

From Data to Action: Prioritizing Health Literacy Interventions in Illinois Counties

Cheng-Chia (Brian) Chen, PhD, MS, MSAS¹ & Godson Davies, MPH Candidate¹

¹University of Illinois Springfield

INTRODUCTION

- The global burden of health disparity refers to the unjust and avoidable differences in health outcomes experienced by different populations. For instance, minorities often have higher rates of chronic diseases like diabetes and heart disease compared to white populations in the US, even at similar socioeconomic levels. Significant health disparities plague Illinois, with residents in certain areas experiencing a disproportionate burden of chronic diseases like diabetes. These disparities are closely tied to social and economic factors like poverty, education levels, and access to healthy food options.
- A staggering 1.3 million adults in Illinois are unaware of their diabetes status. This lack of awareness can lead to delayed diagnosis and complications, highlighting the urgent need to address these disparities. This study employs the power of geospatial analyses and bivariate choropleth mapping to explore intricate relationship between diabetes prevalence and the Social Vulnerability Index (SVI) in Illinois counties.

LEARNING OBJECTIVES

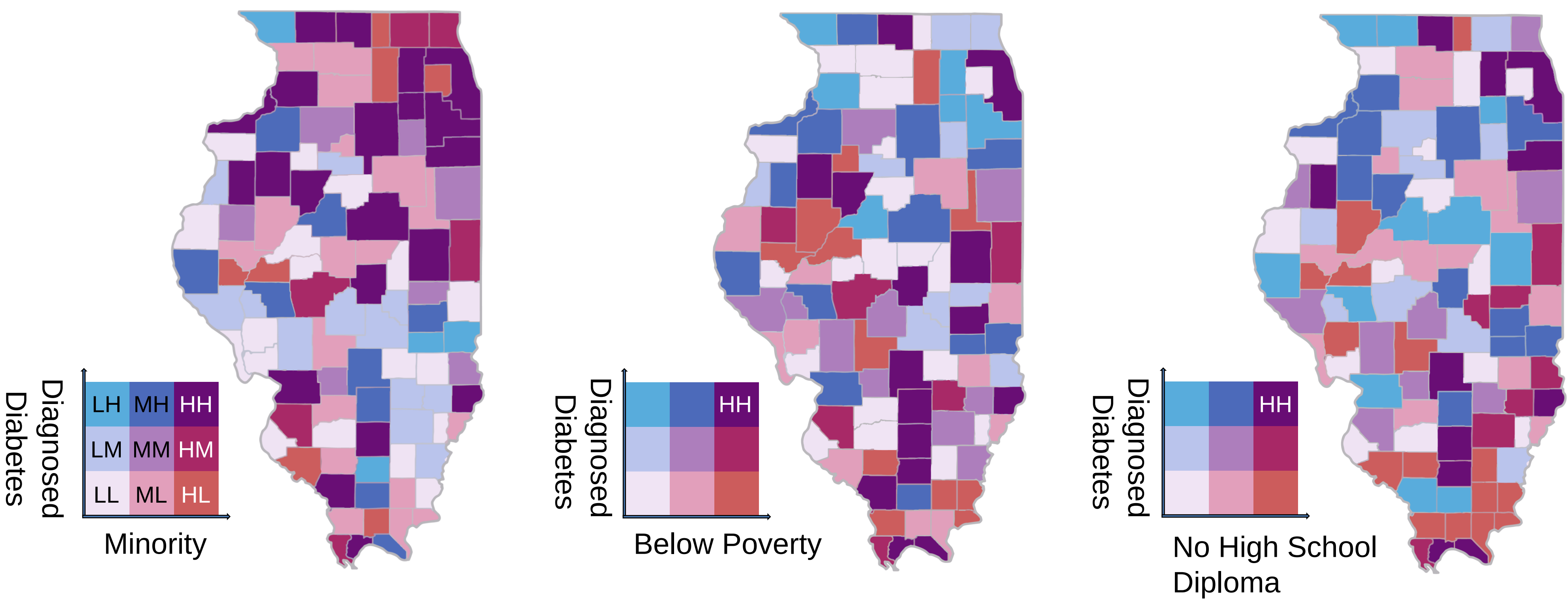
- Unmasking Inequalities:** This presentation unveils the intricate relationship between disparities of diabetes prevalence and social determinants of health in Illinois. You can gain valuable insights into the root causes of health disparities.
- Targeted Interventions:** Learn how geospatial analyses and bivariate choropleth mapping can identify counties requiring focused interventions. This knowledge empowers you to advocate for resources and programs that address the specific needs of vulnerable communities.
- Data Visualization for Change:** Discover the power of data visualization in transforming public health surveillance data into actionable insights. Gain a deeper understanding of how this approach can aid in crafting evidence-based strategies for improving health outcomes.
- Empowering Your Community:** By understanding the dynamics of health disparities, you gain the knowledge and tools to advocate for change in your own community. This knowledge can empower you to work towards reducing health inequalities and creating a healthier future for all.

METHOD

- Utilizing data from the 2018 United States Diabetes Surveillance System (USDSS), sourced from the CDC's Behavioral Risk Factor Surveillance System (BRFSS) and the U.S. Census Bureau, we modeled county-level estimates of diagnosed diabetes alongside key SVI indicators.
- Social Vulnerability Index (SVI incorporates factors like education attainment, employment rates, population density, housing quality, and racial/ethnic composition, providing a detailed picture of social determinants of health within each county.
- Bivariate choropleth maps categorize counties into tertiles (thirds) based on their diabetes prevalence and SVI scores. These visually compelling maps allow for a clear and immediate understanding of the interplay between these two critical factors. Tertiles categorized diabetes cases into three groups: 'L' (Lowest), 'M' (Middle), and 'H' (Highest), representing varying degrees of prevalence and social vulnerability.

RESULT

- Based on our geospatial analyses, three bivariate choropleth maps below were developed based on indicators of the diagnosed diabetes and three selected SVI indicators (i.e., the proportions of minority, no high school diploma, and below poverty).



- By comparing three bivariate mappings with an examination of county-level diabetes rates and selected SVI indicators in Illinois, the following results highlight the 5 counties positioned in the group for highest diabetes prevalence along with the most severe condition of each SVI indicator:

County in Illinois	Bivariate Tertiles	Diagnosed Diabetes	% of Minority	% of No High School Diploma	% of Below Poverty
Cook County	HH	9.0%	57.5%	13.3%	14.9%
Pulaski County	HH	8.1%	36.4%	14.3%	18.7%
Lawrence County	HH	8.1%	15.3%	15.3%	14.2%
Jefferson County	HH	8.0%	14.4%	14.0%	17.1%
Winnebago County	HH	8.6%	30.4%	12.3%	15.4%

DISCUSSION AND CONCLUSION

- Bivariate choropleth mapping provides more than just numbers; it reveals nuanced insights into the intricate interplay of social determinants and health outcomes. These maps highlight the distinct county profiles, allowing for targeted interventions that address the specific challenges faced by each community.
- To address these disparities, a multifaceted approach is needed. This could involve increasing access to quality healthcare services, promoting educational and economic opportunities to build stronger community resilience, and implementing culturally sensitive social support programs that address the unique needs of each population. Such tailored interventions can have a significant impact on improving public health outcomes in these high-burden areas.
- These findings underscore the necessity for data-driven decision-making. By understanding the dynamics of health disparities and the role of social determinants, policymakers, healthcare professionals, and researchers can craft evidence-based strategies to address health inequities throughout Illinois.

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