Children's Hospital of Philadelphia PolicyLab

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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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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