

Using a Collective Impact Model in Communities to Improve the Physical Environment

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The physical environment—the places where individuals live, work, and play—can cause or prevent serious health conditions including chronic diseases and obesity. In North Carolina, the Collective Impact Model serves as the foundation on which multisector community coalitions can address environmental and policy barriers for improved health.

Physical Activity and its Impact on Health in North Carolina

The physical environment shapes movement, which is beneficial for health on multiple levels. The Centers for Disease Control and Prevention (CDC) recommends 150 minutes of physical exercise per week for adults to reduce risk of chronic conditions including Type 2 diabetes and heart disease [1]. Exercise can reduce symptoms of anxiety and depression, as well as certain cancers [1]. Not only is there considerable morbidity to be avoided with regular exercise, it also improves daily performance through enhancing attention at work, school, and home [2]. All sectors of the community stand to benefit from more physically active populations.

Behaviorally, obesity and leading chronic diseases (such as COPD, diabetes, and heart failure) are caused in part by poor diet and lack of exercise [3, 4]. Obesity costs the US health care system \$147 billion per year [5]; in North Carolina, the cost is more than \$4.5 billion, 40% of which is paid for by Medicare and Medicaid [6]. North Carolina's adult obesity levels have increased by more than 20 percentage points since 1990, to 33.6% [7]. Currently, one-third and one-tenth of North Carolinians live with hypertension and diabetes, respectively [7]. Among children, for whom chronic disease may not yet have developed, obesity is rising and not evenly distributed across populations. Nationally, almost one-quarter of Black youth aged 10–17 are obese, whereas the overall percentage of youth of that age with obesity is 16.2% [8]. Such stark differences in obesity between populations create a need to not only understand but also address the role of unhealthy physical environments [9] (Figure 1).

Healthy People, Healthy Carolinas Coalitions Improve the Environment for Physical Activity

The Duke Endowment's Healthy People Healthy Carolinas (HPHC) initiative brings communities together to modify

the physical environment and promote more physical activity. HPHC uses the Collective Impact Model, first described in 2011 in the *Stanford Social Innovation Review*, as a way for cross-sector partners to solve complex social problems. The key components include a common agenda, shared measurement, mutually reinforcing activities, continuous communication, and a strong backbone organization [10]. In 2015, The Duke Endowment began funding backbone organizations (frequently, local hospitals or health departments) to provide full-time coordinators who advance the work of local HPHC coalitions in concert with existing community health assessments and community health improvement plans. Coalitions are also part of an Endowment-funded learning community that supports implementation through coaching and sharing best practices.

The HPHC coalitions are focused on increasing physical activity and nutrition opportunities where people live, learn, work, play, and pray to reduce chronic disease and obesity. Together, 10 multisector HPHC coalitions in North Carolina focus on adopting evidence-based and evidence-informed interventions, policies, systems, and environmental changes. To date, North Carolina HPHC coalitions have implemented 86 evidence-informed programs that include significant policy, environmental, and system changes within their local communities [11].

Using Collective Impact to Improve the Physical Environment

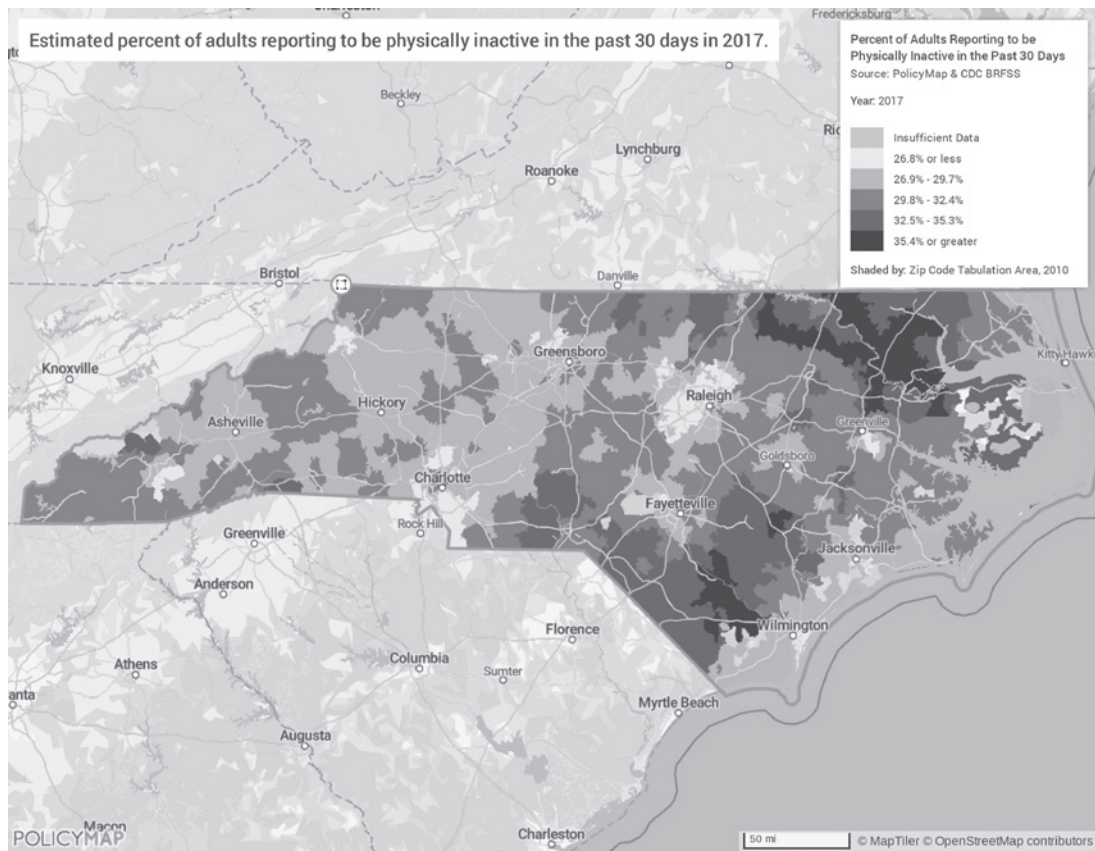
The availability of outdoor space that is easy and enjoyable to use promotes physical activity. Streets that are well connected and aesthetically appealing is associated with walking to get to work or walking for enjoyment [12]. Accessible streets are only part of an environment built for physical activity. The proximity of parks to residents correlates with their use for physical activity [13], and when park trails are paved, they become still more conducive to physical activity [14]. The vital task of creating and maintain-

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FIGURE 1.
Estimated Percent of Adults Reporting to be Physically Inactive in the Past 30 Days in 2017



Source. PolicyMap & Centers for Disease Control and Prevention (CDC) Behavioral Risk Factor Surveillance System (BRFSS) [9].

ing optimal space for physical activity requires concerted investment.

Even a well-connected trail may not be used if limited maintenance creates risks such as tripping hazards. To reach their common agenda, several coalitions use an established framework of best practices for engaging local leadership in policies that promote local health. One HPHC coalition in Henderson County leveraged existing recreation advisory board meetings to gain the county commissioners' financial commitment to repave a local trail that was becoming increasingly unusable. In this case, some coalition members knew how the local built environment was limiting physical activity, while others knew how to frame problems to motivate local leadership. Instead of pursuing solutions independently, partners across multiple sectors came together and were mobilized to take action toward a common agenda, a key element of collective impact.

Collective Impact Provides an Opportunity to Reduce Disparities

Minority populations and those of lower socioeconomic status face disproportionate barriers to accessing environments that encourage physical activity. These barriers are often linked to the remnants of historical discriminatory

practices, such as redlining in the 1930s and city planning that led to highways separating the poor from more affluent neighborhoods.

Reducing disparities in health requires uplifting the voices of those in the community most impacted. An HPHC coalition serving Robeson County prides itself on a membership that represents the racial diversity of the community, which is 42% American Indian and 30% White [15]. This coalition united behind a common agenda to achieve a local environment that protects against chronic disease and obesity. The coalition uses a measurement system shared across HPHC coalitions, in which success is defined in part as the number of evidence-informed changes to the local environment. In keeping with this metric of success, the coalition identified a community with great need. As the coordinator put it, "predominately Hispanic and American Indian, this community has no parks, sidewalks, greenways, or other infrastructure to provide safe places to exercise and encourage physical activity" (personal communication, HPHC facilitator Cathy Hunt, July 19, 2021). Critically, the coalition members knew the local parks and recreation department was equipped to fund and execute a change in the built environment in partnership with the public school district. The coalition proposed creating a soccer pitch with a walking trail around it.

Once built, a shared-use agreement gave non-school-aged community members access after school hours and on the weekends.

Working With Schools to Increase Access to Exercise Opportunities

Lowering the risk of obesity in childhood is important given the consequences for later chronic disease and quality of life [16]. Although there are several potential explanations for growing obesity rates in children, a decline in daily physical activity through practices like walking to school is one proposed cause [17]. Policy makers look to schools to improve the health of children at risk of obesity. A review of childhood obesity prevention policies in states across the country found the most commonly introduced topic areas were nutrition standards and physical activity in schools [18].

Physical activity for students fits naturally as a common agenda for HPHC coalitions and local schools. Getting students moving is good not only for their physical health, but also for their ability to pay attention in class. One HPHC coalition based in the Rowan County Public Health Department worked with the school district and the local United Way to install tracks at 16 public schools and reserve 15 minutes of instructional time daily for students to walk on the tracks. This evidence-based initiative is called the Daily Mile. The coalition established a shared measurement system, regularly reporting total student miles walked to partners at meetings. The continuous communication and common agenda attracted dedicated support for the Daily Mile. One principal sought out the program for his middle school. The coalition coordinator described the principal as “passionate about promoting health for students who previously were not allowed outside for any sort of recess or break” (personal communication, Rowan County Health Director Alyssa Harris, December 31, 2019).

Creating a Healthier Workplace

Reshaping settings where people spend much of their time can substantially improve health outcomes. A study of 5000 adults in the United States found that small increases in moderate to vigorous physical activity had large impacts on risk of obesity [19]. Seeing coworkers engage in physical activity and believing their employer values their health are associated with higher physical activity levels among employees [20]. Not only physical activity, but weight and BMI can be improved effectively with workplace interventions [21].

Workplace policies can lower barriers hindering employees from increasing physical activity levels. One HPHC coalition in Wilkes County established a common agenda with workplace partners who agreed on the importance of surveying employee needs and then establishing an action plan for investment in workplace wellness. This prompted the leadership of one town to hire a wellness nurse to serve multiple

offices. The coalition coordinator later described this new position as starting “a plethora of wellness programming including a steps and water challenge, [and] yoga classes with Public Works employees and the Police Department” (personal communication, Jenn Wages, program director, The Health Foundation, Inc, June 30, 2019). Reflecting mutual reinforcement, other agencies and companies in the community subsequently worked with their staff to adopt evidence-based workplace wellness initiatives.

HPHC and Collective Impact: A Model That Works

The past six years of HPHC funding have made clear the pivotal role of aligning community voices to work across sectors. Initially, many HPHC coalitions worked independently, which presented a problem for busy local leaders asked to participate in multiple coalitions. Coalition members have full-time jobs and need assistance operationalizing their cross-sector initiatives. Endowment funding for backbone organizations created a more sustainable way to leverage the insightful contributions of leaders across the community. Effective HPHC coalitions align multiple coalitions and work groups behind a common agenda, such as community health improvement plans. This use of the Collective Impact Model ultimately empowers communities to improve the local physical environment, encouraging healthy behaviors for years to come.

The North Carolina Healthcare Foundation and its partners at Population Health Improvement Partners can provide additional information about the Collective Impact Model and access to technical assistance. Please refer to the North Carolina Healthcare Foundation’s web page (<https://www.ncha.org/healthy-people-healthy-carolinas/>) to learn more about each North Carolina coalition and the HPHC initiative. NCMJ

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