Youth Mortality

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a moment of silence

for youth who lost their lives far too early, and for those struggling to find their way
The Health and Wellbeing of Children, Youth, and Families in Baltimore City: Child and Youth Mortality

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Actionable Health Intelligence

Health Needs Assessment

- Track city-wide trends
- Examine population-level outcomes across neighborhoods
- Broadly applicable framework
Data Sources

Citywide analysis 2001-2012

2001-2010
wonder.cdc.gov

2011-2012
dhmh.maryland.gov
Neighborhood analysis 2008-2012
Mortality rates and CSA characteristics

bniajfi.org
factfinder2.census.gov
Youth Morality Rate per 100,000

2010-2012

Youth Morality Rate per 100,000

<table>
<thead>
<tr>
<th></th>
<th>Baltimore</th>
<th>Rest of MD</th>
</tr>
</thead>
<tbody>
<tr>
<td>total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>male</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>female</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>black</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>white</td>
<td></td>
<td>50</td>
</tr>
</tbody>
</table>
Trends 2001-2012
Youth Morality Rate
per 100,000

Total, Black, White, Male, Female
Youth Morality Rate 2008-2012

by CSA
*per 10,000

Mean (sd) 13 (8)

Range 0-32

*Best 4

*average of best 25% of CSAs

Data Sources: BNIA Vital Signs
# Neighborhood Inequities

**Objective Neighborhood Disadvantage**  
Ross & Mirowsky, 2001

<table>
<thead>
<tr>
<th>Disadvantage</th>
<th>Social</th>
<th>Economic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% family HH, female-headed</td>
<td>% HH in poverty</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Advantage</th>
<th>Wealth</th>
<th>Human Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% HH, owner-occupied</td>
<td>% adults, ≥ bachelor's</td>
</tr>
</tbody>
</table>

HH = households
Neighborhood Disadvantage

% family HH female-head

% HH owner-occupied

% HH poverty

% adults bachelor’s

Data Sources: BNIA Vital Signs 2010 US Census
Neighborhood Disadvantage

Ross & Mirowsky, 2001

\[
\frac{\text{% in poverty}}{10} + \frac{\text{% family households, female headed}}{10} = A
\]

\[
\frac{\text{% households, owner occupied}}{10} + \frac{\text{% with > bachelor's degree}}{10} = B
\]

\[
\frac{A - B}{4} = \text{neighborhood disadvantage} \quad \text{(range -5 to 5)}
\]

+ 5 (range 0-10)
Neighborhood Disadvantage by CSA

Mean (sd) 5.0 (1.4)
Range 1.8-7.6
Low 22%
Moderate 56%
High 22%

Data Sources: BNIA Vital Signs, 2010 US Census
Disadvantage & Youth Mortality

Data Sources: BNIA Vital Signs, 2010 US Census
Disadvantage & Youth Mortality

- negative binomial regression models

<table>
<thead>
<tr>
<th>Predictor variable (range)</th>
<th>Incidence Rate Ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>neighborhood disadvantage (1.4-7.6)</td>
<td>1.4 (1.2-1.6)</td>
</tr>
<tr>
<td>low/no (1.4-4)</td>
<td>reference</td>
</tr>
<tr>
<td>moderate (4.1-6)</td>
<td>2.3 (1.5-3.5)</td>
</tr>
<tr>
<td>high (6.1-7.6)</td>
<td>3.1 (1.9-4.9)</td>
</tr>
</tbody>
</table>

Data Sources: BNIA Vital Signs, 2010 US Census; Baltimore City Health Department
Residuals Analysis

- How much variation in youth mortality is **NOT** explained by disadvantage?

- **GOAL:** identify areas with better/worse mortality rate than predicted by model

- **NEXT STEPS:** explore neighborhood processes associated with better/worse outcomes; targeted interventions → greatest need
Residuals Analysis

Dark green and red >2sd
Lt. green and orange >1sd

Better (>2sd)
Oldtown/Middle East

Worse (>2sd)
Clifton-Berea
Midway/Colstream
Youth mortality declined in Baltimore between 2001 and 2012.

Significant equity gaps remain.

Targeted community-based interventions in areas with the greatest need will help close the equity gaps in Baltimore.

**NEXT STEPS:** exploring processes in neighborhoods with highest rates and those with higher/lower rates than expected based on disadvantage alone will further guide the selection of responsive interventions.
Thank you

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