Environmental racism is a key component of structural racism. Genuine effort to dismantle structural racism must address environmental inequities that have profound effects on the health and wellbeing of entire communities. Nephrologists and other healthcare professionals must join this effort to protect our patients, our communities, and the future.

**ENVIRONMENTAL RACISM AND HEALTH (AND THE KIDNEY)**

Over the past two decades, evidence has accumulated that exposure to fine particulate matter air pollution (PM$_{2.5}$) is associated with increased risk of early death, and increased risk of several noncommunicable diseases including CKD, CKD progression, and ESKD.\(^1\)\(^-\)\(^5\) This increased burden of death and disease attributable to air pollution is disproportionately borne by communities of color and socioeconomically disadvantaged communities.\(^2\)\(^-\)\(^5\)

It has also become abundantly clear that the burden of death and disease attributable to air pollution is disproportionately borne by communities of color and socioeconomically disadvantaged communities.\(^2\)\(^-\)\(^5\) This increased burden of death and disease due to air pollution reflects several synergistic realities experienced by these communities in that they: (1) are exposed to higher levels of air pollution, (2) have reduced access to mitigation strategies, and (3) have less access to health insurance, health care, and social safety nets. The interaction of these realities represents a syndemic that compounds the health effects of the environmental risk exposure incurred by these communities; consequently, they exhibit a higher burden of disease for the same level of exposure to air pollution.\(^2\)

Black and Hispanic communities suffer from significant “pollution disadvantage” as they are exposed to 56%-63% more pollution than is caused by their consumption of goods and services; this disadvantage is caused by consumption of goods and services mainly by non-Hispanic White communities.\(^6\) The disparity between the pollution experienced by Black and Hispanic communities and the pollution caused by their consumption represents “pollution inequity,” which contributes significantly to the higher burden of death and disease experienced by communities of color in the United States, yet remains largely absent from our national conversation and is invisible to most Americans.\(^6\)

What is even more remarkable is that, decades since the enactment of the Clean Air Act, air quality in the Unites States has dramatically improved, but primarily for White communities.\(^7\)

Owing to a legacy of racist housing policies, historical redlining that resulted in intentionally siting polluting industries and building highways so as to direct much of the commercial and industrial trucking traffic (with all its hazardous emissions) through communities of color, and several other factors, racial-ethnic disparities in exposure to high levels of air pollution have persisted even as overall exposure has decreased in the United States.\(^7\)

Neighborhoods with high proportions of Black, Indigenous, and other people of color were exposed to the most polluted air in the 1980s and remain largely in the same position today—providing further evidence that structural racism (and the resulting distribututional environmental risk inequities) is stubbornly hardwired in the American experience. The intractable nature of the distributional inequities reflects the biased ineffectiveness of current policies, which continue to perpetuate the same discriminatory distribution of risk exposures and resources.

Evidence also suggests that nearly all major emission sources contribute to the systemic PM$_{2.5}$ exposure disparity experienced by people of color in the United States.\(^8\) People of color (including Black, Hispanic, and Asian people) are exposed to greater than average PM$_{2.5}$ concentrations from nearly all (12 of 14) major emissions sources (including industrial, construction, vehicular, restaurants, residential, and other sources); Black Americans are exposed to more than average PM$_{2.5}$ pollution from every emission source...
Racial disparities in environmental risks are not only limited to PM$_{2.5}$ pollution but span the gamut of environmental health risks including water pollution, lead, pesticides, radiation, toxic waste, noise, less residential green space, and other sources of environmental hazards.

Anthropogenic climate change is probably the biggest threat to human health in the 21st century, and it will likely pose unimaginable challenges that may eclipse those experienced during the—still raging—COVID-19 global pandemic. Increasing climate risks will also inequitably impact socioeconomically disadvantaged communities and communities of color. If left unaddressed, a global increase of 1.5°C above the pre-industrial average risks catastrophic harm to overall human health and kidney health in particular. Communities of color and socioeconomically disadvantaged communities are the least equipped to mitigate the impact of climate risks and least resourced to adapt to changing local climate conditions; these communities will consequently bear the brunt of the health (and other) risks due to climate change.

The need for environmental justice is not confined to the United States; it extends to all corners of the world. The burden of death and disease attributable to air pollution and other environmental hazards (including CKD) is disproportionately borne by economically disadvantaged countries that are least resourced to handle it. Many nations that are at highest risk of the destructive forces of climate change are low-income and middle-income countries that contributed the least to the problem (these countries collectively emit just 9% of global carbon dioxide emissions).

**IMPLICATIONS FOR ACTION**

Environmental risks (pollution and climate change) are especially deleterious to kidney health. Because these risks often affect entire communities, solely addressing individual risk is woefully insufficient to protect patient and community health. Moreover, because the health and wellbeing of our patients depends on it, nephrologists have a stake in ensuring environmental and climate justice, and they must join the effort to dismantle environmental racism.

This can be operationalized through advocacy at the state, local, national, and global level for environmental policies that address the stubbornly persistent inequitable distribution of environmental hazards to promote health equity at a broader scale. To achieve this, equity-centered environmental policies targeting locally important sources of emissions (PM$_{2.5}$ and other environmental hazards) must be implemented, and prioritizing the environmental health of disadvantaged communities and communities of color must be a core policy objective. The implementation of the Clean Air Act is a vivid exemplar that, with the absence of an approach that is centered on the elimination of distributional inequities, policies aimed at average total reduction in air pollution have in the past 50 years yielded gains to only the most privileged and have left disadvantaged communities behind, and this will likely continue in the future.

Research to improve our understanding of the health impacts of environmental hazards on overall health and kidney function and disease in vulnerable communities should be prioritized. Data from surveillance networks that monitor levels of environmental exposures should, to the greatest extent possible, be integrated with clinical research datasets. These data can help identify communities at risk and guide advocacy and policy making. Strategies to lessen the impact of climate change on disadvantaged communities and communities of color will also be needed. Enhancing our understanding of the interplay of inequities in environmental exposures with individual and other contextual risks in various communities is a major knowledge gap that should also be addressed. To facilitate more accurate and potentially actionable health impact assessments of pollution and climate risks, researchers should routinely report estimates of risk on relative (e.g., hazard ratios) and absolute scales (e.g., burden per 1000 individuals) by race and ethnicity (and other relevant sociodemographic characteristics).

In closing, environmental racism is a major dimension of structural racism, and it remains deeply entrenched in the American reality. It must be eliminated. Health care professionals (including nephrologists) must not sit on the sidelines as spectators of history. We have a moral obligation to act; we must fully participate in shaping the outcome of the fight to dismantle structural racism (including environmental racism) and bend the arc of the moral universe toward justice. If we do not act, we will not only fail our patients and our communities, but we also risk failing the future of our children and the planet.

**DISCLOSURES**

The author has nothing to disclose.

**FUNDING**

None.

**ACKNOWLEDGMENTS**

The contents do not represent the views of the US Department of Veterans Affairs or the United States government.

**REFERENCES**


