HOW UNSTABLE HOUSING IMPACTS CAREGIVER AND CHILD HEALTH: IDEAS FOR SOLUTIONS

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Roadmap

About Children’s HealthWatch

Explore:
- How adverse housing circumstances affect health
- Three forms of housing instability with caregiver/child health
- Interventions addressing housing instability
Founded: 1998
Non-partisan, pediatric research and policy network
Collect data in urban hospitals across the country on infants and toddlers from families facing economic hardship

- Improve health & development of young children → alleviate economic hardships → inform public policies
  - Difficulty affording enough food (food insecurity)
  - Unstable housing (housing insecurity)
  - Trouble keeping heat/lights on (energy insecurity)
  - Health care hardships

- Provide policy makers with evidence from the frontlines to develop policies that protect young children’s health and development
Where our data come from:

- Collecting real-time data in frontline healthcare settings:
  - Boston, Baltimore, Philadelphia, Little Rock and Minneapolis
  - Interviews - caregivers with children 0 to 4yrs
  - More than 60,000 surveys in our data set
    - “invisible” group
    - critical window of time
How adverse housing circumstances affect health

Photo credit: Witnesses to Hunger
Conceptual framework for adverse housing circumstances

HOMELESSNESS

HOUSING INSECURITY:
  - Crowding
  - Multiple moves

UNAFFORDABLE HOUSING
Conceptual framework for adverse housing circumstances

HOMELESSNESS

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UNAFFORDABLE HOUSING
Timing of Homelessness matters

Table 3. Adjusted birth outcomes of pre and postnatal homeless mothers

<table>
<thead>
<tr>
<th></th>
<th>Consistently housed</th>
<th>Any prenatal homelessness AOR (95% CI)</th>
<th>Postnatal homelessness only AOR (95% CI)</th>
<th>Overall p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low birth weight</td>
<td>1.00</td>
<td>1.43 (1.14, 1.80)</td>
<td>1.00 (0.72, 1.40)</td>
<td>0.01</td>
</tr>
<tr>
<td>&lt;2500 g</td>
<td></td>
<td>p &lt; 0.01</td>
<td>2.0p = 0.98</td>
<td></td>
</tr>
<tr>
<td>Premature</td>
<td>1.00</td>
<td>1.24 (0.98, 1.56)</td>
<td>1.21 (0.89, 1.63)</td>
<td>0.13</td>
</tr>
<tr>
<td>&lt;37 weeks GA</td>
<td></td>
<td>p = 0.08</td>
<td>p = 0.22</td>
<td></td>
</tr>
<tr>
<td>Birth weight in grams</td>
<td></td>
<td>3,093 (7.1)</td>
<td>3,040 (29.2)</td>
<td>0.19</td>
</tr>
<tr>
<td>Least square mean (SEM)</td>
<td></td>
<td>(ref)</td>
<td>3,106 (38.1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>p = 0.08</td>
<td>p = 0.73</td>
<td></td>
</tr>
</tbody>
</table>

Adjusted for site, mother’s birthplace, race/ethnicity, education, employment, marital status, child’s age and mother’s smoking history

AOR adjusted odds ratio, 95% CI = 95% confidence interval

As many as 3.5 million people experience homelessness yearly [1,2]. Children are disproportionately impacted; from 2007 to 2010 homelessness among children increased by 448,000-1.5 million children, or one in 45 US children [3]. Homeless children experience increased risk of acute illnesses, nutritional deficits, physical trauma, developmental
Compounding Stress
The Timing and Duration Effects of Homelessness on Children's Health

By Megan Sandel, MD MPH, Richard Shwed, MPP, and Lisa Sturtevant, PhD
June 2015

Decades of scientific research has demonstrated that homelessness experienced during early childhood is harmful to a child's growth and development. The stress of homelessness during early childhood can lead to potentially permanent harmful changes in brain and body function, in turn causing higher levels of stress-related chronic diseases later in life. In addition, a growing body of evidence has established that a child's health and development are critically dependent on his mother's mental and physical well-being during pregnancy.

New research from Children's HealthWatch illustrates there is no safe level of homelessness. The timing (pre-natal post-natal) and duration of homelessness (more or less than six months) compounds the risk of harmful child health outcomes. The younger and longer a child experiences homelessness, the greater the cumulative toll of negative health outcomes, which can have lifelong effects on the child, the family, and the community.

The Children's HealthWatch Research Network

Researchers from Children's HealthWatch collected data from over 20,000 caregivers of low-income children under the age of four in public or non-health insurance. These caregivers were interviewed in urban pediatric clinics and emergency departments in five U.S. cities from 2009 through 2014. Interview data were analyzed to assess children's health and development and to compare outcomes for children who experienced homelessness at some point in their lives with children who were never homeless.

New Research Findings

While pre-natal and post-natal child homelessness were each separately associated with poor health outcomes for children, the combination of pre-natal and post-natal homelessness resulted in an so-called "dose-response effect" that compounded the health risks linked to both pre-natal and post-natal homelessness. In addition, longer periods of homelessness among children generally were associated with worse health outcomes.

The comparison group for these data is children who were never homeless.

All findings statistically significant at p<0.05

Source: Children's HealthWatch Data, May 2009-December 2014

FIGURE 1
Compounding Effect of Homelessness on Child Health
Compounding Stress
The Timing and Duration Effects of Homelessness on Children's Health

By Megan Sandel, MD MPH, Richard Stewart, MPP, and Lisa Sturtevant, PhD
June 2015

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<table>
<thead>
<tr>
<th></th>
<th>Fair/Poor Child Health</th>
<th>Developmental Risk</th>
<th>Child Hospitalizations*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infants (less than 12 months)</td>
<td>67%</td>
<td>118%</td>
<td>46% 45%</td>
</tr>
<tr>
<td>Toddlers (over 12 months)</td>
<td>59%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The comparison group for these data is children who were never homeless. All findings statistically significant at p<.05, except *hospitalizations among infants (p=.06).

Conceptual framework for adverse housing circumstances

**HOMELESSNESS**

**HOUSING INSECURITY:**
- Crowding
- Multiple moves

**UNAFFORDABLE HOUSING**
Conceptual framework for adverse housing circumstances

HOMELESS

HOUSING INSECURITY:

• Multiple moves
• Crowding

UNAFFORDABLE HOUSING
Children in housing-insecure families more likely to be

- Food insecure
- In fair/poor health
- At risk for developmental delays
- Seriously underweight

(compared to children in housing-secure families)
# US Housing Insecurity and the Health of Very Young Children

Diana Becker Cutts, MD, Alan F. Meyers, MD, MPH, Maureen M. Black, PhD, Patrick H. Casey, MD, Mariana Chilton, PhD, MPH, John T. Cook, PhD, Joni Geppert, MPH, RD, LN, Stephanie Ettinger de Cuba, MPH, Timothy Heeren, PhD, Sharon Coleman, MPH, MS, Ruth Rose-Jacobs, ScD, and Deborah A. Frank, MD

In the US, housing insecurity has been linked to negative health outcomes, including increased risks of respiratory disease, obesity, and asthma.

## TABLE 2—Variables Associated With Insecure Housing, by Housing Group: Children Younger Than 3 Years, 7 US Cities, 1998-2007

<table>
<thead>
<tr>
<th>Variables</th>
<th>Secure Housing (Ref)</th>
<th>Crowding</th>
<th>Multiple Moves</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unadjusted No. (%)</td>
<td>AOR (95% CI)</td>
<td>Unadjusted No. (%)</td>
</tr>
<tr>
<td>Household food insecurity (n=22,069)</td>
<td>1052 (9)</td>
<td>1.0</td>
<td>1060 (12)</td>
</tr>
<tr>
<td>Child food insecurity (n=22,069)</td>
<td>872 (7)</td>
<td>1.0</td>
<td>1513 (17)</td>
</tr>
<tr>
<td>Caregiver report of fair/poor child health (n=22,069)</td>
<td>1313 (11)</td>
<td>1.0</td>
<td>1193 (13)</td>
</tr>
<tr>
<td>Caregiver report of child developmental risk (after 2004, n=7,345)</td>
<td>621 (14)</td>
<td>1.0</td>
<td>355 (14)</td>
</tr>
</tbody>
</table>

Note. AOR—adjusted odds ratio; CI—confidence interval. Analyses are adjusted for site, race/ethnicity, US-born mother, marital status, maternal age, education, mean child’s age, mean number of children in the home, household employment, breastfeeding, and low birth weight. Secure housing is the referent group.

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Adjusted income has been used as the threshold for affordable housing costs. But affordability: HealthWatch study approached 36618 adult caregivers of children younger than 3 years at...
Behind on rent
Strong indicator of other household hardships

<table>
<thead>
<tr>
<th>Condition</th>
<th>Not Behind on Rent</th>
<th>Behind on Rent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food insecurity</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Child food insecurity</td>
<td>3.5</td>
<td>3.5</td>
</tr>
<tr>
<td>Energy insecurity</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>HH foregone care</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Child foregone care</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Health trade-offs</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

Behind on rent is a strong indicator of other household hardships.
Multiple moves
Strong indicator of other household hardships

When we compared young children making frequent moves with those in stable housing we found that young children in households that had moved two or more times in the past year were more likely to be:

- food insecure
- in fair or poor health
- at risk for developmental delays
- seriously underweight

even after accounting for other possible factors, such as maternal education.
Revised conceptual framework for adverse housing circumstances

Housing Instability
- behind on rent
- multiple moves
- homelessness

Unaffordable Housing
Among 22,234 families, 34% had at least one adverse housing circumstance:
- 27% behind on rent
- 8% multiple moves
- 12% history of homelessness

Each circumstance individually associated with adverse health and material hardship compared to stable housing
Little overlap among three adverse housing conditions
Outcomes of unstable housing with health and material hardship outcomes

Under review for publication
Since [current month] of last year,

1. Was there a time when you were not able to pay the mortgage or rent on time?

   Answer is yes/no, positive screen if answer is yes

2. How many places have you lived?

   Answer is # of places lived, positive screen if answer is 3 or more (i.e. multiple moves ≥ 2 in 12 mos.)

3. Was there a time when you did not have a steady place to sleep or slept in a shelter (including now)?

   Answer is yes/no, positive screen if answer is yes
More than 50% Income Spent on Rent + Utilities

Owes 2 Months Rent

Received 14-day Notice to Quit

Received Court Summons

Final Notice to Vacate - Immediate Risk of Homelessness!

Opportunities for prevention

Heading to the “Legal Emergency Room”

Source: Medical Legal Partnership Boston
Individual patient legal interventions are pathways to finding the policy interventions for improving population health.
Housing Security Promotion: Co-Enrollment in Other Programs Matter

- Housing subsidies well known to promote housing security
- When pairing nutrition subsidies (WIC/SNAP) with housing subsidies, housing security increased by 72 percent over housing subsidies alone
  - Loss of housing subsidy decreased housing security by 62 percent
  - Loss of SNAP subsidy decreased housing security by 27 percent
Targeting the vaccine:

- Housing insecure, high risk pregnant/parenting families, child <5 with complex condition requiring specialty care
- Secure and retain housing to
  - improve birth outcomes
  - improve the health and well-being of women and families
- Provision of housing
- Intensive case management: housing retention, engagement in services, family development plan
Designing and Stocking the Housing Pharmacy to Improve Health Outcomes and Utilization

Pilot RCT at Boston Medical Center funded by The Boston Foundation

Goals:

• Enroll 100 families over next 18 months
• Reduce housing instability among families with young children
• Improve child health
• Improve predictors on the pathway toward better child health outcomes, including food security and maternal mental health status
Design and stock a “housing pharmacy” of new therapies and combinations of therapies developed through a collaborative of partners across the health, housing, social and legal professional service sectors

Project partners include:
- Project Hope
- Nuestra Comunidad
- Medical-Legal Partnership | Boston
- Boston Housing Authority

Learn more at childrenshealthwatch.org/housing-prescriptions/
Resource List group
- Current standard to care
- Packet of resources with information on housing agencies, affordable housing waitlists, rental housing search tools, housing support resources, and legal assistance

Intervention group
- Intensive housing case management and Problem Solving Education from Project Hope
- Financial Counseling and Benefit Maximization from Nuestra Comunidad
- Legal Services from Medical-Legal Partnership
- Priority on Boston Housing Authority waitlist of public housing (50 units available for this project)
Thank You!

The mission of Children’s HealthWatch is to improve the health and development of young children by informing policies that address and alleviate economic hardships.

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