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Housing as a Vaccine: A Prescription for Child Health

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How Can Housing be a Vaccine?

- Housing can be a vaccine for individual health
 - Quality, Stability, Affordability all are important determinants to health
 - Improving Housing can provide multiple benefits like a vaccine can
- Preventing or Decreasing Duration of Homelessness can be a vaccine for health
 - Timing and Duration matter to child health
 - Increasing Subsidized Housing decreases Housing Insecurity
- Discuss how Housing and Healthcare can work together to provide the Housing Vaccine

Evidence on Housing Quality and Children's Health

- Development and Worsening Asthma has been tied specific housing conditions
 - Pests (cockroaches and mice)
 - Molds/Chronic Dampness
 - Tobacco smoke
- Lead exposure tied to long term effects
 - CDC recently lowered the “action level” to 5 ug/dl
- “Heat or eat” ties energy costs and poor health
- Homelessness tied to poor health outcomes

Unstable Housing, Hunger, Health Linked

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) | <i>P</i> | Unadjusted No. (%) | AOR (95% CI) | <i>P</i> |
| 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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More than Half of Families in Philadelphia are Housing Insecure

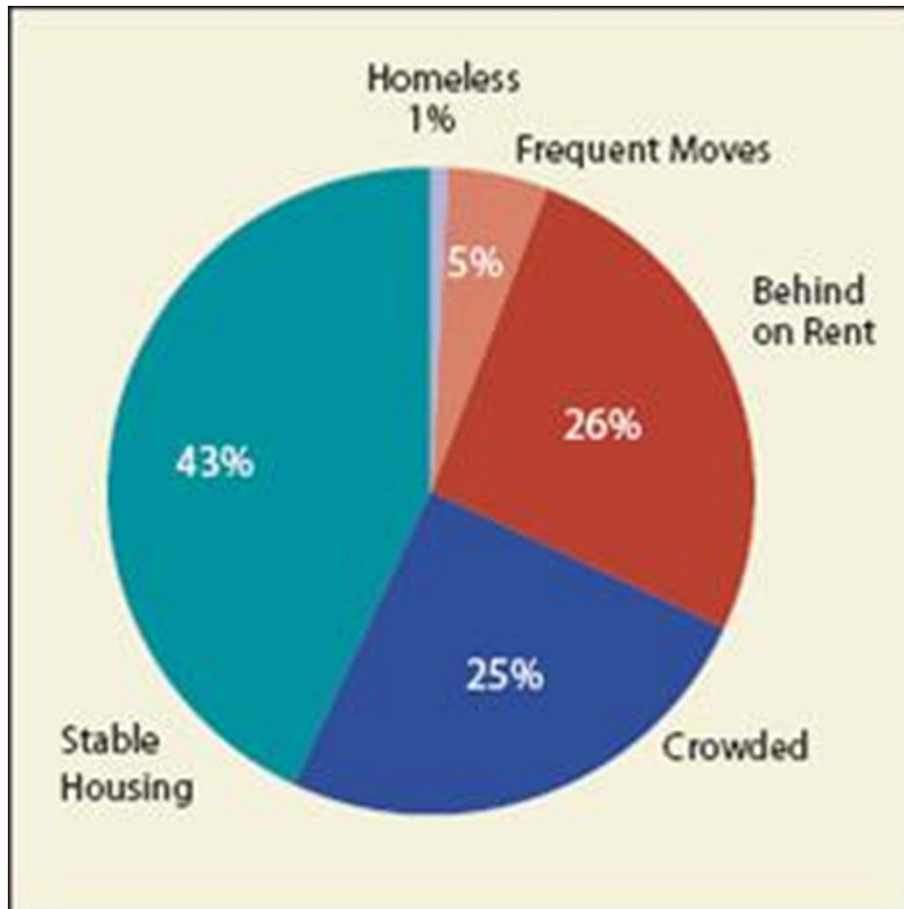


Figure 1: Over half of Children's HealthWatch Philadelphia families experience housing insecurity

- Similar findings in briefs from:
 - Minneapolis
 - Arkansas
 - Massachusetts
 - Baltimore

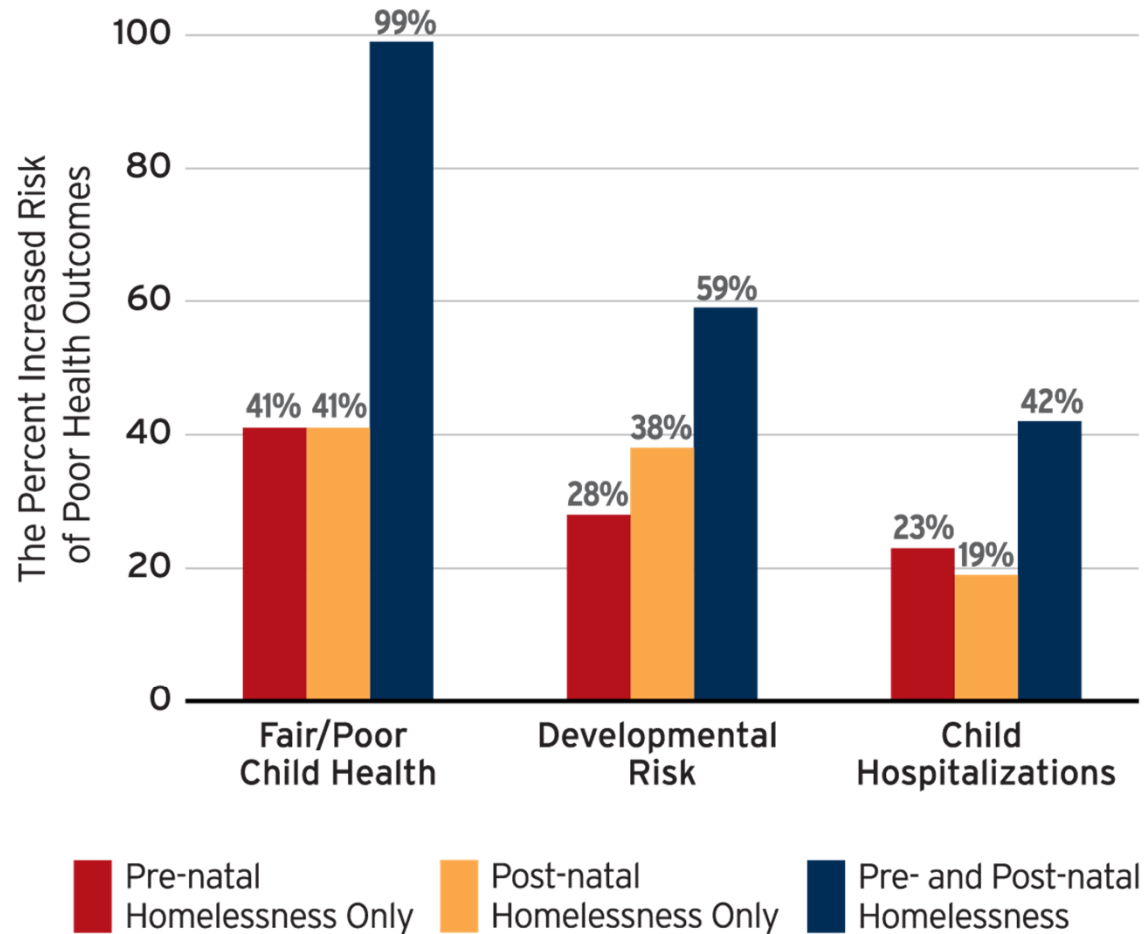


Behind Closed Doors



- Being behind on rent strongly associated with negative health outcomes
 - High risk of child food insecurity
 - Children & mothers more likely in fair or poor health
 - Children more likely at risk for developmental delay
 - Mothers more likely experiencing depressive symptoms

FIGURE 1
Compounding Effect of Homelessness on Child Health



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

All findings statistically significant at $p < .05$.

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

Differential Timing Effects of Homelessness

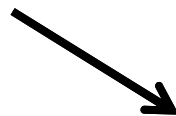


Prenatal homelessness



Higher lifetime hospitalizations, fair/poor health

Postnatal homelessness



Higher developmental risk, fair/poor health

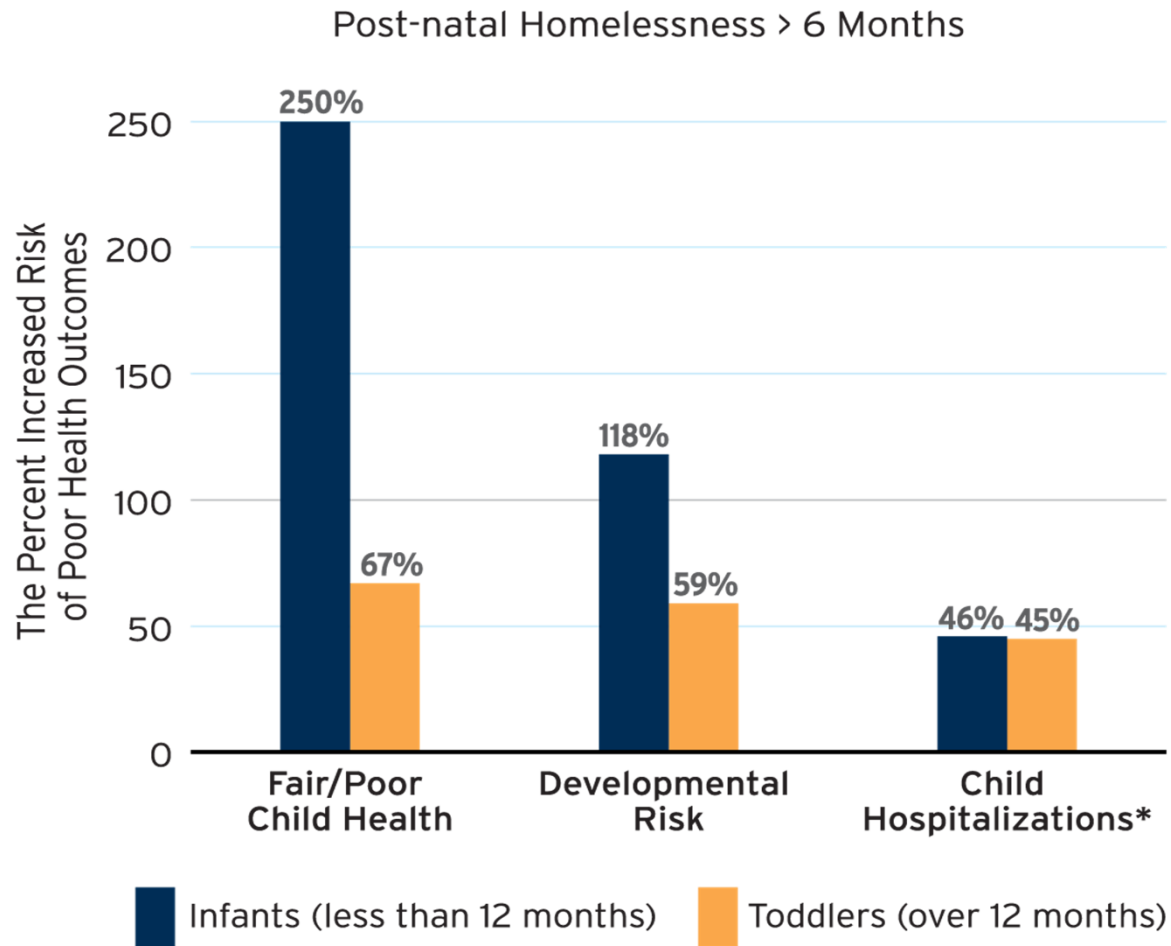
Cumulative effect matters

Prenatal + Postnatal homelessness



Highest lifetime hospitalizations, fair/poor child health, and development risks

FIGURE 2
Long Duration of Post-natal Homelessness Affects Child Health



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

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

Subsidized Housing and Children's Nutritional Status

Data From a Multisite Surveillance Study

Alan Meyers, MD, MPH; Diana Cutts, MD; Deborah A. Frank, MD; Suzette Levenson, MEd, MPH; Anne Skalicky, MPH; Timothy Heeren, PhD; John Cook, PhD; Carol Berkowitz, MD; Maureen Black, PhD; Patrick Casey, MD; Nieves Zaldivar, MD

Background: A critical shortage of affordable housing for low-income families continues in the United States. Children in households that are food insecure are at high risk for adverse nutritional and health outcomes and thus may be more vulnerable to the economic pressures exerted by high housing costs. Only about one fourth of eligible families receive a federally financed housing subsidy. Few studies have examined the effects of such housing subsidies on the health and nutritional status of low-income children.

Objective: To examine the relationship between receiving housing subsidies and nutritional and health status among young children in low-income families, especially those that are food insecure.

Design: Cross-sectional observational study.

Setting and Participants: From August 1998 to June 2003, the Children's Sentinel Nutrition Assessment Program interviewed caregivers of children younger than 3 years in pediatric clinics and emergency departments in 6 sites (Arkansas, California, Maryland, Massachusetts, Minnesota, and Washington, DC). Interviews included demographics, perceived child health, the US Household Food Security Scale, and public assistance program participation. Children's weight at the time of the visit was documented. The study sample consisted of all renter households identified as low income by their participation in at least 1 means-tested program.

Main Outcome Measures: Weight for age, self-reported child health status, and history of hospitalization.

Results: Data were available for 11 723 low-income renter families; 27% were receiving a public housing subsidy, and 24% were food insecure. In multivariable analyses, stratified by household food security status and adjusted for potential confounding variables, children of food-insecure families not receiving housing subsidies had lower weight for age (adjusted mean z score, -0.025 vs 0.205 ; $P < .001$) compared with children of food-insecure families receiving housing subsidies. Compared with children in food-insecure, subsidized families, the adjusted odds ratio (95% confidence interval) for weight-for-age z score more than 2 SDs below the mean was 2.11 (1.34-3.32) for children in food-insecure, non-subsidized families.

Conclusions: In a large convenience sentinel sample, the children of low-income renter families who receive public housing subsidies are less likely to have anthropometric indications of undernutrition than those of comparable families not receiving housing subsidies, especially if the family is not only low income but also food insecure.

Arch Pediatr Adolesc Med. 2005;159:551-556

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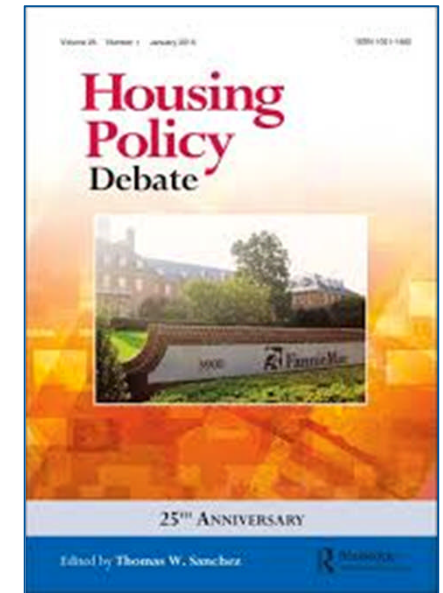
Arch Pediatr Adolesc Med. 2005;159:551-556



Families in subsidized housing who are food insecure were two fold protected against being underweight compared to similar food insecure families on waiting list

Subsidized Housing Index

- Focus – low-income families with young children in cities with fewer subsidized units than need
→ Higher rates of housing insecurity
- County-level index of availability of subsidized housing
 - Total # sub. units available (occ + unocc) relative to demand, low-income households paying >30% of income for rent



Subsidized Housing Index

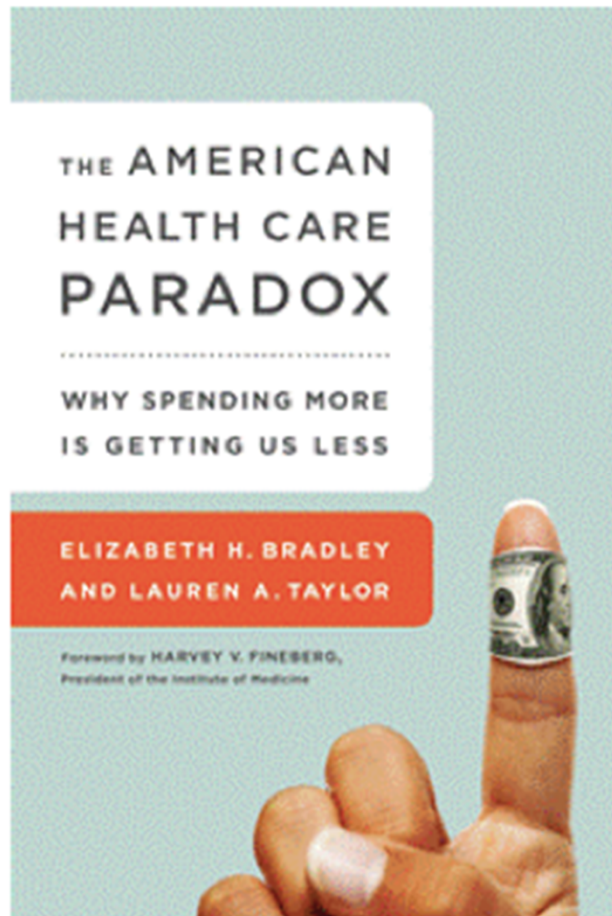
If Supply Increases What can Cities Expect?

- Tested changes in supply against components of housing insecurity
 - Behind on rent
 - Overcrowding
 - Multiple moves
 - Homelessness



- **If 5% increase in supply (for every 50 additional sub housing units/1000 low-income rent-burdened HHs)**
- **approx 30% decrease each – overcrowding, multiple moves**

Investing in the Housing Vaccine: What is the business case?



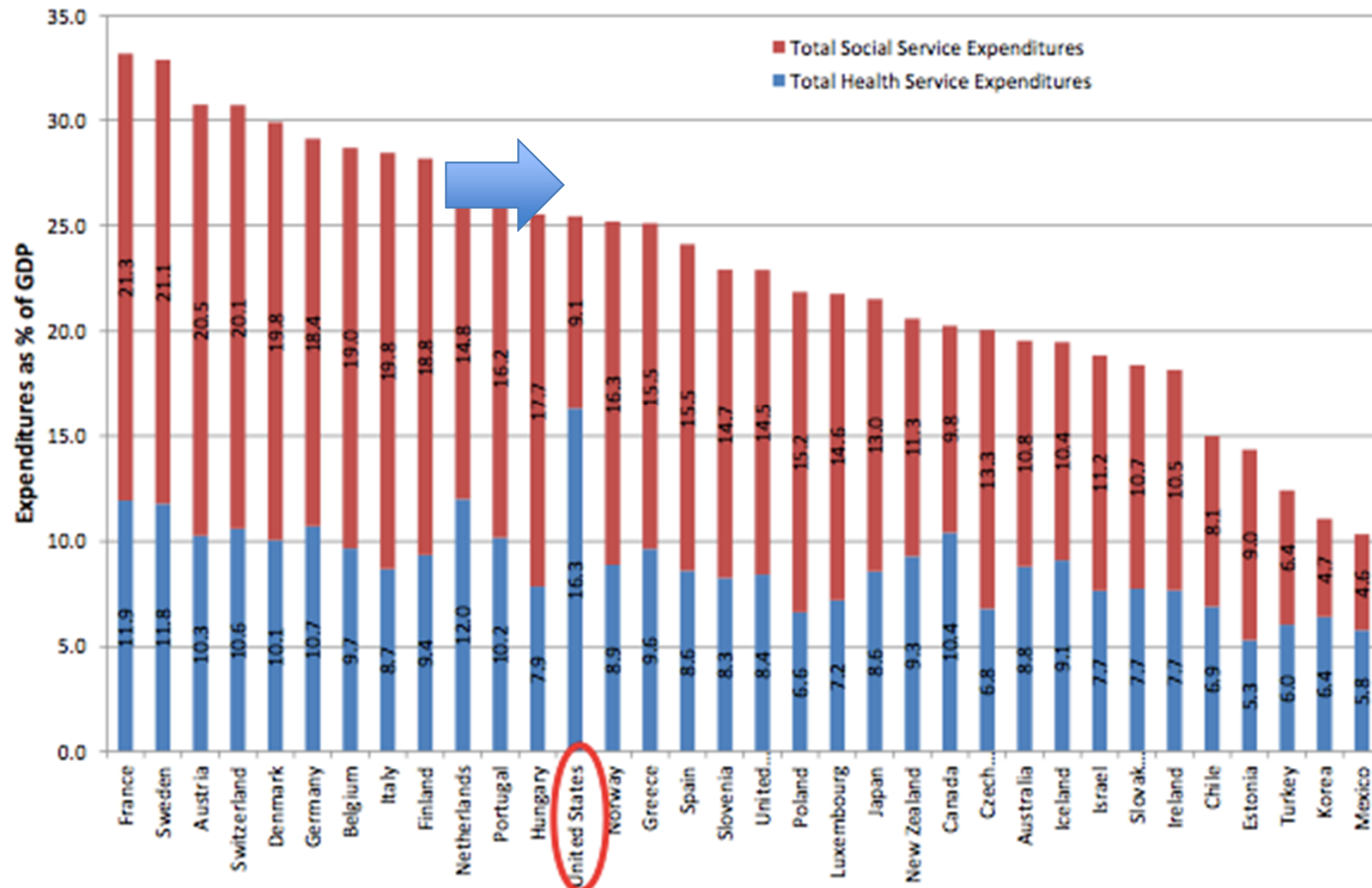
The American Health Care Paradox: Why
Spending More Is Getting Us Less

November 5, 2013
Public Affairs Books

Spending on health care



Total health care investment in US is *less*



In OECD, for every \$1 spent on health care, about \$2 is spent on social services
 In the US, for \$1 spent on health care, about 55 cents is spent on social services

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47

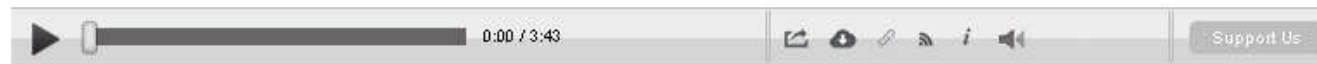


2



3

Why a health insurance company entered the housing market



JEFFREY SIMONSON/Minnesota Public Radio

The Seasons Townhomes development Monday, Feb. 3, 2014 in Ramsey, Minn.



Perspective

Housing as Health Care — New York's Boundary-Crossing Experiment

Kelly M. Doran, M.D., M.H.S., Elizabeth J. Misa, M.P.A., and Nirav R. Shah, M.D., M.P.H.
N Engl J Med 2013; 369:2374-2377 | [December 19, 2013](#) | DOI: 10.1056/NEJMp1310121

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| | | |
|---------|------------|---------------------|
| Article | References | Citing Articles (1) |
|---------|------------|---------------------|

Among the countries in the Organization for Economic Cooperation and Development (OECD), the United States ranks first in health care spending but 25th in spending on social services.¹ These are not two unrelated statistics: high spending on the former may result from low spending on the latter. Studies have shown the powerful effects that "social determinants" such as safe housing, healthful food, and opportunities for education and employment have on health. In fact, experts estimate that medical care accounts for only 10% of overall health, with social, environmental, and behavioral factors accounting for the rest.² Lack of upstream investment in social determinants of health probably contributes to exorbitant downstream spending on medical care in the United States. This neglect has ramifications for health outcomes, and the United States lags stubbornly behind other countries on basic indicators of population health.

The role of social determinants of health, and the business case for addressing them, is immediately clear when it comes to homelessness and housing. The 1.5 million Americans who experience homelessness in any given year face numerous health risks and are disproportionately represented among the highest users of costly hospital-based acute care. Placing people who are homeless in supportive housing — affordable housing paired with supportive services such as on-site case management

Audio Interview



Interview with Dr. Nirav Shah on New York State's decision to address housing needs as a social determinant of health. (10:56)

Listen
 Download

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