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# Annotated Bibliography: The Impacts of Affordable Housing on Health

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**Acevedo-Garcia, Dolores, Theresa L. Osypuk, Rebecca E. Werbel, Ellen R. Meara, David M. Cutler, and Lisa F. Berkman. 2004. Does Housing Mobility Improve Health? *Housing Policy Debate* 15(1): 49-98.**

In this article, the authors critically review 13 empirical evaluations of five housing mobility programs in the United States, rank the studies according to the strength of their designs, and summarize the research evidence that housing mobility programs improve health outcomes. Mobility programs evaluated by reviewed studies include: the Moving to Opportunity experiment, the Gautreaux program, the Yonkers scattered-site public housing program, the Section 8 program, and the Cincinnati Special Mobility Program.

Overall, the authors find evidence that mobility policies may contribute to improved health and a reduction in harmful health behaviors, such as substance abuse. Studies indicate that relocation to better neighborhoods can result in lower rates of depression and anxiety, reduced incidence of violent or traumatic events, and significantly lower levels of obesity among residents of public housing. These findings suggest that housing policy has the potential to improve individual health by influencing where families live. Nevertheless, the authors acknowledge that these findings are preliminary and that studies to date do not evaluate specific pathways between

housing and health and – with a few exceptions – do not utilize an experimental (or similarly rigorous) research design.

Recommendations for future research include the development of conceptual frameworks that address the specific mechanisms through which neighborhood effects and racial discrimination impact health, as well as further examination of the relationship between health improvement and success in the labor force. Other recommendations include use of multilevel data and qualitative research methods, larger sample sizes, and development of better health, housing, and neighborhood data.

**Aidala, Angela A., Peter Messeri, David Abramson, and Gunjeong Lee. 2001. *Housing and Health Care Among Persons Living with HIV/AIDS. Update Report #37.* New York, NY: Columbia University.**

This report presents research from the CHAIN project, a longitudinal study of people living with HIV in New York City. Findings presented demonstrate the significant relationship ( $p \leq .01$  or  $p \leq .001$ ) between (1) homelessness or unstable housing, and (2) failure to receive and maintain adequate medical care, as well as the critical role of housing and support services in ensuring appropriate care among people living with HIV/AIDS who have a history of homelessness. Results were obtained through ongoing interviews with a representative sample of individuals living with HIV. The initial sample of 700 participants was recruited from 43 local agencies in 1994; participants were interviewed every 6-12 months, with an additional “refresher” sample of 267 individuals introduced in 1998.

“Event history analysis” revealed that homeless or unstably housed participants who received housing assistance in the form of rental assistance, placement assistance, or placement in AIDS housing between 1994 and 1998 were 3.8 times more likely to enter into medical care, and twice as likely to enter into and maintain quality care, than those who did not receive assistance during this period. Among participants in need of service coordination (those who (1) reported being homeless or had housing problems during the 6 months prior to the interview, (2) lacked a regular medical provider when diagnosed with HIV, (3) scored below an established cut-off point indicating a mental disorder on a standardized test, or (4) reported having transportation problems), those who received case management related to securing housing and supportive services were more likely to enter into appropriate medical care than those who received only medically oriented case management, and were 9.4 times more likely to initiate medical care than those who did not receive case management at all.

**Balfour, Danny L. and Janet L. Smith. 1996. Transforming Lease-Purchase Housing Programs for Low Income Families: Towards Empowerment and Engagement. *Journal of Urban Affairs* 18(2): 173-188.**

In this article, Balfour and Smith evaluate a lease-purchase program run by the nonprofit Cleveland Housing Network (CHN) to help low-income families achieve home ownership. Through focus group interviews with 13 families at different stages in the program, the authors found that the opportunity to secure affordable housing and work toward home ownership appears to contribute to greater levels of self-esteem and empowerment among clients. However, the authors also suggest that living in stable, long-term housing situated within a supportive community network may have a greater influence than home ownership per se on clients' sense of efficacy and self-esteem. Based on this finding, as well as recognition of deficiencies in CHN program administration and the financial pressures of home maintenance, Balfour and Smith recommend that the program balance its focus on housing production and ownership with attention to community building and increased client involvement in program administration.

**Bartlett, Sheridan. 1997. The Significance of Relocation for Chronically Poor Families in the USA. *Environment and Urbanization* 9(1): 121-132.**

This study reports on ethnographic research conducted in Brattleboro, VT, following three poor families closely for a period of 18 months. Bartlett's ethnography reveals the toll frequent relocation takes on their emotional and mental health, and the power of decent, affordable housing to break the cycle of mobility. A brief literature review highlights studies that explore the association between relocation and stress or depressive illness. Bartlett's own research demonstrates the emotional damage children experience as their parents' search for better living conditions leads to repeated disruption of their social ties and living circumstances. Bartlett found that adequate affordable housing was the one factor influencing the mobile families studied to stay put.

**Bassuk, Ellen L. and Lynn Rosenberg. 1990. Psychosocial Characteristics of Homeless Children and Children with Homes. *Pediatrics* 85(3): 257-261.**

In this article, the authors report the results from a case-control study in which a battery of standardized tests measuring developmental delays, behavior, and mental health was administered to 86 homeless children and a comparison group of 134 children with homes. In

both groups, children lived in single-parent families headed by women who had been receiving welfare payments for long periods. On nearly all tests, homeless children had worse scores than housed children; both groups had worse scores than children in the general population. The tests administered include: the Denver Development Screening Test and Simmons Behavior Checklist for children younger than 6 years of age; the Children's Depression Inventory, Children's Manifest Anxiety Scale, and Child Behavior Checklist for children 6 years and older.

The authors suggest that instability, frequent relocation, and the uncertainties of daily life negatively impacted the homeless children, as indicated by their test scores. They do point out, however, that differences in scores were not statistically significant for any of the tests except the Denver Developmental Screening Test ( $p < .05$ ), and warn that care should be taken in interpreting study findings, as difficulty accessing the target populations may have compromised the representativeness of the samples and limited sample sizes. Moreover, performance may have been influenced by differences in setting: homeless children were tested in a more chaotic shelter setting with little privacy, whereas children in the comparison group were tested at home.

**Brenner, Barbara L., Steven Markowitz, Maribel Rivera, Harry Romero, Matthew Weeks, Elizabeth Sanchez, Elena Deych, Anjali Garg, James Godbold, Mary S. Wolff, Philip J. Landrigan, and Gertrud Berkowitz. 2003. Integrated Pest Management in an Urban Community: A Successful Partnership for Prevention. *Environmental Health Perspectives* 111(13): 1649-1653.**

This article reports the results of an Integrated Pest Management (IPM) intervention intended to reduce cockroach infestation in East Harlem, NY. Participants were recruited at local health care facilities; three-quarters of all participating families reported a cockroach problem at baseline. After comparing initial cockroach levels, a treatment group of 76 families received an individually tailored IPM program, including sealing of cracks and crevices, repair of plumbing leaks, instruction in better housekeeping and sanitation, application of least-toxic gel pesticides, and advocacy for safe pest control practices with building management. The control group of 55 families received home safety education. After 6 months of IPM, cockroach infestation in the treatment households declined from 80.5 to 39.0 percent ( $p < .0001$ ) while control households showed no reduction in infestation.

**Breyse, Patrick, Nick Farr, Warren Galke, Bruce Lanphear, Rebecca Morley, and Linda Bergofsky. 2004. The Relationship Between Housing and Health: Children at Risk. *Environmental Health Perspectives* 112(15): 1583-1588.**

This article summarizes proceedings from The Relationship Between Housing and Health: Children at Risk Workshop, in which experts reviewed current knowledge on the effects of housing on children's health and discussed best practices, research opportunities, and policy gaps. The authors report that housing quality continues to be an important component of health disparities, citing recent findings that up to 25 percent of health status variability in Japan can be explained by variation in urban residential quality.

Workshop participants discussed ways in which the home environment may present hazards that are especially detrimental in early childhood. For example, chronic exposure to allergens from mold, vermin, cockroaches, and dust mites can cause, and exacerbate asthma in children, particularly in homes with indoor moisture problems. Environmental tobacco smoke and other indoor air pollutants can have the same effect. Exposure to neurotoxicants, such as lead, pesticides, and tobacco smoke, is linked to neurodevelopmental and behavioral problems, some of which are irreversible. Risk of unintentional injury and death in the home is increased by a lack of safety devices, including window guards, safety gates, and smoke alarms. Future research and policy should address the home as an arena for strategic intervention to prevent negative health impacts.

**Buchanan, David, Bruce Doblin, Theophilus Sai, and Pablo Garcia. 2006. The Effects of Respite Care for Homeless Patients: A Cohort Study. *American Journal of Public Health* 96(7): 1-4.**

This paper reports on the effectiveness of respite care in reducing hospital use among homeless adults in Chicago. During a 1-year period following discharge from a public hospital, the authors compared hospital days, emergency room visits, outpatient clinic visits, and mortality among two groups of patients: 161 homeless adults that were accepted into respite care and 64 members of a "usual care group" that were refused care because of lack of available beds. During the 12 months after hospital discharge, the authors found that the respite care group used 58 percent fewer inpatient days than the usual care group, and had a 49 percent reduction in hospital admissions, after adjusting for a variety of variables including previous use of health services (both significant at  $p = .002$ ). The authors also demonstrate the cost-effectiveness of respite care, which cost \$706 per hospital-day avoided, as compared with

an average per day hospital cost of \$1,500 during the same time period. While there were also reductions in emergency department use among the respite care group during the follow-up period, they did not reach statistical significance. The authors emphasize the need for a randomized trial to further assess the health benefits of respite care.

**Cairney, John and Michael H. Boyle. 2004. Home Ownership, Mortgages and Psychological Distress. *Housing Studies* 19(2): 161-174.**

In this report, the authors use data from the General Social Survey on Health (GSS-H) to compare the mean level of distress experienced by home owners without mortgages, as measured on a standard scale of distress, with that of home owners with mortgages and renters. The GSS-H is a telephone survey of a national probability sample of Canadians over the age of 15; only those respondents aged 20 and over were included in this analysis, resulting in a sample size of 8,106 individuals. Findings indicate that renters experience the highest levels of distress, followed by home owners with mortgages. Home owners without mortgages have the lowest levels of distress.

The authors also measure age, gender, marital status, and stress, as well as education and household income, which are used as proxies for socioeconomic status. When controlling for these variables, variation in mental health status by housing tenure remains the same, indicating that the effect of tenure on distress is not merely an artifact of demographics, socioeconomic status, or stress levels. Moreover, housing tenure was found to have a moderating effect on the relationship between stress and psychological distress; renters with high levels of stress report higher levels of distress than both groups of high-stress home owners. According to the authors, these findings can be explained by the sense of security and personal control incurred by a stable housing situation. Nevertheless, the authors caution that data limitations limit the confidence with which a causal relationship between housing status and mental well-being can be inferred.

**Cardoso, Maria Regina Alves, Simon Nicholas Cousens, Luiz Fernando de Goes Siqueira, Fatima Maria Alves, and Luiz Antonio V. D'Angelo. 2004. Crowding: Risk Factor or Protective Factor for Lower Respiratory Disease in Young Children? *BMC Public Health* 4(19): 19-26.**

In this report, the authors use a case-control method to assess the association between residential crowding and lower respiratory diseases in children under 5 years old in Sao Paulo,

Brazil. Four hundred and eleven children diagnosed with bronchitis, pneumonia, asthma, and other lower respiratory tract diseases by pediatricians in local hospitals were matched with 347 neighborhood children on the basis of age and other eligibility criteria. Field workers compared the residential conditions for a total of 313 pairs, including ventilation, household crowding, presence of environmental contaminants, sanitation, and other factors. Findings show that household crowding—measured by number of people sharing the child’s bedroom—placed children at an increased risk of developing acute lower respiratory infection, possibly by increasing the opportunity for cross-infection among family members. Interestingly, however, the authors also found that crowding may protect against asthma by exposing children to infections at early ages.

**Cohn, Richard D., Samuel J. Arbes Jr., Renee Jaramillo, Laura H. Reid, and Darryl C. Zeldin. 2006. National Prevalence and Exposure Risk for Cockroach Allergen in U.S. Households. *Environmental Health Perspectives* 114(4): 522-526.**

In this study, data from the National Survey of Lead and Allergens in Housing (NSLAH), a nationally representative, cross sectional survey of 831 housing units, are used to assess cockroach allergen prevalence in different types of housing and among different demographic groups. Environmental samples were collected from the homes of survey participants, including dust samples from the kitchen, bedroom, and living room floors. Detectable levels of cockroach allergen were found in 63 percent of all homes, with the highest prevalence of elevated concentrations in high-rise apartments. In general, higher concentrations were also found in homes built before 1940, urban areas, households with incomes below \$20,000, and units in multifamily buildings. The authors suggest these findings can help clinicians assess the likelihood of patient exposure to cockroach allergen.

**Committee on Environmental Health. 2005. Lead Exposure in Children: Prevention, Detection, and Management. *Pediatrics* 116(4): 1036-1046.**

This policy statement reviews trends in lead poisoning in the United States, sources of lead exposure, and clinical effects in children related to the toxicity of lead. The authors review studies that demonstrate the irreversibility of cognitive impairment resulting from lead exposure and present findings from cost-benefit analyses indicating the short- and long-term cost effectiveness of removal of lead paint hazards. The authors also present methods for lead paint

screening and management of children with elevated levels of blood lead concentration, as well as a range of recommendations for pediatricians and government officials.

**Culhane, Dennis P., Stephen Metraux, and Trevor Hadley. 2002. Public Service Reductions Associated with Placement of Homeless Persons with Severe Mental Illness in Supportive Housing. *Housing Policy Debate* 13(1): 107-163.**

In this study, the authors assess the impact placement in the New York/New York (NY/NY) supportive and community housing program has on levels of service use among more than 3,000 formerly homeless persons with severe mental illness (SMI). Using data collected by eight agencies, the authors measure utilization of shelters, hospitals, and correctional facilities among the study group during the 2 years immediately following placement in NY/NY housing. Levels of use are then compared with each individual's history of service use during the 2 years prior to placement, as well as with service use during the same period among a matched-pair control that did not receive NY/NY placement. Cases are matched on the basis of demographics, indicators of mental illness and substance abuse, and similar preplacement history of service use.

Using a regression model, findings indicate that persons placed in supportive housing experience striking reductions in the frequency and duration of public service use as compared with the control group and with their own preplacement utilization rates, resulting in a \$16,281 reduction in service costs per housing unit per year and overall net program cost of \$995 per unit per year over the first 2 years. Eighty-six percent of preplacement expenditures were in health services, and the authors suggest that housing placement allows individuals to engage more effectively in outpatient regimes that may prevent the need for hospitalization and reduce the duration of hospitalization when it occurs. Readers are cautioned, however, that results may not be generalizable to all homeless people with SMI, and that reductions in service indicated in the report are conservatively measured.

**Elsinga, Marja and Joris Hoekstra. 2005. Homeownership and Housing Satisfaction. *Journal of Housing and the Built Environment* 20: 401-424.**

In this study, the authors use data from the European Community Household Panel to test the relationship between tenure and housing satisfaction among owners and renters across the European Union. Sample sizes in each country range from 1,760 to 5,570 households;

countries covered by this study include Ireland, the United Kingdom, Netherlands, Denmark, Austria, Greece, Italy, and Spain. Using regression analysis and controlling for housing quality, household characteristics, and housing costs, among other variables, the authors found that, in all countries except Austria, tenure has an independent influence on satisfaction and homeowners experience greater satisfaction than renters. The authors concede that the cause of this relationship has not been determined, and review an array of hypotheses other researchers have presented.

**Frank, Deborah A., Nicole B. Neault, Anne Skalicky, John T. Cook, Jacqueline D. Wilson, Suzette Levenson, Alan F. Meyers, Timothy Heeren, Diana B. Cutts, Patrick H. Casey, Maureen M. Black, and Carol Berkowitz. 2006. Heat or Eat: The Low Income Home Energy Assistance Program and Nutritional and Health Risks Among Children Less Than 3 Years of Age. *Pediatrics* 118(5): 1293-1302.**

This report compares health outcomes among children in households that received assistance through the Low Income Home Energy Assistance Program (LIHEAP) with those in income-eligible households that did not. Data came from the Children's Sentinel Nutrition Assessment Program, an ongoing, multisite survey of caregivers of children younger than 3 years, who are recruited when they bring their children for medical care at emergency departments and primary care clinics. The study had a sample size of 7,074 caregivers, and 16 percent of the families received LIHEAP assistance. After controlling for receipt of Food Stamps and other programs, age, birth weight, and other confounding factors, children in nonrecipient households were found to have a significantly greater likelihood of being at nutritional risk for growth problems, with weight-for-age scores significantly lower than Centers for Disease Control and Prevention reference data, as compared with children in households that received LIHEAP. Moreover, children whose families received LIHEAP assistance had lower odds of acute hospitalization from an emergency department visit on the day of the interview. The authors caution that these findings do not demonstrate causation.

**Goodman, Lisa, Leonard Saxe, and Mary Harvey. 1991. Homelessness as Psychological Trauma. *American Psychologist* 46(11): 1219-1225.**

In this article, the authors suggest that homelessness may be a risk factor for emotional disorder and psychological trauma and, as such, argue that psychological theory ought to be applied to the study of homelessness in order to make shelters and other settings more responsive to clients' needs. The authors present three pathways through which homelessness can lead to

trauma, including: the event of becoming homeless and losing stable shelter, the ongoing conditions of homelessness and shelter life, and/or the exacerbation of symptoms of trauma among those with a history of victimization. Improvement in shelter conditions, including encouragement of social connections, establishment of routines that promote self-efficacy, and linkage to a comprehensive service program, could prevent or mitigate psychological trauma and its damaging symptoms, including social disaffiliation and learned helplessness.

**Guzman, Carolina, Rajiv Bhatia, and Chris Durazo. 2005. *Anticipated Effects of Residential Displacement on Health: Results from Qualitative Research*. Research Summary. Prepared by the San Francisco Department of Public Health and South of Market Community Action Network.**

In this research summary, the authors report findings from two focus groups conducted with 24 tenants facing eviction from a rent-controlled apartment building slated for demolition in San Francisco. The authors review several ways in which displacement from affordable housing threatens health, including loss of sufficient residual income to cover food and health care expenses; disruption of social ties and community relationships; and movement to substandard living arrangements, including homelessness. Focus group participants characterized healthy neighborhoods by their safety, access to transportation, and the presence of social capital and cohesion, and indicated that displacement caused stress by threatening to disrupt these characteristics. Tenants also expressed concern about the lack of stability in their children's lives, failure of landlords to keep up with basic repairs, and lack of decent affordable housing options.

**Haber, Mason G. and Paul A. Toro. 2004. *Homelessness, Mental Health, and Economic Justice*. PsyACT Policy Brief. Detroit, MI: Wayne State University, Research Group on Homelessness and Poverty.**

In this policy brief, the authors provide an overview of trends in homelessness and homelessness policy in the United States. The authors acknowledge a bidirectional relationship between homelessness and poor mental health, but emphasize that the recent increase in homelessness should be attributed to broad social and economic trends, rather than individual characteristics such as substance abuse or psychological problems. In addition to treating the mental health problems associated with homelessness, psychologists are advised to advocate for social, policy, and economic changes to address its causes.

**Harkness, Joseph and Sandra J. Newman. 2005. Housing Affordability and Children's Well-Being: Evidence from the National Survey of America's Families. *Housing Policy Debate* 16(2): 223-255.**

In this study, the authors use multivariate regression analysis to examine the effects unaffordable housing has on children's well-being, including behavior, physical and emotional health, and school engagement and performance. The authors rely primarily on data from the 1997 National Survey of America's Families, and include in this study only households with incomes below the poverty line and children between 6 and 17 years of age. Overall, findings indicate that poor children living in areas with more affordable housing exhibit better outcomes in all areas than those living in less affordable areas. Moreover, the authors suggest the positive effects of affordable housing are cumulative, with stronger effects for older children (aged 12-17) than younger children (6-12).

The primary explanation offered for these differential effects is that housing unaffordability restricts residual income left for consumption of other basic needs. Families in unaffordable areas are more likely to postpone health care and worry about having enough food. The authors find limited evidence of parents' stress as a source of adverse effects on children living in unaffordable housing, but emphasize the need for further research.

**Hwang, Stephen W. and Ann L. Bugeja. 2000. Barriers to Appropriate Diabetes Management Among Homeless People in Toronto. *Canadian Medical Association Journal*. 163(2): 161-165.**

This study presents results from a survey completed by 50 homeless adults with diabetes staying in Toronto shelters. When asked about difficulties managing their diabetes, 64 percent of respondents reported concerns related to the appropriateness of food available at the shelters. Shelter residents also indicated that they experienced difficulties adhering to recommended insulin injection schedules and/or coordinating medication with mealtime; others feared theft of needles used for injections. Access to health care services and prescription medications were not mentioned as problems, although some respondents reported difficulties keeping their appointments and storing their medications in a safe place.

**Kappel Ramji Consulting Group. 2002. *Common Occurrence: The Impact of Homelessness on Women's Health. Phase II: Community Based Action Research. Final Report: Executive Summary. Prepared for Sistering—A Woman's Place.***

This paper presents findings and recommendations regarding homelessness and health, gleaned from interviews with 126 women experiencing homelessness in Toronto and 38 representatives of local agencies. For the purposes of this analysis, homelessness is characterized as visible (including those sleeping in shelters, on the street, and in other places unfit for human habitation) and hidden. Hidden homelessness includes women facing severe housing cost burdens or eviction, living in physically unsafe buildings or overcrowded conditions, temporarily staying with family or friends, and living in situations where they are prone to violence or conflict.

The authors report that the severity of hidden homelessness is underestimated, and that related health impacts are similar to those incurred by the visibly homeless. Ninety-three percent of all respondents reported emotional and mental health issues stemming from their living conditions, including debilitating stress resulting from the unpredictability of their housing situation. Women also reported feelings of depression, despair, and hopelessness, and exacerbation of existing mental health issues as a result of homelessness. The women interviewed also indicate difficulty learning about available health care services and barriers to accessing services due, in part, to the lack of coordination among providers and judgmental attitudes of workers.

**Krieger, James and Donna L. Higgins. 2002. *Housing and Health: Time Again for Public Health Action. American Journal of Public Health 92(5): 758-768.***

In this article, public health practitioners are advised to become more involved in issues related to housing quality and accessibility. The authors catalog the myriad ways in which substandard housing is linked to negative health outcomes, including: the onset and exacerbation of infectious and chronic diseases; incidence of accidental injuries; poor childhood development and nutrition; adverse mental health outcomes; and deleterious neighborhood effects. The authors provide a brief review of the history of public health involvement in housing as well as current efforts to improve housing conditions, and offer suggestions for further engagement of public health practitioners in housing issues.

**Lanphear, Bruce P., Michael Weitzman, Nancy L. Winter, Shirley Eberly, Benjamin Yakir, Martin Tanner, Mary Emond, and Thomas D. Matte. 1996. Lead-Contaminated House Dust and Urban Children's Blood Lead Levels. *American Journal of Public Health* 86(10): 1416-1421.**

In this paper, the authors investigate the association between lead-contaminated house dust and urban children's blood lead levels, using children's blood samples and environmental samples of water, soil, and dust taken during a home visit. Subjects were drawn from a random-sample survey of 205 children in Rochester, NY; all were between 12 and 31 months of age and had lived in the same house since they were 6 months old.

Using a multiple regression model, the authors found significant correlations between children's blood lead levels and lead-contaminated household dust and soil, with a mean blood lead level of 7.7  $\mu\text{g}/\text{dL}$ . According to the authors, these findings indicate that settled, lead-contaminated house dust is an important contributor of lead to children with low-level blood lead elevation. Moreover, a considerable portion of children in the study had elevated blood-lead levels even though dust lead levels in the home were lower than current Housing and Urban Development and Environmental Protection Agency standards. This finding suggests the need for lowering dust lead standards and more rigorous dust lead sampling of older housing to improve primary prevention of childhood lead exposure.

**Lee, Wang, Eric Beecroft, Jill Khadduri, and Rhiannon Patterson. 2003. *Impacts of Welfare Reform on Recipients of Housing Assistance: Evidence from Indiana and Delaware*. Prepared for the U.S. Department of Housing and Urban Development by Abt Associates.**

In this study, the authors assess whether welfare reform has different effects on families who receive housing assistance, as compared with those that do not. To address this question, the authors rely primarily on data from random assignment welfare reform evaluations in Indiana and Delaware, which are matched with Housing and Urban Development administrative data to identify families that also receive federal housing assistance. The authors estimate impacts by comparing outcomes for families randomly assigned to a welfare reform group with those assigned to a control group receiving the traditional welfare program.

Findings indicate that welfare reform increases earnings and employment, and decreases Temporary Assistance for Needy Families and Food Stamp payments for families receiving federal housing assistance. The authors suggest that welfare recipients' receipt of housing

assistance may result in positive effects beyond the benefit of housing itself, including increases in recipients' employment and reduced reliance on welfare, possibly because housing assistance allows welfare recipients to stabilize their lives and subsequently experience improved employment outcomes.

**Lipman, Barbara J. 2005. *Something's Gotta Give: Working Families and the Cost of Housing*. Washington, DC: Center for Housing Policy.**

In this report, the author uses data from the Consumer Expenditure Survey and the 2002 National Survey of America's Families to explore the tradeoffs working families make when high housing costs consume a disproportionate share of the family budget. Findings indicate that severely cost-burdened homeowners are able to maintain relatively higher levels of spending on healthcare and insurance, as compared with renters, although both groups limit expenditures as housing cost burden grows; this difference may be due to homeowners' use of their home as an asset to borrow against. Compared with those paying less for housing, working families are also 23 percent more likely to have difficulty paying for food and 28 percent more likely to have a child or adult lacking health insurance. Finally, the author demonstrates that poor children in cost-burdened families are more likely to be in fair or poor health than poor children whose families are not cost-burdened.

**Macintyre, Sally, Anne Ellaway, Geoff Der, Graeme Ford, and Kate Hunt. 1998. Do Housing Tenure and Car Access Predict Health Because They Are Simply Markers of Income or Self Esteem? A Scottish Study. *Journal of Epidemiological Community Health* 52: 657-664.**

In this article, the authors use survey data from the West of Scotland Twenty-07 Study to investigate whether housing tenure and car ownership actually predict health, or whether they are simply proxies for assumed underlying causal factors such as income or self-esteem. The sample for which data were analyzed consists of 1,500 randomly selected Scottish adults between the ages of 30 and 60, for which the authors examine sex, age, housing tenure, car access, household income, self-esteem, and health.

After controlling for these other variables, the authors found that tenure and car access were still associated with a range of health measures, in the direction suggested by previous studies (home and car ownership predict better mental and respiratory health, fewer chronic illnesses, fewer symptoms, lower blood pressure, and smaller waist/hip ratio). These findings indicate that

tenure and car access are not simply markers for other characteristics, but may actually contribute to health. The authors caution that measures of income and psychological traits used in this study are crude, and recommend further empirical examination to better understand this relationship.

**Matthews, Karen A., Catarina I. Kiefe, Cora E. Lewis, Kiang Liu, Stephen Sidney, and Carla Yunis. 2002. Socioeconomic Trajectories and Incident Hypertension in a Biracial Cohort of Young Adults. *Hypertension* 39: 772-776.**

In this paper, the authors examine the relationship between socioeconomic trajectories and hypertension by using data from the Coronary Artery Risk Development in Young Adults Study, a 10-year longitudinal study of 3,827 individuals aged 18-30 years old at the time the study began. Participants' socioeconomic status was measured at four intervals throughout the study period, and indicated by achievement of a new educational degree, difficulties experienced in paying for basics, and changes in income category in relation to income at entry. All subjects had normal blood pressure at the initial assessment.

Using multiple logistic regression models that controlled for an array of initial characteristics, the authors found that participants who experienced difficulty paying for basics throughout the study period were significantly more likely to develop hypertension than those who did not. Income decline between years 5 and 10 was also found to be associated with the onset of hypertension. Overall, findings demonstrate that cumulative economic difficulties are associated with hypertension, indicating the importance of incorporating socioeconomic trajectories in risk estimates. The authors offer several potential explanations for this relationship, including less adequate health care, greater incidence of depression, and chronic stress exposure among those with economic difficulties, and suggest that policies that reduce economic disadvantage may also have an impact on levels of hypertension.

**Meyers, Alan, Diana Cutts, Deborah A. Frank, Suzette Levenson, Anne Skalicky, Timothy Heeren, John Cook, Carol Berkowitz, Maureen Black, Patrick Casey, and Nieves Zaldivar. 2005. Subsidized Housing and Children's Nutritional Status: Data from a Multisite Surveillance Study. *Archives of Pediatrics and Adolescent Medicine* 159: 551-556.**

In this study, the authors test the impact housing subsidies have on the nutrition and health status of children in low-income families. Data were drawn from the Children's Sentinel Nutrition Assessment Program (CSNAP), an ongoing program in which a cross-sectional convenience

sample of caregivers of children under the age of 3 years are asked about child health history, food security, and participation in public assistance and health programs while accessing medical care at sites in six cities across the United States. Data used in this analysis were gathered over 4 years, and include nearly 12,000 children; children in families with owner-occupied housing were excluded from this study.

Findings indicate that receipt of housing subsidies is associated with improved nutritional status among low-income renter families, as indicated by measures of weight for age. The authors used multivariate models that controlled for variables including participation in Women, Infants, and Children, Temporary Assistance for Needy Families, and/or the Food Stamp Program, and found a significant difference in the health of children whose families received housing subsidies, as compared with those that did not; findings were particularly robust (significant at  $p < .001$ ) among food-insecure families—those in which food availability, or socially acceptable food acquisition, is limited or uncertain. The authors caution that these findings do not indicate causation, and may not be generalizable to the national population of similar children.

**Meyers, Alan, Dana Rubin, Maria Napoleone, and Kevin Nichols. 1993. Public Housing Subsidies May Improve Poor Children's Nutrition. *American Journal of Public Health* 83(1): 115.**

In this brief article, the authors report the findings of a retrospective pilot study designed to test whether low-income children whose families receive public housing subsidies have better nutritional status than similar children whose families do not receive subsidies. Data were collected from more than 500 children between the ages of 6 months and 6 years during health maintenance visits at the Pediatric Primary Care Clinic at Boston City Hospital. The Boston Housing Authority and Metropolitan Housing Authority then classified each child's family by subsidy status. The authors found that 19 percent of children whose families received housing subsidies were iron deficient, compared with 30 percent of children whose families did not receive subsidies (significant at  $p = .055$ ). According to the authors, these findings suggest that subsidized housing may protect children against iron deficiency, possibly as a result of reduced pressure on family food budgets.

**National AIDS Housing Coalition. 2005. *Housing Is the Foundation of HIV Prevention and Treatment: Results of the National Housing and HIV/AIDS Research Summit*. Washington, DC: Author.**

This paper presents the results of the 2005 National Housing and HIV/AIDS Research Summit, which focused on the ways in which homelessness and unstable housing affect HIV risk behaviors and treatment access. Emphasizing the cost-effectiveness and savings achieved by viewing housing as a prevention and treatment intervention, experts at the Summit came up with policy priorities based on existing research.

Findings upon which these priorities are based include: the higher rates of infection and death from HIV/AIDS among those experiencing homelessness as compared with HIV positive persons who are housed; the continued unmet housing need among those living with HIV/AIDS; and the need for accessible housing models to serve this population. Evidence also shows that unstable housing or homelessness can lead to increased engagement in risk behaviors, while stable housing can serve as a protective force, limiting “exposure” to health threats and facilitating ongoing engagement in health services as well as treatment adherence and success. The report also identifies a range of issues related to the impact of housing models, for which further research is needed.

**National Association of Realtors Research Division. 2006. *Social Benefits of Homeownership and Stable Housing*. Washington, DC: Author.**

This paper explores the social outcomes associated with residential stability and/or homeownership. Among other outcome measures, the authors present research indicating that home owners experience higher levels of self-esteem and control over their lives, as well as better self-ratings of physical health, even when controlling for factors such as age, income, and education levels. Other evidence shows that homeowners are able to use housing equity to access higher levels of care and pay medical bills, thus enjoying better health. The authors acknowledge the difficulty of distinguishing between the benefits associated with homeownership and those associated with stable housing, regardless of tenure.

**Nettleton, Sarah and Roger Burrows. 1998. *Mortgage Debt, Insecure Home Ownership and Health: An Exploratory Analysis*. *Sociology of Health and Illness* 20(5): 731-753.**

Using data from the British Household Panel Survey (BHPS), this report examines the impact on mental health and use of primary care services associated with the onset of mortgage

arrears. The BHPS is a longitudinal study of a national representative sample of households and individuals within them; the authors use a total sample size of more than 7,000 individuals, and examine changes among those falling into arrears or having trouble making mortgage payments within two periods, from 1991 to 1992 and 1994 to 1995.

Using multiple and logistic regression analyses and controlling for changes in income, physical health problems, and employment, the authors demonstrate that the onset of mortgage problems is associated with a significant ( $p < .001$  in the first period, and  $p < .05$  for men and  $p < .01$  for women in the second period) decline in psychological well-being, as indicated by changes in GHQ12 (General Health Questionnaire) scores. In the first study period, the onset of mortgage problems is also significantly associated with an increase in visits to general practitioners among men. Nevertheless, the authors caution that a causal relationship between these factors has not been established, and identify three potential explanations for their findings: (1) the presence of a “constellation of factors” associated with mortgage indebtedness and leading to poor mental health; (2) the loss of personal status or self identity associated with entering into arrears, and the resulting insecurity and impact on mental health; and (3) the social isolation individuals feel when unable to take responsibility for their shelter, and its psychosocial consequences.

**Nevin, Rick and David E. Jacobs. 2006. Windows of Opportunity: Lead Poisoning Prevention, Housing Affordability, and Energy Conservation. *Housing Policy Debate* 17(1): 185-207.**

In this article, the authors report on the accuracy of a predictive model used to forecast childhood lead poisoning and paint hazards, and confirm that window replacement played a large role in reducing the number of children with elevated blood lead levels (at or above 10  $\mu\text{g}/\text{dL}$ ) between 1990 and 2000. The model was created using data from an array of sources, and forecasts suggested that the number of housing units with interior lead paint would fall by nearly 11 million between 1989 and 2000, with 70 percent of this decline attributable to window replacement and the balance due to demolition.

The authors indicate that this model has been validated, and suggest that single-pane window replacement, in conjunction with other strategies, can help eliminate childhood lead poisoning by 2010. Further, window replacement can lead to increased energy efficiency, and has implications for housing affordability and indoor air quality. The authors also provide an

overview of the effects lead exposure has on children, trends in childhood lead poisoning levels that indicate the success of regulatory actions to date, and policies and practices that have helped reduce lead paint hazards.

**Newman, Sandra. 2006. *How Housing Matters: A Critical Summary of Research and Issues Still to be Resolved [Discussion Draft]*. Baltimore, MD: Johns Hopkins Institute for Policy Studies, mimeo.**

In response to a 1980 critique in which John Weicher<sup>1</sup> found insufficient evidence that the benefits of housing extend beyond the value of the actual units, the author examines findings from subsequent research on the effects of housing on social outcomes. The review is limited to studies of housing attributes, rather than neighborhood characteristics, and separately assesses the evidence related to five aspects of housing: quality, crowding, affordability, subsidized housing, and homeownership. The author considers questions of measurement and causality and focuses on quantitative studies that meet the standards of scientific rigor.

According to this review, a number of studies linking housing quality and crowding to health have found an association between these conditions and health outcomes, but fail to sufficiently establish any causal relationship. The author concludes that research to date has not been rigorous enough to justify departing from Weicher's initial conclusion. She argues for holding a "consensus conference" to develop a comprehensive and rigorous research agenda on these questions, validated measures of housing-related variables, and a minimum housing dataset for inclusion in major surveys of child and family outcomes.

**Page-Adams, Deborah and Nancy Vosler. 1997. *Homeownership and Well-Being Among Blue-Collar Workers*. Working Paper No. 97-5. St. Louis, MO: Washington University, George Warren Brown School of Social Work Center for Social Development.**

In this paper, the authors examine the impact assets have on well-being by testing the relationship between homeownership and economic strain, depression, problematic alcohol use, and social support among automobile manufacturing workers. Data are drawn from responses to a questionnaire sent to a random sample of 653 workers in two automobile manufacturing plants in the Midwest. A total of 193 usable questionnaires were returned, and the authors caution that the low response rate and limited population restrict the generalizability of their

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<sup>1</sup> Weicher, John. 1980. *Housing: Federal Policies and Programs*. Washington, DC: American Enterprise Institute for Public Policy Research.

findings. Using multivariate and logistic regression analyses, and controlling for household income and educational attainment, the authors found that homeownership is significantly and negatively associated with economic strain (indicated by difficulty in being able to afford needed items and leisure activities, and/or difficulty paying bills), as well as with problematic alcohol abuse, and depression (indicated by responses to standard measurement instruments).

**Rafferty, Yvonne and Marybeth Shinn. 1991. The Impact of Homelessness on Children. *American Psychologist* 46(11): 1170-1179.**

In this review, the authors critique existing research on the effects of homelessness on children, and attempt to identify the specific pathways through which homelessness leads to adverse effects. Research indicates that homeless children have higher levels of health problems, with inadequate shelter conditions, lack of access to quality health services, and poor nutrition serving as the main mechanisms through which homelessness leads to these problems. Other areas addressed include developmental delays, psychological problems, and educational under-achievement.

**Rasmussen, David W., Isaac F. Megbolugbe, and Barbara A. Morgan. 1997. The Reverse Mortgage as an Asset Management Tool. *Housing Policy Debate* 8(1): 173-194.**

Addressing the queries of observers questioning the growth potential of the reverse mortgage market, the authors of this article identify nontraditional market segments and potential uses for this instrument. Among other uses, the authors discuss the reverse mortgage as a means to access equity to sustain home health care for a longer period of time. The mortgages can be used to finance home retrofitting and increase accessibility for disabled persons, or cover the cost of caregivers. Presumably, according to the authors, this resource allows the elderly to maintain a better quality of care than available through Medicaid. Moreover, reverse mortgages can make private long-term care insurance more affordable, allowing beneficiaries more flexibility in their long-term care.

**Rohe, William M. and Victoria Basolo. 1997. Long-Term Effects of Homeownership on the Self-Perceptions and Social Interaction of Low-Income Persons. *Environment and Behavior* 29(6): 793-819.**

This paper presents the third wave of findings in a quasi-experimental longitudinal study of homeowners in Baltimore, MD. Using a pretest-posttest design, the authors compare measures

of personal and social well-being among 171 participants in a subsidized homeownership program with a comparison group of 140 renters receiving Section 8 housing vouchers. Interviews were completed before the treatment group purchased their homes, 18 months post-purchase, and 36 months after moving. By the third wave, 63 percent of homebuyers and 46 percent of renters remained in the study, but the authors find that attrition bias does not threaten the validity of their results.

Using multiple regression models, the authors assessed the impact of homeownership on self-esteem and perceived control, among other variables. Literature suggests that homeownership can increase self-esteem through three mechanisms: reflected appraisals, favorable comparison with others, and achievement of a personal goal; however, homeowners did not show significantly higher levels of self-esteem in any of the three waves of interviews—in the third wave, owners actually had lower self-esteem than the renter group. Hypotheses also suggest that homeownership can influence owners' sense of personal control, through the ability to fix up and personalize the living environment and restrict entry to the dwelling. Again, over the 3-year period no significant relationship was found between perceived control and ownership.

**Rohe, William M., Shannon Van Zandt, and George McCarthy. 2001. *The Social Benefits and Costs of Homeownership: A Critical Assessment of the Research*. Low-Income Homeownership Working Paper Series. Cambridge, MA: Harvard University Joint Center for Housing Studies.**

In this review, the authors assess the evidence for claims of the individual and societal benefits of homeownership. Among other things, the authors examine the relationship between homeownership and psychological health, as well as homeownership and physical health.

Three mechanisms are offered to explain the potential relationship between homeownership and psychological health: (1) the social status and personal freedom linked to homeownership contribute to greater self-esteem and sense of personal control, (2) homeowners have access to assets that allow them to access better health care, and (3) the security of tenure that comes with homeownership leads to diminished stress levels. The authors point out, however, that little empirical evidence validates the presumed relationship between homeownership and self-esteem; moreover, foreclosure or difficulty keeping up with home maintenance needs and mortgage payments can counteract any of the proposed benefits.

Arguments that homeownership positively influences physical health include: (1) home owners are able to draw on home equity to pay for health care and maintain a higher standard of care; and (2) homeownership promotes a general sense of well-being, which has a positive impact on physical health. The authors caution that evidence for this positive relationship is limited and that the mechanism through which ownership impacts health has not been identified; nevertheless, research generally finds a positive association between homeownership and physical health. Like psychological health, however, this relationship may be compromised when a household has difficulty making mortgage payments.

**Rossi, Peter H. and Eleanor Weber. 1996. *The Social Benefits of Homeownership: Empirical Evidence from National Surveys. Housing Policy Debate* 7(1): 1-35.**

In this report, the authors use data from the General Social Survey, the National Survey of Families and Households, and the American National Election Studies, to separate tenure status from dwelling attributes and socioeconomic characteristics, and examine the differences between renters and owners across a wide range of variables. Using regression analyses, the authors' findings support claims that owners enjoy marginally higher levels of well-being than renters, as evidenced by measures of self-satisfaction, belief that they can do things as well as anyone else, confidence that their lives will work out, lower scores on depression scales, and higher self-ratings of physical health. Not all measures reach statistical significance (in some cases the sample sizes are too small), however, and when they do the coefficients are not large. Moreover, the cross-sectional data sets do not allow causality to be addressed.

**Sandel, Megan and Joshua Sharfstein. 1998. *Not Safe at Home: How America's Housing Crisis Threatens the Health of Its Children*. Boston, MA: Children's Hospital Medical Center, The Doc4Kids Project.**

In this report, the authors compile true stories submitted by caregivers, which detail the effects of inadequate or unaffordable housing on children. The report, organized by housing consequences, details the mechanisms through which substandard housing influences child health, including: asthma attacks and respiratory viruses triggered by exposure to tobacco smoke, cockroaches and rats, dust mites, mold, and lack of heat; burns from house fires, hot water, and other home heating sources; psychological disorders due to exposure to violence in unsafe neighborhoods or living arrangements; lead poisoning resulting from exposure to lead paint and dust; homelessness and the attendant health risks; and malnutrition as families make

a tradeoff between food and housing costs. Consequences are heightened for children already living with a chronic disease.

**Smith, Susan J., Donna Easterlow, Moira Munro, and Katrina M. Turner. 2003. Housing as Health Capital: How Health Trajectories and Housing Paths Are Linked. *Journal of Social Issues* 59(3): 501-525.**

In this article, the authors discuss housing as a source of “health capital,” that is, a “store of resilience that is built up or depleted as part of the trajectory individuals, households, and communities take through...changing networks...that shape their lives.” Health capital is seen as part of a dynamic process of getting sick or becoming well, and housing is assumed to play an important role in this process. To test the notion that housing has therapeutic properties, the authors engage in in-depth open-ended interviews with men and women with health problems in 84 households across Britain. In their interviews, the authors also explore the idea that people with health problems have more difficulty attaining and sustaining home ownership, relative to the general population. Participants were recruited primarily through self-help groups, and interviewees are not presented as a representative sample, but rather representatives of a spectrum of circumstances.

Initial responses indicate that many interviewees found physically and emotionally “curative” properties in homeownership through access to healthier homes and improved living spaces. However, the authors found that many respondents had difficulty accessing homeownership, through an inability to pay or secure a mortgage and/or find an accessible property.

Interviewees reported that these obstacles can take a damaging psychological toll and undermine resilience. Moreover, worsening health often meant that owners had difficulty sustaining home ownership, as a result of decreasing incomes that make it difficult to make payments and maintain the physical conditions of the home. The authors suggest that the emotional stress associated with these circumstances makes homeownership an unrealistic, and potentially damaging goal for individuals with health problems.

**Taylor, Mark P., David J. Pevalin, and Jennifer Todd. 2006. *The Psychological Costs of Unsustainable Housing Commitments*. Working Paper. Essex, UK: University of Essex, Institute for Social and Economic Research.**

In this study, the authors use data from the British Household Panel Survey (BHPS) gathered between 1991 and 2003 to assess the relationship between housing payment problems,

including mortgage arrears and the threat of eviction or repossession, and the psychological well-being of owners and renters in Great Britain. Results show that being in arrears is significantly associated with psychological costs at a level equivalent to those associated with unemployment or divorce among male heads of households. Among females, having persistent difficulties making housing payments has a negative impact on psychological well-being. Findings also indicate that unsustainable housing commitments result in larger psychological costs among homeowners, as compared with renters, perhaps because they have larger financial and emotional investments in their homes.

**Wood, David L., R. Burciaga Valdez, Toshi Hayashi, and Albert Shen. 1990. Health of Homeless Children and Housed, Poor Children. *Pediatrics* 86(6): 858-866.**

In this report, the authors present findings from the Los Angeles Homeless Families Study, a cross-sectional survey of 196 homeless families and a comparison group of 194 stably housed poor families. The homeless families were sampled from clients at the 10 largest Los Angeles County shelters, while the housed families were sampled from visitors to four welfare offices located near the homeless families' last stable address; in each family one child was randomly chosen for study. Parents' responses to questions about the child's health and development, as well as anthropomorphic measurements of height and weight, are used to compare the health status of homeless and housed children.

Using regression analysis, the authors find that children in both groups were equally likely to be rated in fair or poor health by their mothers, and had very similar types and incidences of symptoms during the month prior to the interview, at rates far greater than the general population of children. Large proportions of children in both groups were found to eat inadequate, unbalanced diets; homeless children, however, were much more likely to be obese and frequently eat food from fast-food restaurants and convenience stores. They were also more likely to experience hunger because the family ran out of food or money. Along with increased behavior and academic problems, the authors attribute these differences to a "cumulative effect of multiple risk factors," rather than a single environmental or behavioral factor.