

## UNIVERSITY PARTNERSHIP RESEARCH BRIEF

### “Mapping Behavioral and Social Determinants of Health to Inform Louisiana Medicaid Delivery”



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### WHAT IS KNOWN ABOUT THE TOPIC?

*The Medicaid population often faces significant life challenges such as poverty, limited health literacy, and exposure to crime. These factors make it difficult to access timely, high-quality health care. These challenges were intensified by the disruptions caused by the COVID-19 pandemic. Yet many non-communicable chronic diseases are preventable and manageable through healthy lifestyle interventions that address key behavioral factors and the broader social determinants of health.*

### WHAT DID THIS PROJECT DO?

This project aimed to identify and characterize disparities in important behavioral (Aim 1) and social determinants of health (Aim 2) among children in Louisiana’s disadvantaged communities, the majority of whom are Medicaid beneficiaries.

### INTRODUCTION

The Louisiana Department of Health (LDH) and other state agencies have emphasized the urgent need to address persistent health disparities. The Louisiana Medicaid Program (LMP) currently provides coverage to approximately 1.67 million Louisianans (about 36.5% of the state’s population) including individuals who are categorically and medically needy as well as other eligible groups. Many non-communicable chronic diseases can be effectively prevented and managed through healthy lifestyle interventions that target key behavioral factors and underlying social determinants of health. For optimal well-being, children are encouraged to meet the 24-hour movement guidelines (e.g.,  $\geq 60$  minutes of moderate-to-vigorous physical activity per day,  $\leq 2$  hours of recreation (continued next page)

#### How Can Medicaid use this Information?

*The findings from this project can inform the efficient allocation and delivery of resources within the Louisiana Medicaid Program.*

(and 9–11 hours of sleep per day) as well as adhere to the U.S. Dietary Guidelines for Americans. Children’s health outcomes are further shaped by social determinants of health (SDOH), including social and economic conditions, socioeconomic status, food insecurity, poverty, and exposure to chronic stress. This project aimed to identify and characterize disparities in important behavioral (Aim 1) and social determinants of health (Aim 2) among children in Louisiana’s disadvantaged communities, the majority of whom are Medicaid beneficiaries.

## PROJECT DESIGN AND RESULTS

**Project Design:** We used a developmental research design to identify cross-sectional differences in health determinants across communities. We gathered first hand survey data from a representative sample and obtained secondary datasets from the Louisiana Healthcare Connections (LHCC) and other sources (e.g., CDC, University of Wisconsin). Data analyses included descriptive, Inferential, and GIS.

### Results:

**B.1.** Of the 7246 survey responses gathered, 1062 responses were from parent proxies of children ages 5-11 (55.4% males, 41.6%; 46.0% Black, 42.3% White). Of the sample:

- 17.8% described their child’s health as “fair” or “poor”;
- 43.3% reported having pending appointments or procedures for physical health, mental health, or dental care;
- 8.6% indicated needing help arranging a health service.
- 26% of the children visited the ER at least once in the past six months
- 8.4% stayed overnight in a hospital at least once in the past six months.

Table 1 outlines the status of SDOHs including economic stability, food insecurity, education access, healthcare access, neighborhood and built environment, social and community context. *(continued next page)*

**Table 1.** Social Determinants of Health in Medicaid Families with Young Children (5-11 years old)

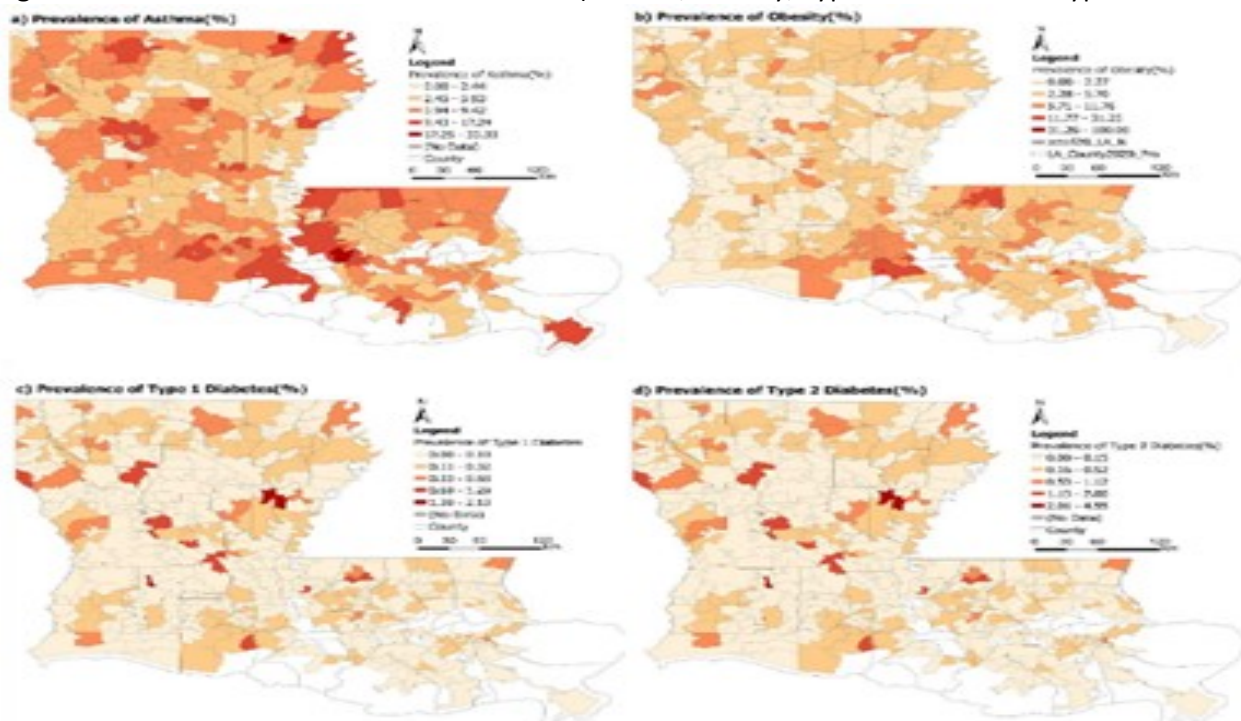
<b>Household Income:</b> 65.3% < \$50,000, 24.1% > \$50,000, 10.6% prefer not to say
<b>Marital Status:</b> 54.3% single or separated/divorced/widowed, 6.8% prefer not to say
<b>Food Availability:</b> 38.6% used supplemental food sources
<b>Utility:</b> 20.9% received warning to shut off utility at home from failure to pay
<b>Childcare Access:</b> 17.7% with difficulty getting childcare
<b>Housing Condition:</b> 12.5% with concerns about housing condition/quality
<b>Housing Status:</b> 44.4% renting, 41.8% own a house, 13.8% other and prefer not to say
<b>Living Stability:</b> 20% moved at least once in past 12mo (5.5% 2 times or more)
<b>Food Insecurity:</b> 19.6% ate less than should; 13.2% were hungry for not having enough money for food; 16.1% received ≥1 free bag of groceries from food pantry, food bank, or church in past 12mo.

**B.2.** GIS identified significant disparities of SDOH (area deprivation), obesogenic environments (walkability, food access, park access), and diseases (asthma, obesity, diabetes) in Louisiana.

Our multilevel modeling analysis identified some significant findings:

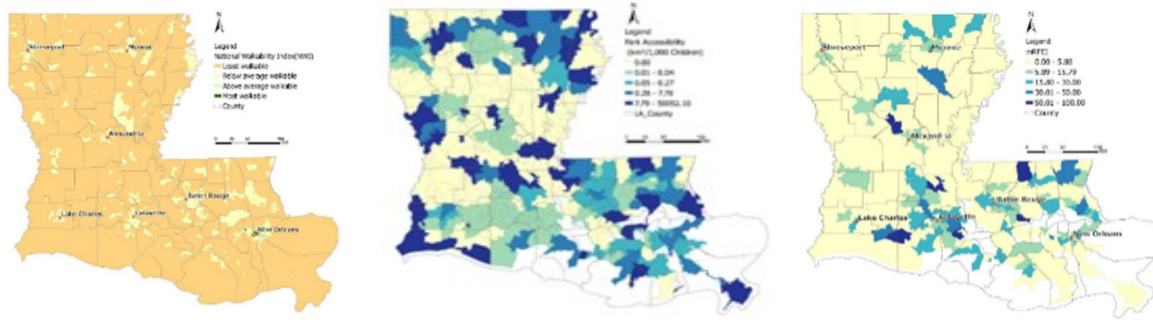
- Higher racial heterogeneity and less favorable food environments were associated with increased obesity risk, particularly among older children.
- Black Americans consistently exhibited the highest predicted probability of obesity, while White Americans had the lowest, suggesting persistent racial disparities in obesity risk.
- For ADI, all racial groups showed a negative association between neighborhood deprivation and obesity risk, indicating that disadvantaged neighborhoods are generally associated with lower obesity rates. However, the slope was steepest for Black children, implying greater sensitivity to neighborhood deprivation.
- Greater neighborhood heterogeneity was weakly associated with reduced obesity probability for Black children, whereas for White and other race children, increasing heterogeneity corresponds to higher obesity risk. Walkability (NWI) also demonstrates a race-specific pattern. (*continued next page.*)

**Figure 2.** Prevalence rates of chronic conditions (Asthma, Obesity, Type 1 Diabetes and Type 2 Diabetes)



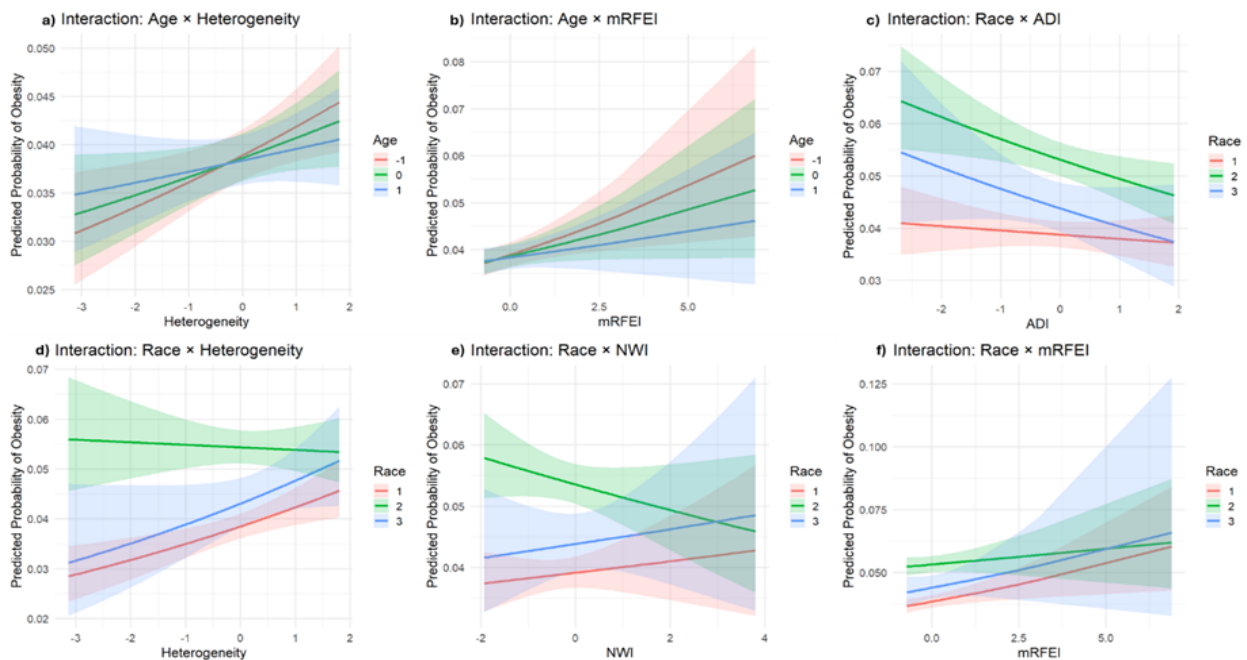
**Figure 3.8** Prevalence rates (%) of (a) asthma, (b) obesity, (c) type 1 diabetes, and (d) type 2 diabetes in Louisiana (n=253,553)<sup>2</sup>

Figure 5. Walkability Index (NWI), Park Accessibility and mRFEI distribution.



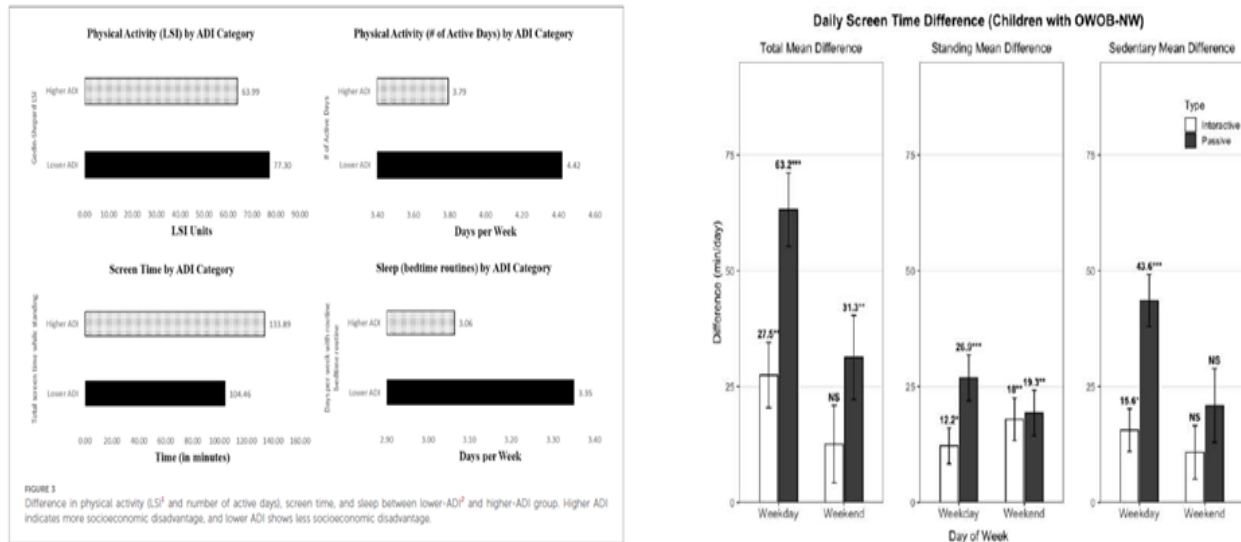
- (cont.) For Black children, higher walkability was associated with a decrease in obesity probability. In contrast, the relationship was weak or slightly positive for White and others.
- Modified food environment index (mRFEI) showed a stronger association with obesity risk among White and other race groups, with the predicted probability of obesity rising more sharply as food environments become healthier.

Figure 3. Relationship between Obesogenic Environments and Demographics



B.3. The project results found that children with overweight or obesity (OWOB) showed significantly greater amount of screen time than those with normal weight. These differences were observed for both passive and interactive screen behaviors on weekdays and weekend days. SDOH indicators (e.g., ADI, household chaos, food insecurity) significantly correlated with health behaviors such as physical activity, diet, screen time, and sleep (canonical  $r = 0.27$ ).

**Figure 6.** Comparison of Physical Activity and Daily Screen Time



## Conclusions and Health Policy Implications for Medicaid

These findings highlight the need to identify and characterize influential behavioral risk factors and underlying SDOH within the Medicaid populations, due to their significant impact on health and chronic diseases. Medicaid children (and their families), especially those with overweight or obesity weight status, living in socio-economically deprived communities, and are racial minorities, face elevated risk for chronic diseases such as obesity, asthma, and diabetes. The findings from this project have identified hot and cold spots for the disparities of health and health determinants. The findings may be used to inform the efficient allocation and delivery of resources within the Louisiana Medicaid Program.

## Scientific Articles Generated from the LDH PUPP-funded Project

Zeng, Y., Chen, S., Staiano, A., & Wang, F. (2024). Disparities in obesogenic built environment for children: A pilot study in east Baton Rouge parish, Louisiana. In B. Bereitschaft (Eds). *Equity in the Urban Built Environment* (pp. 137-152). Routledge.

Son, D., Nie, Y., Tan, Q., Staiano, A.E., Wang, F., Hu, G., Gordon, S., Murray, P., Luo, C., Zeng, Y., Underwood, R.A., & Chen, S. (2026). Health behaviors and social determinants of health in children from under-resourced communities: Does weight status play a role? *Frontiers in Sports & Active Living*, 7:1695539. <https://doi.org/10.3389/fspor.2025.1695539>.

Son, P., Nie, Y., Tan, Q., Yang, P., Murray, P., Staiano, A.E., Wang, F., Hu, G., Gordon, S., & Chen, S. (in press). Socioeconomically Disadvantaged Children's Screen Time Behaviors by Weight Status. *PLOS One*.

Zeng, Y., Wang, F., Chen, S. (In Press). Disparities of children's obesogenic environments in Louisiana. *International Journal of Health Geographics*.

Zeng, Y., Chen, S., Staiano, A.E., Gang, H., Gordon, S., & Wang, F. (under review). Obesogenic environment and obesity risk in Medicaid children of Louisiana: A multilevel modeling approach. *Health & Place*.