Association of Food Deserts and Pediatric Hospitalization Rates

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Association of Food Deserts and Pediatric Hospitalization Rates

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**Background**
- Nearly 40 million United States residents live in areas with limited access to affordable and nutritious foods (i.e. food deserts)
- Data evaluating the association of food deserts and health is limited in children

**Objectives**
- Describe differences in hospitalization rates for children based upon their residence within a food desert and describe any differences among reasons for hospitalization

**Methods**
- Retrospective cross-sectional study
- United States Department of Agriculture’s Food Access Research Atlas used to determine food deserts at the census tract level
- Included children ≤18 years old in the Kansas City metropolitan area in 2016 in census tracts where ≥80% of children hospitalized were at the children’s hospital
- Hospital data and American Community Survey was used to determine hospitalization rates for each census tract
- Overall and service line analyses were adjusted for poverty rate

**Results**
- 460 census tracts were included (13.7% food deserts, 86.3% non-food deserts) with 482,623 children and 6,638 hospitalizations
- In unadjusted analyses, pediatric hospitalization rates were higher in food deserts compared to non-food deserts
- When adjusted for poverty differences resolved
- Poverty adjusted hospitalization rates stratified by service line did not differ based upon food desert status except for cardiac hospitalizations

**Discussion**
- Our results suggest that residing in food deserts may not affect children’s hospitalization rates and any differences may instead be a result of poverty
- Efforts in alleviating poverty may be more effective in improving child health than directly addressing food deserts

**Limitations:**
- Hospitals may be too distal a measure for adverse health outcomes and food deserts may be associated with other sequelae such as malnourishment or obesity
- Food access as measured by the USDA food desert definition may not significantly affect child health

<table>
<thead>
<tr>
<th>Census Tract Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
</tr>
<tr>
<td>Number of Census Tracts</td>
</tr>
<tr>
<td>Urban Census Tract</td>
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<tr>
<td>Low vehicle access</td>
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<tr>
<td>Poverty Rate</td>
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<tr>
<td>Median Household Income</td>
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<tr>
<td>Child population</td>
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<tr>
<td>Median Age of Children</td>
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<tr>
<td>Race</td>
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<tr>
<td>-----------------------------</td>
</tr>
<tr>
<td>Non-Hispanic White</td>
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<tr>
<td>Non-Hispanic Black</td>
</tr>
<tr>
<td>Hispanic</td>
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<tr>
<td>Other</td>
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</tbody>
</table>

**Overall Hospitalization Rate**

- Unadjusted Hospitalization Rate
- Adjusted Hospitalization Rate
- Rate per 1,000 Children
- Food Desert
- Non-Food Desert
- *p ≤ 0.05