

Supplementary Information for

**How differential privacy will affect our understanding of health disparities in the United States**

Alexis R. Santos-Lozada<sup>1</sup>, Jeffrey T. Howard<sup>2</sup>, Ashton M. Verdery<sup>3</sup>

1. Department of Human Development and Family Studies, Pennsylvania State University
2. Department of Public Health, University of Texas at San Antonio
3. Department of Sociology and Criminology, Pennsylvania State University

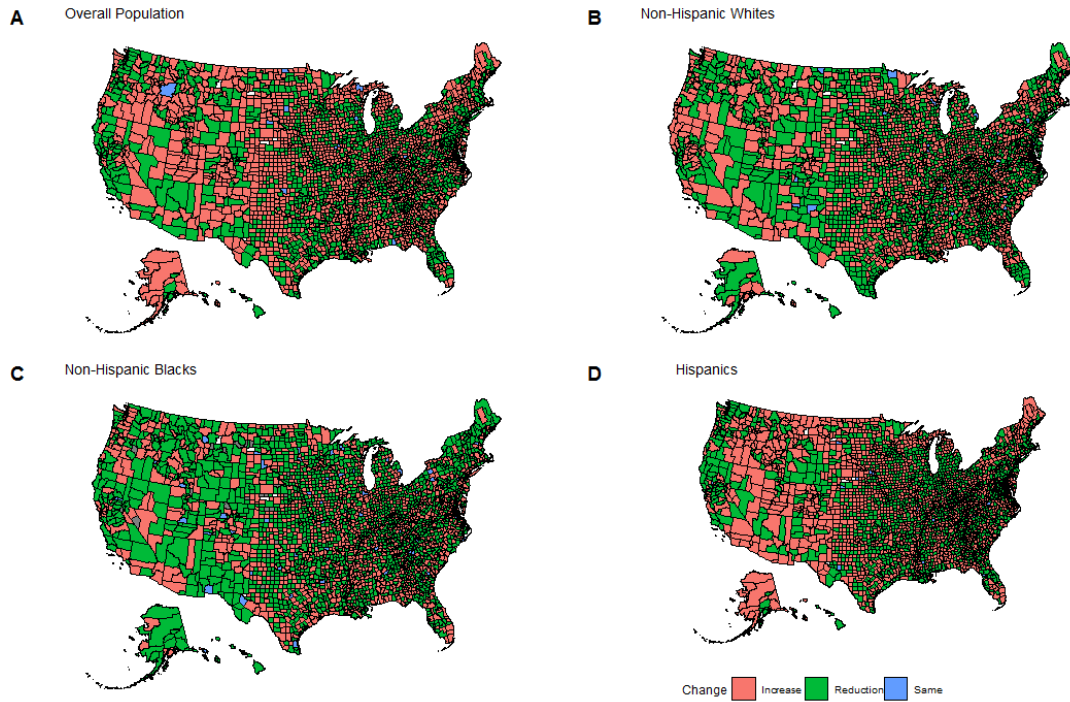
Alexis R. Santos-Lozada

Email: [ars39@psu.edu](mailto:ars39@psu.edu)

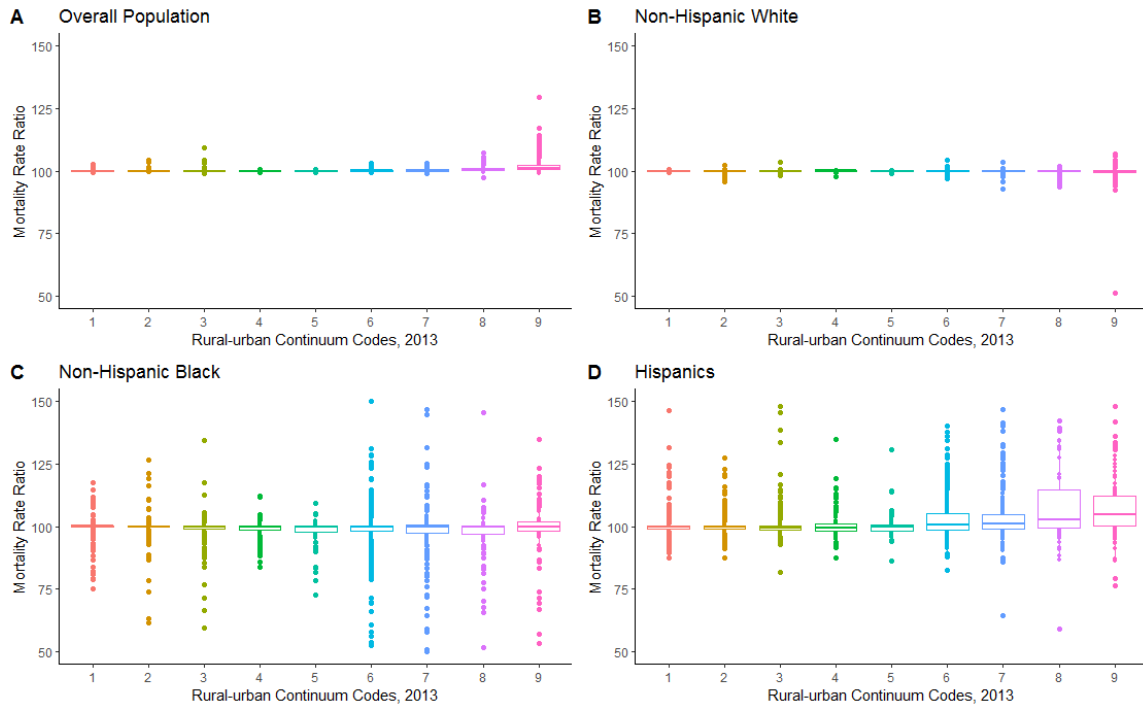
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Table S1

**Fig. S1.** County-level population change for the overall population and three major racial/ethnic group, indicating the population under differential privacy increased (red), remained the same (blue) or increased (green). Comparisons are between originally published 2010 data and the 2010 data with noise infused by DP.

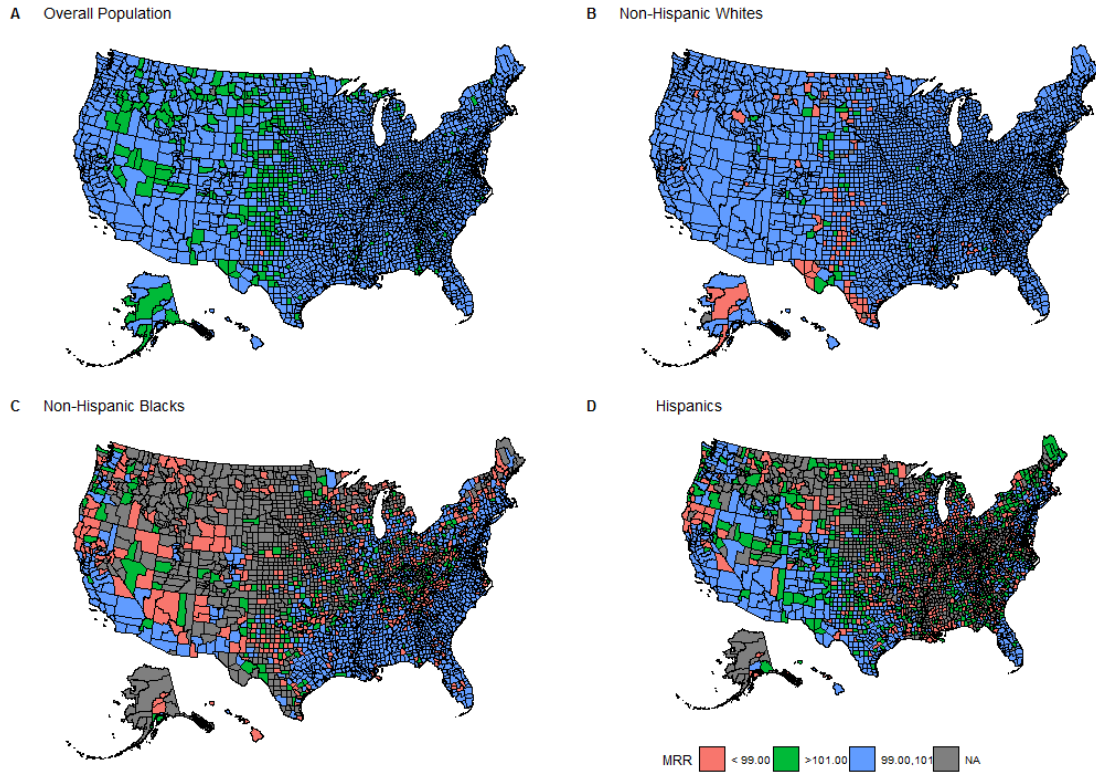


**Fig. S2.** Mortality Rate Ratios for the overall population and three major racial/ethnic groups by 2013 Rural-Urban Continuum Codes (RUCC). MRR comparisons are between originally published 2010 data and the 2010 data with noise infused by DP.



The USDA Rural-Urban Continuum Codes indicate whether a county is considered: 1. Metro - Counties in metro areas of 1 million population or more, 2. Metro - Counties in metro areas of 250,000 to 1 million population, 3. Metro - Counties in metro areas of fewer than 250,000 population, 4. Nonmetro - Completely rural or less than 2,500 urban population, adjacent to a metro area, 5. Nonmetro - Completely rural or less than 2,500 urban population, not adjacent to a metro area, 6. Nonmetro - Urban population of 2,500 to 19,999, adjacent to a metro area, 7. Nonmetro - Urban population of 2,500 to 19,999, not adjacent to a metro area, 8. Nonmetro - Urban population of 20,000 or more, adjacent to a metro area, 9. Nonmetro - Urban population of 20,000 or more, not adjacent to a metro area (1).

**Fig. S3.** County-level Mortality Rate Ratios for the overall population and three major racial/ethnic group, indicating whether the MRR was below 99.00 (red), within acceptable levels 99.00-101.00 (blue) or over 101.00 (green). MRR comparisons are between originally published 2010 data and the 2010 data with noise infused by DP. Counties that do not have enough information for the calculation of these rates are presented in gray



**Table S1.** Counts (and percentages) of Mortality Rate Ratios for the overall population and three major racial/ethnic groups in the United States by direction.

<b>Acceptability threshold</b>	<b>Overall Population</b>	<b>Non-Hispanic Whites</b>	<b>Non-Hispanic Blacks</b>	<b>Hispanics</b>
Above (< 99.75)	133 (4.24)	438 (14.00)	858 (40.37)	895 (44.79)
Within (99.75 - 100.25)	1,883 (60.14)	2,422 (77.43)	746 (35.11)	313 (15.67)
Below (> 100.25)	1,115 (35.61)	268 (8.57)	521 (24.51)	790 (39.54)
<b>Total (n)</b>	<b>3,131</b>	<b>3,128</b>	<b>2,125</b>	<b>1,998</b>
<b>Note:</b> The MRR are calculated as Mortality Rates using DP to Mortality Rates with original 2010 population counts. More information about the MRR calculation and interpretation can be found in the <i>Approach, Methods, Data and Measures</i> section of the manuscript.				

## References

1. USDA, Rural-Urban Continuum Codes. *Rural. Contin. Codes* (2013) (February 2, 2020).