Statement on Environmental Health

Student National Medical Association
Health Policy and Legislative Affairs Committee
Statement on Environmental Health

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INTRODUCTION

Established in 1964 by medical school students of the Meharry Medical College, the Student National Medical Association (SNMA) is the nation's oldest and largest organization focused on the needs and concerns of medical students of color. Additionally, the SNMA is dedicated to practices leading to better health care for minority and underrepresented communities. Environmental hazards, both man-made and natural, are linked to poor health. Communities of color are disproportionately affected by the deleterious effects of negative environmental exposures due in part to community stressors and socio-political discrimination. SNMA seeks to provide education and information relating to environmental health and discuss plausible goals aimed at reducing the risk of morbidity and mortality associated with exposure to environmental hazards.

BACKGROUND

A wide variety of conditions and diseases have been strongly linked to environmental factors; among others, there are as follows: allergies and asthma;\(^1,2\) autism;\(^3\) cancers of the breast and other tissues;\(^4,5\) lung disease;\(^6\) lupus;\(^7\) Parkinson’s disease;\(^8\) and reproductive conditions and disorders.\(^9-11\) Communities of color experience a greater disease burden from the above-mentioned conditions and impoverished people around the world experience increased risk of harmful environmental exposure due to lack of sanitation and proximity to pollution.\(^12\) Because of the ways environmental pressures disproportionately affect low-income communities and communities of color, the Environmental Protection Agency (EPA) has established a strategic plan called the Environmental Justice (EJ) 2020 Action Agenda, with goals including “deepen[ing] environmental justice practice within EPA programs to improve the health and environment of overburdened communities” and “work[ing] with partners to expand [the EPA’s] positive impact within overburdened communities.”\(^13\) As this plan acknowledges, addressing environmental hazards and the unjust disparities in exposure to them must undoubtedly play an important role in addressing the needs of medically underserved populations.

SCOPE OF THE PROBLEM

Environmental Agents and Exposure Routes
Exposure to specific chemicals and/or factors in the environment has been linked to adverse health effects. These agents include dioxins, electromagnetic fields (EMFs), and endocrine-disrupting compounds, examples of which are DDT, lead, mercury, mold, ozone, and pesticides. Many of these factors can be found in items such as plastic bottles, metal food cans, herbicides, detergents, flame retardants, food, toys and cosmetics. Exposure routes include, but are not limited to, air and water pollution, as well as proximity to hazardous waste and materials. Studies demonstrate that although these exposure routes are common to all people, minorities and communities of color tend to reside and work in locations where they are more susceptible to elements that can utilize the aforementioned routes as vehicles for transmission of disease.

Environmental Health Disparities

Gilbert Gee, a former instructor of Health Behavior and Health Education at the University of Michigan School of Public Health, noted that environmental conditions play an important role in health outcomes, which is supported by the stress-exposure disease model. According to Gee’s work and that of others, minority neighborhoods tend to have higher rates of mortality, morbidity, and health risk factors when compared to white neighborhoods, even after accounting for economics and other characteristics. Some have noted that one’s zip code and the degree of racial segregation in one’s area of residence can serve as a powerful indicator for predicting a variety of health outcomes. Community resources comprise a whole host of physical and infrastructural resources such as economic and political stability, access to fresh fruits, vegetables and nutritious foods (absent in so-called “food deserts”), and access to healthcare, among others. Minority communities tend to lack the above-mentioned resources, which would otherwise safeguard them from poor health and disease due to neighborhood stressors, such as increased crime rates and pollution. Therefore, a multifaceted approach will be needed to address the environment’s impact on health.

Natural disasters are key examples of the ways in which the environment can impact health and healthcare delivery. In 2005, Hurricane Katrina and its aftermath highlighted the relationship between poverty, racism, and environmental and residential segregation. In 2017, Hurricane Maria devastated Puerto Rico and other parts of the Caribbean, leading to over 3,000 fatalities, as well as drastically reduced access to food and potable water. The loss of clean water in Puerto Rico led to an uptick in illnesses related to unclean water and lack of
sanitation, including vomiting and diarrhea, conjunctivitis, and at least 4 deadly cases of leptospirosis, and the loss of power in some parts of the island for months on end greatly limited the preexisting healthcare infrastructure. As more information is revealed regarding the aftermath of Hurricane Maria, the full extent of this environmental disaster’s effects on the health of the people of Puerto Rico can be better ascertained.

Man-made disasters, including the Flint, MI water crisis, also lay bare the insidious links between health disparities and environmental conditions. After Flint’s city government chose to switch its water supply from Detroit to the Flint River in April 2014 without using anti-corrosives, the lead levels in residents’ water greatly increased, putting the community at risk for numerous health issues. After April 2014, fetal deaths rose by 58% and fertility rates decreased 12%. Notably, the county in which Flint is located, Genesee County, was ranked 82nd out of 83 counties in the state for health outcomes and 81st for health behaviors by the Robert Wood Johnson Foundation. Notably, disproportionate lead exposure in minority communities, which can lead to a variety of central nervous system, reproductive, and developmental disorders, including learning disabilities, has been identified elsewhere, including Chicago, and the EPA lists addressing disparities in childhood lead exposure as one of its current challenges as it seeks to reach the goals of the EJ 2020 Action Agenda.

Nitrogen dioxide (NO₂) is an air pollutant that is publically discharged from trucks and car fuels, as well as power plants. Intake can cause short-term respiratory issues, such as wheezing and coughing, serve as an asthma trigger, and a large Danish cohort study found that long-term residential exposure may increase the risk of heart failure. Researchers at the University of Washington discovered that while the overall number of Americans exposed to NO₂ dropped from 2000 to 2010, Black/African Americans and Hispanics still experienced 37% more exposure to NO₂ than whites in 2010, only a slight decrease from 40% in 2000. Had non-whites inhaled the same levels of NO₂ as Whites during this time frame, around 5000 premature heart disease deaths could have been prevented in 2010. It is important to note that heart disease death rates were higher in 2017 for non-Hispanic Black men and women than for all other racial groups, and almost half of all black adults have some form of cardiovascular disease. Since environmental pollution can have such drastic effects on health, Mohai and Saha’s 2015 review of current environmental justice research demonstrated the need for further
longitudinal research and new, more comprehensive frameworks, in studying the effects of toxic waste disposal in close proximity to communities of color.\textsuperscript{36,37} Although widely believed to be mostly eradicated in the U.S. and much of the developed world, hookworm infections are resurging in the U.S. South, particularly in areas like Lowndes County, Alabama, a fact that garnered the attention of the United Nations in their recent survey of U.S. poverty and human rights.\textsuperscript{14} According to 2017 population estimates, Lowndes County is 72\% black and 31\% of residents live in poverty.\textsuperscript{38} Partially due to the cost-prohibitive nature of laying new sewage systems in such rural areas, around half of Lowndes County’s residents do not have sewage systems.\textsuperscript{9} As residents are forced to “straight pipe” waste material into their yards, this can create a breeding-ground for the \textit{Necator americanus} hookworm and other parasites whose larvae mature in feces.\textsuperscript{9} As a result, a study published in 2017 found gastrointestinal parasites, including hookworm, in more than 30\% of the at-risk subjects included in the study.\textsuperscript{9} While the Alabama Department of Public Health has refuted the article’s claims that hookworm had been identified in samples from the subjects, the issues with sanitation in Lowndes County are an important reminder of how class, race, and environmental factors can interact, leading to dangerous environmental risks and health disparities.\textsuperscript{39}

**STATEMENT OF POSITION AND RECOMMENDATIONS**

The SNMA advocates for the following measures to be considered to reduce the contributions that environmental hazards have on the health and well-being of communities of color:

1. Provide increased funding to local, state, and federal agencies that are tasked with providing surveillance and data on environmental hazards and their impact on morbidity and mortality.
2. Advocate for increased tracking of environmental disparities in health.
3. Ensure that communities are compliant with laws and regulations that are adequate to protect public health or the environment. If adequate standards are not currently established, new environmental quality standards should be developed and enacted.
4. Advocate for environmentally responsible planning and design principles to be utilized in the development, construction, and operation of businesses or residential properties.
These measures should promote environment sustainability through the efficient use and conservation of resources, landscaping and ground maintenance practices.
5. Establish stricter guidelines for and greater penalties relating to residential and housing discrimination.
6. Prevent pollution by minimizing solid waste generation and the potential release of pollutants into the environment through waste reduction, reuse and recycling, treatment and proper disposal.
7. Minimize hazardous waste and toxic materials by instituting and enforcing policies and processes for the safe and efficient use, tracking, storage, and disposal of hazardous and toxic materials.
8. Promote environmental health by implementing environmental education and awareness programs.
9. Promote the efficient use and conservation of energy, water, and other resources.
10. Advocate for and incentivize environmentally responsible purchasing decisions.
REFERENCES


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