



Exploring Spatial Distribution of Risk Factors for Teen Pregnancy

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Background

Chicago's teen birth rate has steadily declined over the past decade, hitting its lowest recorded number in 2014 (32 births per 1000 females ages 15 to 19). However, Chicago still trails behind the national average of 24.2 births per 1000 females.¹ Over the past few years, the city of Chicago has launched several sexual education campaigns and resources aimed primarily at teens, such as "Chicago Wears Condoms," which focuses on informing teens about STI testing and condom distribution sites. Yet, Chicago's teen birth rate remains well above the national average.

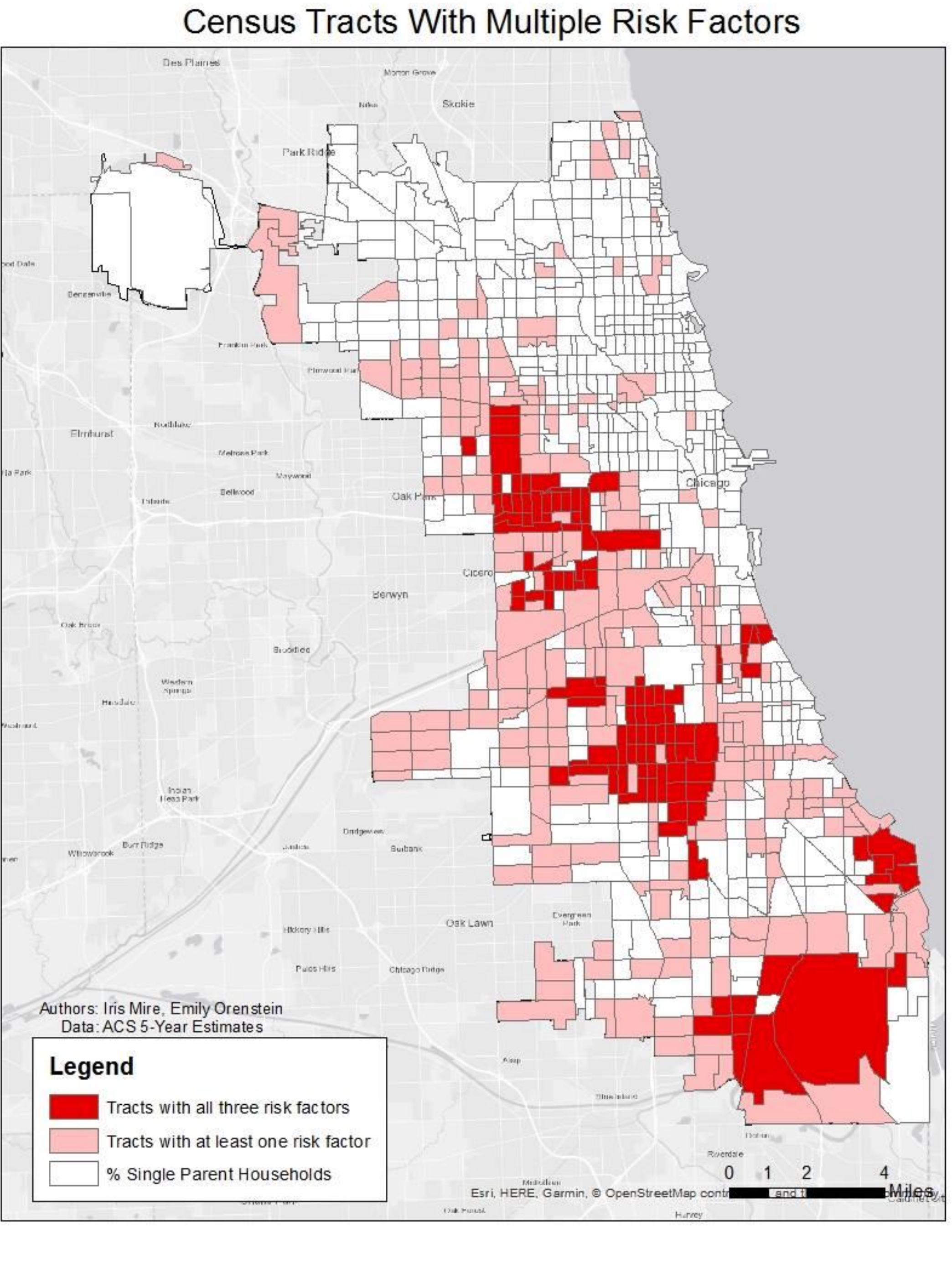
Specific Aims

Our study seeks to identify areas where teens may be at higher risk for teen pregnancy due to social and economic influences. Our study focuses on identifying areas in Chicago where one or more of those factors overlap to create areas where a combination of factors may lead to increased risk of teen pregnancy. Identifying these hotspots will allow education efforts and resources to be targeted at the communities most in need. First, we identified several factors that have been shown to be correlated with high teen pregnancy rates, including high school graduation rates,² a high percentage of residents living below the poverty line,³ and percentage of single-parent households by census tract.⁴

Methods

Using data from the City of Chicago Data Portal and Social Explorer, we used 2016 estimates of education level, poverty level, and family structure, as well as county boundaries and 2010 Census tracts. We mapped each factor using natural-break jenks optimization to determine our classes. We identified the tracts that fell into the top two breaks for each factor as "high risk," and isolated tracts that qualified as high-risk on all three factors as our highest-priority locations.

Results



Conclusion

We observed approximately three hotspots where all three factors coincided: the southeasternmost part of the Far Southeast Side by Pullman, the Southwest Side around Englewood and West Englewood, and the West Side around Austin. Larger patterns of at least two coinciding factors are near neighbors to these hotspots. We suggest that educational campaigns should prioritize these neighborhoods when determining resource allocation and outreach. While all teens should be given information and resources to prevent unwanted pregnancy, teens in the highlighted areas may be especially at risk and should be the focus of any federally or state-funded efforts.

Teen pregnancies not only impact the teens, their children, and their immediate families, but also societal structures as a whole.⁵ Teens who become pregnant are more likely to live below the poverty line as adults.⁶ It has also been shown that acceptance of teen pregnancy can lead to positive reinforcement of those ideas and perpetuation of social norms that can contribute to cycles of early motherhood and poverty.⁷

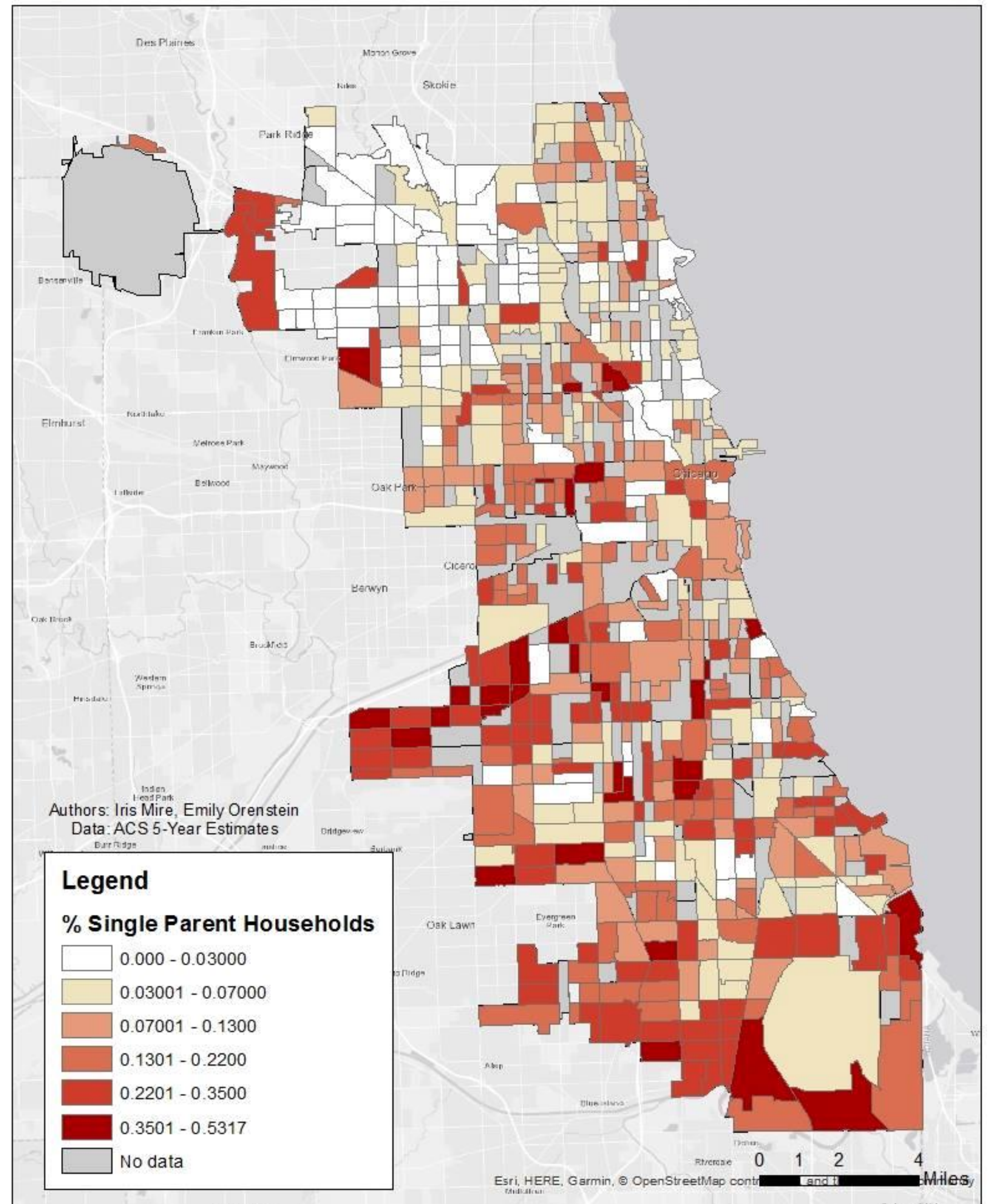
Limitations

Sufficiently granular data were not available for more accurate teen birth rates. Additionally, external factors such as social and community norms and overall environment are not included in this data and are difficult to quantify.

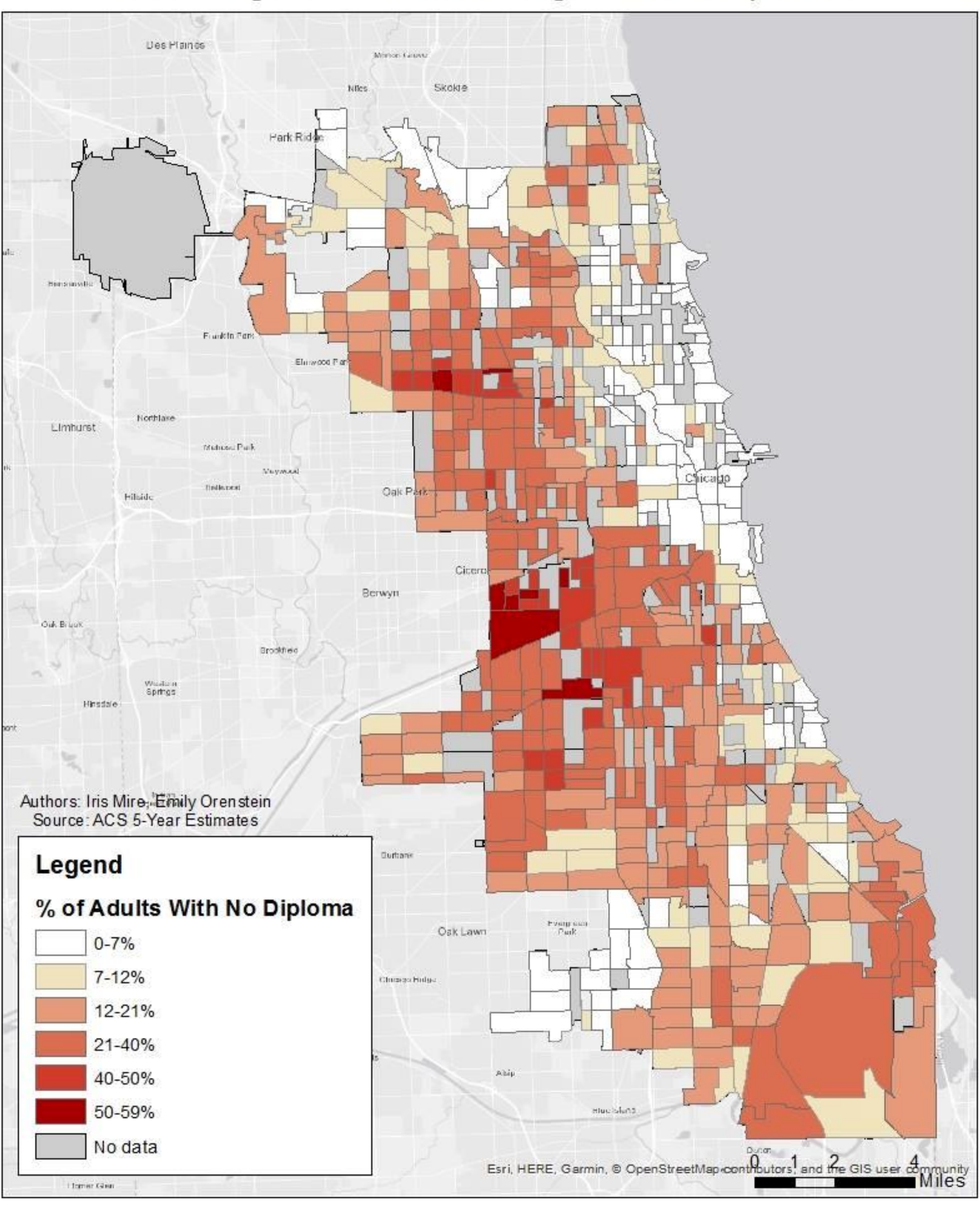
Furthermore, this study is merely a preliminary look at risk factors and each factor should be examined more closely in the context of each community.

Data

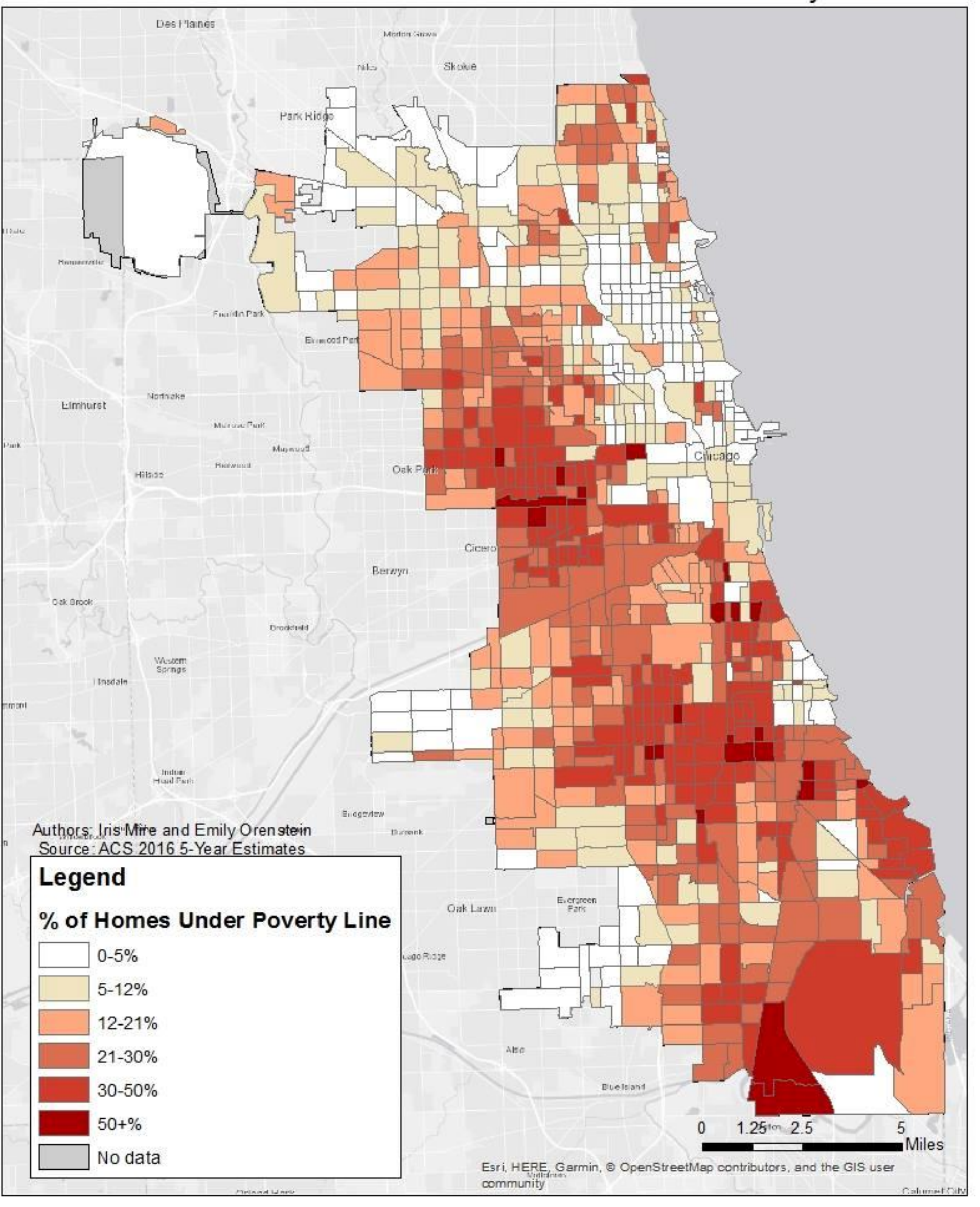
Single-Parent Households as Proportion of Families with Children



Adults Ages 25+ With No High School Diploma



Households With Incomes Under Federal Poverty Line



Acknowledgements

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References

¹ Vivanco, Leonor. "Chicago's Teen Birth Rate Further Declines to Historic Low." Chicagotribune.com. May 27, 2017. Accessed April 18, 2018. <http://www.chicagotribune.com/lifestyles/health/ct-chicago-teen-birth-rates-decline-met-20170526-story.html>.

² Viner, R. M. et al. (2012). Adolescence and the social determinants of health. *Lancet*, 379, 1641-1652. Doi: 10.1016/s0140-6736(12)60149-4

³ Hoskins, D. H., & Simons, L. G. (2015). Predicting the risk of pregnancy among African American youth: Testing a social contextual model. *Journal of Child and Family Studies*, 24, 1163-1174. Doi: 10.1007/s10826-014-9925-4

⁴ Viner et al. (2012)

⁵ Danawi, Hadi, Zenobia Bryant, and Tala Hasbini. "Targeting Unintended Teen Pregnancy in the U.S." *International Journal of Childbirth Education* 31, no. 1 (January 2016): 28-31. Accessed April 18, 2018.

⁶ Meade, C. S., & Ickovics, J. R. (2005). Systematic review of sexual risk among pregnant and mothering teens in the USA: Pregnancy as an opportunity for integrated prevention of STD and repeat pregnancy. *Social Science and Medicine*, 60, 661-678. Doi: 10.1016/j.socscimed.2004.06.015

⁷ Akella, D., & Jordan, M. (2011). Impact of social and cultural factors on teen pregnancy. *Journal of Health Disparities Research and Practice*, 8(1), 41-62. Retrieved from <http://digitalscholarship.unlv.edu/jhdrp>