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State-Level Partisanship Strongly Correlates with Health Outcomes for US Children

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Introduction/Background: Poor childhood health can lead to chronic illness, producing significant burdens on both patients and the healthcare system. Given that public policy can affect public health, it is conceivable that childhood health can be influenced by one's state of residence. The Cook Partisan Voting Index (PVI) is calculated based on how strongly a state leans toward the Democratic or Republican Party in presidential elections compared to the national average. We set out to determine the ecological correlation between childhood health outcomes and state-level partisanship, as denoted by PVI.

Methods: The outcome of interests were 16 measures of childhood health obtained from the Center for Disease Control and Prevention, U.S. Census Bureau, U.S. Bureau of Labor Statistics and National Conference of State Legislatures for 2012-2016. PVI was taken from the Cook Political Report and averaged for every state for the same time period. Pearson's rho was used to examine the correlation between PVI and median values for each health outcome, using a Bonferroni adjustment of 0.003 (derived from 0.05 divided by 16). Multiple regression analysis was conducted to investigate the association between PVI and each of the 16 outcomes, adjusting for state-level measures of children without health insurance, primary care physician shortages, and childhood poverty. We also compared childhood health measures in moderately-Democratic states vs. moderately-Republican states (5%-9.9% more Democratic/Republican than the national mean) and, similarly, for extremely-Democratic states vs. extremely-Republican states (at least 10% more Democratic/Republican than the national mean), using Kruskal-Wallis tests. All analyses were conducted in R Studio.

Results: Democratic-leaning states had statistically better outcomes for 6 of 16 health measures, including teen death rate, teen birth rate, life expectancy at birth, childhood death rate, rate of uninsured children and infant mortality (all $p < 0.003$, see table 1). In the adjusted model, Democratic-leaning states were still found to have significantly better outcomes for 7 of the 16 childhood health variables (all $p < 0.003$, see table 1). Among moderately-partisan states, childhood death rate, life expectancy at birth, and teen birth rate were statistically better in Democratic-leaning states (all $p < 0.003$, see table 2). Similarly, extremely-Democratic states

were found to have superior outcomes to extremely-Republican states for these same three variables (all $p < 0.003$, see table 2). For all analyses performed, no health outcomes were found to be significantly better in Republican-leaning states than in Democratic-leaning states.

Conclusions: In this ecological study, we found that multiple childhood health measures were statistically better in Democratic-leaning states compared to Republican-leaning states. Future research should focus on identifying which state-level policies have led to such disparate health outcomes.