



# Food Insecurity, Housing Instability and Health

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- Discuss evidence on two social factors related to health
  - Food Insecurity
  - Housing Instability
- Discuss how screening for social factors links with health outcomes and may change definitions

# Food insecurity

## REPORT CARD ON FOOD SECURITY AMONG YOUNG CHILDREN IN 2015

### HIDDEN FOOD STRESS

UNDERREPORTED IN NATIONAL DATA:

FAMILIES STRESSED ABOUT AFFORDING ENOUGH FOOD

AT RISK FOR POOR HEALTH AND WELL-BEING



Many families across the country experience stress over whether or not they will have enough resources to feed their families, technically known as "marginal food security." We refer to marginal food security as "hidden food stress". Those who are marginally food-secure worry about having consistent access to healthy food whereas food-secure families are confident that they have access to enough quality food. Though they are categorized as food secure in national datasets, research demonstrates that families that fall into the marginally food secure category actually face health risks similar to those faced by families experiencing food insecurity.



Compared to fully food-secure families with children, health risks for marginally food-secure families include:<sup>3</sup>

CHILDREN ARE 56% MORE LIKELY TO BE IN FAIR OR POOR HEALTH  
MOTHERS ARE ALMOST 3X MORE LIKELY TO HAVE DEPRESSIVE SYMPTOMS  
CHILDREN ARE 60% MORE LIKELY TO BE AT DEVELOPMENTAL RISK

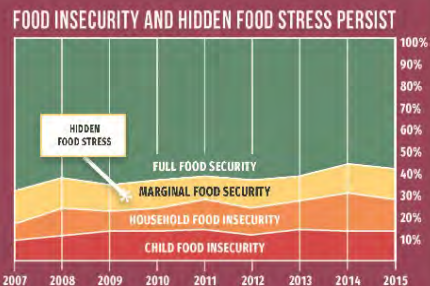


Figure 2: Food Insecurity and Hidden Food Stress Increased from 2007 to 2015 in Families with young children. Source: Children's HealthWatch Data, 2007 - 2015.

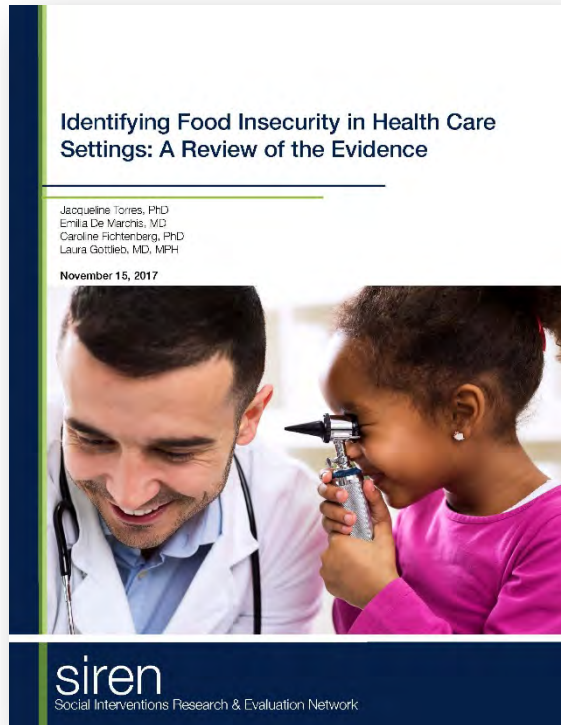
Figure 2 illustrates how the trends in food security among households with young children have fluctuated since 2007. From 2007 to 2015, hidden food stress (marginal food security) remained a significant problem, fluctuating between 1 in 6 (14.2%) and 1 in 7 (12.2%) households with young children, based on Children's HealthWatch data. These families have not previously been tracked in national data. The proportion of households who are fully food secure – and therefore more likely to be healthy – decreased from 69% in 2007 to 63.9% in 2015.

- Food insecurity refers to when a family is unable to reliably access enough food for all family members to live healthy, active lives.
- The gold standard for measuring food security is the United States Department of Agriculture's (USDA) Food Security Survey Module
  - 18-item questionnaire, multiple responses
  - 4 classifications (Food Secure, Marginally Secure, Low Food Security, Very Low Food Security)

<http://bit.ly/USDA18item>



# Identifying food insecurity in health care settings: A review of the evidence



<https://goo.gl/oJJDwU>

## siren

Social Interventions Research & Evaluation Network

- 6-item module
  - Developed by National Center for Health Statistics
  - Intended to address need for shorter, more practical screen... still too long for many settings
- 1 item hunger screen (Kleinman, et al, 2007)
  - Exclusive focus on hunger
  - Misses Food Insecure families experiencing stress
- 1 item “WE CARE” tool (Pediatrics 2007, 2014)
  - Do you always have enough food for your family?
- 2 item “Hunger Vital Sign” that captures marginal and food insecure population

# Children's HealthWatch



Improving the health and development of young children by informing policies that address and alleviate economic hardships

**SINCE OUR LAUNCH IN 1998,**

## PEER REVIEWED JOURNAL ARTICLES

43

Our researchers have made landmark contributions to the understanding of how public policies and economic hardships impact children's health



## 65K FAMILIES

We have interviewed more than 65,000 caregivers of young children under 4 years of age in pediatric emergency rooms and clinics



A nonpartisan network of pediatricians, public health researchers & policy experts, we bring data & analysis from the front lines of care in Boston, Baltimore, Philadelphia, Little Rock & Minneapolis

## 20 YEARS

Leveraging the perspective of pediatricians, our research and testimony has improved public policies (nutrition, housing, anti-poverty) and practices that give all children equal opportunities for healthy, successful lives

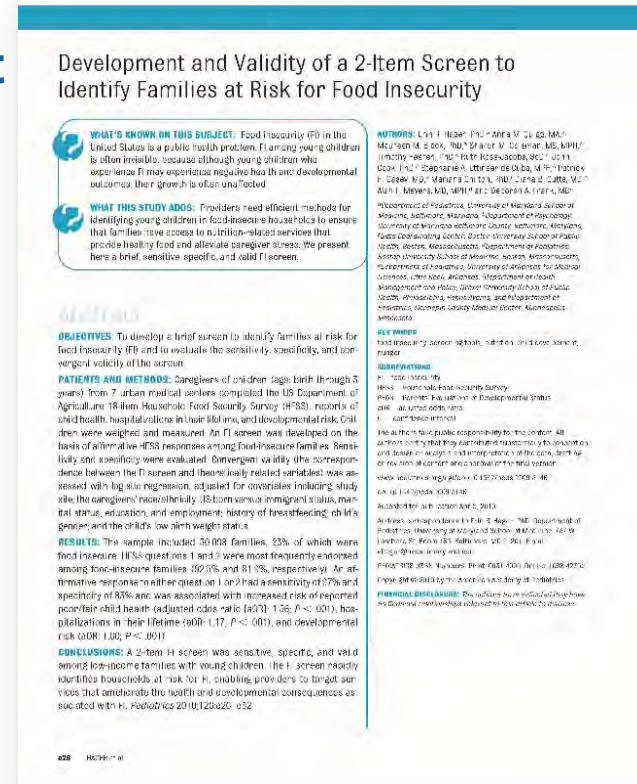


# Development and Validity of a 2-Item Screen to Identify Families at Risk for Food Insecurity

Hager ER, Quigg AM, Black MM, et al **Development and Validity of a 2-Item Screen to Identify Families at Risk for Food Insecurity.** *Pediatrics*; 2010;126:e26–e32.

Complementary article: Are Food Insecurity's Health Impacts Underestimated in the U.S. Population? Marginal Food Security Also Predicts Adverse Health Outcomes in Young U.S. Children and Mothers. Cook, JT, Black, M, Chilton, M et al. *Advances in Nutrition*. 2013;4: 51-61.

<http://bit.ly/marginalfoodsecurity>



<http://bit.ly/hungervitalsign>

# Testing 1,2,3

- Most commonly affirmatively answered questions with best sensitivity/specificity
  - 1<sup>st</sup> 2 questions
- Compared to “gold standard” (HFSM)
- **Sensitivity – 97%**
  - 97% of families identified as FI (HVS) were also FI (HFSM)
- **Specificity – 83%**
  - 83% of families identified as FS (HVS) were also FS (HFSM)



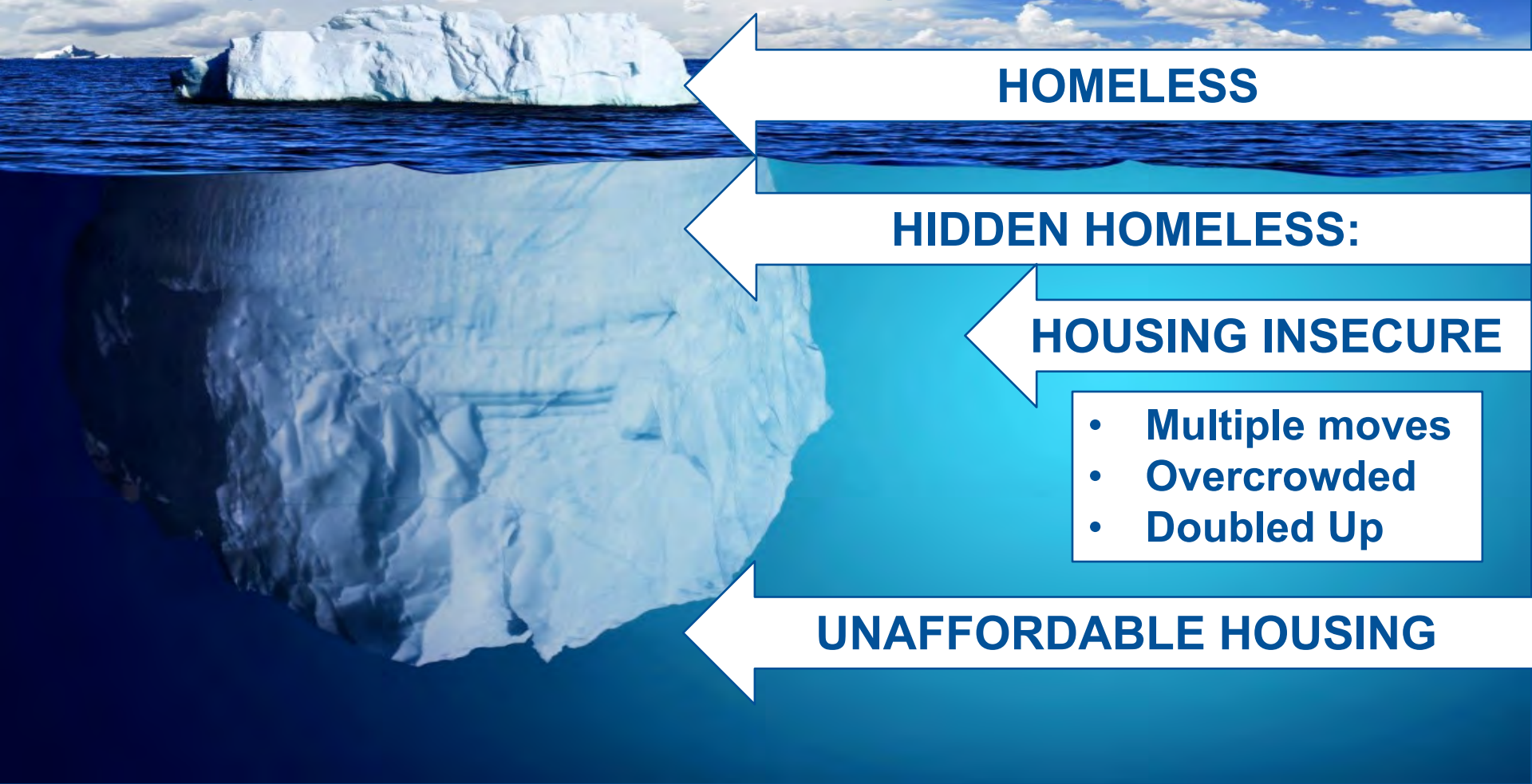
# Outcomes (Health validation)\*

- Young children
  - 56% more likely to be in fair/poor health
  - 17% more likely to have been hospitalized
  - 60% more likely to be at risk for developmental delays
- Mothers
  - Almost 2x as likely to be in fair/poor health
  - Almost 3x as likely to report depressive symptoms

\*Compared to food-secure households



# Stability: The Home Iceberg



# 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 United States, as in other countries, housing is considered a strong social determinant of health.<sup>1</sup> Poor housing conditions have been linked to multiple negative health outcomes in both children and adults. The Department of Health and Human Services has defined housing insecurity as high housing costs in proportion to income, poor housing quality, unstable neighborhoods, overcrowding, or homelessness.<sup>2</sup> Crowding in the home and multiple moves from home to home have clear negative associations for children. Crowding is negatively associated with mental health status,<sup>3</sup> ability to cope with stress,<sup>4</sup> child and parent interaction,<sup>5</sup> social relationships,<sup>3</sup> and sleep.<sup>3</sup> It also increases the risk for childhood injuries,<sup>6</sup> elevated blood pressure,<sup>5</sup> respiratory conditions,<sup>7</sup> and exposure to infectious disease.<sup>7</sup> Adults<sup>8</sup> and children<sup>9</sup> living in crowded households are less likely to access health care services than are those in noncrowded households, and families with multiple moves are less likely to establish a medical home and seek out preventive health services for their children than are securely housed families.<sup>10</sup>

**Objectives.** We investigated the association between housing insecurity and the health of very young children.

**Methods.** Between 1998 and 2007, we interviewed 22 069 low-income caregivers with children younger than 3 years who were seen in 7 US urban medical centers. We assessed food insecurity, child health status, developmental risk, weight, and housing insecurity for each child's household. Our indicators for housing insecurity were crowding (>2 people/bedroom or >1 family/residence) and multiple moves ( $\geq 2$  moves within the previous year).

**Results.** After adjusting for covariates, crowding was associated with household food insecurity compared with the securely housed (adjusted odds ratio [AOR]=1.30; 95% confidence interval [CI]=1.18, 1.43), as were multiple moves (AOR=1.91; 95% CI=1.59, 2.28). Crowding was also associated with child food insecurity (AOR=1.47; 95% CI=1.34, 1.63), and so were multiple moves (AOR=2.56; 95% CI=2.13, 3.08). Multiple moves were associated with fair or poor child health (AOR=1.48; 95% CI=1.25, 1.76), developmental risk (AOR 1.71; 95% CI=1.33, 2.21), and lower weight-for-age z scores ( $-0.082$  vs  $-0.013$ ;  $P=.02$ ).

**Conclusions.** Housing insecurity is associated with poor health, lower weight, and developmental risk among young children. Policies that decrease housing insecurity can promote the health of young children and should be a priority. (*Am J Public Health.* 2011;101:1508–1514. doi:10.2105/AJPH.2011.300139)

adjusted income has been used as the threshold for affordable housing costs. But affordability

HealthWatch study approached 36 618 adult caregivers of children younger than 3 years at

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

Variables	Secure Housing (Ref)		Crowding			Multiple Moves		
	Unadjusted No. (%)	AOR (95% CI)	Unadjusted No. (%)	AOR (95% CI)	P	Unadjusted No. (%)	AOR (95% CI)	P
Household food insecurity (n = 22 069)	1052 (9)	1.0	1060 (12)	1.30 (1.18, 1.43)	<.001	166 (16)	1.91 (1.59, 2.28)	<.001
Child food insecurity (n = 22 069)	872 (7)	1.0	1513 (17)	1.47 (1.34, 1.63)	<.001	204 (19)	2.56 (2.13, 3.08)	<.001
Caregiver report of fair/poor child health (n = 22 069)	1313 (11)	1.0	1193 (13)	1.07 (0.98, 1.18)	.14	192 (18)	1.48 (1.25, 1.76)	<.001
Caregiver report of child developmental risk (after 2004, n = 7345)	621 (14)	1.0	355 (14)	1.06 (0.91, 1.23)	.49	96 (22)	1.71 (1.33, 2.21)	<.001

*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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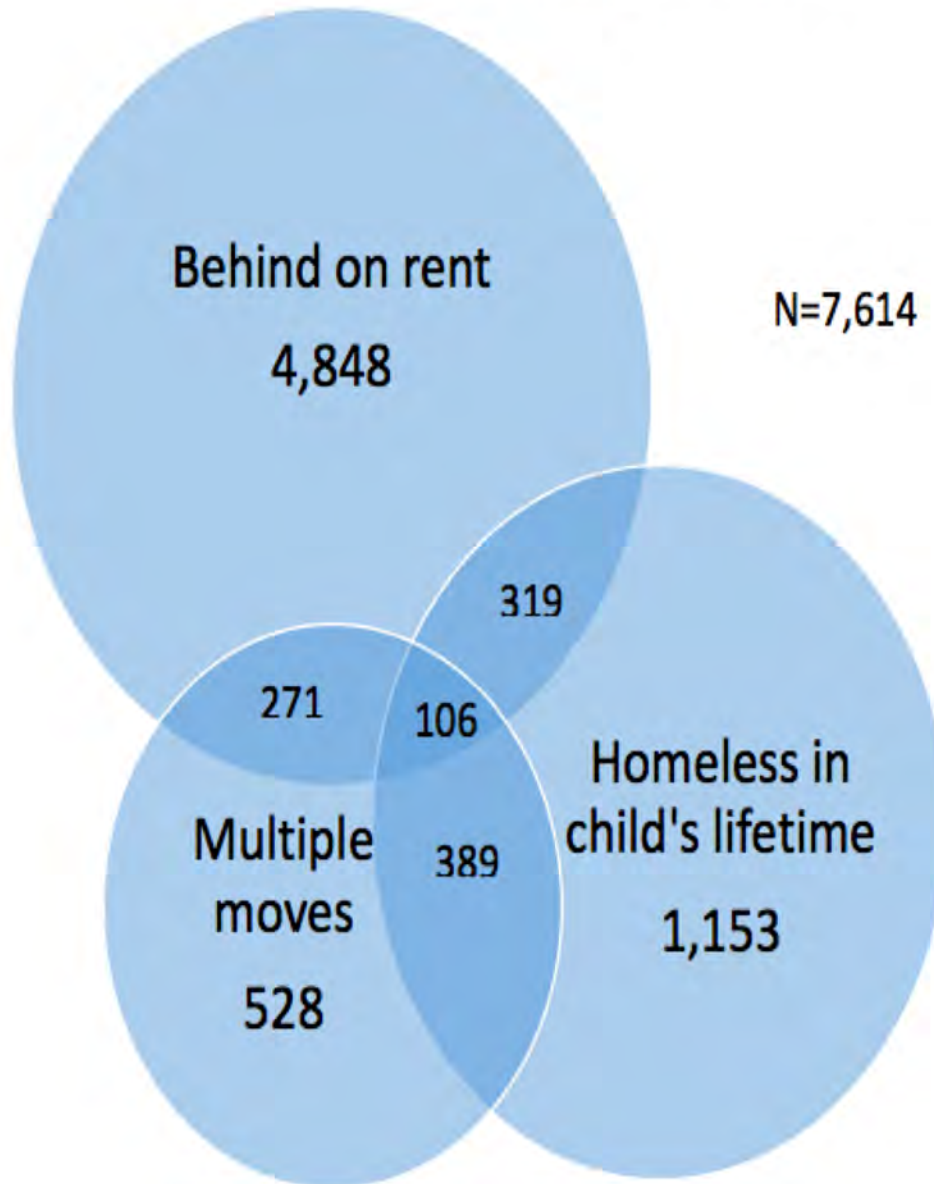
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# Exploring three forms of unstable housing with caregiver and child health

- 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

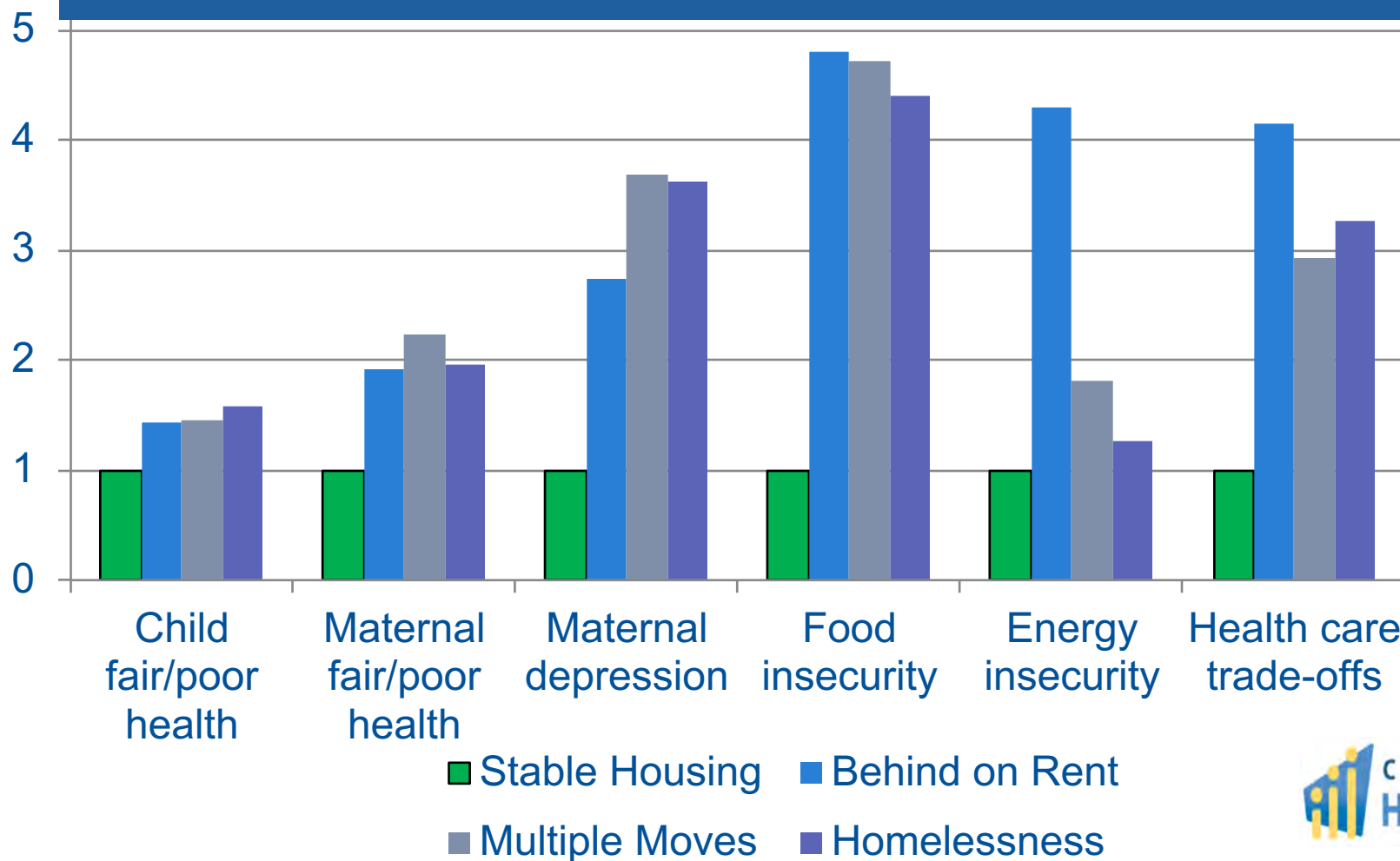
## Number of adverse housing conditions



**Little overlap  
among three  
adverse housing  
conditions**

**Most families  
were behind on  
rent and  
impacted health**

# Outcomes of unstable housing with health and material hardship outcomes





- Social screens should be related to adverse health outcomes
- Without a “Gold Standard” it becomes difficult to be sure what is measured
  - Food Insecurity
  - Housing Instability
- Future research should define consistency needed for screens to identify at risk populations