

Where We Work, Play, And Live: Health Equity and the Physical Environment

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The physical environment in which we live, work, and play has everything to do with our overall well-being and health. This issue of the *North Carolina Medical Journal* focuses on those physical structures, environmental factors, and access issues that impact North Carolinians' ability to make healthy choices and the policy changes that could improve indicators like access to healthy food, exercise opportunities, and secure and safe housing.

Introduction

Our ability to access quality housing and transportation, healthy food, and clean air and water is determined by social and economic factors. For many—particularly members of historically marginalized and vulnerable populations—low socioeconomic status, compounded by the “remnants of historical discriminatory practices such as redlining in the 1930s” [1], disproportionately impacts access to quality physical and environmental structures. This context plays a role in the choices we make about the things we eat, where we live, and how and where we spend our time, all of which ultimately impact our health.

To improve health factors related to physical environment in North Carolina, we must be committed to working together on a shared vision with the understanding that the health of our state begins in our communities. This means we must also consider root causes of disparities that contribute to barriers to health, and the historical context that determined where our marginalized and vulnerable populations live; the social and economic contexts in which we all work, live, and play; our ability or inability to access physical structures; and how all these circumstances impact our behaviors and decision-making. In addressing these factors, we can aim to achieve health equity for all. “Healthy North Carolina 2030” sets the stage to focus on health equity and the non-medical drivers of health [2].

Context and Background for Physical Environment as a Healthy NC 2030 Indicator

The goal of “Healthy North Carolina 2030” (Healthy NC 2030) is to improve the health of North Carolinians through a shift in culture and mindset to not only consider the roots of disparities that contribute to poor access to healthy places to live, work, and play, but also address them

in an equitable way. Addressing the non-medical drivers, or social determinants, of health, is critical to our state's efforts to improve the health and well-being of all North Carolinians.

The Healthy NC 2030 indicators for the physical environment include access to exercise opportunities, defined as percent of population living within half a mile of a park, a mile of a recreational center in urban areas, or three miles from one in rural areas; limited access to healthy foods, measured as percent of people who are low-income and do not live close to a grocery store; and severe housing problems, specifically percent of households with at least 1 of 4 of the following housing problems: overcrowding, high housing costs, and lack of kitchen and/or plumbing facilities [2]. These indicators are not separate from each other; in fact, they are intricately connected.

Access to Exercise Opportunities

Healthy NC 2030 established a target of increasing access to exercise opportunities from 73% of the population living within half a mile of a park, one mile of a recreation center in an urban area, or three miles of a recreation center in a rural area, to 92% [2]. To increase physical activity and reach this target goal, people must have access to safe places to be physically active. “One of the most important things communities can do to improve the health of their people is to provide opportunities for physical activity,” the report states [2].

Exercise is linked to positive mental, social, and physical outcomes. It's not surprising my mother would say, “go outside and play.” It wasn't because she didn't want me in the house with her, but she explained that outdoor activity is good for the mind, body, and soul. When equitable and accessible space is created for physical activity, people are healthier and have lower risk of chronic conditions, such as obesity.

The Centers for Disease Control and Prevention guidelines for physical activity recommend 150 minutes of physi-

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cal exercise per week for adults and at least 60 minutes every day for children and adolescents to reduce the risk of chronic disease [3].

While working with residents who live in underserved communities, I have witnessed the impact of lack of physical activity on children and adults. Daily performance is reduced, and anxiety and depression are increased. These conditions are exacerbated by the disparities that exist within underserved and rural communities. This is because, systemically, members of these communities experience greater obstacles to health based on their racial or ethnic group, socioeconomic status, geographic location, or other characteristics historically linked to discrimination or exclusion [4].

Communities must come together to eradicate such conditions and modify the areas that lack equitable, accessible, and safe outdoor spaces to promote physical activity. Behaviorally, obesity and leading chronic diseases—such as COPD, diabetes, and heart failure—are caused in part by lack of exercise and poor diet [1].

Limited Access to Healthy Foods

We know that when we eat well, we feel well. Food is the basic building block of our health. The inability to access healthy food has a direct impact on our nutrition, which is a critical factor in the mental and physical health of an individual. Many of us can relate to the feeling of eating a nourishing meal. Unfortunately, there are families and individuals in our state who do not have the same luxury. People in rural or underserved areas are particularly affected by the lack of access to stores where they can purchase nutritious food. “There is no lack of healthy foods,” stated Sam Springs of Blue Ridge Women in Agriculture during her interview for this issue. “We grow more food than we need, by far, but we waste most of it. It’s because, systemically, it’s not accessible enough yet” [5]. Bringing “local food closer to home,” as the slogan goes for Blue Ridge Women in Agriculture, is a critical piece of the puzzle for achieving equitable access to healthy foods.

The Healthy NC 2030 goal is to shrink the percentage of people with limited access to healthy food from 7% to 5% [2]. Change must not only happen at the community level but also on a policy and system level, because there are social factors, especially race, income, and geographic location, that influence access to healthy food.

For many, the proximity to a grocery store is the indicator predicting access to healthy food options. Over 1.6 million North Carolinians live in food deserts, and people of color make up almost half of that population [6]. In this issue, Anna Casey and Nicholas Pylypiw, data scientists with Cape Fear Collective, share their calculations for the present and future state of food insecurity in North Carolina [6]. Food has the power to heal and restore, so naturally the phrase “food as medicine” can be understood in the literal sense for some, but for those without access it’s no more than a fleeting thought.

Severe Housing Problems

Housing is not just about having a place to live; it has a direct correlation with the state of one’s health. In addition to affecting access to healthy food, an individual’s social status impacts the ability to access quality housing. “The simplest way to think about it is: housing is health care,” stated Michelle Kennedy, Greensboro’s Neighborhood Development Director, in her interview for this issue [7]. According to Kennedy, poor housing conditions can contribute to a decline in educational attainment for children and exacerbate chronic respiratory issues like asthma [7].

Compounding the problem is economic instability due to rising housing costs. Families that spend a large portion of their income on home expenses are forced to reduce spending on food, health care, transportation, insurance, day care, or other life necessities. These families and individuals are not only at risk of eviction and homelessness, but also poor health outcomes.

The connection between housing and health has become clearer over the last several years. In North Carolina, 1 in 6 households faces severe housing problems, such as overcrowding, high housing costs, and the lack of kitchen and/or plumbing facilities [2]. Half a million households face severe cost burden [2]. The share of income being spent on housing is at a 30-year high. High rents and low incomes result in high eviction rates, increased homelessness, and people living in substandard housing [8]. As executive director for the Greensboro Housing Coalition, I witness these conditions daily. Our state was in a housing pandemic prior to the coronavirus pandemic. Unhealthy housing perpetuates poor health outcomes, poverty, and barriers to self-sufficiency, such as inability to safely store medication [8].

Healthy NC 2030 set a goal of reversing the trend of severe housing problems and reducing the percentage of households with 1 of 4 such problems from 16.1% to 14.0% [2]. To meet that target, we must get at the causes of housing instability, implement equitable policy and environmental changes, and eradicate disproportionate access to safe and stable housing.

Potential Levers for Change

Health begins in our communities with shared vision, long-term sustainable improvements, and interventions that address root causes of barriers to equitable access to the necessities of life. Additionally, we must tighten and consolidate community networks to close the gaps so that everyone has an opportunity to obtain healthy food, housing, and access to safe places for physical activity. We need a better understanding of the impact of exposure to environmental contaminants, such as the chemicals that have been observed in our water and within a wide range of products utilized by North Carolinians.

Levers for change recommended by Healthy NC 2030 include increasing the number of community parks across

the state, expanding public transit options, supporting school-based meal programs and tax incentives for grocery stores and farmers markets that move into underserved areas, increasing living wage employment opportunities, and more [2].

Overview of This Issue

This issue of the *North Carolina Medical Journal* shines a spotlight on the non-medical drivers of health, with a focus on the physical environment. Each article includes evidence-based strategies for meeting the target outcomes of Healthy NC 2030. They highlight promising opportunities for communities to engage in promoting health equity through implementation of equitable changes to the physical environment.

Dr. Emmanuel Obeng-Gyasi, an expert in environmental health and epidemiology at NC A&T University, shares an analysis of a family of human-made chemicals known as per- and polyfluoroalkyl substances (PFAS), which are often called “forever chemicals.” They are widely used and persistent in our environment and water, and are associated with increased risk for cancer and other diseases [9].

Dr. Stephen Sills, director of the Center for Housing and Community Studies at UNC-Greensboro, illustrates the impact of severe housing problems and eviction, which have become prevalent across our state. As he explains, poor quality of housing and high rates of eviction combined with low social and economic status directly influence health outcomes [8].

Sel Mpang, community engagement associate with the Greensboro Housing Coalition and a member of the Cottage Grove community, writes about her personal experience dealing with severe housing problems as a member of the Montagnard refugee community in a piece coauthored with Patricia Macfoy, executive director of New Hope Community Development Group [10]. The authors share their experiences of working and living in an underserved community.

Lincoln R. Larson and J. Aaron Hipp of the NCSU Department of Parks, Recreation, and Tourism Management give insight regarding parks and greenspace and how access to safe areas to play improves and increases physical activity [11]. Greenspaces also offer opportunities for people to gather and interact, contributing to positive mental health.

Lori Carter-Edwards, PhD, of Kaiser Permanente and Monica Taylor of Duke Medicine encourage us to listen to the needs of the community and bridge the urban-rural divide in North Carolina [12]. They argue that the first thing to do is assess the community organizational landscape across the state to understand the assets available within rural areas.

Consultant Miriam Tardif-Doughlin, Chris Collins of The Duke Endowment, and Emily Roland and LaPonda Edmondson of the North Carolina Healthcare Foundation propose the Collective Impact Model as the foundation for multisector community coalitions to address environmental

and policy barriers for improved health [1].

Ehren Dohler, a doctoral student at the UNC School of Social Work, and Katharine Ball Ricks and Dr. Seth A Berkowitz of the Cecil G. Sheps Center for Health Services Research discuss the housing-focused aims of the state’s Healthy Opportunities Pilots and how the results of their evaluation will affect future health policy and practice [13]. The Healthy Opportunities Pilots will allow the use of Medicaid funding for the direct payment of services related to housing and other health-related social needs.

NCMJ Managing Editor Kaitlin Ugolik Phillips sits down for an enlightening interview with Greensboro Neighborhood and Development Director Michelle Kennedy on the impact of severe housing problems and how they contribute to poor health outcomes ranging from asthma to heart disease [7]. My interview with Sam Springs of Blue Ridge Women in Agriculture sheds light on a community program that brings local food closer to home in Watauga County [5], and Jamilla Pinder, assistant director for Healthy Communities at Cone Health, writes about how her community came together to improve food access for underserved people in Greensboro during the height of COVID-19 [14]. Anna Casey and Nicholas Pylypiw of Cape Fear Collective show how access to healthy food is a foundational social determinant of health in their Running the Numbers column [6], and the Focus on Philanthropy column explains how the John Rex Endowment helped fund improvements to the physical environment in Wake County municipalities [15].

We must ensure health is attainable for all regardless of demographic background. An affordable, high-quality place to live; safe neighborhoods and quality green spaces; access to affordable, nutritious food to eat; a job that pays a living wage; access to comprehensive health care; and access to stores to purchase goods all play a critical role in the overall health and well-being of our families. Our physical environment encompasses all these factors. NCMJ

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