Using Integrated Data to Understand Early Childhood Risks and Access to Quality Early Childhood Education

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Research-Practice Disconnect
What is an integrated data system?

- Individual level
- Routinely integrated
- Internal & external researchers
- Policy & program questions of interest to government
- Research-based variables
IDS Model to Improve Public Services

Derived from our national study of State & Local Governments' Use of Integrated Data Systems

Population-based descriptive study of social problem

Intervention building & implementation

Intervention testing
An Example: Pre-K Expansion in Philadelphia

- Pre-K Commission
- Mayor’s priority issue
- Limited funds
- High need

How to prioritize available funding?
Philadelphia IDS

Vital Statistics
- Inadequate prenatal Care
- Low maternal education
- Teen mother
- Low birth weight/preterm

Child Welfare
- Child maltreatment

Public Health
- Lead exposure

Homeless Shelter System
- Shelter stays
### Early Risks & Third-grade Educational Outcomes

| Top 3 *most harmful risks* for educational outcomes | With *each additional risk* a child is...
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading</strong></td>
<td>30% less likely to meet <em>reading proficiency</em> in 3rd grade.</td>
</tr>
<tr>
<td>1. Low maternal education</td>
<td>30-40% less likely to be <em>engaged in the classroom</em> in 3rd grade.</td>
</tr>
<tr>
<td>2. High lead exposure</td>
<td>50-100% more likely to be <em>truant</em> in 3rd grade.</td>
</tr>
<tr>
<td>3. Child maltreatment</td>
<td></td>
</tr>
<tr>
<td><strong>Classroom Engagement</strong></td>
<td></td>
</tr>
<tr>
<td>1. Child maltreatment</td>
<td></td>
</tr>
<tr>
<td>2. Low maternal education</td>
<td></td>
</tr>
<tr>
<td>3. Homelessness</td>
<td></td>
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<td><strong>Truancy</strong></td>
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</tr>
<tr>
<td>3. Teen mother</td>
<td></td>
</tr>
</tbody>
</table>

Rouse & Fantuzzo (2009); Rouse, Fantuzzo & LeBoeuf (2011); Fantuzzo, LeBoeuf & Rouse (2014)
Research Questions

1. What percentage of 3- and 4-year olds in Philadelphia have multiple early risks?

2. What is the geographic distribution of 3- and 4-year olds with multiple early risks?

3. What is the current distribution of high-quality pre-k slots across Philadelphia?

4. Where is there geographic overlap between places with children experiencing early risks and places without high-quality pre-k?
## Risk Prevalence

<table>
<thead>
<tr>
<th>Early Risk</th>
<th>U.S.</th>
<th>Philadelphia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preterm or low birth weight</td>
<td>9.7%</td>
<td>13.4%</td>
</tr>
<tr>
<td>Inadequate prenatal care</td>
<td>6.1%</td>
<td>36.8%</td>
</tr>
<tr>
<td>Teen mother</td>
<td>10.0%</td>
<td>15.5%</td>
</tr>
<tr>
<td>Low maternal education</td>
<td>14.0%</td>
<td>20.3%</td>
</tr>
<tr>
<td>Lead exposure</td>
<td>0.6%</td>
<td>3.4%</td>
</tr>
<tr>
<td>Homelessness</td>
<td>2.8%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Child maltreatment</td>
<td>0.9%</td>
<td>4.8%</td>
</tr>
</tbody>
</table>

n = 19,670 5-year-old children in 2012

*Note: National statistics were obtained for five-year-olds in 2012 from the Center for Disease Control, the U.S. Department of Health and Human Services, the Department of Housing and Urban Development, the Pew Research Center, and the U.S. Census Bureau.*
Multiple Early Risks

9,563 children

Percentage of 3 & 4 year-olds

<table>
<thead>
<tr>
<th>Number of Early Risks</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>45.2%</td>
</tr>
<tr>
<td>1</td>
<td>33.4%</td>
</tr>
<tr>
<td>2</td>
<td>14.7%</td>
</tr>
<tr>
<td>3 or more</td>
<td>6.7%</td>
</tr>
</tbody>
</table>
Multiple Risks

9,563 children with 2+ risks in 2012
(21.4% of 44,724 children)

Percent of children with 2+ risks by neighborhood:
- 0 - 11% (<0.5 times citywide rate)
- 11 - 19% (0.5 - 0.9 times citywide rate)
- 19 - 23% (Near citywide rate)
- 23 - 32% (1.1 - 1.5 times citywide rate)
- 32 - 43% (>1.5 times citywide rate)
Neighborhood Profile: Kingsessing

- < 2 square miles
- 730 three & four year-olds
- 32% have 2+ risks (237 kids)

237 kids → 12 pre-k classrooms
High-quality Pre-K
Neighborhood Profile: Kingsessing

• 60 high-quality slots
• 8% of neighborhood children
• 25% multi-risk children
High-risk/Low-supply neighborhoods

High-risk: Children with 2+ risks above the citywide average
Low supply: Availability of high-quality slots below citywide average
Outcomes

- Plan prioritized high-risk, low-supply neighborhoods
- Family outreach to encourage enrollment
- 2,000 new slots in Jan 2017
- 5 year plan for 6,500 slots
Neighborhood Profile: Kingsessing

- 3 of 5 centers able to expand with City funding
- 68 additional slots in the Kingsessing area
- 94% enrollment as of March
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