

NeRDS: Neighborhood Resources and Disease Severity in Pediatric Critical Care

Statement of Problem

Historically, sociodemographic factors have been [key contributors](#) to health inequities for critically ill children. In particular, children experiencing poverty and those who are racially or ethnically minoritized tend to have [higher costs, longer stays and increased mortality](#) in hospitals.

Neighborhood environment has become an [increasingly important and researched](#) sociodemographic factor in health disparities in recent years. But among children, we do not have the same [strength of evidence](#) on how neighborhood characteristics specifically impact health outcomes, especially for critically ill children. Furthermore, no studies have explored the medical costs for critically ill children living in underserved neighborhoods.

Description

Our retrospective study will look at the relationship between neighborhood resources and illness severity on admission to the pediatric intensive care unit (PICU). Using validated indices for neighborhood resources, such as the Child Opportunity Index (COI), and severity of illness at admission, we aim to:

1. Determine the association between census tracts and severity of illness on admission to the PICU.
2. Test the relationship between neighborhood factors and severity of illness on admission to the PICU.
3. Explore differences in hospital charges based on a child's neighborhood characteristics and illness severity.

We hypothesize that there is an association between census tract and illness severity, as well as between neighborhood factors and severity of illness, and that children living in neighborhoods with less resources will tend to have greater hospital costs.

Next Steps

With this study, we hope to enrich and expand upon the current evidence on health disparities among children with critical illnesses. These findings will fill gaps in evidence on the impact of neighborhood characteristics on children's health outcomes and costs. On a practical level, we plan to use the data from this study to inform neighborhood-level interventions, cost-benefit analyses on interventions and policies to reduce disparities in health outcomes for children with critical illnesses.

Suggested Citation

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PolicyLab Leads

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Faculty Member

Paula Magee (she/her) is a faculty member at PolicyLab at Children's Hospital of Philadelphia (CHOP), an assistant professor of anesthesiology, critical care and pediatrics at the Perelman School of Medicine at the University Pennsylvania, and a pediatric critical care attending within CHOP's Division of Critical Care Medicine.

Throughout her medical career, Dr. Magee has used her health policy background to improve our knowledge of the impact of social factors, including racism, on patient outcomes through research and scholarly activities. Dr. Magee's research efforts examine how one's neighborhood can be associated with the development of critical illness and other disparate patient outcomes. She is also interested in assessing the importance of screening for unmet social needs in the pediatric intensive care setting. Overall, she is determined to leverage her research to inform neighborhood-level interventions aimed at stymying health disparities for critically ill children. Otherwise, Dr. Magee has focused her attention on increasing diversity in the medical workforce; creating curricula on health equity and racism; and creating a framework for health equity in the pediatric critical care unit.

Dr. Magee received her medical degree from the Morehouse School of Medicine in Atlanta, Ga., completed her pediatric residency training at Children's National Hospital of Washington, D.C., and completed her pediatric critical care fellowship at Ann & Robert H Lurie Children's Hospital of Chicago. Dr. Magee also completed the Commonwealth Fund Mongan Fellowship in Minority Health Policy, during which she obtained her Master of Public Health in Health Policy at the Harvard T.H. Chan School of Public Health.



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Related Tools & Publications

- [The Association Between Neighborhood Factors and Early Organ Dysfunction in Children Who Are Critically Ill: A Retrospective Cohort Study Article](#)
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