Environment

For those with asthma, indoor and outdoor environments greatly influence their health status and well-being. Consistent and prolonged exposure to allergens can make managing asthma difficult. Asthma [triggers and allergens](#) are generated by a variety of sources from industrial pollution to densely packed motorways to dust and cockroaches.

Addressing environmental factors that contribute to asthma inequities among children of color is essential to achieving health equity. By implementing comprehensive policies that promote environmental protection, equitable urban planning, and climate resilience, policymakers can improve the respiratory health of at-risk communities and reduce asthma-related inequities. These efforts will pave the way toward a healthier, more sustainable future for all children, irrespective of their socioeconomic status or racial background.

Schools

Managing asthma is vital in enabling students' ability to succeed academically. Poorly managed asthma can lead to frequent absences and reduced productivity, resulting in academic setbacks. To support students with asthma, it is imperative for educators and healthcare professionals to collaborate and create an environment that helps students manage their condition effectively within the school setting.

Given that children spend a substantial portion of their day in schools, the indoor environment plays a vital role in shaping their overall health outcomes. Factors such as indoor air quality, allergen exposure, and the presence of other environmental triggers significantly impact students with asthma. Improperly maintained heating, ventilation, and air conditioning (HVAC) systems in underfunded schools can lead to poor air circulation in classrooms. Additionally, humid air can trap allergens and irritants and trigger asthma symptoms—an issue that is easily addressed by proper maintenance of air quality monitoring technology in schools. Addressing these environmental factors in schools can lead to improved respiratory health and better academic performance for all students, particularly those affected by asthma.

Inequities in school locations and surrounding environments can exacerbate asthma disparities among students of color. Cars on busy roads produce an array of pollutants in their wake. Among them are nitrogen dioxide, nitrous oxide, and carbon monoxide; all of which have been [shown](#) to have a positive association with a higher incidence of childhood asthma. Recent [data](#) reveals that 15% of schools serving mostly students of color are located near major roads, while this is the case for only 4% of schools serving predominantly white students. A [study](#) in the *Journal of Allergy and Clinical Immunology* of schools in the northeast United States showed that “for every 100 meters away from a major road, students had 29% fewer reported asthma symptoms, 37% less healthcare utilization, and were 20% less likely to report poor asthma control”. Additionally, the unequal distribution of schools in proximity to major roads contributes to varying levels of exposure to outdoor air pollution, which leads to [increased missed school days](#) and decreased academic performance among students with asthma.

Uncontrolled asthma is a [leading cause](#) of school absenteeism. Because children of color are more likely to have uncontrolled asthma than non-Hispanic white children, they are also more likely to miss school because of this chronic disease. This inequity in school absences is directly associated with decreased academic performance, further widening educational disparities.

Addressing asthma in schools is critical to ensuring equitable educational opportunities and promoting better health outcomes for all students. Effective ways for schools to reduce the impact of asthma on students is having an action plan for students experiencing symptoms to reduce exacerbation. Additionally, having medication on campus can help students better manage symptoms and avoid emergencies. However this is not always easy or possible, as some schools do not enforce medication policies on campus, and some parents face barriers to ensuring access to medication for their children. For example, a [study](#) published in *Pediatric Allergy, Immunology, and Pulmonology* found that, of the schools studied, only 14% of elementary school students in Alabama had access to albuterol inhalers, a commonly used quick-relief medication for treating asthma attacks, despite school-based policies allowing students to carry inhalers. Additionally, parents facing financial or transportation barriers might face [challenges](#) affording the cost of obtaining an additional inhaler to be kept on school grounds, being able to make it to campus to file paperwork enabling inhaler usage in school, or being able to bring an inhaler to their child in the event of an emergency. By implementing targeted interventions to improve indoor air quality, reduce environmental triggers, and enhance asthma management support, schools can create a more inclusive and health-conscious learning environment.

H.R. 2468 - School-Based Allergies and Asthma Management Program Act

[H.R. 2468](#), which became public law in 2021, addresses asthma management in public schools with a comprehensive approach. It focuses on identifying and supporting all individuals with asthma within school settings. The law gives preferences for grants to schools that have allergy and asthma management programs and provides education for school staff on effective case management of asthma and allergies. Furthermore, it emphasizes efforts to reduce environmental triggers of allergies and asthma within schools. With the enactment of this law, schools are incentivized to work with students to develop individualized action plans to help manage students' asthma, ensuring timely and appropriate care and fostering a healthier and safer learning environment.

Asthma-Friendly Schools Initiative

The American Lung Association's (ALA) [Asthma-Friendly School Initiative](#) toolkit is a valuable resource for helping students with asthma. The program creates a framework for schools to address asthma in a comprehensive, proactive management system. ALA outlines a step-by-step process for implementing tools and resources in schools such as asthma action plans, maintaining healthy indoor air quality, and asthma education for administrators. These tools are designed to work within the existing school structure to leverage resources and minimize any burden on the schools.

This comprehensive plan helps schools better understand how to appropriately manage asthma and guides administrators in creating healthy environments for their students.

Housing Quality

For individuals with asthma, the quality of indoor physical environments holds significant implications for their health and well-being. Both indoor and outdoor environments can strongly influence asthma control and exacerbations by exposing individuals to allergens and triggers that worsen their condition.

Substandard housing conditions contribute to increased exposure to common indoor triggers known to exacerbate asthma symptoms. Factors such as cockroach infestations, dust mites, pets, moisture, molds, tobacco smoke, and rodents are prevalent in poorly maintained dwellings, and they can have adverse effects on respiratory health. Children living in such conditions face a higher risk of asthma exacerbations and compromised asthma management.

Homeownership has been associated with better housing quality and a decreased rate of asthma-related emergency department visits. Unfortunately, U.S. homeownership [rates](#) among Black populations (42%) remain significantly lower compared to white populations (73%), resulting in disparities in housing quality. Rental units, which are more common among communities of color, often have deficiencies, and renters have limited means to address these problems, leading to increased exposure to asthma triggers. Research [indicates](#) that Black renters report higher rates of exposure to indoor asthma triggers like rats, mice, cockroaches, and mold in their homes, further exacerbating asthma disparities.

Efforts to address housing quality disparities are crucial in mitigating asthma disparities among minority populations. To this end, governmental agencies have implemented "healthy homes" policies, promoting safe, adequate, and sanitary housing for people renting homes in under-resourced communities. These interventions aim to reduce exposure to common asthma triggers, especially for individuals at risk, and improve overall respiratory health.

In 2017, the U.S. Department of Housing and Urban Development (HUD) issued a mandate requiring smoke-free policies in public housing. This move aims to reduce secondhand smoke exposure, which can [worsen asthma symptoms](#) and lead to respiratory complications. Smoke-free policies play a critical role in creating healthier living environments for children with asthma and protecting them from the adverse effects of tobacco smoke.

In addition to smoke-free policies, New York City (NYC) passed the Asthma-Free Housing Act in 2017. Through this act, property owners are required to identify and address indoor allergens: mold, rodents, and cockroaches. Landowners are required to schedule annual inspections for health hazards and implement integrated pest management practices to address and prevent the presence of pests. The law mandates both mold and sources for mold growth to be removed upon identification by the inspector, tenant, or property-owner. Enforcement of the act is on the onus of tenants to report violations to the NYC Department of Housing Preservation &

Development and NYC Department of Buildings. By addressing indoor triggers and improving housing conditions, this policy seeks to enhance the quality of life for individuals living with respiratory conditions.

Several federal grant programs focus on improving housing conditions and health outcomes. The HUD Lead and Healthy Homes grants, Community Development Block Grants, and Community Services Block Grant all support initiatives that target substandard housing and promote healthier living environments for underinvested communities, including those affected by asthma.

Air Quality

The burden of air pollution in the United States falls disproportionately on communities of color. Ongoing histories of discrimination and residential segregation have resulted in these communities being more likely to be located near factories, major roadways, and material refineries—all sources of significant outdoor air pollution. The close proximity to these pollution sources heavily impacts the health of individuals residing in these neighborhoods. Consistent exposure to air pollution poses a particular challenge for managing asthma effectively, exacerbating the inequities faced by children of color with asthma.

Controlling indoor air quality is essential in mitigating the impact of pollution on vulnerable populations, especially children with asthma. The Environmental Protection Agency (EPA) outlines three categories of indoor air quality control:

- **Source Control:** Modifying and monitoring pollution sources within indoor environments can significantly improve air quality. Addressing sources such as heating and cooling systems, indoor tobacco use, and furnishing materials like upholstery and carpets is crucial. Proper ventilation for appliances known to emit pollutants, like fuel-burning stoves, is recommended. Reducing tobacco use in households is a direct and effective intervention with a substantial positive impact on the respiratory health of children with asthma.
- **Air Ventilation:** Opening windows and doors to bring in fresh outdoor air helps in removing indoor air particles, improving the overall air quality inside the premises.
- **Air Cleaners:** Air cleaners equipped with filters can effectively remove pollutants from circulated indoor air. These range from small units suitable for placement on shelves to whole-house systems. The effectiveness of an air cleaner depends on its air filtration rate and its proximity to pollutant sources.

While these three ways of controlling indoor air quality rely on the efforts of members of a household and their access to appropriate controlling technologies, they can be immensely useful in mitigating the effects of asthma. In vulnerable areas where the rate of asthma is highest and the quality of outdoor air is lowest, monitoring indoor pollution sources and installing air cleaners can be invaluable in increasing quality of life and improving health outcomes for children with asthma.

Clean Air Act

The federal Clean Air Act (CAA), enacted in 1963, is a critical tool in reducing exposure to harmful air conditions, which have disproportionately affected people of color and people living in under-resourced communities. Historically, these communities have been situated near pollution sources like factories and roadways, bearing an unfair environmental health burden. However, [state governments](#) have taken significant steps since the 1990s to implement the CAA by regulating air emissions and targeting areas with low air quality for clean-up, thereby narrowing the pollution exposure gap between racial groups.

As a result of states' targeted interventions through use of the CAA, the disparity in pollution exposure between Black and white populations has been [reduced](#) by more than 60% since 2000. By directing resources toward improving air quality in the most polluted areas, the states have made strides in addressing environmental inequities and promoting environmental justice for communities of color.

Climate Change

Climate change has emerged as a significant global concern, impacting various aspects of the environment and human health. One area where its effects are increasingly apparent is in the realm of respiratory health, particularly for individuals with asthma.

Rising temperatures associated with climate change can result in longer and more intense pollen seasons. Vegetation is signaled to [release pollen sooner](#) in the spring and the warmer temperatures promote higher amounts of pollen release. For people with asthma a longer pollen season can be problematic as pollen is a common trigger for asthmatic symptoms. Increased levels of airborne pollen can heighten the risk of allergic reactions and inflammation in the airways, exacerbating asthma symptoms and potentially leading to more frequent emergency department visits and hospitalizations.

Climate change has also led to increased heat, lengthening droughts, and altering humidity levels; all of which are critical factors in the creation of wildfires. The drastic alterations to our climate have led to an increase in the severity of wildfires across the globe. When they occur near developed areas, wildfires cause weeks-long periods of poor air quality. In areas where wildfires are prevalent, it is good practice for homes and community buildings to have air filtration and heating, ventilation, and air conditioning (HVAC) systems installed, both of which improve indoor air quality during times of fires. Climate change has increased the risk of wildfire smoke in regions that historically have not dealt with fires. These areas may lack the resources necessary to properly address the decrease in air quality, from air filtration systems to emergency response plans. During the Canadian wildfires of 2023, U.S. Department of Health and Human Services (HHS) [regions](#) 2, 3, and 5 were highly exposed to smoke. Some areas faced a drop in outdoor air quality comparable to [smoking half a pack of cigarettes a day](#). For those with asthma, the smoke released from wildfires is extremely harmful as it irritates lungs and restricts their functions. All three regions suffered from drastic reductions in air quality which led to 17% [more](#) asthma-associated emergency department visits than expected.

Moreover, elevated temperatures can promote the production of ground-level ozone, a major component of smog, which can irritate the respiratory tract and worsen asthma symptoms. High ozone concentrations are linked to increased asthma-related hospital admissions and emergency room visits.

As the global climate continues to change, the air we breathe will change along with it. Though we do know of some of the harmful effects of such change, more research is needed to determine the effect that climate change will have on people in the future. Research on the subject can help those with asthma better mitigate the effects and risks posed by climate change as well as inform them on how to best protect themselves from the associated harm.

Access to Healthcare

Access to quality healthcare is an important contributor to effective asthma management. Inequities in insurance coverage, systemic barriers to healthcare access, and limited availability of primary and specialty care providers create barriers to effective asthma management. Moreover, social and systemic drivers of health such as poverty and racism magnify these barriers.

Inequities in Insurance Coverage

Access to healthcare coverage is essential to effective asthma management. Although uninsured rates have decreased steadily over the last decade, racial and ethnic inequities in healthcare coverage persist.

In 2021, about 5.4% of children in the United States were [uninsured](#) with significant [variability](#) between states: In Massachusetts, for example, 1.3% of children were uninsured, while in Wyoming and Texas it was 11.4% and 11.8%, respectively. In addition, racial and ethnic variations exist, with children of color being more likely to lack insurance than white children. In 2021, American Indian and Alaska Native children had the highest [uninsured rate](#) at 11.8%, more than two times as high as the national average. The uninsured rate was 4.7% for Black children and 8.6% for Hispanic children. By comparison, non-Hispanic white children were uninsured at a rate of 3.9% in 2021. When children do not have access to healthcare coverage, they face a greater risk of having unmet health needs and lacking a usual source of care, which increases the risk of worsening health outcomes. Access to a usual source of care is essential to effectively managing asthma for children.

In addition to racial inequities in uninsured rates, racial and ethnic inequities in Medicaid and CHIP coverage persist. As of 2021, more than 40 million children are [enrolled](#) in Medicaid or CHIP, accounting for nearly half of all children in the United States. Together, these two public insurance programs [cover](#) 60% of all Black children in the United States, 55% of Hispanic, 59% of American Indian and Alaska Native (AIAN) children, and 52% of Native Hawaiian and Pacific Islander children in the United States. Medicaid and CHIP cover 30% of white children.

Racial and ethnic inequities in insurance rates can exacerbate inequities in asthma care for children of color. Because children of color are both more likely to have asthma than white children, and are more likely to lack insurance or be underinsured, they are at greater risk of having worse asthma outcomes than their white peers and of not being able to access the services and medication needed to treat more severe symptoms. Addressing racial and ethnic inequities in access to healthcare is crucial to reducing inequities in asthma prevalence and promoting better health outcomes for children of color.

Inequities in Access to Care

Children who lack access to insurance or are underinsured may also have difficulty accessing both specialty and primary care services for asthma care.

Lack of access to specialty care is another inequity that limits the ability of children of color to manage their asthma effectively. National asthma-based guidelines that outline evidence-based practices for treating asthma [recommend](#) that patients with severe asthma be referred to specialists in asthma care, including allergists, immunologists, and pulmonologists. Care from an [asthma specialist](#) is important for effective asthma management, as it allows a physician to work with a patient to provide additional medications and treatments, such as [biologics](#), that patients would not get through a primary care provider. Furthermore, access to specialty care in asthma may improve health outcomes for patients. A [study](#) published in the *Journal of Allergy and Clinical Immunology* found that patients aged six and older who had at least one visit with an asthma specialist experienced less frequent use of a rescue inhaler and less frequent asthma exacerbations than those who did not visit a specialist.

Children of color may face limited access to both primary care and specialty care relative to white children. Because children of color are more likely to lack insurance or to lack adequate insurance that covers the cost of specialty care, they may be less likely to have asthma specialists. Many providers, including both pediatricians and other specialists, choose not to accept patients insured by Medicaid due to low reimbursement rates and bias. According to [data](#) from the Medicaid and CHIP Payment and Access Commission, pediatricians accepted new patients enrolled in Medicaid at a lower rate (84.7%) than patients with private insurance (97.6%), citing low reimbursement as a factor. In addition, specialists were less likely (70%) to accept patients with Medicaid than they were to accept patients with private insurance (96%), suggesting that people with Medicaid may have more difficulty accessing speciality care. More research is needed to see the rates at which asthma specialists accept children with Medicaid.

Access to primary and specialty care are important for children with asthma because asthma that is not [adequately](#) managed in the primary care or specialty care setting may lead to preventable hospitalizations. Children of color are disproportionately more likely to be hospitalized with asthma, with Black children being 4.5 times more [likely](#) than white children to be admitted to the hospital for asthma. As such, the disproportionate use of emergency services to treat asthma in children of color indicates that children of color lack access to the primary

care and specialty services needed to effectively manage their condition. In order to reduce racial and ethnic inequities in asthma rates, children of color, who experience severe asthma symptoms at higher rates than white children must have adequate access to insurance, primary care, and specialty care services.

Systemic Barriers to Healthcare Access

While healthcare access is essential for all children, systemic barriers can disproportionately impact children of color, hindering their ability to receive timely and appropriate healthcare services to treat conditions like asthma. Children of color face unique challenges to healthcare access, including transportation barriers, language and literacy barriers, and poverty. These systemic barriers can further exacerbate existing inequities in asthma care.

Transportation challenges can hinder access to healthcare services for families from under-resourced communities. A study [published](#) in *Transportation Research Record: Journal of the Transportation Research Board* found that those facing the greatest transportation barriers were most likely to be women, people of color, people with chronic illnesses or disabilities, people living in communities with limited financial resources, and older people. Additionally, a [study](#) published in the journal *BMC Health Services Research* found that African Americans faced a higher burden of travel to healthcare facilities than did white Americans after controlling for mode of transportation and socioeconomic status.

Living in areas with limited public transportation, lacking access to private transportation, or facing financial barriers to transportation can make it difficult for families to reach medical facilities for regular asthma check-ups or emergencies. Without access to reliable, affordable transportation, children of color with asthma may be subject to delayed care, inadequate asthma management, and increased reliance on emergency services, affecting asthma control and overall health outcomes.

In addition to transportation barriers, language and health literacy barriers can also reduce adequate access to healthcare for children from under-resourced communities. In the United States, many families speak languages other than English or have varying levels of [health literacy](#), which is defined as “the degree to which individuals have the ability to find, understand, and use information and services to inform health-related decisions and actions for themselves and others.” If healthcare facilities do not provide healthcare materials and conduct visits in accessible languages or at literacy levels that match those of the patients, then children and families may have difficulty understanding asthma management plans. Language and health literacy barriers can lead to misunderstandings about medication use and treatment regimens, potentially exacerbating asthma symptoms and contributing to avoidable hospitalizations.

Poverty can also [restrict](#) families' ability to afford the cost of health insurance, co-pays, and deductibles, causing many families to forgo healthcare coverage or to delay necessary care. Children without access to quality healthcare coverage face difficulties accessing essential asthma care, including regular check-ups, preventive services, and medication management.

Without adequate insurance, families living in under-resourced communities will have [difficulty](#) paying for asthma medications and for the cost of visits. They may also delay seeking medical attention for their children's asthma, leading to more severe asthma symptoms and increased healthcare costs in emergency situations.

Systemic healthcare barriers that restrict access to asthma care disproportionately affect children of color due to their higher asthma prevalence rates. As a result of systemic barriers, children of color may face delayed asthma diagnosis and treatment, potentially resulting in more severe asthma symptoms. Additionally, limited access to regular check-ups and preventive care can make it challenging to effectively manage a child's asthma, leading to frequent exacerbations and hospitalizations.

Furthermore, children with limited access to primary care may rely on emergency rooms for acute asthma care. Emergency rooms are not ideal for asthma care due to their focus on acute interventions rather than ongoing management. While emergency rooms play a vital role during severe asthma exacerbations, they do not provide the monitoring and health education essential for long-term asthma control. In addition, seeking care at an emergency room often means patients will not have in-depth asthma screening questionnaires or comprehensive history-taking, which can result in healthcare professionals focusing on immediate symptoms rather than delving into the underlying causes or conducting thorough evaluations. This may result in an improper diagnosis. In contrast, [primary care](#) offers more in-depth screening for proper diagnosis and tailored treatment plans that can be adjusted as needed, which can help ensure early intervention, prevention, lower healthcare costs, and improved quality of life for children with asthma.

Ongoing Efforts to Address Inequities in Asthma Rates

Healthcare coverage is important for people with asthma, as insurance can help reduce out-of-pocket costs associated with care and medication. Through the Affordable Care Act (ACA) and advances in Medicaid and the Children's Health Insurance Program (CHIP), children with asthma living in under-resourced communities have increased access to healthcare coverage and can receive the care they need to manage their condition.

Affordable Care Act

The [Affordable Care Act](#) (ACA) is a 2010 comprehensive healthcare reform law that sought to increase the quality and affordability of health insurance and expand access to healthcare for people who lacked insurance in the United States. The ACA accomplished this through Medicaid expansion and the creation of healthcare [marketplaces](#), or exchanges, that allowed many individuals and families who were ineligible for both Medicaid and employer-sponsored insurance to purchase private health insurance plans. Additionally, the ACA improved access to healthcare coverage by eliminating a [pre-existing condition](#) mandate that allowed health

insurance companies to deny coverage to individuals with pre-existing conditions, or health conditions experienced before enrollment in a health insurance plan.

While all of these efforts improved access to healthcare coverage for people living below the federal poverty level (FPL), coverage gains were [greatest](#) in states that adopted the ACA's Medicaid expansion policy. Medicaid [expansion](#) is a policy initiative in the ACA that aims to broaden the eligibility criteria of the Medicaid program to increase access to healthcare coverage for greater numbers of people who face barriers to healthcare. Before expansion, Medicaid primarily provided coverage to specific groups of individuals living below the federal poverty level (FPL), such as pregnant individuals, children, and adults with disabilities. This expansion increased access to healthcare for people across the United States by expanding Medicaid coverage to adults with incomes up to 138% of the FPL and providing states with an enhanced federal matching rate to cover the cost of providing coverage to the newly eligible.

The ACA's expansion of healthcare coverage in 2010 reduced barriers to accessing health insurance for millions of Americans, particularly for those in under-resourced communities. The Urban Institute [estimates](#) that about 2.8 million children age 18 and under gained health insurance with the passage of the ACA, including through Medicaid and CHIP. By extending coverage to a larger population, Medicaid expansion allowed more children to gain healthcare coverage through their parents, ensuring that children living in under-resourced communities had access to health insurance and healthcare services.

As of July 2023, 40 states and Washington, D.C., have [adopted](#) the ACA's Medicaid expansion, and 10 have not (Alabama, Florida, Georgia, Kansas, Mississippi, South Carolina, Tennessee, Texas, Wisconsin, and Wyoming). Across the country, 1.9 million people are in the [coverage gap](#), or live in states that have not adopted Medicaid expansion and have incomes too high to qualify for Medicaid but too low to be eligible for subsidies in the ACA marketplaces. About 62% of [people](#) in the coverage gap are people of color, demonstrating racial and ethnic inequities in access to insurance. Additionally, children without insurance are [disproportionately](#) concentrated in non-expansion states. More than 1 in 3 (35.8%) U.S. children live in non-expansion states, however more than half (53.8%) of children without insurance live in non-expansion states. To ensure that children who have no other pathway to insurance can gain coverage through their parents under Medicaid expansion, the 10 holdout states that do not offer coverage to larger populations should adopt Medicaid expansion. With increased access to healthcare coverage, children with asthma, especially children of color, will be better able to access care needed to effectively manage their condition.

Medicaid and the Children's Health Insurance Program (CHIP)

[Medicaid](#) is a joint federal and state government program in the United States that provides healthcare coverage to eligible individuals and families with limited financial resources, though income thresholds vary both by state and age of the individual seeking care. The [Children's Health Insurance Program](#) (CHIP) is a jointly funded federal and state government program in

the United States that provides health insurance coverage for children in families with incomes above the Medicaid eligibility threshold but who may still face financial challenges accessing private health insurance.

Both Medicaid and CHIP play critical roles in addressing health inequities and ensuring that people living in under-resourced communities, including children of color, have access to the essential healthcare services they need to manage their asthma effectively. Medicaid and CHIP are dominant insurers for asthma care for children, especially for children of color. According to the [National Survey of Children's Health](#), of all children surveyed, 47.6% of those with asthma were enrolled in Medicaid or CHIP, while only 36.1% of those without asthma had Medicaid or CHIP. Furthermore, Black children with asthma (66.2%) were more likely to be covered by Medicaid or CHIP than those without asthma (55.9%). As such, Medicaid and CHIP are essential to ensuring children of color have access to healthcare to effectively treat asthma.

In addition to increasing access to asthma care for children of color, Medicaid and CHIP help improve access to coverage for children with asthma through [technical assistance](#). The federal [Centers for Medicare & Medicaid Services](#) (CMS) administers Medicare and works in partnership with states to administer Medicaid and CHIP. To improve asthma management for both children and adults enrolled in Medicaid and CHIP, CMS offers states access to [quality improvement \(QI\) technical assistance](#) and [resources](#) outlining different approaches to asthma control and state examples of successful intervention.

In 2020, CMS launched the [Improving Asthma Control](#) learning collaborative to assist states in improving health outcomes among children and adults with asthma who are enrolled in Medicaid and CHIP. Features of this collaborative include a series of webinars with presentations from experts in asthma care and a description of approaches that states can use to improve asthma management and health outcomes for pediatric asthma patients. This is intended to help states design and implement their own quality improvement projects. Results from this are forthcoming, but information sharing among states has the potential to encourage innovative approaches to asthma care for children and to reduce inequities between states.

Asthma Guidelines-Based Care

[Guidelines-based care](#) is the practice of providing treatment to patients in a way that incorporates evidence-based recommendations for effective diagnosis, treatment, and management. For asthma care, guidelines are important for establishing a standard of care and increasing the ability of providers to effectively manage asthma symptoms among patients. The National Institutes of Health (NIH) and the National Heart, Lung, and Blood Institute (NHLBI) developed [federal guidelines](#) in 2007, known as the *Expert Panel Report 3 (EPR-3): Guidelines for Diagnosis and Management of Asthma* to standardize care for patients with asthma. In 2020, the NIH and NHLBI released an [updated](#) set of guidelines called the *2020 Focused Updates to the Asthma Management Guidelines: A Report from the National Asthma Education and Prevention Program Experts Panel Working Group* that outlined 19 new recommendations for diagnosing, treating, and managing asthma, 18 of which are relevant to children.

Guidelines for medical management of asthma include assessing asthma severity, regularly monitoring asthma control, prescribing inhaled corticosteroids when appropriate, and using immunotherapy to treat allergic asthma.

Because asthma guidelines-based care is evidence-based, it can improve the ability of healthcare providers to make well-informed, evidence-based decisions about diagnosis, treatment, and long-term management, thus increasing the chances that patients will have better health outcomes.

Asthma guidelines-based care is also linked to improved health outcomes for patients. [Data](#) from the CDC found that primary care providers participating in citywide asthma management programs in accordance with the 2007 federal asthma guidelines observed decreases of up to 27% in asthma related emergency department visits; 35% in asthma-related hospitalizations; and 19% in asthma-related outpatient visits for children living in urban areas.

Asthma guidelines-based care can also improve racial and ethnic inequities in health outcomes. Since providers are encouraged to follow evidence-based guidelines, this increases the chances that all patients, regardless of background, receive the same standard of care. By providing treatments backed by evidence, guidelines-based care can help reduce variations in healthcare practices that can lead to disparate outcomes and reduce the potential for bias in healthcare decision-making. This helps mitigate inequities and ensures that patients receive appropriate care regardless of their demographic characteristics.

Additionally, guidelines often emphasize preventive measures and early intervention, which are essential in addressing health inequities. By identifying and managing conditions at an early stage, guidelines-based care can prevent the development of more severe asthma, especially in populations from under-resourced communities where access to quality healthcare is often limited.

While guidelines-based care is important to treating asthma and potentially reducing inequities in asthma care, not all providers are familiar with the updated guidelines or use them in the same way. For example, a [study](#) conducted in late 2021 found that only 62.5% of providers showed at least some familiarity with the updated 2020 federal asthma guidelines, and only 16.4% were familiar with the recommendation to “use inhaled corticosteroids as needed for children experiencing asthma exacerbations.” More research is needed to determine the extent to which providers adhere to asthma guidelines in treating children.

Additionally, not all states follow these guidelines in exactly the same way. In 2017, the American Lung Association conducted an [analysis](#) to determine the extent to which asthma guidelines-based treatments and services were covered by state Medicaid programs in all 50 states; Washington, D.C.; and Puerto Rico. The American Lung Association found that, while almost all states offered some form of coverage for treatments and services such as medications and home visits, not all states covered the same services. For example, 32 states

did not cover the cost of home visits in their state Medicaid programs, although guidelines-based care emphasizes the importance of home visits in managing asthma for children with chronic asthma. To effectively reduce inequities in asthma care, more states need to follow asthma-based guidelines as closely as possible and tailor their Medicaid programs to cover services that are linked to improved asthma outcomes.

Policy Options

To reduce racial inequities in asthma rates, policymakers, legislators, advocates, and providers must craft policies and asthma management plans that ensure children with asthma have access to the services needed to improve asthma management and address the impact of systemic racism on health. Options include addressing the Medicaid unwinding, improving language and literacy accessibility, increasing asthma education in school-based programs, environmental interventions, improvements in guidelines-based care, and increased research and data collection on racial and ethnic inequities in pediatric asthma exacerbations.

Addressing the Medicaid Unwinding

Addressing the Medicaid unwinding is crucial to ensuring children of color have comprehensive and equitable access to healthcare, which will allow them to more effectively manage their asthma.

At the start of the COVID-19 pandemic, Congress passed the [Families First Coronavirus Response Act \(FFCRA\)](#), which included a mandate that required state Medicaid programs to keep people enrolled in Medicaid through the end of the COVID-19 public health emergency. In order to ensure continued coverage, states received additional federal funding to cover the additional cost of retaining enrollees who otherwise would have been disenrolled if not for the FFCRA's continuous eligibility mandate.

During the pandemic, Medicaid enrollment [increased](#) by over 29% as a result of various factors including the FFCRA's continuous eligibility mandate; an increase in the amount of people eligible for Medicaid due to changes in employment; and the adoption of the ACA's Medicaid expansion in Nebraska (October 2020), Missouri (October 2020), and Oklahoma (July 2021). [Approximately](#) 7.3 million more children gained Medicaid/CHIP coverage during the pandemic, accounting for 31% of the Medicaid enrollment growth.

In preparation for the end of the COVID-19 public health emergency, states were allowed to begin a 12-month "[unwinding](#)" period starting in April 2023 to restart the process of regularly reviewing Medicaid applications and unenrolling people who are no longer eligible. While some people lose eligibility due to changes in income, the Kaiser Family Foundation (KFF) [estimates](#) that 71% of people in states with available data lost coverage for [procedural](#) reasons, such as not responding to a request for more information that may not have arrived in the mail, or filling out a form incorrectly due to language barriers or lack of understanding. This means that, although they have been disenrolled, they may still be eligible.

Not every state collects age-related disenrollment data, but in the 21 states that do, it has been [estimated](#) that at least 2.036 million children have lost coverage by November 2023, accounting for 38% of all disenrollments in states with available data. Large variations exist between states, where child disenrollments [ranged](#) from 16% in Massachusetts to 58% in Texas. KFF [estimates](#) that between 2.2 and 7.2 million children could lose coverage by the end of the unwinding period.

Because Medicaid has been crucial in providing healthcare coverage and increasing access to care for children of color and children in low-income households, the Medicaid unwinding could have detrimental effects on the ability of children of color to effectively access the healthcare coverage and services necessary to effectively manage asthma.

To adequately improve asthma care for children, particularly children of color who face a higher risk of asthma exacerbations, state Medicaid programs must safeguard and strengthen access to Medicaid coverage. States should collaborate with health plans and community organizations to conduct outreach to enrollees about the unwinding and renewal requirements, work with healthcare facilities to connect people to enrollment assistors, and implement policies that prevent procedural disenrollment. By addressing the Medicaid unwinding, states can improve access to healthcare coverage for children of color, which improves access to healthcare services, promotes better health outcomes, and reduces racial and ethnic inequities in health and healthcare among children.

Guidelines-based Care

Providers should adhere to asthma guidelines-based care to ensure effective asthma management amongst children of color with asthma. Evidence-based guidelines provide a standardized framework that healthcare providers can follow to deliver comprehensive and consistent care. By adhering to these guidelines, healthcare professionals can accurately diagnose asthma, tailor treatment plans to individual needs, and monitor patients' progress over time. This approach not only improves the quality of care but also promotes a management strategy that focuses on preventive measures, regular check-ups, and appropriate medication use. These guidelines pave the way for better health outcomes, reduced exacerbations, and improved quality of life for children affected by asthma.

While these guidelines can help adequately address asthma care, more research is needed to determine how closely providers adhere to guidelines-based care, as well as how effective guidelines-based care has been in addressing asthma and reducing exacerbations within communities of color.

Support for Mobile Medical Clinics (MMCs)

Children's Health Fund has a long history of ensuring children living in under-resourced communities have access to healthcare they need to thrive and succeed through the use of mobile medical clinics (MMCs).

CHF pioneered the use of MMCs to bring healthcare directly to the children and families with the least access to care. Today, we support a coalition of 24 national network programs in 15 states; Washington, D.C.; and Puerto Rico that delivers care through a fleet of 50 MMCs, telehealth, community health centers, school clinics, Head Start centers, homeless and domestic violence shelters, and other fixed-site clinics. Through the years, we have helped millions of children receive healthcare services in their communities with more than 100,000 uninsured or underinsured children receiving services, annually. Four out of five children seen by our national network partners are Black or brown. Nearly all live in low-income households.

MMCs can reach children right where they are and help eliminate transportation barriers to healthcare access and provide a wide range of essential healthcare services, including preventive and asthma care. For example, the University of California, Los Angeles (UCLA) [launched](#) an MMC known as the Breathmobile to bring guidelines-based asthma care to children in low-income communities in Long Beach, California. Researchers observing the Breathmobile found that the number of emergency room visits decreased from 39.8% to 21.4%, hospitalizations decreased from 9.2% to 4.1%, and the number of children missing more than five days of school due to asthma decreased from 33.7% to 11.2% after children began receiving services through the asthma-based MMC.

Funding MMCs not only improves access to healthcare services but also promotes early intervention, reducing the burden on emergency rooms and improving overall health outcomes. Investing in MMCs is a necessary step toward achieving equitable and comprehensive healthcare for children growing up in under-resourced communities.

Support for School-Based Programs

Schools play a critical role in affecting the lives of children with asthma because children spend a significant amount of time in them. School nurses are essential to effective asthma management because they can administer asthma medications, help children adhere to management plans, address asthma attacks, and aid in the prevention of exacerbations. Schools, especially those with large populations of children of color, should therefore receive adequate nursing support. Schools should also improve their ventilation strategies to decrease the likelihood of asthma attacks.

As of August 2022, 35 states and Washington, D.C., include [laws and regulations](#) requiring school districts to employ nurses. However, policies relating to the employment of school nurses vary widely between states. Some states, for example, have policies allowing one nurse to work in multiple schools, while others allow one nurse to serve an entire school district. States

requiring school nurses may also set policies about nurse-to-student ratios that allow schools to employ nurses depending on the number of students in the school or district. These nurse-to-student ratios also vary widely between states. For example, Tennessee requires one nurse for every 3,000 students, while Alabama requires one nurse for every 500 students. Among all states that have policies around the employment of school nurses, only Delaware and Vermont require at least one full-time nurse in every school.

Perhaps through their nurses, schools should also educate staff on recognizing and responding to the signs and symptoms of asthma exacerbations, common triggers, and how to respond in an emergency. The more educated the school staff, the easier it will be for children to receive appropriate asthma care.

Another strategy to address asthma exacerbations among children, especially children of color, is improved ventilation in school settings. One of the ways that COVID-19, influenza (the flu), respiratory syncytial virus (RSV), common cold and other viruses [spread](#) is through the inhalation of infectious particles. Because all of these airborne illnesses, as well as common allergens like dust and pollen, may exacerbate asthma symptoms, schools should aim to improve indoor air quality so children with asthma can be as healthy as possible. One way to improve air quality and reduce the spread of airborne viruses and common allergens is by implementing ventilation [strategies](#), including replacing or upgrading HVAC systems, installing filtration systems, and ensuring continuous airflow in school by opening windows and doors.

A [study](#) from the CDC found that incidence of COVID-19 was 39% lower in schools that improved ventilation compared to those that did not. In addition, COVID-19 incidence was 48% lower in schools that combined methods for ventilation such as opening windows and doors and using high efficiency particulate air (HEPA) filters. Because children of color experience asthma exacerbations at higher rates and are more likely to be exposed to air pollutants than white children, they may benefit most from the implementation of ventilation strategies in schools. Schools should receive support from all levels of government to reduce the spread of COVID-19 as the pandemic continues and ensure buildings and classrooms are properly ventilated through use of various strategies.

Ensuring adequate access to nurses, incorporating asthma education into schools, and improving ventilation creates a healthier school environment for children with this chronic disease, resulting in less frequent attacks and missed school days, giving children with asthma a better chance of succeeding academically.

Environmental Interventions

Governments and environmental agencies are also essential to addressing racial and ethnic inequities in asthma rates. Governments, environmental agencies, and community-based organizations should collaborate on strategies to promote environmental justice and improve indoor air quality and housing conditions in communities with high asthma prevalence rates, which will help reduce exposure to asthma triggers for children of color. This can include

initiatives to address mold, pests, allergens, and other environmental factors that contribute to asthma exacerbations.

In addition, governments should strengthen laws and regulations aimed at reducing air pollutants and the impact of climate change, including the Clean Air Act. Any law or regulation that is passed to address climate change must center the voices of children and families from communities who are most impacted by both asthma exacerbations and environmental racism.

Telehealth

Investments in telehealth allow children and families to manage pediatric asthma more effectively. Telehealth enables remote visits with healthcare providers, which reduces the need for frequent in-person visits and makes healthcare more accessible by reducing transportation barriers to care. Telehealth also facilitates monitoring of asthma symptoms and medication adherence through digital health tools and mobile applications, allowing both families and providers to track a child's asthma symptoms and progress over time. Additionally, children with asthma may utilize telehealth at higher rates than children without asthma. One study from the CDC's May 2022 National Health Statistics Report [showed](#) that children under age 18 with asthma (26.3%) utilized telemedicine at higher rates than children without asthma (17.0%) from July 2019 to July 2020.

In addition, telehealth can be especially effective at helping children improve asthma outcomes. One [study](#) found that children who used virtual asthma care were able to reduce routine outpatient visits by 50% and saw more symptom-free days compared to children who only received care through in-person visits. By investing in telehealth, policymakers can help ensure that children with asthma can access services that promote effective asthma management, education, and early intervention without having to worry about transportation.

Research and Data Collection

Governmental agencies, universities, and community based organizations should invest in research efforts that focus on understanding the drivers of racial and ethnic inequities in asthma rates among children. In addition, research is needed to evaluate the effectiveness of healthcare and environmental interventions aimed at addressing asthma inequities. Research provides evidence-based insights to inform policy decisions and can help define strategies that will reduce asthma inequities impacting children of color and improve health outcomes.

Language and Literacy Accessibility

Language and literacy accessibility improves the ability of providers to provide adequate care to children of all racial and ethnic backgrounds. To provide care to patients from wide-ranging backgrounds, healthcare facilities should provide services and programming that incorporate language and literacy access, including interpreter services, materials available in the patient's preferred language, and health education materials that match the literacy levels of the families

they serve. This ensures that families can receive services in their preferred language and can fully understand treatment plans, promoting better health outcomes.

Conclusion

Asthma remains a significant public health challenge, particularly among communities of color in the United States. Children from Black, Hispanic, and Indigenous American backgrounds face disproportionate burdens of asthma, stemming from an interplay of social, environmental, and structural factors. These inequities are exacerbated by factors such as substandard housing, exposure to environmental triggers, limited access to quality healthcare, and systemic barriers. To address these inequities and promote health equity for all children, comprehensive strategies must be implemented at various levels, including policy, healthcare, education, and housing.

Environmental factors play a crucial role in effective asthma management and must be a key focus in intervention efforts. Policies aimed at environmental protection, equitable urban planning, and climate resilience can significantly reduce asthma disparities among vulnerable communities. Schools, where children spend a significant portion of their time, also play a vital role. Improving indoor air quality, reducing environmental triggers, and enhancing asthma management support in schools can lead to better respiratory health and academic outcomes for all students, especially those affected by asthma.

Housing quality is another critical determinant of asthma outcomes, with substandard housing conditions contributing to increased exposure to asthma triggers. Efforts to improve housing conditions and implement smoke-free policies are essential in mitigating asthma disparities. The Clean Air Act has shown promise in reducing pollution exposure among racial and ethnic minority communities, contributing to a reduction in environmental health disparities.

Access to quality healthcare is fundamental to managing chronic conditions like asthma. The Affordable Care Act has expanded health insurance coverage, reducing barriers to care for underserved populations. Medicaid and the Children's Health Insurance Program have been essential sources of coverage for children of color with asthma. Despite these advancements, disparities in uninsured rates persist, underscoring the need for continued efforts to address health inequities and ensure equitable access to care.

Efforts to address asthma inequities require a multifaceted approach that involves collaboration between policymakers, healthcare providers, educators, community organizations, and individuals. By focusing on social drivers of health, promoting environmental protection, and improving healthcare access, progress can be made toward reducing asthma inequities and promoting a healthier future for all children, regardless of their socioeconomic, racial, or ethnic background.

Asthma inequities among children of color in the United States are deeply rooted in and influenced by racial, ethnic, socioeconomic, and structural inequities that impact health outcomes for children of color. To reduce these inequities, stakeholders should develop

comprehensive strategies and policies that promote environmental justice, improve housing quality, increase access to healthcare, and highlight the importance of the school environment. By addressing these factors collaboratively, we can work towards reducing asthma inequities, promoting health equity, and creating a more just and healthier society for all children.

About Children's Health Fund

Children's Health Fund is the nation's foremost nonprofit dedicated to ensuring access to comprehensive healthcare for children growing up in under-resourced communities throughout the United States. For more than 35 years, CHF has mobilized and deployed more than \$230 million to support its initiatives throughout the country. Its national network of partners has provided more than 6 million health visits to children, including almost half a million in 2022, and provided training to over 380 educators in NYC public schools through our Healthy and Ready to Learn program. CHF was founded in 1987 by singer/songwriter Paul Simon, pediatrician and child advocate Dr. Irwin Redlener, and program designer Karen Redlener. childrenshealthfund.org