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Description of document: Department of Agriculture (USDA) Food and Nutrition Service (FNS) Subject: Final report on childhood hunger produced under contract to University of Illinois, 2013-2014

Requested date: 18-November-2018

Release date: 04-May-2020

Posted date: 23-November-2020

Source of document: FOIA Officer
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United States
Department of
Agriculture



Food and
Nutrition
Service

3101 Park
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Alexandria, VA
22302-1500

May 4, 2020

RE: FOIA Tracking Number 2019-FNS-00946-F

This is in response to your Freedom of Information Act, 5 U.S.C. § 552, (FOIA) request dated November 12, 2018. In your correspondence you requested the following:

“A copy of the Final Report produced under contract 3048108673-12-660 issued to the University of Illinois. It is likely in the timeframe 2013-2014.”

You then amended your request on December 18, 2018 and provided additional search terms. Specifically you provided the following additional information detailed below in bold text:

Subaward Number: 3048108673-12-660
Prime Award Number: AG3198K110070
Prime Award Parent: AG3198B100028
USDA Food and Nutrition Service
Office Code 3198 (FNS-HQ)
Prime Awardee: University of Kentucky, Lexington, Kentucky
Subawardee: University of Illinois, Urbana, Illinois

Your request was received by our office on July 18, 2019 and was assigned case number 2019-FNS-00946-F. The Contracts Management Division (CMD) conducted a search for responsive records. CMD located 4 documents that it deemed to be responsive to your request totaling 91 pages. These records are being released to you in their entirety.

This completes our responsive to your request.

If you have any questions pertaining to this request or the FOIA process you may contact us by email at FOIA-FNS@usda.gov. Please refer to case number 2019-FNS-00946-F in any future correspondence.

Sincerely,

//S//

Kevin Lynch
FNS FOIA Officer

Attachments



RESEARCH PROGRAM ON CHILDHOOD HUNGER



April 2013

Program Overview

The *Research Program on Childhood Hunger* seeks innovative and policy relevant research on the underlying causes of food insecurity among children in the United States.



UNIVERSITY OF KENTUCKY

Research Program on Childhood Hunger



BACKGROUND

Food security is fundamental to health and well-being. For children, even a modest compromise may impair physical, intellectual and social development. Thus food insecurity is considered a serious problem facing children in the U.S.

In 2011, 14.9% of all households containing 50.1 million people experienced food insecurity. There were 16.6 million children in these food insecure households. A subset of those households experienced the most severe form of food insecurity measured by the USDA – 12.1 million adults and 4.8 million children lived in households with very low food security (Coleman-Jensen et al., 2012).

That children in the U.S. are going without sufficient amounts of food is of concern in its own right. Previous research, spanning numerous empirical studies, has found that children in families suffering from food insecurity are more likely to suffer from a wide array of negative health, nutrition, and educational outcomes. Despite an array of government policies geared toward its alleviation, food insecurity remains stubbornly high and indeed has increased over 30% since the onset of the Great Recession in 2007.

THE PROGRAM

With core funding from the Food and Nutrition Service in the U.S. Department of Agriculture, the University of Kentucky Center for Poverty Research competitively awards grants to qualified individuals and institutions for rigorous research that will assist policymakers achieve the nation's goal of eradicating childhood hunger.

In the 2011-2013 fiscal years 34 awards were made totaling \$5.25 million. These projects use data from a myriad of nationally representative sources such as the Current Population Survey and the National Health and Nutrition Examination Survey, from more targeted surveys such as Fragile Families and Child Well Being Study and the Three City Study, as well as qualitative interviews in selected sites around the country. Table 1 contains a list of our grantees and their projects, with additional information available at <http://www.ukcpr.org/>.

PRIORITY RESEARCH AREAS

IDENTIFICATION OF FAMILIES WITH FOOD-INSECURE CHILDREN

This area focuses on the general characteristics that distinguish families that are food insecure from those that are not. The ultimate goal being to develop a feasible means of identifying food-insecure children so that target interventions at the community, state, or national level may be implemented.

DESCRIPTION OF COPING STRATEGIES OF AT-RISK FAMILIES TO AVOID OR REDUCE CHILDREN'S FOOD INSECURITY

This topic seeks to discover what coping strategies are more effective for avoiding or reducing children's food insecurity and if these strategies are effective when applied across various family characteristics and circumstances. The research goal is to find coping strategies which can lend themselves to large scale initiatives to end childhood food insecurity.

DESCRIPTION OF THE CIRCUMSTANCES AND PROCESSES IN FAMILIES WITH FOOD INSECURITY

Under this category, we seek to understand more about the circumstances and processes of families who experience food insecurity with a close look at household structure (nuclear, extended family, neighborhood/community, or state-level), as well as variations in food prices, and the temporal aspect of food insecurity over the course of the month. The research goal is to identify how these circumstances ameliorate or exacerbate the likelihood of childhood food insecurity.

PROGRAM PARTICIPATION AND FAMILIES WITH FOOD INSECURE CHILDREN

This topic seeks to define who and to what extent participation in nutrition assistance programs reduce food insecurity and to define what program changes, if any, are likely to enhance food security among participants.



PREVIEW OF INITIAL RESULTS:

Most of the research supported by the program is ongoing and will not be completed until late 2013 or 2014. The 2011 cohort of small grants, which focused attention on the more severe form of very low food security among children, completed their projects in the fall of 2012. Complete reports are available at <http://www.ukcpr.org/CHRecipients.aspx> and some highlights from these studies include:

- ***Children raised in immigrant families, or with a disabled parent, face heightened risk of hunger.*** Kelly Balistreri in her study finds that even though fewer than 25% of children in the U.S. today are born into families of immigrants, over 40% of the very low food secure is from these families. The risk is especially high in single-parent or complex family structures and in those families where the adult is disabled.
- ***There is a significant amount of churning into and out of Childhood Hunger.*** Alison Jackowitz and Taryn Morrissey find that the most important triggers that cause a family to enter very low food security are housing and income instability, as well as declines in maternal and child health. Exits from childhood hunger are most associated with increases in income, improvements in maternal mental health, and increases in the number of adults in the household, whether spouse, partner, or grandparent, suggesting the importance of resource sharing of both time and money.
- ***The WIC Program leads to significant reductions in food insecurity among children.*** Brent Kreider and John Pepper find that WIC reduces food insecurity among children by one-third, and the more severe very low food security by about 60%. What is striking is that these large positive effects of WIC even adjust for the fact that some families misreport their participation in the program to survey interviewers, while others self-select into the program based on their food security status.
- ***The wider social safety net reduces child hunger.*** Lucie Schmidt, Lara Shore-Sheppard, and Tara Watson find that the combined bundle of safety net programs (TANF, SSI, EITC, SNAP, and Medicaid) result in a 16% reduction in food insecurity among single parent families with income below three times the poverty line, and as much as a 36% reduction in very low food security. Each \$1000 increase in annual SNAP benefits leads to a 5% reduction in food insecurity among these families, and to an effect twice as large for families living closer to the poverty line.



TABLE 1

2011 GRANT RECIPIENTS

LARGE GRANTS

Food Hardship in the Low Income Population: Child-Focused Evidence from the Three City Study

Robert Moffitt, Johns Hopkins University

David Ribar, University of North Carolina at Greensboro

The Dynamics of Food Insecurity and Effective Coping Strategies for Households at Risk of Childhood Hunger

Gregory Mills, Urban Institute

Karla Hanson, Cornell University

Understanding Very Low Food Security among Children in the U.S.

Neeraj Kaushal, Columbia University

Irv Garfinkel, Columbia University

Jane WaldFogel, Columbia University

Vanessa Wight, Columbia University

How can Communities and Households Protect Children from Very Low Food Security?

Sonya Jones, University of South Carolina

Nonresident Fathers' Involvement and Welfare Policies: Impacts on Childhood Hunger

Steven Garasky, IMPAQ International

Daniel Miller, Boston University

Lenna Nepomnyaschy, Rutgers University

SMALL GRANTS

Family Structure and Time Allocation: Mechanisms of Food Insecurity among Children

Kelly Balistreri, Bowling Green State University

Food Insecurity across the First Five Years: Triggers of Onset and Exit

Alison Jacknowitz, American University

Taryn Morrisey, American University

The Impact of Household Labor Market Shocks on Child Food Insecurity

Bradford Mills, Virginia Tech University

George Davis, Virginia Tech University

2011 SMALL GRANTS (CONT'D)

The Effect of Safety Net Programs on Food Insecurity

Tara Watson, Williams College
Lara Shore-Sheppard, Williams College
Lucie Schmidt, Williams College

Identifying the Effects of WIC on Very Low Food Security

Brent Kreider, Iowa State University
John Pepper, University of Virginia

Availability and Accessibility of Emergency Food Assistance and Food Insecurity among American Children

Qi (Harry) Zhang, Old Dominion University

Families with Hungry Children and the Transition from Preschool to Kindergarten

Colleen Heflin, University of Missouri
Irma Arteaga, University of Missouri
Sara Gable, University of Missouri

The Impact of Incarceration on the Food Security of Children

Sally Wallace, Georgia State University
Robynn Cox, Spelman College

2012 GRANT RECIPIENTS

LARGE GRANTS

Understanding the Interdependencies among Three Types of Coping Strategies Used by Very Low Food Secure Households with Children

Andrea Anater, RTI International

Understanding Very Low Food Security and Other Food Hardships Among Households with Children

Judith Bartfeld, University of Wisconsin

J. Michael Collins, University of Wisconsin

Childhood Stress: A Mixed Methods Analysis of the Intergenerational Circumstance of Child Hunger

Mariana Chilton, Drexel University

Sandra Bloom, Drexel University

Economic Shocks, Neighborhood Food Infrastructure and Very Low Food Security

Sheldon Danziger, University of Michigan

Luke Shaefer, University of Michigan

Scott Allard, University of Chicago

Connective Saving and Food Security: Evidence from an Asset Building Program for Families in Poverty

Caezilia Loibl, Ohio State University

Anastasia Snyder, Ohio State University

New Evidence on Why Children's Food Security Varies across Households with Similar Incomes

Diane Whitmore Schanzenbach, Northwestern University

Patricia Anderson, Dartmouth College

Kristin Butcher, Wellesley College

Hilary Hoynes, UC Davis

Understanding Very Low Food Security among Children of Mexican-Origin: The Circumstances and Coping Strategies of Mexican-Origin Families in Texas Border Colonias

Joseph Sharkey, Texas A&M University

SMALL GRANTS

Risk and Protective Factors Associated with Prevalence of VLFS in Children among Children of Foreign Born Parents

John Cook, Children's HealthWatch

Financial Services and Food Insecurity among Households with Children

Katie Fitzpatrick, Seattle University

The Effect of Household Financial, Time, and Environmental Constraints on Very Low Food Security among Children

Helen Jensen, Iowa State University

Oleksandr Zhylyevsky, Iowa State University

Food Insecurity during Childhood: Understanding Persistence and Change Using Linked Current Population Survey Data

Sheela Kennedy, University of Minnesota

Catherine Fitch, University of Minnesota

John Robert Warren, University of Minnesota

Parenting Practices and Attitudes: Children's Food Security in the Nexus of Parent Behavior

Elizabeth Powers, University of Illinois

2013 GRANT RECIPIENTS

LARGE GRANTS

Family Health Shocks and Young Children's Food Insecurity

Hope Corman, Rider University

Kelly Noonan, Rider University

Nancy E. Reichman, Robert Wood Johnson Medical School

Understanding the Immediate and Long Term Effects of Supplemental Nutrition Education Program-Education as an Intervention to Improve Food Security among Households with Children in Indiana

Heather A. Eicher-Miller, Purdue University

Child Food Insecurity in Families of Young Children with and without Special Health Care Needs

Ruth Rose Jacobs, Boston Medical Center

SMALL GRANTS

The Effect of In-Classroom Breakfast Feeding on Children's Food Security and Participation in the School Breakfast Program

Katherine W. Bauer, Temple University

Adam Davey, Temple University

Gary D. Foster, Temple University

Do Big Box Grocers Improve Food Security?

Charles Courtemanche, Georgia State University

Contextualizing Food Insecurity among Children: Do Neighborhood Characteristics Shape the Risk?

Justin Denney, William Marsh Rice University

Rachel Kimbro, William Marsh Rice University

Understanding the Relationship between the School Breakfast Program and Food Insecurity

David E. Frisvold, Emory University

Very Low Food Security and Teenage Labor Supply

Sarah Hamersma, University of Florida

Mathew Kim, University of St. Thomas

Unintended Consequences of Mass Incarceration: Explaining the Relationship Between Paternal Incarceration and Food Insecurity among Young Children

Kristin Turney, University of California, Irvine



About UKCPR

UNIVERSITY OF KENTUCKY CENTER FOR POVERTY RESEARCH

The University of Kentucky Center for Poverty Research (UKCPR) is a non-partisan, nonprofit academic research center focused on the causes, consequences, and correlates of poverty and inequality in the United States. Established in 2002, the Center's research informs evidence-based policymaking at the local, regional, and national levels.

UKCPR staff and faculty affiliates reflect the cross-disciplinary emphasis of the research agenda, with representatives from economics, public policy, political science, public health, sociology, and social work. The Center is governed by its Founding Director, Dr. James P. Ziliak, and an Executive Committee consisting of faculty at the University of Kentucky.

To learn more about the programs of the UKCPR please visit our website at <http://www.ukcpr.org>. If you would like to support the mission of UKCPR, offer comments on this publication, or make suggestions email us at ukcpr@uky.edu or write University of Kentucky, Center for Poverty Research, 302D Mathews Building, Lexington, KY 40506-0047. Phone: (859) 257-7641.



UNIVERSITY OF KENTUCKY



UNIVERSITY OF KENTUCKY
CENTER FOR POVERTY RESEARCH

RESEARCH PROGRAM ON CHILDHOOD HUNGER

Contract No.: AG-3198-B-10-0028/AG – 3198-K-10-0057

Integrated Summary for Task Order I

May 1, 2014

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I. Introduction

Food insecurity among children is a serious, policy-relevant issue in the United States today for two central reasons. First, the magnitude of the problem is enormous. In 2012, for example, 20.0% of children in America were in food insecure households (16.7 million children) (Coleman-Jensen et al., 2013). And, about half of these children experienced food insecurity themselves. The extent of food insecurity is at an all-time high, and despite the end of the Great Recession, rates have not returned to the food insecurity levels of 2007. Of particular concern – and the focus of this summary – is the very low food security rate (VLFS) among children. In 2012, 1.2% of children fell into this category and for every year since 2008, at least 1.0% of children were in this category. Second, there are many demonstrated negative health consequences associated with food insecurity. Among others, some consequences that are associated with food insecurity among households with children are: higher risks of some birth defects (Carmichael et al., 2007), anemia (Eicher-Miller et al., 2009, Skalicky et al., 2006), lower nutrient intakes (Cook et al., 2004), greater cognitive problems (Howard, 2011), higher levels of aggression and anxiety (Whitaker et al., 2006), higher probabilities of being hospitalized (Cook et al., 2006), poorer general health (Cook et al., 2006), higher probabilities of asthma (Kirkpatrick et al., 2010), higher probabilities of behavioral problems (Huang et al., 2010), and more instances of oral health problems (Muirhead et al., 2009). More recent work has demonstrated that children suffering from some forms of food hardship but not food insecure are also more likely than fully food secure children to suffer from myriad negative health outcomes (Cook et al., 2013). So, alongside the fact that millions of children in the U.S. faced involuntary restrictions in their food intakes over the past year, these restrictions are likely to have led to a host of negative outcomes.

Given the existence of food insecurity and its attendant consequences, there is a wide array of government policies geared towards its alleviation. The central vehicle among children is the Supplemental Nutrition Assistance Program (SNAP). This program directly augments a family's resources available for purchasing food. Prior research has suggested that SNAP, at the very least, does not lead to increases in food insecurity (e.g., Borjas, 2004; DePolt et al., 2009; Gundersen and Kreider, 2008; Gundersen and Oliveira, 2001; Gundersen et al., 2009; Jensen, 2002; Nord and Golla, 2009; Van Hook and Balistreri, 2006; Yen et al., 2008). Other food assistance programs also expand low-income families' budget opportunities which may lead to less food insecurity. Chief among these are programs like the National School Lunch Program, the National School Breakfast Program, and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). Policies unrelated to food assistance programs, such as the Earned Income Tax Credit (EITC) and educational programs to assist families with food budgeting and nutrition choices may also help to alleviate food insecurity. Despite this array of programs, food insecurity rates remain stubbornly high.

The fact that food insecurity rates remain stubbornly high is due to any number of reasons. One key reason – and the focus of this project – is limitations in our understanding of the determinants of food insecurity and the potential ways that food assistance and other programs can help alleviate food insecurity. Without a doubt, an extensive food insecurity literature has emerged. This has enabled policymakers and program administrators to pursue policies that are better constructed to address the problem of food insecurity. However, relatively little work had been done looking at the determinants of VLFS among children. In response, beginning in 2010 the Food and Nutrition Service of the USDA funded the *Research Program on Childhood Hunger* at the University of Kentucky Center for Poverty Research, which consists

of three rounds of external grants to research teams around the nation. In this Integrated Summary, we review the reports that emerged from Task Order I of this project. Similar Integrated Summaries for Task Orders II and III will be provided in subsequent reports. This review is constructed around three broad categories - identification of families with food insecure or hungry children, description of the circumstances of families with food insecure or hungry children, and description of the coping strategies of at-risk families to avoid or reduce food insecurity. For each of these we briefly describe some of the work that has been done on each topic followed by the specific findings from the relevant funded reports for this project. Prior to turning to these summaries, we provide definitions of the various food insecurity categories that were utilized in these reports.

II. Defining Food Insecurity

In an effort to measure food insecurity in the United States, a series of questions related to food intakes first appeared in the Current Population Survey (CPS). After a series of modifications to these questions, the Core Food Security Module (CFSM) was established. The measure is based on a set of 18 questions for households with children and 10 questions for households without children. Examples of questions include: “I worried whether our food would run out before we got money to buy more,” (the least severe item); “Did you or the other adults in your household ever cut the size of your meals or skip meals because there wasn’t enough money for food?”; “Were you ever hungry but did not eat because you couldn’t afford enough food?”; and “Did a child in the household ever not eat for a full day because you couldn’t afford enough food?” (the most severe item for households with children). (A complete list of questions can be found in, e.g., Coleman-Jensen et al., 2013). Each question is qualified by the stipulation that the outcomes are due to financial issues.

The USDA places households into food insecurity categories based on responses from the CFSM. This placement is made with the assumption that the number of affirmative responses reflects the level of food hardship experienced by the family. The following thresholds are established: (a) food security (all household members had access at all times to enough food for an active, healthy life); (b) low food security (at least some household members were uncertain of having, or unable to acquire, enough food because they had insufficient money and other resources for food); and (c) very low food security (one or more household members were hungry, at least some time during the year, because they couldn't afford enough food). A household is said to be "food insecure" if they fall into category (b) or (c). Food insecurity statuses are also established for the children in the household. The children in a food insecure household are said to be low food secure if the respondent answers affirmatively to 1 to 4 child-specific questions and very low food secure if the respondent answers affirmatively to 5 or more child-specific questions. As seen in what follows, the reports commissioned through this project concentrated on the VLFS category albeit other measures of food insecurity were used for sake of comparison and, in some instances when sample sizes were too low or the survey did not contain the CFSM, other measures of food insecurity were used.

III. Identification of Families with Food Insecure or Hungry Children

A. What combination(s) of family or child characteristics distinguish between low-income families who are food secure from those who are not?

Previous work on food insecurity has shown that renters, households with lower incomes, with less education, or with more children are more likely to be food insecure, as are those households headed by a single parent, by a non-Hispanic black, or by a Hispanic. (For recent work showing some or all of these factors matter see, e.g., Cutler-Triggs, 2008; Furness et al., 2004; Garasky and Stewart, 2007; Gundersen, 2008; Gundersen et al., 2003; Heflin et al., 2007; Huang et al., 2009;

Kenney 2008; Martin et al., 2004; Mazur et al., 2003.). In addition, the following factors have been found to be associated with food insecurity in these studies, which use cross-sectional data: the lack of financial management skills (Gundersen and Garasky, 2012), the household head is American Indian (Gundersen, 2008), being at high risk of homelessness (Gundersen et al., 2003), not receiving child support (Garasky and Stewart, 2007), having a non-custodial father who does not visit regularly (Garasky and Stewart, 2007), lack of access to social capital (Martin et al., 2004), summertime (Nord and Ronig, 2006), being in a state with higher than average unemployment rates (Bartfeld and Dunifon, 2006), facing high food prices (Gregory and Coleman-Jensen, 2012), and having a cigarette smoker in the home (Cutler-Triggs et al., 2008). In studies using panel data, the following dynamic factors have been associated with being at higher risk of food insecurity: negative income shocks, lack of assets, changes in household composition, and becoming unemployed (Gundersen and Gruber, 2001; Leete and Bania, 2010, Ribar and Hamrick, 2003); declines in mental health status and limited financial buffers (Heflin et al., 2007; Heflin and Butler, 2013); and declines in general health, declines in the number of adults, increases in the number of children, and increases in domestic violence (Heflin and Butler, 2013).

Kaushal, Schwartz-Soicher, Garfinkel, and Waldfogel (2013), found several characteristics that influence VLFS status using data from the Fragile Families and Well-Being Study. First, they found that mothers in food secure poor households are in better physical and mental health and are less likely to report intimate partner violence and substance use compared to mothers in low food secure (LFS) or VLFS poor households. Second, with respect to income, food insecure families with incomes twice the poverty thresholds are more likely to be headed by low-educated single mothers and to report depression and substance abuse than families with

similar incomes that are food secure. Third, their regression models with family fixed effects show that marriage/cohabitation with the child's biological father lowers food insecurity among children by 5 to 8 percent. Fourth, negative income shocks lead to food insecurity among children in families in deep poverty with incomes less than 50 percent of the poverty threshold, but not in families with higher incomes.

In a second study by Wight, Kaushal, Waldfogel and Garfinkel (2013), they investigated the association between poverty and food insecurity among children using two different definitions of poverty: 1) the official poverty measure (OPM) and 2) the new supplemental poverty measure (SPM) of the Census Bureau based on a more inclusive definition of family resources and needs. While the OPM poverty measure is based on pre-tax income, the SPM poverty is based on a much broader set of resources, including post-tax income and near-cash transfers (such as SNAP) and a more comprehensive set of needs including work, child care, and medical out-of-pocket expenditures. This analysis is based on data from the December Supplements of the Current Population Survey (CPS) for 2001-2011 merged with the 2002-2012 waves of the Annual Social and Economic Study in the CPS. Their estimates suggest that food insecurity and VLFS among children decline as income-to-needs ratio increases. The point estimates from both logistic and multiple logit regression models show that the associations are stronger with the new supplemental measure of income-to-needs ratio than with the official measure. Their results suggest that with SPM, the risk of experiencing household food insecurity, particularly food insecurity among children, is strongly skewed toward lower-income families. Statistical tests reject the hypothesis that the odds of experiencing LFS among poor households are the same using the SPM compared to OPM measure; but fail to reject the hypothesis when VLFS is the outcome. This suggests that factors other than lack of resources might be causing

very low food security and therefore more innovative policy programs may be needed to eradicate very low food security.

A study conducted by Groover, Mills, and Davis (2012) observed that spikes in regional and household characteristics played a significant role in the observed 2008 increase in children with VLFS and LFS. Household-level data is drawn from the 2005 to 2009 December CPS in order to compare child food security responses immediately prior to and after the abrupt decline in economic conditions occurring after December 2007. Supplemental datasets on regional economic conditions are matched to the household records. Rates of unemployment for state-level metropolitan or non-metropolitan regions are obtained from the Bureau of Labor Statistics' Economic and Employment Statistics for the years 2004 to 2009, and data for the number of counties experiencing persistent poverty (i.e. poverty rates in excess of 20% in each of the 1970-2000 Decennial Censuses) is obtained from the Economic Research Service's county typology codes. As expected, using both probit and ordered probit regression methods, their study revealed that unemployment of the household head is found to substantially increase the probability of VLFS and LFS among children. Further, Groover, et al.'s simulations of changes in regional economic conditions indicate rising unemployment rates during the Great Recession explain a significant portion of observed increases in child food insecurity. The study also finds that the factors that place children at risk of very low food security are in some cases different from those that place children at risk of low food security—most very low food secure children experience chronic food insecurity. Their findings suggest that there is a need to examine unemployment insurance and job creation policies during severe labor market shocks in order to better protect the food security of precarious families with children.

B. In what ways are low-income families who are food secure similar to and different from higher income families with food insecure children?

A low-income household has, all else being equal, a higher probability of being food insecure than a better-off household. Despite this, about 50% of low-income households with children are food secure and about 1 in 10 households with incomes above 185% of the poverty line are food insecure (Table 3, Coleman-Jensen et al., 2013). Some work has attributed this to differences in assets, income shocks, and other disruptions to household conditions (e.g., Gundersen and Gruber, 2001; Ribar and Hamrick, 2003; Leete and Bania, 2010).

In another study Kaushal, Waldfogel, and Wight (2013), investigated whether permanent income better explains variation in food insecurity among children than current income. A puzzling issue identified by Wight, et al. (2013) and others is that many families with current incomes above the poverty line report experiencing food insecurity. For example, they find that 6.6 percent of families with children with incomes between two and three times the poverty threshold and 1.5 percent of families with children with incomes more than three times the poverty threshold report experiencing food insecurity among children. A possible reason for this is that during the year of the survey the household's income was transitorily high and thus food insecurity might be more reflective of "permanent" or average income. To examine whether current or permanent income is more important, Kaushal, et al. (2013) use data from the Early Childhood Longitudinal Study Kindergarten Cohort (ECLS-K) study, which has collected data on the annual income and food insecurity in households of sampled children at four points over a period of eight years. At each of these four points, they studied the association between food insecurity among children and current income (income-to-needs ratio) and between food insecurity among children and permanent income (income-to-needs ratio as defined as the mean

of income-to-needs ratio over the four points). They find that permanent income predicts food insecurity among children better than current income, especially when modeling chronic food insecurity, and among those families living in deep poverty.

Research conducted by Balistreri (2012) examined time use among and between food secure and food insecure households with children. She utilizes data from the CFPS in the December CPS linked to the American Time Use Survey (ATUS), which is a nationally representative sample of U.S. households that collects detailed information on family and household composition as well as time diary information on how individuals allocate their time. Her study suggests that parents in food insecure households use their time differently than do parents in food secure households. While it is reasonable that parents in households in which the children are completely food secure would allocate more time to work; more time spent on work among parents often yields more economic resources. Unadjusted differences in the time spent on food preparation and cleanup are higher among parents living with children experiencing any food insecurity regardless of family structure. While these results do not imply that parental time spent in food preparation causes childhood food insecurity, it may suggest that parents in food insecure environments use their time differently than do parents in food secure households.

C. Are there multiple and distinct profiles of at-risk or hungry children? Do these profiles vary with respect to the degree of food insecurity?

The annual report by the USDA gives an excellent overview of the difference in profiles of at-risk and hungry children (e.g., Coleman-Jensen et al., 2013). Other work has used finer distinctions in food insecurity status by looking at the extent, depth, and severity of food insecurity (Gundersen, 2008).

In her study on family structure, work patterns, and time allocation, Balistreri (2012) finds that children at most risk of VLFS are more often children being raised in immigrant families. While under a quarter of all children in the United States is the child of an immigrant, a disproportionate fraction (40%) comprise the populations of children living under the most severe conditions of food insecurity. Results from multivariate models in her study suggest also that family structure is a key predictive factor of food insecurity among low-income families. Net of economic and household characteristics, children living with an un-partnered parent or living in a more complex family are at an increased risk of LFS or VLFS compared with children living in either a 100% biological family or a stepfamily. Notably, mother's work patterns among low-income families are much stronger predictors of children's food insecurity among stepfamilies than in 100% biological families. Other results suggest that disability among adults living with children greatly increases the likelihood of the more extreme form of child food insecurity. Holding other factors constant, children living with a disabled adult have almost three times the odds of living under condition of VLFS than children who do not live in a disabled adult.

In a related study, Miller, Nepomnyschy, Lara-Ibarra, and Garasky (2014) use comprehensive data from four national surveys—ECLS-B, Fragile Families, ECLS-K, and the Panel Study of Income Dynamics—to examine links between family structure and child food insecurity. The emphasis of their analysis is whether children growing up in a single parent household faced greater odds of being food insecure compared to children in families with cohabiting partners or repartnered mothers. Although bivariate relationships suggests that children in single mother families are at higher risk, once they condition on socioeconomic status there is no longer a substantive difference across these family types. However, even after

controlling for these known risk factors, children growing up in married biological-parent households are still a significantly lower risk of food insecurity.

D. Are there feasible means of identifying at-risk or hungry children in order to target interventions at the community, state, or national level?

Efforts to address food insecurity have generally been concentrated at the household level. As an example, eligibility criteria for SNAP are based on household-level information rather than, say, the community in which one lives. Given the great deal of diversity in food insecurity rates across the U.S. that is not tied strictly to income differences (e.g., Bernell et al., 2006; Bartfeld and Dunifon, 2006; Tapogna et al., 2004), alternative approaches using geographic information may be helpful. For example, Fram, et al. (In press) propose a school-based approach in conjunction with school social workers to identify children facing food insecurity.

In this round of funding, several of the studies have identified important factors to improve our ability to identify food insecure children and to more effectively target interventions. For example, Wight, Kaushal, Waldfogel and Garfinkel (2013) suggest using a broader measure of resources that includes in-kind transfers like SNAP and tax credits like the EITC to help identify food insecure children, while Kaushal, Waldfogel, and Wight (2013) go a step further and suggest that permanent income (i.e. a multi-year average) will improve identification of food insecure children. Balistreri (2012) emphasizes the importance of family structure—single parent and cohabiting parent families are at much greater risk of VLFS—as well as children of immigrants and children of disabled parents.

E. What is the nature of the relationship between children’s hunger and food insecurity in their families?

While children are generally protected from food insecurity, as indicated by lower rates of child food insecurity than those of adults, there may be substantial variations that are masked by these averages. To date, there has been little work done in this area outside of studies finding that children are generally protected from hunger by their parents (e.g., McIntyre, 2003; Nord, 2009). There is an extensive literature on the intra-household allocation of resources with respect to food insecurity in developing countries (e.g., Abdullah & Wheeler, 1985; Engle & Nieves, 1993; Godoy et al., 2007; Gomna and Rana, 2007; Hadley et al. 2008; Hampshire et al., 2009; Leonard, 1991; Sauerborn et al., 1996;), but with the exception of Kenney (2008), there has not been work done within the U.S.

The grants funded in this round do not explicitly address this issue. This area is addressed by several grantees in Task Order II.

IV. Description of the Circumstances of Families with Food Insecure or Hungry Children

A. What conditions distinguish between low-income families who are food secure and those who are not?

Slightly more than half of families with children and incomes below the poverty line are food secure. While some protective factors have been found in the literature (see the literature cited above in III. A), a number of other factors that are often not observed in data sets may also matter.

At the household level, the study conducted by Jackowitz and Morrissey (2012) used data from the ECLS-B from four of the first five waves (the children were 9 months, 2 years, 4

years, and kindergarten entry) to examine entry and exit triggers into and out of food insecurity in children across their first five years. The transition model estimates, which are based on linear regression (i.e. linear probability), show that the most important triggers that cause a family to enter very low food security are housing and income instability, as well as declines in maternal and child health. Exits from childhood hunger are most associated with increases in income, improvements in maternal mental health, and increases in the number of adults in the household, whether spouse, partner, or grandparent, suggesting the importance of resource sharing of both time and money.

B. What is the relative importance of the nuclear family, extended family, neighborhood/community or state-level circumstances?

Efforts to address food insecurity have generally been concentrated at the household level. As an example, eligibility criteria for SNAP are based on household-level information rather than, for example, the community in which one lives. Given the great deal of diversity in food insecurity rates across the U.S. that is not tied strictly to income differences (e.g., Bernell et al., 2006; Bartfeld and Dunifon, 2006; Tapogna et al., 2004), alternative approaches may be worthwhile.

In one study, Heflin, Arteaga, and Gable (2012a) examined the roles of parental care versus non-parental care (center-based, relative, other) on childhood food insecurity. They note that nearly three-quarters of children spend some portion of their preschool years in the care of others, and children in center-based care can receive as much as two-thirds of their nutritional needs met while in care. They use data from ECLS-B along with propensity-score matching techniques to control for possible non-random selection into the form of care. The authors compare outcomes across five child care arrangement patterns: exclusive parent care, relative

care, non-relative care, center care, and Head Start. They show that relative to parental care, low income preschoolers attending a child care center have lower odds of food insecurity by about 4.2 percentage points and very low food security a percentage point. Moreover, compared to exclusive parental care, relative care reduces the probability of food insecurity by 2.5 percentage points, but has no effect on VLFS. Non-relative care increases the probability of very low food security by 1.3 percentage points. These results add to the growing body of evidence that formal child-care settings have positive effects on child well being.

In another study conducted at the household level, Cox and Wallace (2012) sought to determine the role that parental incarceration plays on the probability of food insecurity among families with children and VLFS of children using micro-level data from the Fragile Families and Child Well Being Study (FFCWS). The data set contains the information on incarceration and this enables a comparison of food insecurity and VLFS among children, families, and adults in households with and without incarcerated adults. Since there is likely reverse causality in the relationship between parental incarceration and food insecurity, Cox and Wallace employ a variety of program evaluation techniques to identify the causal relationship between food insecurity and parental incarceration. They employ imputation techniques to account for non-response among the food security variables and independent variables. In this study, the ordinary least squares results suggest that having at least one parent that has ever been incarcerated has a small positive effect (1 to 4 percentage points) on the probability of VLFS among children, adults and households with children, but the results are not significant in various specification. Food insecurity for adults and households with children is affected by parental incarceration under most specifications with magnitudes of impact from 4 to 15

percentage points. This research provides some evidence that incarceration adversely affects children and families in terms of food insecurity.

C. To what extent are risk conditions long term versus short term?

In Nord et al. (2002), the average spell length for food insecurity was first established. This was an important insight because it provides some sense as to how often people experience food insecurity. The insights, though, are limited by the data set – given the cross-sectional nature of the CPS and the questions posed in the CFISM, one cannot garner either information on multiple years or greater specificity within year. There has been some work done using panel data sets with information on multiple observations of food insecurity (e.g., Heflin et al., 2007; Ribar and Hamrick, 2003; Wilde and Nord, 2005) but, very little is known about the duration of food insecurity either across years or within years.

In the previously mentioned study by Groover, Mills, and Davis (2012) regarding economic decline and child food security, the study also found that factors that place children at risk of VLFS are in some cases different than those that place children at risk of LFS. Their use of the households' 12 month recall responses to the 2005-2009 December CPS, suggest VLFS children experience chronic food insecurity while LFS children are less likely to experience chronic food insecurity. Kaushal, et al. (2013) described above also examined duration of food insecurity and found that those facing chronic food insecurity were more likely to be in that state because of persistently low incomes. Li, Mills, Davis, and Mykerezzi (2012), described below, also examined permanent and transitory food insecurity, and found that in the PSID more than half of households reporting food insecurity only report problems meeting food needs in three or fewer months.

D. What combination of individual/household characteristics and circumstances ameliorate or exacerbate the likelihood of childhood food insecurity or hunger?

The food insecurity literature, which has used multivariate methods, has looked mostly at the effect of individual factors on food insecurity. What may be especially interesting is how individual factors may work together to either ameliorate or exacerbate food insecurity.

This research is furthered by a study for our initiative conducted by Nepomnyaschy, Miller, Garasky, and Nanda (In press) which looks at nonresident father's involvement and its impact on childhood hunger. As measures of father involvement they consider cash transfers, in-kind contributions to the households, and contact with the child. They used a variety of estimation methods including probit, negative binomial (for count data models), and fixed effects in linear panel data models. Across the variety of specifications they found robust evidence that the provision of in-kind father's support is related to lower child food insecurity for both young children and adolescents, and reduced very low child food security among the young. They also found that among adolescents the provision of inconsistent cash support as compared to no support is associated with higher child food insecurity, but consistent support is associated with lower risk of food insecurity, suggesting consistency of support across cash and non-cash domains is important for child food insecurity.

E. Among families participating in nutrition assistance programs, are the circumstances of those who are food secure different than those who are food insecure? If so, how?

There has been substantial work done comparing food assistance participants and non-participants (especially SNAP) with respect to the probability of being food insecure. To our

knowledge, though, there has not been research among food assistance participants.

Understanding these relationships among participants would be especially useful to policymakers as they consider alternative constructions of food assistance programs.

Along these lines, Schmidt, Shore-Sheppard, and Watson (2012) investigated how the level of *overall* safety net benefits and their distribution between cash, food, and health insurance affect VLFS among children and LFS in families. Safety net programs allow at-risk families to avoid or reduce food insecurity. However, program effects potentially depend on the mix of cash-and non-cash benefits and the degree to which they “crowd out” food –specific transfers. For example, cash assistance is a factor in the determination of SNAP benefits, so residents of states with generous cash programs may receive less food assistance. The results suggest that the safety net does impact food insecurity with the median eligibility package of \$3400 food and cash combined reduces LFS by 5.1 percentage points on a base incidence of 33 percent, a 16 percent reduction. While the study conducted by Schmidt, et al. lacks the power to measure precise effects for most of the individual programs that are part of the safety net package, it does appear that SNAP is effective in addressing food insecurity. Controlling for eligibility, they find that each \$1000 in annual SNAP eligibility reduces LFS by 1.8 percentage points among single parent families under 300 percent of poverty. No evidence is found that the distribution of safety net benefits across food or that cash matters for food insecurity. This suggests that a strong social safety net reduces food insecurity in families with children.

Kaushal, Waldfogel, and Wight (2014) examined the factors associated with food insecurity and SNAP participation among Mexican immigrant families and investigated the impact of the outreach initiative and ARRA expansion on SNAP participation and food insecurity among children. In the latter analysis, they stratified Mexican immigrant samples into

two groups: those that are eligible for SNAP versus those with low probability of eligibility to test the validity of the speculation that the outreach initiative and ARRA expansion channeled benefits to populations ineligible under the law, e.g. the undocumented Mexican immigrants. They show that after controlling for a rich set of economic, demographic, and geographic variables, children in Mexican immigrant families are more likely to be food insecure than children in native families, but are less likely to participate in SNAP. Further, estimates show that permanent income is a better predictor of food insecurity and chronic food insecurity among children than current income. This is particularly true for those families living in deep poverty; these more vulnerable groups that are at a higher risk of food insecurity are the least likely to participate in SNAP.

They also test the “chilling” hypothesis that posits that fear of deportation of family members (or some other fear) exerted a “chilling effect” resulting in families not applying for SNAP even for the members who are eligible. For this analysis Mexican immigrant families were stratified into three groups: households with only citizens; households with a mix of citizens and non-citizens; and households with only non-citizens. . Their analysis shows that after adjusting for demographic, economic and geographic differences, compared to native families, the mixed status families are more likely to be food insecure and yet less likely to participate in SNAP. Because of their citizenship status at least one member of the mixed status families is eligible for SNAP. Their estimates thus suggest that SNAP participation of mixed status families is weakened by the “chilling effect.” They also investigated whether SNAP participation among mixed status families increased during the USDA outreach initiative and ARRA expansion and find that SNAP participation increased in mixed status families during the ARRA expansion periods in states with a Mexican consulate office. However, they did not find

any similar evidence for Mexican immigrant families with only non-citizen members or only citizen members.

F. Are there anti-hunger efforts that target family circumstances associated with the problem? If yes, what are they and what is known about their cost effectiveness?

Anti-hunger efforts in the U.S. have concentrated on the provision of food assistance, both through formal and informal mechanisms. With a few exceptions, often overlooked are approaches that seek to influence family circumstances more broadly. Research examining the effect of other approaches would be especially relevant.

Kreider, Pepper, and Roy (2012) estimated the causal effect of WIC on VLFS among infants and children. WIC is considered a crucial component of the social safety net, yet there is mixed evidence on the effects of WIC on the nutritional well-being and food security of infants and young children. Part of the reason for this is some studies ignore the possibility of reverse causation between WIC participation and food insecurity, while other work that does attempt to control for this issue confront problems of weak instrumental variables to identify program effects. Kreider, et al. take a different approach to examine what assumptions are necessary for us to decisively conclude that the use of WIC reduces food insecurity, and whether those assumptions are plausible. Using data from the National Health and Nutrition Examination Survey (NHANES), they find that under reasonable assumptions WIC reduces the prevalence of child food insecurity by at least 5.5 percentage points (a one-third reduction off the baseline rate) and VLFS by at least 1.5 percentage points (almost two-thirds reduction off the baseline rate). These results hold even accounting for misreporting of WIC participation in the NHANES.

Li, Mills, Davis, and Mykerezzi (2012) used data from the PSID for the 1999, 2001, and 2003 waves when measures of food insecurity were included to examine monthly as opposed to

annual links between SNAP participation and child food insecurity. They note that more than half of food insecure households only reported problems in three months or less during each survey year. Moreover, at least 25 percent of households in the PSID reporting receipt of food stamps received assistance for six months or less. This suggests that within-dynamics of food stamp participation and food insecurity might be important. Their estimates confirm this conjecture. They show that food insecurity increases in the 3 months leading up to joining SNAP, but after 4 months of benefits from SNAP the family food insecurity “returns to normal,” i.e. to the level seen in the prior to increase in food insecurity. Thus SNAP seems to ameliorate spells of child food insecurity.

At the community level, Heflin, Arteaga, and Gable (2012b) conducted a study involving the Child and Adult Care Food Program, which provides cash reimbursement to family day care, child care centers, homeless shelters, and after school programs for meals and snacks served to children. Using data from the ECLS-B as in the earlier study, along with methods controlling for possible non-random sample selection into the type of child care setting, they find that CACFP participation has no association with household or child food insecurity. However, there is weak evidence that the location of CACFP administrative agency may matter for Head Start participants. Given the known cognitive and health consequences associated with food insecurity during the early childhood period, their findings on Head Start participants suggest proximity to the CACFP agency may matter.

V. Description of Coping Strategies of At-Risk Families to Avoid or Reduce Food Insecurity

A. What steps do at-risk families take to address hunger or food insecurity? Is there any relationship between coping strategies selected and family circumstances or characteristics?

One of the central responses of at-risk families facing hunger or food insecurity is to enroll in a food assistance program. An extensive literature has emerged, which examines the effects of SNAP on food insecurity. Alongside these formal food assistance programs, at-risk families access a wide array of informal food assistance programs (Mabli et al., 2010), as well as other coping mechanisms such as selling furniture (Chilton et al., 2009), pawning items (Wood et al., 2006), reducing expenditures on medications (Sullivan et al., 2010), reducing expenditures on heating and cooling costs (Bhattacharya et al., 2003; Nord and Kantor, 2006), “dumpster diving” (Eikenberry and Smith, 2005), eating food past-due dates (Kempson et al., 2002), and delaying bill payments (Ahluwalia, 1998).

A study conducted by Mills and Hanson (2013) for this project investigated the factors associated with child food insecurity and comparing households’ strategies for avoiding food shortages. Results suggest that the determinants of child food insecurity are largely consistent with prior literature about household-level food insecurity. Low household financial resources (income below 200 percent of the federal poverty level) and poor parental physical and mental health were associated with an increased risk of CFI. Other factors positively associated with CFI were the presence of older children in the household, participation in school meal programs, and high county-level unemployment rates. Living in a two-parent household and having strong social support networks protected against CFI. Mills and Hanson found no relationship between child food insecurity and participation in SNAP.

They also found that households with food insecure children had a greater number of risks for child hunger and more intense risks, than households with food secure children. Households with food insecure children more often had single parents, more children, complex and fluctuating household composition, health issues, and unpredictable earnings. Households with VLFS among children were particularly stressed, and mothers appeared more depressed than in more food secure households. Limited evidence suggests that at-risk households with food secure children more often received government assistance (such as rental assistance, health insurance, and disability payments) and more often used food management approaches (such as planning meals, finding recipes, and cooking from scratch). In trying to address food shortages, households with food insecure children drew heavily on their informal social networks but, often, all members of the social network also were resource poor. These findings suggest that key risks of child food insecurity are related to the challenging household circumstances (single parents, additional children, and fluctuation in household members), poor parental physical and mental health, limited financial resources, and earnings volatility. Coping strategies—such as using government assistance, relying on informal support networks, and adopting food management approaches—only slightly mitigate the risk of child food insecurity.

A study conducted by Sonya Jones (2013) for this project examined whether (1) negative life events, (2) the meanings families assign to stressful life events, (3) social and economic demands, and (4) social and economic capabilities to adapt in the face of those events were associated with child hunger and food insecurity. Results suggest consistent associations of negative life events and SNAP benefit amounts are an attribute of economic capabilities in both food insecurity and child hunger. However no associations of economic demands (rent or mortgage, transportation, utility or health care expenses), social demands (homelessness, chaos

or domestic violence) or demographic characteristics were found to be associated with child hunger and food insecurity. With respect to meanings assigned to life events, food insecure families were more likely report higher than average perceived stress levels. In addition to the factors listed above, overall household income and social support were associated with lower odds of child hunger.

Results also suggest that adequate economic resources were a key protective factor against experiencing child hunger. It was found in this study that an additional \$500 per month of income above the average monthly income in this study would reduce the odds of child hunger by 26%, while holding all other variables constant. In regards to assistance programs it was found in this study that families experiencing child hunger had lower odds of higher SNAP benefit levels.

B. To what extent are coping strategies transferable across at-risk families? Do they lend themselves to larger scale initiatives to end childhood hunger?

A wide array of coping strategies have been employed by low-income households in response to food insecurity. An understanding which of these strategies would be especially effective will guide the construction of larger-scale initiatives.

The studies funded in this round of research did not explore this area, but at least three studies in Task Orders 2 and 3 are examining the transferability of coping strategies.

VI. Policy Conclusions

Within each of the papers that underlie this integrative summary, the researchers provided some policy implications arising from their work, and here we concentrate on four broad implications. First, the array of social safety net programs in place in the United States lead to reductions in food insecurity. A similar result has been found for SNAP and the National

School Lunch Program (NSLP) but this is one of the first times the effect of non-food assistance programs and other food assistance programs (such as WIC) have shown this impact. Second, in the main, the determinants of VLFS among children are similar to the determinants of food insecurity within other populations. As a consequence, the success of food assistance programs in alleviating food insecurity in the broader food insecure population are likely to also be successful in reducing VLFS among children. Third, those children experiencing VLFS appear to be at greater risk of being chronically food insecure. Especially in light of the potentially more severe health consequences associated with chronic food insecurity, efforts to reduce VLFS may have the ancillary benefit of reducing chronic food insecurity and the attendant consequences. Fourth, disability status is an especially important predictor of food insecurity among children. In general, assistance programs designed to improve the lives of those with disabilities have not specifically concentrated on the challenges facing those with disabilities in terms of obtaining food; this may be an issue worthy of further consideration. Similarly, food assistance programs probably should be restructured to do more with respect to helping those with disabilities.

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UNIVERSITY OF KENTUCKY
CENTER FOR POVERTY RESEARCH

RESEARCH PROGRAM ON CHILDHOOD HUNGER

Contract No.: AG-3198-B-10-0028/AG – 3198-K-11-0070

Integrated Summary for Task Order II

November 2014

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I. Introduction

The University of Kentucky Center for Poverty Research was awarded three Food and Nutrition Service (FNS) grants to fund policy enriching research looking specifically at childhood food security. The Center was awarded a total of \$6,488,944 and funded a total of 15 Large Grants and 19 Small Grants to various universities and research organizations across the United States.

In this Integrated Summary, we review the reports from the second FNS grant, Task Order II. This review is constructed around the identification of family circumstances and characteristics, which increase the likelihood for low and very low food security (VLFS) in households with children; a look at family structure and relationships surrounding food insecurity; and household strategies that may alleviate or exacerbate the problem. Prior to turning to these summaries, we provide definitions of the various food insecurity categories that were utilized in these reports.

II. Defining Food Insecurity

In an effort to measure food insecurity in the United States, a series of questions related to food intakes first appeared in the Current Population Survey (CPS). After a series of modifications to these questions, the Core Food Security Module (CFSM) was established. The measure is based on a set of 18 questions for households with children and 10 questions for households without children. Examples of questions include: “We worried whether our food would run out before we got money to buy more.” “Was that often, sometimes, or never true for you in the last 12 months?” (the least severe item); “In the last 12 months, did you or other adults in the household ever cut the size of your meals or skip meals because there wasn’t enough money for food?”; “In the last 12 months, were you ever hungry, but didn’t eat, because there

wasn't enough money for food?"; and "In the last 12 months, did any of the children ever skip a meal because there wasn't enough money for food?" (the most severe item for households with children). (A complete list of questions can be found in, e.g., Coleman-Jensen et al., 2014). Each question is qualified by the stipulation that the outcomes are due to financial issues, and are asked both over the prior year and the past 30 days.

The USDA places households into food insecurity categories based on responses to the CFM. This placement is made with the assumption that the number of affirmative responses reflects the level of food hardship experienced by the family. The following thresholds are established: (a) food security (all household members had access at all times to enough food for an active, healthy life); (b) low food security (at least some household members were uncertain of having, or unable to acquire, enough food because they had insufficient money and other resources for food); and (c) very low food security (one or more household members were hungry, at least some time during the year, because they couldn't afford enough food). A household is said to be "food insecure" if they fall into category (b) or (c). Food insecurity statuses are also established for the children in the household. The children in a food insecure household are said to be low food secure if the respondent answers affirmatively to 1 to 4 child-specific questions and very low food secure if the respondent answers affirmatively to 5 or more child-specific questions. As seen in what follows, the reports commissioned through this project concentrated on the VLFS category albeit other measures of food insecurity were used for sake of comparison and, in some instances when sample sizes were too low or the survey did not contain the CFM, other measures of food insecurity were used.

III. Identification of Families with Very Low Food Security

A. What combination(s) of family or child characteristics distinguish between low-income families who are food secure from those who are not?

The presence of VLFS among children is relatively rare, affecting 1.1% of the population in 2012. A look at family characteristics and the incidence of VLFS among children is especially important for designing policies aimed at reducing childhood hunger. Two recent studies have found that certain household characteristics lead to a large percentage of children who face VLFS in the United States—one focusing on foreign-born mothers and another on reliance on alternative financial services.

Cook (2013) hypothesized that children with foreign-born mothers have significantly greater odds of experiencing VLFS in children and that FB mothers may have socio-demographic characteristics that act as either risk or protective factors for VLFS. In estimation, Cook controls for these potential risk or protective factors in order to see if they lead to reduction or increases in VLFS in children. Using data on roughly 44,000 mother-child dyads for children under the age of 4 years as part of the Children's HealthWatch survey conducted at teaching hospitals and clinics in seven US cities, Cook's estimation finds that VLFS among children is strongly associated with the presence of a mother being born outside the U.S. After controlling for available socio-demographic characteristics of mothers, Cook's estimates show that children born to FB mothers are more than three times as likely to face VLFS than children born to mothers born in the U.S. Findings also show that FB mothers are less likely than U.S.-born mothers to receive SNAP and non-nutrition assistance (TANF, LIHEAP, or housing subsidies), but more likely to receive WIC. Although children in households with foreign-born mothers are more likely to be VLFS, mothers who are not U.S.-born are more likely to be employed. These

findings speak to the need for further evaluation of dynamic decision making with regard to food and nutrition availability within households with foreign-born mothers.

Previous research has shown that children in low to moderate income households often face considerable difficulties in ensuring enough resources to meet their needs. To better increase our understanding of what specific household characteristics affect food security and why some children achieve food security and others face either insecurity or even VLFS, Fitzpatrick (2013) looks at the financial services utilized by low to moderate income households in an effort to gain better insights into household decision making with regards to food security.

Using a unique, nationally representative dataset of households in both the December 2008 Current Population Survey (CPS) Food Security Supplement and the January 2009 CPS Unbanked and Underbanked Supplement, Fitzpatrick's research examines both the food security status of children in these household and the full array of financial services used by these households. Information about multiple services are available in the CPS Unbanked and Underbanked Supplement including mainstream financial services like bank accounts, and alternative financial services (AFS) such as check cashers, payday lenders, pawn shops, rent-to-own outlets and tax refund anticipation loans companies. Additionally, it also allows for the combining of household's overall financial resources to gain valuable insight in how the financial organization of parents can affect the child's food security outcomes.

Fitzpatrick identifies factors associated with food insecurity among children by using cross-tabulations and regression-adjusted correlations between financial decisions made by parents and the food security status. Findings reveal that children in households with low and moderate incomes often face considerable difficulties in ensuring enough resources to meet their

needs. Additionally, children in households using AFS products are more likely to experience VLFS and food insecurity than other households.

Fitzpatrick's findings also show that parents without a bank account (i.e. "unbanked") are strongly associated with the presence of childhood food insecurity. Unbanked households alone are more than 4.5 percent more likely to have child food insecurity than households that have a bank account and households that previously held bank accounts face an extremely high risk of general child insecurity. Previously banked households have a 2.6 percentage point increase towards having VLFS and an 8.3 percentage point increase in food insecurity. Descriptive evidence suggests the benefits of improved financial education and management skills and state laws that encourage the availability of appropriate bank accounts for low to moderate income households could help improve outcomes.

The use of AFS providers is positively associated with the incidence of food insecurity and is a possible indicator of limitations on a household's cash flow. Specifically, households who utilize AFS providers for credit based services are associated with an even greater risk of potential child food insecurity and VLFS than utilizing basic transactional services. Both AFS servicers like pawn shops and payday loan companies increase the likelihood of VLFS among children. Services from pawn shops are associated with more than a 12 percentage point increase in the incidence of VLFS among children, and the use of a payday loan services are associated with an increase of a 1.8 percentage point incidence of VLFS among children.

These data also provide insight for households with shared financial resources and shared decision making. When couples share at least some of their resources and make joint financial decisions, it lowers the risk of food insecurity among children and may even have a protective effect. However, more research looking specifically at head of household financial decision

makers is necessary, as there is only weak evidence that women with greater control over financial resources improves overall child food security.

Fitzpatrick's study suggest that improved financial literacy and financial management skills would improve outcomes in households where children are at risk for food insecurity. While the use of short-term creditors like pawn shops and payday loan companies assist vulnerable households obtain food during economic shocks, they are associated with reductions in food security. In an effort to reach households on the margin of child food insecurity, outreach assistance efforts should be targeted in communities with a large concentration of AFS providers and for households that have had a bank account closed by a bank.

B. What is the nature of the relationship between children's hunger and food insecurity in their families?

To better understand the distribution of food insecurity within a family, Sharkey (2014) delves past the parent perspective of food security on the traditional CFISM, and examines whether parents and children report different experiences of food insecurity. Utilizing data from a longitudinal cohort, Sharkey examines the circumstances and strategies of Mexican-origin families in Texas border *colonias* who experience VLFS. The dataset, comprised of children ages 6-13, allows for a two-step analysis by 1) determining the relationship between household VLFS as reported by the mother and the child's experience of VLFS and 2) identifying seasonal influences on VLFS among children.

Findings show differences in food security from adult to child. According to children, food insecurity was more prevalent in the summer than during school, while the mother's perspectives indicated there was no significant change in child food security from the summer to school months. Independent of other factors, there was a dyadic discordance in the prevalence of

child food insecurity, and the condition was less severe during the school year compared with summertime.

This report demonstrates the importance of moving beyond parental reports of food insecurity. This is relevant for both future research in this area – this is an underexplored area – and for policymakers and program administrators who are designing interventions to improve the well-being of older children. While the report has insights for the broader population, it is particularly relevant for Hispanics living in high-poverty areas near the U.S. Mexico border.

IV. Description of the Circumstances of Families with Food Insecure or Hungry

Children

A. What conditions distinguish between low-income families who are food secure and those who are not?

The majority of poor households in the U.S. are food secure (Coleman-Jensen et al., 2014). As a consequence, research must examine conditions that distinguish between those who are poor and fall into food insecurity and those who are poor and are food secure. Powers (2013) examines other conditions that heretofore have not been explored. Using nationally representative data from the Survey of Income and Program Participation (SIPP), she examined how parenting practices affect the risk of food insecurity among children. She hypothesizes that parents with a close relationship with their children possess better information about them, including their food-security status.

The descriptive evidence suggests that mothers in food-insecure households have a more negative perception of their own parenting abilities than do mothers in food-secure households. However, after controlling for other problems that are correlated with parents' outlook, especially maternal mental and physical health, the effect of parenting outlook on food insecurity

disappears. That is, any link between parenting practices and childhood hunger is spurious, and the data instead suggest that improving mothers' health can decrease food insecurity among children. In her research, Powers finds that about 10 percent of households have someone not eating enough or skipping meals, and in half of these cases a child goes without food. For policymakers, then, efforts to improve mother's health can have beneficial outcomes among other household members including improvements in the food security status of children.

B. What is the relative importance of the nuclear family, extended family, neighborhood/community and state-level circumstances?

A deeper focus into family dynamics can provide important insight into the complexity of factors that impact those who directly face food insecurity. Finding that income is not the only direct predictor of needs, Schanzenbach, Anderson, Butcher, and Hoynes (2014) investigate the circumstances of why VLFS among children varies in families with similar income statuses.

For their analysis, Schanzenbach, et al. utilize data from the Current Population Survey (CPS), the American Time Use Survey (ATUS), the National Health and Nutrition Examination Survey (NHANES), and the Panel Study of Income Dynamics (PSID). In each dataset, they construct alternative measures of income-to-needs; that is, the ratio of household income to the federally specified poverty threshold that varies by household size. Despite various measures of income (e.g. inclusive or exclusive of in-kind transfers such as SNAP) across multiple datasets and specifications, there continue to be household characteristics that systematically correlate with the incidence of VLFS among children. These characteristics can include household composition, such as those with more teenage children being more likely to suffer from VLFS, suggesting unmet needs as children grow and require more food. Additionally, a household disability that limits work, depression, a lack of emotional support, drug use, and time spent

sleeping are behavioral factors correlated with VLFS among children even after controlling for the amount of income needed to meet their household needs.

Extending this research is work by Jensen and Zhylyerskyy (2013), whose analysis finds similar results in that households with unmarried couples and households with a single head are more likely to experience marginal, low, and VLFS. Jensen and Zhylyerskyy extends research to examine the roles of household variables such as financial, time, and environmental constraints, the effects of socioeconomic characteristics of the household, the attributes of the local food environment such as food prices and availability, and food preparation times. Using the 2002-2010 CPS Food Security Supplement and the 2003-2011 American Time Use Survey, they examine the importance of socioeconomic and environmental factors that contribute to food insecurity among children.

Households with a single head, and households with more children, are more likely to experience low and VLFS among children than married-couple households and households with fewer children. Specifically, the probability of full, or marginal, food security among children is lower by 5.2 percent among children in single female-headed households. Lower household income and lower educational attainment of the householder are also associated with more food insecurity, and being identified as a minority household significantly increases the incidence of low or VLFS among children.

With respect to residential location, they find that living in an area with higher fast food prices is associated with higher rates of food insecurity among children. While residing in relatively close proximity to more convenience stores and specialty food stores tends to help reduce food insecurity. Additionally, households of Hispanic or foreign-born origin spend more

time preparing food than do households with an older householder. Men spend substantially less time preparing food than women, and children are associated with more food preparation times.

These findings can help guide the design of public policies and programs aimed at reducing food insecurity among children. Specific enhancements would be for policies aimed at single female households and the proximity of low cost food (including fast food) to residences. Also, policies that encourage businesses to open up food stores in poorer neighborhoods may help mediate food insecurity among children. Additionally, the effectiveness of food assistance programs may be enhanced by allowing their requirement to vary across seasons in order to account for the differential opportunity cost of time.

C. To what extent are risk conditions long term versus short term?

The majority of research looking at food insecurity has relied on cross-sectional data in part due to the lack of longitudinal data. In response to this research gap, Kennedy, Fitch, Warren, and Drew (2013) use longitudinal data to assess children's movement into and out of food insecurity, the duration of food insecurity, and policy levers which affect movement. Looking specifically for the incidence of becoming VLFS and remaining at VLFS status, CPS data provided one-year transition rates of exits and entry into VLFS status.

Findings suggest that on average, 5 percent of previously food secure children newly entered food insecurity each year. This includes the nearly 1 percent of children who entered VLFS among children. Additionally, among all food insecure children, 40 percent overall persisted in food insecurity in the following year with nearly one-fifth of households experiencing VLFS among children remaining in this status for a second consecutive year. Transitions into food insecurity and durations of food insecurity nearly doubled during the Great Recession.

Kennedy, et al. find that the probability of entering into and exiting from food insecurity varies widely by children's socioeconomic and demographic characteristics. For example, among children in a household with below-poverty income, 18 percent newly entered in food insecurity among, and of this group, 2 percent entered into VLFS. Children in families with incomes between 100 and 185 percent of the poverty line also have high entry rates into food insecurity—10-15 percent of children—including 1 percent entering into VLFS among children. For children whose parents have less than a high school degree, 15 percent newly entered food insecurity and over 2 percent entered VLFS. On the other hand, children with married parents are comparatively protected from entering child food insecurity compared to those living with a single parent—4 percent versus 12 percent, respectively.

Although persistent years of VLFS is unusual, those children who do experience VLFS commonly experience multiple years of food insecurity. Nearly half of households who entered a VLFS status experienced low food security the previous year and about half of households who exit VLFS still experience low food security the second year. Direct interventions towards these children who are at particular risk of longer spells of food insecurity may be a path considered by policymakers and program administrators. In addition, additional research is needed to determine the impact of prolonged food insecurity on child health and well-being.

D. What combination of individual/household characteristics and circumstances ameliorate or exacerbate the likelihood of childhood food insecurity or hunger?

As we have learned from the research summarized above, there are multiple insights pointing towards the combinations of various individual and household circumstances that can adversely affect food security. Research into adverse childhood experiences, including abuse,

neglect, and household instability, that have been found to affect lifelong health and economic potential, also prove important for understanding food insecurity outcomes.

Chilton and Knowles (2014) found that there is a significant correlation between the occurrence of adverse childhood experiences and the severity of food insecurity. In particular, the prevalence and exposure to emotional and physical neglect and substance abuse during childhood was associated with mothers' reports of household low and VLFS.

For this work, they conducted semi-structured interviews with 33 mothers of children under the age of 4 from the Children's Health Watch sample in Philadelphia who initially reported low or VLFS within their household. Results held that these early adverse childhood experiences negatively impacted their ability to protect their children from food insecurity. This included a compounded effect in their inability to advance their education, maintain employment, and plan for the future. Medical practitioners working with mothers who mention exposure to difficult childhoods may wish to further ascertain whether the children in the household are at greater risk of food insecurity.

Allard and Shaefer (2014), focusing on households that faced economic shocks, health limitations, and financial hardships, addressed two issues: first, how does access to the local food resources infrastructure relate to the risk of food insecurity?; and, second, to what extent is the experience of unemployment associated with increased risk of food insecurity? When controlling for other observable household characteristics, results indicate that these circumstances were associated with a greater chance of experiencing food insecurity.

Using data from the first two waves of the Michigan Recession and Recovery Study (MRRS), a panel survey of working-age adults in the Detroit Metropolitan Area, they examined the availability of food within vulnerable populations. Across most measures, Allard and

Shaefer found that many vulnerable population groups have greater or at least comparable spatial access to food resources than less vulnerable population groups. In some instances, a closer proximity to SNAP-certified supermarkets or grocery stores, is negatively associated with food security. That is, contrary to expectations, Allard and Shaefer found that households closer to supermarkets and small grocery stores are more likely to report food insecurity.

They found that households who are food secure are on average 0.89 miles away from a large chain grocery store, while households who are food insecure are on average 0.64 miles away, a difference of about two residential blocks. This geographic difference and the contradictory findings could be explained by households who face physical health limitations. These results hold for households with children facing food insecurity. It was found that 73 percent of households with food insecure children are within a mile of a large chain grocery store, compared to only 61 percent of households with food secure children. Their findings in the urban setting of their sample may not be generalizable to the wider population in the U.S., and further research is needed. The newly available National Household Food Acquisition and Purchase Survey (FoodAPS), a survey of 4,800 families sponsored by the Economic Research Service in USDA, is likely to prove to be a valuable resource for this research.

Individual Development Accounts (IDA) have been utilized by many state and local governments and non-governmental organizations, usually with federal funding, to stimulate saving among low-income families. Generally the IDAs are a matched savings accounts whereby the sponsor matches the contributions of the participant, say \$1 for \$1. Research by Loibl and Snyder (2014) is the first to examine whether IDAs have a positive spillover of reduced food insecurity among current and former participants. A specific key hypothesis they

test is whether or not risk of food insecurity declines over time after successful program completion.

To address this issue Loibl and Snyder conducted a phone survey of 645 savings program participants across seven IDA agencies across the U.S. and who opened accounts at some point between 2007 and 2013. Overall, they find an average of 20.8 percent of children with low or VLFS among children in their survey, comparable to national estimates for child food insecurity among low-income families (Coleman-Jensen, et al. 2014 Table 3). Qualitatively they find that low child food insecurity is lowest among program graduates (19.8 percent), followed by current participants and dropouts (21.6 percent each), but there is no statistical difference. This preliminary research also indicates a disconnect between the perception of food insecurity among savings program providers and actual, higher food insecurity among participating families.

V. Description of Coping Strategies of At-Risk Families to Avoid or Reduce Food Insecurity

A. What steps do at-risk families take to address hunger or food insecurity? Is there any relationship between coping strategies selected and family circumstances or characteristics?

Families who are at-risk of food insecurity will use coping strategies in an effort to avoid food insecurity or, if not avoid, at least reduce the level of food insecurity. To better understand the relationship between these strategies and family characteristics, an analysis of the interrelationships between food insecurity and other household circumstances would prove useful. Bartfeld and Collins (2014) look at food insecurity and child-specific food hardships of household financial experiences and behaviors in a survey of school children and their parents in the state of Wisconsin. They consider the influence of financial coping strategies, food

assistance program participation, and savings behaviors on food insecurity. In addition, they consider how these strategies are affected by shocks to incomes and expenditures.

Similar to other research findings, income shocks are strong predictors of household food insecurity levels. However, Bartfeld and Collins show that in the case of child food hardships, only expenditure shocks, not income shocks, are significant predictors. This suggests that the inability to manage large or unexpected expenses, specifically measured in this study by self-reported large medical or other unanticipated expenses, may be particularly detrimental with regard to avoiding food hardships among children.

Although causal models were not estimated, Bartfeld and Collins find that food insecurity at various levels of severity is predictive of almost all of the financial coping strategies considered in their research. There also seems to be an active progression of coping behaviors and mechanisms, such as borrowing money and using payday loans and pawn loans, as the severity of food insecurity increased. Strong associations were also found between food insecurity and food assistance program participation, and evidence indicates that savings for college and emergencies is lower when facing food insecurity. However, perhaps surprisingly, they find that food insecurity is associated with a higher likelihood of saving for college.

The analysis suggests that there is a striking difference in the behaviors associated with food hardships than those associated with a more general financial strain. Financial strain is a much stronger predictor of financial coping behaviors than is food insecurity, whereas food insecurity is much more predictive of food assistance. These findings are suggestive that food assistance may have an untapped potential for freeing up resources among struggling families.

Some findings also provided evidence that at-risk households' choice of financial behaviors is associated with their ability to avoid the most severe manifestations of a child's food

hardship. Although spending out of savings and the use of SNAP may be protective, those using pawn loans, food pantries, and summer food programs have an elevated risk of encountering food hardships, though Bartfield and Collins believe this stems from differences in the socioeconomic status of the families choosing to use these alternative financial services.

B. To what extent are coping strategies transferable across at-risk families? Do they lend themselves to larger scale initiatives to end childhood hunger?

Anater (2014) conducted a mixed-methods study of coping strategies used by VLFS households with children in North Carolina. For phase 1, she employed a cross-sectional, observational design to recruit 320 clients of service providers who offer assistance to people with limited resources within the eight North Carolina counties with the highest food insecurity rates. Trained interviewers administered an in-person survey interview about their use of coping strategies. In Phase II, Anater completed in-depth interviews with a sample of Phase I participants. During the largely unscripted interviews, participants were asked a select number of close ended questions from the Phase I survey to assess changes between the two surveys.

The qualitative findings indicate that when experiencing a food shortage, respondents found varied ways to enhance their household income, such as avoiding unnecessary expenses (e.g., reduce driving), asking family and friends for money, seeking back child support, performing odd jobs, making trade-offs (e.g., skipping prescriptions or not taking as prescribed), picking up pennies, and writing bad checks. Although they recognized that some of these activities can be risky, they felt that the short-term benefits of having enough money for food outweighed the potential harms.

Respondents also described ways of increasing the amount of available food. Federal safety net programs and food pantries allowed for increase food among these respondents, but

many also mentioned a range of alternatives such as asking for food from family and friends, fishing, gardening, getting food through work, and going to a food pantry. Respondents elaborated multiple ways that they bargain shopped in order to “stretch” their existing funds. These included buying sale items or markdowns, purchasing food on discount days, buying in bulk, buying generics or store brands, shopping at discount stores, and shopping around for the best deals at several stores. Although these were useful strategies for saving money, some of them do come with some costs to the household, including the opportunity cost of their time.

VI. Policy Considerations

The research reported here has shown that beyond having low income status, whether transitory or permanent, key factors that predict a child’s food insecurity include the mother’s mental and physical health, as well as her current and past substance abuse; residential instability; living in households without both parents present; whether it is summertime when school meals are not offered; whether the parents are foreign-born; and the financial management skills of the parents. This suggests a few policy considerations.

First, improved financial literacy and financial management skills would improve outcomes among those households with children at risk for food insecurity. This suggests that policy initiatives to encourage savings and enhanced access to low-cost credit may allow families with child food hardships to bypass potentially harmful loan strategies. In addition, improved outreach that identifies households that have a bank account closed and/or who utilize alternative financial services may be fruitful avenues to identify at-risk children.

Second, the research showing that a mother’s mental and physical health can affect her children’s food security raises substantive concerns about families’ ability to navigate daily activities around food purchase and consumption and use food assistance programs. In some

cases, these health challenges are exacerbated by lack of access to mental health services.

Enabling access to such services could improve food security, but how to do so is not altogether clear; more research in this area may help identify solutions. Similarly, the finding that children of women who have been treated for substance use, or for past domestic violence, are also at heightened risk of food insecurity suggests we should ensure that such women are enrolled in programs such as SNAP and WIC during their treatment (if they are eligible), and that their children are enrolled in school meal programs.

Third, evidence that children's experiences were worse than mothers' perceptions suggests that actions taken by mothers that may be perceived as sufficient may not fully protect children from the experience of food insecurity. As a consequence, findings about the incidence of food insecurity will differ depending on who answers the questions. One question for future research is whether children's answers suggest different causes of food insecurity. If so, then policy responses may depend on whether the children's or parents' perspective is deemed the most useful one for reducing food insecurity.

Fourth, the overall work demonstrates that certain groups are at higher risk of food insecurity than others. As has been demonstrated in several papers (for a listing of papers see Gundersen and Ziliak, 2014), SNAP participants are less likely to be food insecure than eligible non-participants. Nevertheless, there are still a high proportion of SNAP participants who are still food insecure (see, e.g., Coleman-Jensen et al., 2014). One possible way to address this is to increase SNAP benefits to at least a subset of participants (Caswell and Yaktine, 2013). In thinking about how to best target these SNAP benefits, the insights drawn from this report about what characteristics are associated with food insecurity may be useful.

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Craig Gundersen and James P. Ziliak

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The Future of Children would like to thank the University of Kentucky Center for Poverty Research for financial support through funding by the U.S. Department of Agriculture, Food and Nutrition Service, contract number AG-3198-B-10-0028/AG-3198-K-0057. The opinions and conclusions expressed herein are solely those of the authors and should not be construed as representing the opinions of any sponsoring agency.



Childhood Food Insecurity in the U.S.: Trends, Causes, and Policy Options

Craig Gundersen and James P. Ziliak

In 2012, nearly 16 million U.S. children, or over one in five, lived in households that were food-insecure, which the U.S. Department of Agriculture defines as “a household-level economic and social condition of limited access to food.”¹ Even when we control for the effects of other factors correlated with poverty, these children are more likely than others to face a host of health problems, including but not limited to anemia, lower nutrient intake, cognitive problems, higher levels of aggression and anxiety, poorer general health, poorer oral health, and a higher risk of being hospitalized, having asthma, having some birth defects, or experiencing behavioral problems.² Many government programs aim explicitly to reduce food insecurity, including the Supplemental Nutrition Assistance Program (SNAP), the National School Lunch Program (NSLP), the School Breakfast Program (SBP), the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and the Child and Adult Care Food Program (CACFP). (Other social safety-net programs—for example, the Earned Income Tax Credit—can also help alleviate food insecurity by increasing household income.)

The fact that food insecurity remains so high even though the government spent over \$100 billion on the various federal food-assistance programs in fiscal year 2012 poses a significant policy challenge.

Food insecurity rates remain stubbornly high for a number of reasons. One is that we don’t fully understand what causes food insecurity or how food assistance and other programs can help alleviate it. Food insecurity has been researched extensively, and this research has helped policy makers and program administrators better address the problem.³ However, relatively little research has looked at what causes food insecurity among children in the first place, or the effectiveness of public policies, especially on more severe forms of food hardship.

In this policy report, we highlight new research that seeks to fill this gap. Much of this work comes from the Research Program on Childhood Hunger at the University of Kentucky Center for Poverty Research, which was underwritten by the Food and Nutrition Service of the U.S. Department of Agriculture (USDA).

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Food Insecurity among Children

In 1989, the Life Sciences Research Office, an independent nonprofit that studies scientific issues, assembled an expert panel on behalf of the American Institute of Nutrition to find ways to measure the nutritional status of “difficult-to-sample” populations (that is, people who are hard to count, such as the homeless, or few in number relative to the general population, such as pregnant women). The panel proposed an operating definition of food insecurity as a situation that “exists whenever the availability of nutritionally adequate and safe foods or the ability to acquire acceptable foods in socially acceptable ways is limited or uncertain.”⁴ It intended food insecurity to be conceptually distinct from “hunger,” which is generally viewed as a physiological condition assessed at the individual rather than the household level. The current definition of food insecurity was put into practice in 1995, when the USDA began fielding the Core Food Security Module (CFSM) as part of the Current Population Survey (CPS), a nationally representative monthly survey conducted by the U.S. Census Bureau. Until 2001, various changes in the survey made it difficult to compare the results across years. However, the CFSM has been consistent since 2001 and is currently a part of the nationally representative 50,000-household December supplement to the CPS. (The CFSM is included in other surveys as well; below we mention these surveys when we review various studies.)

The CFSM is a series of 18 questions (10 if no children live in the household) that ask whether the household faced difficulties feeding adults and children over the past year because of lack of money. These difficulties range from worry about running out of money to skipping meals for a whole day because of a lack of money. The questions also ask separately about food security over the 30 days before the interview. Examples of questions include: “Did you or the other adults in your household ever cut the size of your meals or skip meals because there wasn’t enough money for food?”; “Did you ever cut the size of any of the children’s meals because there wasn’t enough money for food?”; and, the most severe item for households with children, “Did any of the children ever not eat for a whole day because there wasn’t enough money for food?”⁵ Each question is qualified by the stipulation that the lack of food was caused by money problems.

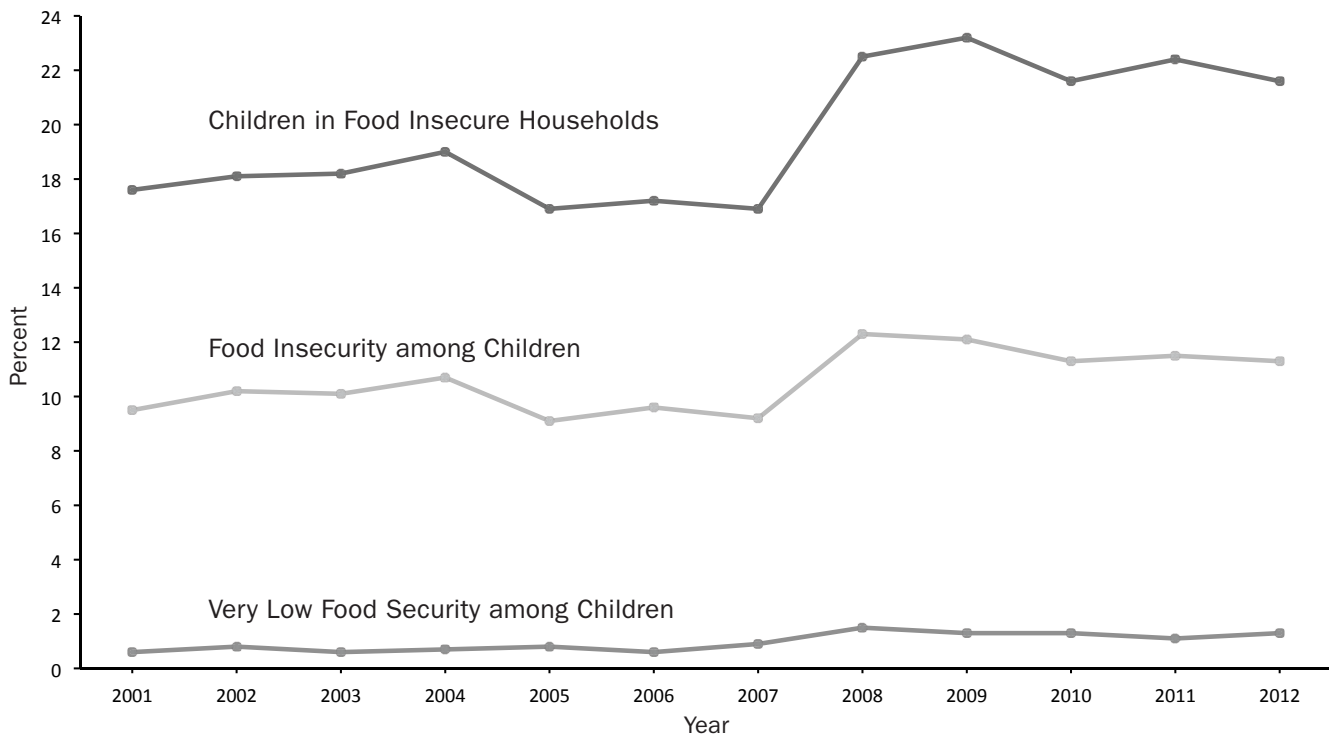
The USDA places households into food insecurity categories based on their responses to these questions; the number of affirmative responses reflects a household’s level of food hardship. As table 1 shows, the USDA has established the following thresholds: (a) fully food secure (all household members had enough food at all times); (b) marginally food secure (the household had problems with or anxiety about getting enough food, but the quality, variety, and quantity of their food intake were not substantially reduced); (c) low food security (household members reduced the quality, variety, and desirability of their diets, but the quantity of food intake and normal eating patterns were not substantially disrupted); and (d) very low food security (at times during the year, eating patterns of one or more household members were disrupted and food intake was reduced because the household lacked money and other resources for food). A household is said to be “food insecure” if it falls into the low or very low food security categories. Food insecurity statuses are also established for the children in the household. Children are experiencing food insecurity if at least two of the eight child-centered questions are answered in the affirmative, and very low food security if five or more such questions are answered positively.

Table 1. Categories of Food Insecurity

<i>USDA Classification</i>	<i>Number of Affirmative Responses to CFSM</i>
Fully Food Secure	0
Marginally Food Secure	1 or 2
Food Insecure	3 or more
Very Low Food Security	6 or more (households without children) 8 or more (households with children)
Food Insecurity among Children	2 or more child-referenced questions
Very Low Food Security among Children	5 or more child-referenced questions

Note: For descriptions of these categories, see Alisha Coleman-Jensen, Mark Nord, and Anita Singh, *Household Food Security in the United States in 2012*, U.S. Department of Agriculture, ERR-155 (Washington, DC, 2013).

Figure 1. Trends in Food Insecurity among Children



Source: Authors' tabulations of data in Alisha Coleman-Jensen, Mark Nord, and Anita Singh, *Household Food Security in the United States in 2012*, U.S. Department of Agriculture, ERR-155 (Washington, DC, 2013), table 1B.

Figure 1 depicts trends from 2001 to 2011 in (a) the fraction of children who live in households facing food insecurity; (b) the rate of food insecurity among children; and (c) the rate of very low food security among children. We emphasize four main points about this figure. First, all three measures saw a substantial increase between 2007 and 2008 with the onset of the Great Recession. Both the fraction of children in food-insecure households and the rate of food insecurity among children rose by one-third across those two years, and the rate of very low food security among children increased by two-thirds, from 0.9 percent in 2007 to 1.5 percent in 2008. Second, despite the official end of the Great Recession in June 2009, rates of food insecurity have remained at these elevated levels. Third, nearly 1 million children are experiencing very low food security. Fourth, though the Great Recession caused a large and sustained increase in food insecurity, food-insecurity rates among children were high even during good economic times. For example, from 2005 to 2007, three years with a robust economy, approximately 17 percent of U.S. children lived in food-insecure households.

As we show in more depth below, not all children are equally likely to be food insecure. Indeed, there is enormous variation in the geographic distribution of children who live in food-insecure households. Figure 2 shows estimated food insecurity rates for all counties in the U.S. For example, the Mississippi Delta, Appalachia, the Rio Grande, and American Indian reservations all have high concentrations of food insecurity among households with children.

Why Are Some Children Food Insecure?

A natural assumption is that childhood food insecurity is caused by poverty, and this is broadly accurate. For example, figure 2 shows that county rates of child food insecurity are highest in the South and in rural parts of the country more generally. As these regions tend to have higher rates of poverty, the association with food insecurity seems clear.⁶ In figure 3, we depict the relationship between food insecurity among children (and households with children), on the one hand, and the income-to-needs ratio, on the other. The income-to-needs ratio is determined by dividing a family's income by the poverty threshold that U.S. agencies

use to determine poverty rates for a family that size. An income-to-needs ratio below 1 means a family is poor; a ratio of 2 means the family income is twice the poverty line; and so on. (The figure includes families with incomes under 400 percent of the poverty line.)

Clearly, the risk for child food insecurity drops quickly with income. But even at incomes two and three times the poverty level, food insecurity is quite high. Moreover, almost 60 percent of children in households close to the poverty line are in food-secure households. This suggests that income is only part of the story and that other factors also contribute to children's food security.

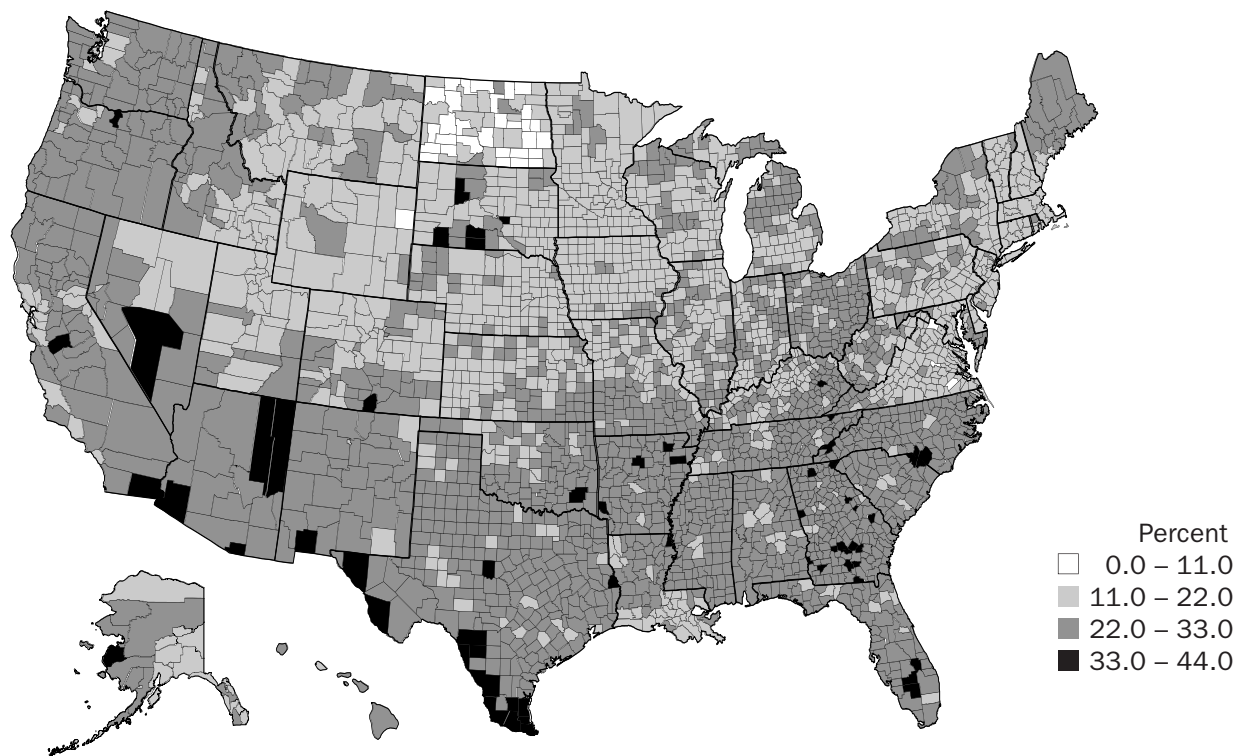
Factors Other Than Income

Research has shown that numerous factors besides income influence whether a household is food insecure.⁷ Here we consider recent studies that extend and improve upon this previous work by, among other things, considering more factors, using newer

data, employing different research methods, and concentrating on food insecurity among children specifically.

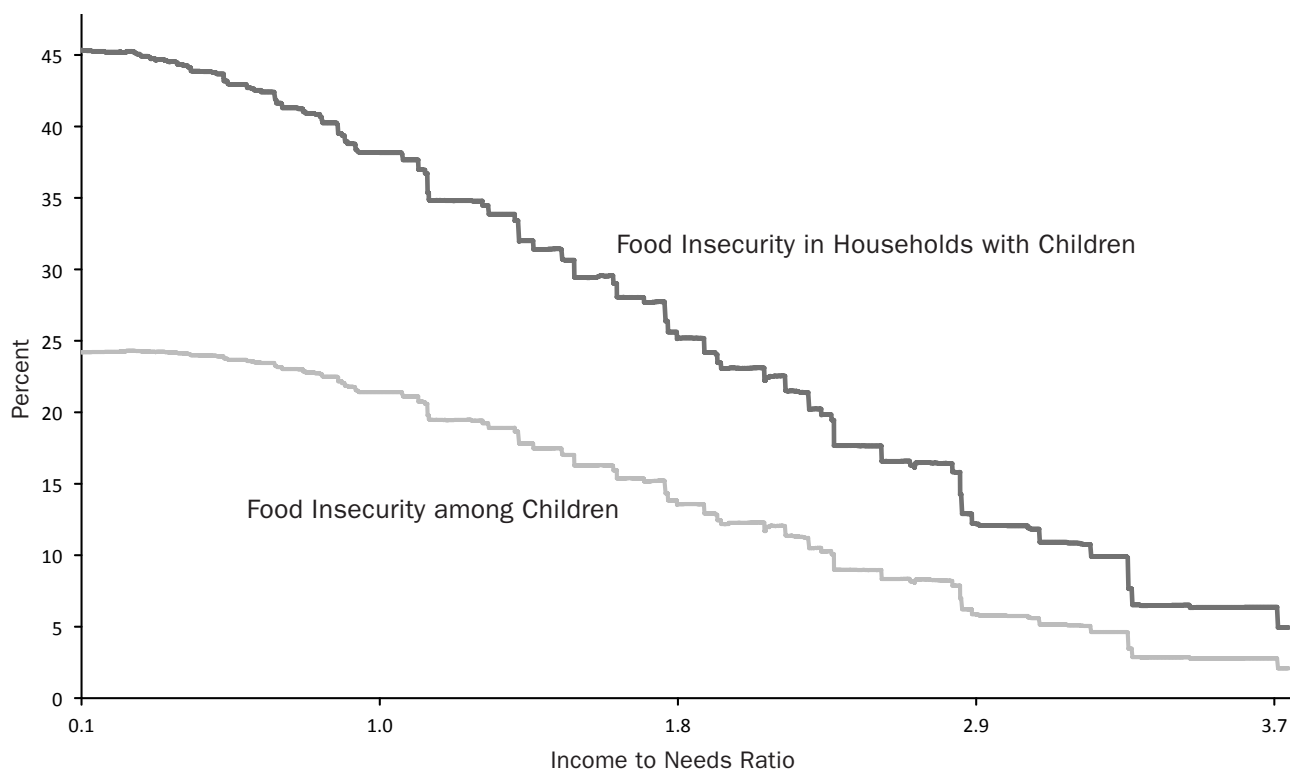
One theme among these new studies is that, even when income and other risk factors are accounted for, adult caregivers' mental and physical health play a central role in children's food security. For example, Neeraj Kaushal and colleagues, using data from the Fragile Families and Child Well-Being Study (a survey based at Princeton University that has followed 5,000 children born between 1998 and 2000 in 20 major metropolitan areas, mostly to unmarried mothers), found that mothers in food-secure poor households are in better physical and mental health and are less likely to report intimate-partner violence and substance use compared with mothers in food-insecure poor households. When the sample is restricted to those with incomes twice the poverty line and lower, food-insecure families are more likely to be headed by poorly educated single mothers and more likely to report maternal depression

Figure 2. County Map of Child Food Insecurity Rates in 2012



Source: Map is based on results compiled through Feeding America's Map the Meal Gap Project. For more information, see <http://feedingamerica.org/hunger-in-america/hunger-studies/map-the-meal-gap.aspx>; for technical details, see Craig Gundersen et al., *Map the Meal Gap 2014: Technical Brief* (Chicago, IL: Feeding America, 2014).

Figure 3. Relationship Between Food Insecurity among Children and Income, 2012



Source: Authors' calculations using data from the 2012 Current Population Survey, Core Food Security Module.

and substance abuse than are food-secure families with similar incomes.⁸ Likewise, using data from the CPS, Kelly Balistreri found that disability among adults living with children greatly increases the likelihood that children will experience very low food security. Holding other factors constant, children living with a disabled adult are almost three times as likely to experience very low food security as are children who don't live with a disabled adult.⁹

Elizabeth Powers, using nationally representative data from the Survey of Income and Program Participation (a survey on socioeconomic status, participation in social assistance programs, and myriad other factors conducted by the U.S. Census Bureau that follows approximately 30,000 people per wave of data collection), examined how parenting practices affect the risk of food insecurity among children. She hypothesizes that parents who have a closer relationship with their children possess better information about them, including their food-insecurity status. The descriptive evidence suggests that mothers in food-insecure households have a more negative perception of their own parenting abilities than do mothers in food-secure households.

However, after controlling for other problems that are correlated with parents' outlook, especially maternal mental and physical health, the effect of parenting outlook on food insecurity disappears. That is, any link between parenting practices and childhood hunger is spurious, and the data instead suggest that improving mothers' health can decrease food insecurity among children.¹⁰

The finding that maternal mental health affects household food security is bolstered further by evidence from Kelly Noonan and colleagues, who used data from the Early Childhood Longitudinal Study Birth Cohort (ECLS-B), which interviewed the parents and caregivers (including early childhood teachers) of 14,000 children born in 2001 four times between birth and the start of kindergarten. They found that when mothers are moderately to severely depressed, the risk of child and household food insecurity rises by 50 to 80 percent, depending on the measure of insecurity.¹¹ Similarly, Patricia Anderson and colleagues examined the link between maternal health and child food security, in this case using data from the National Health and Nutrition Examination Survey (NHANES), which is

a nationally representative annual survey of 5,000 adults and children conducted by the National Center for Health Statistics, Centers for Disease Control and Prevention, that includes both a survey interview and a physical examination conducted by a trained professional. The researchers found that families where children experience very low food security report having significantly weaker social and emotional support networks.¹²

Anderson and colleagues also find that drug use in the last 30 days—and heroin use in particular—is strongly associated with food insecurity among children. Rates of heroin use in the past 30 days are 10 times as high (1.5 percent) in families with very low food security among children than they are in the population overall. Likewise, 16.2 percent of household heads in families with very low food security among children have been in rehabilitation centers of some kind, compared with 5.8 percent of household heads in the full population surveyed in NHANES.¹³

A second theme in the new research on child food insecurity is that the household head's marital status plays a key role. Balistreri finds that, after controlling for economic and household characteristics, children living with a single parent or living with an unmarried parent in a more complex family (for example, one that includes a cohabiting partner or another adult such as a grandparent) have a greater risk of food insecurity than do children living in families where the parents are married. Moreover, among low-income families, mothers' work patterns predict children's food insecurity much more strongly in stepfamilies than in 100 percent biological families.¹⁴ Daniel Miller and colleagues used comprehensive data from four national surveys—ECLS-B, Early Childhood Longitudinal Study–Kindergarten (ECLS-K), the Fragile Families Study, and the Panel Study of Income Dynamics (PSID) (a survey that collects information on a wide array of topics including, among other things, socioeconomic status, consumption, and participation in assistance programs, that has followed thousands of American families since 1968)—to see whether children growing up in single-parent households were more likely to be food insecure than were children in families with cohabiting partners or with mothers who had repartnered with another adult who was not

a biological parent of her children, whether married or cohabiting. Although correlational evidence suggests that children in single-mother families are at higher risk, after controlling for socioeconomic status there was no longer a substantive difference across the family types that Miller and colleagues studied. However, children living with married biological parents still experience a significantly lower risk of food insecurity.¹⁵ Similarly, using Fragile Families data, Kaushal and her colleagues found that children who live with their biological parents, whether married or cohabiting, face a significantly lower risk of food insecurity.¹⁶

Delving deeper into family structure and food insecurity, Lenna Nepomnyaschy and colleagues examined how nonresident fathers' involvement affects childhood food security. To measure fathers' involvement, they considered cash transfers, in-kind contributions to households, and contact with the children. Using a variety of statistical methods, they found strong evidence that in-kind support from fathers is related to lower child food insecurity for both young children and adolescents, and less very low food security among young children. They also found that among adolescents, the provision of inconsistent cash support as compared with no support is associated with higher child food insecurity, but consistent support is associated with a lower risk of food insecurity. Both findings suggest that consistent support from nonresident fathers, whether in cash or in kind, is important for child food security. Fathers' contact with their children had no effect on food insecurity.¹⁷

A third theme is that child-care arrangements affect food insecurity status. Understanding the role of child care is especially important insofar as three-quarters of children spend some portion of their preschool years in the care of people other than their parents—a relative or child-care center, for example—and children in center-based care can receive as much as two-thirds of their nutritional needs there. Using data from ECLS-B, Colleen Heflin, Irma Arteaga, and Sara Gable examined how child care by parents versus child care by someone else affected food insecurity among children in low-income families. The authors compared five types of child-care arrangements: care by parents exclusively; by a relative; by someone unrelated to the

child in a home-care setting; in a child-care center; and in Head Start. They found that, compared with children cared for exclusively by their parents, low-income preschoolers attending a child-care center had lower odds of both food insecurity in general and very low food security; children cared for by a relative were less likely to experience food insecurity in general but equally likely to experience very low food security; and children cared for by an unrelated adult were more likely to experience very low food security.¹⁸

A fourth theme of the new research is that certain populations are particularly vulnerable to food insecurity among children. For example, Balistreri found that children in immigrant families have especially high rates of very low food security in comparison to children in nonimmigrant families.¹⁹ Though less than a quarter of all children in the United States are children of immigrants, such children constitute 40 percent of children experiencing very low food security. Similarly, examining nearly 45,000 mother-child pairs in the Children's Health Watch Study, which monitors the health and nutrition of families with children age three and under in clinics in five major U.S. cities, John Cook found that children of foreign-born mothers were three times as likely to experience very low food security as were children of U.S.-born mothers, even after controlling for other risk factors.²⁰

Children in households with an incarcerated parent constitute another vulnerable group. Sally Wallace and Robynn Cox examined how parents' incarceration affects food insecurity using micro-level data from the Fragile Families study that allowed them to compare food insecurity and very low food security among children, families, and adults in households with and without incarcerated adults. On the face of it, the effect of incarceration is not clear. On the one hand, incarcerating a parent might improve a household's food security because the demands on the family's resources are diminished. On the other hand, it might bring a higher probability of food insecurity because the parent's formal (for example, a paycheck) and informal (for example, child care) contributions would be removed. Moreover, factors correlated with incarceration, rather than incarceration itself, might be the primary cause of any changes in food security status. After controlling for

Children of foreign-born mothers were three times as likely to experience very low food security as were children of U.S.-born mothers, even after controlling for other risk factors.

correlated factors, however, Wallace and Cox found that children in households with an incarcerated parent are indeed more likely to be food insecure.²¹

A fifth theme revolves around the issue of how to measure income when considering the relationship between income and food insecurity. Vanessa Wight and colleagues consider two definitions of poverty: the official poverty measure, based on pretax income; and the Census Bureau's new Supplemental Poverty Measure, which considers both a broader set of resources (including posttax income and near-cash transfers from programs like SNAP, NSLP, SPB, and WIC) and a comprehensive set of needs, including work, child care, and medical expenses. As figure 3 shows, using the official poverty measure, although food insecurity falls as income rises, a substantial number of households with incomes above (and sometimes far above) the poverty line are still food insecure. Wight and colleagues find that the relationship between income and food-insecurity status is even stronger when they use the Supplemental Poverty Measure. Put a different way, when we use a better measure of resources available to a household, the relationship between available resources and food insecurity becomes stronger. For households suffering from very low food security, however, there is no difference between the effects of the traditional poverty measure and the new measure.²² This suggests that simply expanding the definition of income does not eliminate the puzzle of why very low food security often occurs in households without very low incomes. Thus efforts to reduce very low food security may need to take a broader perspective than looking at income alone.

Triggers of Food Insecurity

A few scholars have examined the triggers (for example, losing a job) associated with a higher risk of food insecurity and the long-term protective factors (for example, asset levels) associated with a lower risk.²³ Recent research has expanded this work in new directions.

The first of three themes in this new research is that changes in a household's socioeconomic situation can produce changes in food-security status. For example, Alison Jacknowitz and Taryn Morrissey used ECLS-B data to examine what triggers entry into and exit from food insecurity across the first five years of children's lives. They find that changes in a family's housing situation, income instability, and a decline in the mother's mental and physical health or the child's physical health are the most important triggers that are associated with a family's entrance into very low food security among children. Exits from very low food security among children are most often associated with increases in income, improvements in mothers' mental health, and increases in the number of adults in the household (this relationship holds whether the new adults are spouses, partners, or grandparents, suggesting that sharing both time and money is an important factor).²⁴ Sheela Kennedy and colleagues used data from the Current Population Survey to find what factors best predict entry into and exit from low and very low food security among children. They find that living in poverty strongly predicts both whether a child enters food insecurity and whether food insecurity persists. They also found that job losses and declines in income significantly predict entry into very low food security.²⁵ Also using CPS data, the authors of this report, James Ziliak and Craig Gundersen, show that households with grandparents and grandchildren present—including those both with and without at least one of the parents—are at significantly greater risk of entering food insecurity and, once becoming food insecure, remaining so.²⁶ Finally, using a special supplement of the CPS on alternative financial services (for example, check-cashing outlets, rent-to-own stores, and pawnshops), linked to the December CPS of the previous year, Katie Fitzpatrick found that when households went from being "banked" to "unbanked"—that is, from having a checking or savings account to having no account—they saw a 2.6 percentage point increase

in the risk of very low food security and an 8.3 percentage point increase in the risk of food insecurity generally.²⁷

A second research theme considers the distinction between permanent and current income. Neeraj Kaushal, Jane Waldfogel, and Vanessa Wight compared whether food insecurity is more related to current income (that is, income over the past year) or permanent income (defined as income averaged over several years). To find whether current or permanent income is more important, they used ECLS-K data on annual income and food insecurity in households of sampled children at four points over eight years. At each point, they studied the association between food insecurity among children and current income and between food insecurity among children and permanent income. They found that permanent income is a much better predictor of food insecurity among children than is current income.²⁸

The third theme concerns the duration of food insecurity. We have lacked research in this area partly because no long-term, population-wide survey regularly collects information on food insecurity among the same families. However, Kennedy and colleagues have shown that 40 percent of all food-insecure children remain food insecure the following year. (The structure of the CPS is such that a household is observed for two years at most.) Moreover, almost 20 percent of households where children experienced very low food security faced this extreme form of food hardship the next year as well. The researchers also found that very low food security among children was more likely to persist in the years during and after the Great Recession.²⁹ Yiran Li and colleagues, using the three waves when food insecurity was measured in the PSID (1999, 2001, and 2003), also examined permanent and transitory food insecurity and found that just under half of households facing food insecurity reported problems meeting food needs in three or more months over the course of a year.³⁰

Public Policy Response to Food Insecurity

Campaigning for the Democratic nomination for president in 1960, then-Senator John F. Kennedy toured West Virginia and grew alarmed at the region's extreme poverty (county poverty rates exceeded 50 percent in most West Virginia counties). He pledged to help the poor if elected, and

in 1963 he proposed expanding and making permanent a small pilot project called the Food Stamp Program. Fifty years later, this program, now called the Supplemental Nutrition Assistance Program (SNAP), remains the leading component in the safety net against hunger, assisting one in seven Americans at a cost of \$80 billion per year. Following closely on the heels of the Food Stamp Program, Congress passed the Child Nutrition Act of 1966, which expanded the National School Lunch Program (NSLP) and established both the School Breakfast Program (SBP) and Child and Adult Care Food Program (CACFP). The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) was added a few years later. We provide a brief overview of each program and then discuss research on the programs' effectiveness in combating childhood hunger.

Federal Food Assistance

SNAP benefits can be used to buy food in authorized retail outlets, which number about 250,000 nationwide. Benefit levels rise with family size and fall with income. In 2014, the maximum monthly benefit for a family of four was \$632. SNAP benefits may be used only by those who are eligible for and choose to enter the program. To be eligible, households must first meet a test of monthly gross income (that is, income before any deductions), which must be under 130 percent of the poverty line, although some states have set higher thresholds. There are exceptions; for instance, households with at least one elderly member or one disabled member do not have to meet this test. Along with the gross income test, households must have net incomes below the poverty line. Net income is calculated as gross income minus certain deductions, including, for example, a 20 percent earned income deduction and a dependent care deduction when such care is necessary for work, training, or education. This net income test is obviously more likely to affect households in states with higher gross-income thresholds. The final test for SNAP eligibility concerns assets. As defined at the federal level, the total liquid assets of a household must be less than \$2,000 (\$3,250 for seniors and the disabled), and the fair market value of one car per adult household member must be less than \$4,650. Most states have applied for and received waivers to exempt at least one vehicle from the test and, in most states, to waive the asset test

entirely. Some categories of potential participants do not have to meet the gross income, net income, and asset tests. For example, households in which all members receive Supplemental Security Income (SSI) or Temporary Assistance for Needy Families (TANF) are automatically eligible for SNAP.

Once a household passes these eligibility screens, the amount of its SNAP benefits is calculated by multiplying net income by 0.3, under the assumption that households should contribute 30 percent of their net income to food. The resulting value is then subtracted from the value of the Thrifty Food Plan (one of several low-cost food plans developed by the USDA, varying by household size and composition) to yield the SNAP benefit level. Given this formula, a household that has a net income of zero will receive the maximum benefit. Implicit in the SNAP benefit formula is that SNAP benefits are not supposed to cover all food expenditures for families with a net income above zero. Put another way, all households receiving less than the maximum benefit are expected to spend some of their own income on food.

States have discretion over some aspects of SNAP. For example, under broad-based categorical eligibility they can choose the dollar values for the gross income and asset tests, and they set how often a SNAP recipient needs to recertify eligibility. States also administer the program (paying half the administrative costs themselves). Despite this state-by-state flexibility, all benefits, which totaled \$76 billion in 2013, or \$133 per recipient in a typical month, are funded by the federal government.

The National School Lunch Program is a federal assistance program that operates in over 100,000 public and nonprofit private schools across the United States. In 2013, just under 31 million students participated in the NSLP; nearly 19 million of them received free lunches and nearly 3 million more received reduced price lunches. (The remaining 9 million students pay the full price of the school meal.) The federal government gave schools \$1.2 billion in free food for the program in 2013, along with an additional \$11 billion to reimburse the cost of providing the meals. In light of these subsidies, even students who are paying the full price are receiving a discount for the meals. At participating schools, children from families with incomes at or below 130 percent of the poverty level are eligible

for free meals. Children with household incomes between 130 and 185 percent of the poverty level are eligible for reduced-price meals, which cannot cost more than 40 cents. The Community Eligibility Option allows schools in high-poverty areas to provide free breakfasts and lunches to all students if the percentage of households in the community participating in SNAP is high enough. If schools participate in the NSLP, the lunches they serve must meet certain federal requirements. No more than 30 percent of a lunch's calories may come from fat, with less than 10 percent from saturated fat; lunches must also include at least one-third of the Recommended Dietary Allowances of protein, vitamin A, vitamin C, iron, calcium, and calories.

The School Breakfast Program operates much like the NSLP. But while almost all schools in the U.S. serve lunches, about 75 percent serve breakfasts. More than 89,000 public schools, nonprofit private schools, and public and nonprofit private residential child-care institutions participate in the SBP. In 2013, 13.2 million children participated in the program; 11.2 million received their breakfast free or at a reduced price, and the remaining children paid full price for the meals.

The benefits associated with receiving free or reduced-price meals through the NSLP or SBP are not trivial. At least as defined by the reimbursement costs to schools, the value of receiving a lunch every day for a week is about \$15. Still, a high proportion of eligible children do not receive free or reduced price meals through the NSLP or SBP. This fact is often ascribed to the stigma that some children face for receiving NSLP and SBP meals and to some dissatisfaction with the content of the meals on the part of parents, children, or both. These factors can be especially important for high school children, for whom other options besides school meals may be readily available.

The Special Supplemental Nutrition Program for Women, Infants, and Children provides food, nutrition education, and health care referrals. Like the other programs reviewed above, WIC is federally funded and operated by the USDA. Unlike the others, it targets a much narrower population: low-income (that is, less than 185 percent of the poverty line) pregnant, postpartum, and breast-feeding women, as well as infants and children under five

years of age, who are determined to be at nutritional risk. In comparison to SNAP benefits, WIC vouchers can be redeemed at fewer outlets (46,000 nationwide) and for a much more limited set of foods. In 2013, WIC served 8.7 million people, at a cost of \$6.45 billion and with an average monthly benefit of \$43.

Even smaller in size and scope is the Child and Adult Care Food Program, which reimburses family day cares, child-care centers, homeless shelters, and after-school programs for meals and snacks served to children. Though the program has an adult component, the overwhelming majority of participants are children. In 2013, 3.3 million children participated in the program, at a cost of just under \$3 billion.

Causal Effects of Food Assistance on Food Insecurity

Identifying the effect of these programs on food insecurity among children is complicated by the fact that we cannot know either what the food-insecurity status of eligible nonrecipients would be if they received food assistance or what the food-insecurity status of participants would be if they did not receive food assistance. In addition, when we try to quantify the extent to which food assistance reduces food insecurity, we have to worry about reverse causation, because those who sign up for food-assistance programs are more likely to be food insecure in the first place. For example, in the overall population, the rate of food insecurity among those enrolled in SNAP is twice as high as the rate among eligible nonparticipants. Even when we control for readily observed factors that may also affect food insecurity—age, education, race and ethnicity, and income, for example—the rate of food insecurity among SNAP participants remains higher than that among eligible nonparticipants. Moreover, subjects of national surveys frequently either fail to report their participation in food-assistance programs or underreport the amount of assistance they receive, compounding the evaluation problem.

Many researchers have tried to ascertain how food assistance affects food insecurity, and most of their research has focused on SNAP. Christian Gregory and colleagues recently reviewed the research on SNAP with respect to food insecurity, and also presented new estimates of SNAP's impact.³¹ They note that estimates based on nonexperimental

techniques have diverged widely. Some researchers have reported that SNAP ameliorates food insecurity, and others have said that the program has the perverse effect of exacerbating it. (Studies that say SNAP exacerbates food insecurity tend to implicitly treat families' enrollment in SNAP as randomly distributed; that is, they assume that families don't self-select into the program.) Still other studies have found little or no effect. But when rigorous controls are used to account for reverse causation, the research has suggested that, at the very least, SNAP does not increase food insecurity; in most studies, SNAP participation leads to substantial reductions in food insecurity.³² In their own study, Gregory and colleagues use a "dose-response" model, which examines how a dollar increase in SNAP benefits affects food insecurity. This approach offers more variation beyond the basic comparisons of participants and eligible nonparticipants used in most applications. In their dosage models, Gregory and colleagues tend to find results that are consistent with the theory that there is no plausible reason why receiving SNAP benefits (that is, having more financial resources to purchase food) should lead to a higher probability of food insecurity.³³

Using a dose-response approach, Lucie Schmidt, Lara Shore-Sheppard, and Tara Watson investigated how the level of benefits from various safety net programs (SNAP, TANF, SSI, EITC, and Medicaid)—and the distribution of those benefits among cash, food, and health insurance—affect very low food security among children and low food security among families. A program's effects may depend on the mix of cash and noncash benefits and the degree to which they "crowd out" food-specific benefits. For example, cash assistance is a factor in determining SNAP benefits, so residents of states with more generous cash assistance programs may receive less food assistance. Schmidt, Shore-Sheppard, and Watson find that the median food and cash benefit level of \$3,400 reduces low food security by 16 percent. They find that the same package lowers very low food security among children by 36 percent, though because very low food security is relatively rare, this estimate is less precise.³⁴

In many communities, feeding programs for children are not available during the summer, when school is not in session. This may be one of the reasons that food insecurity among children spikes during the

In most studies, SNAP participation leads to substantial reductions in food insecurity.

summer.³⁵ To see whether providing benefits during the summer months may lead to reductions in food insecurity, the USDA conducted a dose-response experiment in a randomized controlled trial by "topping up" SNAP benefits for one group of children by \$60 per child per month during the summers of 2011, 2012, and 2013; another group of SNAP recipients did not receive this summertime boost.³⁶ Among children receiving the extra \$60 per month, very low food security fell by one-third across the 14-site demonstration.

Brent Kreider, John V. Pepper, and Manan Roy estimated the causal effect of WIC on very low food security among infants and children. They examined the assumptions necessary to decisively conclude that WIC reduces food insecurity, and whether those assumptions are plausible, considering both the problem of reverse causation—food insecure families are more likely to apply for WIC—and the fact that households underreport their use of WIC in surveys. Using data from NHANES, they find that under reasonable assumptions, WIC reduces the prevalence of child food insecurity by one-third and of very low food security by at least two-thirds.³⁷

Finally, Colleen Heflin, Irma Arteaga, and Sara Gable examined how CACFP affects child and family food insecurity. Using data from the ECLS-B, they found that CACFP participation has no association with household or child food insecurity.³⁸

Beyond the Safety Net: Family Coping Strategies for Childhood Hunger

In recent years, scholars have documented strategies that families use as they cope with food insecurity among their children. Prior work on household food insecurity suggested that at-risk families access an array of informal food-assistance programs, such as food banks and pantries, and that they also use other coping mechanisms, such as selling furniture,

pawning possessions, “dumpster diving,” eating food that is past its sell-by date, putting off bills, and spending less on medications or heating and cooling.³⁹

Kathryn Edin and colleagues conducted a qualitative study of 90 randomly selected SNAP households that were part of a larger quantitative SNAP survey on food security.⁴⁰ They found that most of the SNAP families—whether food secure or food insecure—faced financial shortfalls at the end of the month. Rather than earmarking funds to hold in reserve, however, they generally improvised when the shortfall occurred, by, for example, keeping the lights off to lower utility bills, delaying bill payments, moving in with relatives to secure a more regular source of meals for themselves, or working odd jobs to earn extra cash. But there were distinctions in coping strategies between the food secure and food insecure. The least food secure were least likely to have access to family members or a wider social network for cash, groceries, or meals when resources were short and were more likely to share food purchased through SNAP with other household members who were not receiving SNAP.⁴¹ Importantly, the least food secure were also the least skilled at shopping for bargains and using other budgeting strategies to stretch low resources. Similarly, Craig Gundersen and Steven Garasky found that households with better financial management skills were less likely to be food insecure.⁴²

Using qualitative methods, Gregory Mills and Karla Hanson studied about 90 families in two small rural areas and one larger urban area to investigate the factors associated with child food insecurity and compare household strategies for avoiding food shortages.⁴³ They found that households with

The least food secure were least likely to have access to family members or a wider social network for cash, groceries, or meals when resources were short.

food-insecure children had both more risks and more intense risks for child hunger than did households with food-secure children. For example, households with food-insecure children were more likely to be led by single parents, have more children, have complex and fluctuating household composition, experience health problems, and have unpredictable earnings. Households with very low food security among children were particularly stressed, and mothers in such households appeared more depressed than mothers in low-food-secure or food-secure households. Limited evidence suggests that at-risk households with food-secure children more often received government assistance (such as rental assistance, health insurance, and disability payments) and more often used food management techniques (such as planning meals, finding recipes, and cooking from scratch). Faced with food shortages, households with food-insecure children drew heavily on their informal social networks, but, in general, the other members of the households’ social networks also lacked resources.

Policy Considerations

Food insecurity among children remains a stubborn policy challenge for the nation, in part because so many factors can expose children to the risk of hunger. The research reported here has shown that beyond low income, whether transitory or permanent, key factors that predict a child’s food insecurity include the mother’s mental and physical health, as well as her current and past substance abuse; residential instability; living in households without both parents present; living in a household where noncustodial parents make inconsistent or no child support payments; whether it is summertime, when school meals are not offered; and whether the parents are immigrants. At the same time, the most credible evaluations of food-assistance programs such as SNAP, NSLP, and WIC indicate that the programs reduce children’s food insecurity. However, many children are still falling through tears in the safety net. Here we highlight a few possible directions for policy.

Although participation rates in SNAP among children fell in the years immediately following the 1996 welfare reform, they have increased steadily since 2000, due, in part, to concerted outreach efforts by the USDA. Despite this, many children are not

receiving benefits even though they are eligible for assistance, and thus improving take-up rates should be a priority, especially in light of SNAP's proven benefits in reducing food insecurity.

One way to improve take-up rates might be to improve access to the program. The process of applying for and recertifying SNAP benefits varies greatly across the country. Some jurisdictions have office hours only during prime work hours, forcing parents to choose between missing work and wages or failing to enroll in SNAP or recertify. Other jurisdictions let people apply or recertify online, an innovation that may lead to lower transaction costs and increased participation. Some states have also decided to extend the recertification period to combat the sharp drop-off in participation that occurs when households need to recertify. The USDA could reward states that increase participation rates among eligible households.

With school feeding programs, the access problem is different. In the case of the SBP, only about two-thirds of schools offer breakfast. Expanding the breakfast program to more schools would be an obvious step. And neither the NSLP nor the SBP is available when school is not in session. Some communities offer food programs in the summer, typically in community centers in disadvantaged neighborhoods, but the practice is not widespread. The recent USDA demonstration that “topping up” SNAP benefits during the summer can reduce food insecurity offers an efficient, well-targeted option. To get a sense of what it might cost to scale up the demonstration nationwide, we note that in 2012, an estimated 13,730,000 school-age children were participating in SNAP. If SNAP were topped up \$60 per month per child for the three summer months, and if take-up rates of the benefits were 100 percent, then scaling up nationwide would require \$2.5 billion in extra benefits, or about a 3.3 percent increase in outlays. At a more plausible take-up rate of 75 percent, which reflects the results of the demonstration project, the additional outlay would be closer to \$1.88 billion. However, though we generally think of the lack of school feeding programs as a summertime issue, it also spans other periods when there are extended breaks. These include the holiday season, when schools are closed for two or three weeks, and the staggered breaks throughout the year in year-round schools. In this case, outreach efforts such as

Some of the factors that predict children's food insecurity

- *Mother's health*
- *Mother's substance abuse*
- *Residential instability*
- *Living in a household without both parents present*
- *Inconsistent or no child support payments*
- *Summertime*
- *Immigrant parents*

expanded backpack programs (in which food banks send children home with food for the weekend) could help tide children over with food assistance during holiday breaks.

The research showing that a mother's mental and physical health can affect her children's food security raises substantive concerns about families' ability to navigate the welfare system. In some cases, these health challenges are exacerbated by lack of access to mental health services. Enabling access to such services could improve food security, but how to do so is not altogether clear; more research in this area may help identify solutions. Similarly, the finding that children of women who have been treated for substance use are also at heightened risk of food insecurity suggests we should ensure that such women are enrolled in programs such as SNAP and WIC during their treatment (if they are eligible), and that their children are enrolled in school meal programs.

Beyond improving program take-up, policy makers should examine whether the programs' benefit levels are adequate, especially with regard to SNAP. In 2013, the Institute of Medicine released a report that questioned whether SNAP benefits are meeting the needs of families today.⁴⁴ Though benefit levels

have increased over time alongside inflation, the structure of the basic benefit formula has not been updated since the Food Stamp Act of 1977. Among other concerns, the IOM noted several issues:

1. SNAP benefits are fixed across the continental U.S. (though they are higher in Alaska and Hawaii). Because food costs are not uniform across the country, the benefit may fall short in high-cost regions. We note, however, that because the Thrifty Food Plan is the least costly plan established by the USDA to attain a nutritious diet, there is little nutritional justification for cutting benefits in low-cost areas, and thus bumping up benefits in high-cost regions would not be cost neutral.

2. Working people have a slightly lower participation rate in SNAP. The SNAP benefit formula treats earned income (that is, income from paid employment) differently than income from other sources insofar as the net income formula (discussed above) assigns earned income 80% of the value of other income sources. This discounting of earned income encourages work among SNAP-eligible households. But discounting earned income even more might encourage more work among the SNAP population. In addition, doing so would increase SNAP benefit levels among families that often have work-related expenditures (for example, for travel to and from work) that diminish the amount of money and time available for food preparation.

3. Families are expected to contribute almost one-third of their net income to food. This 30-percent rule is tied to the time when the official poverty line was established, in the 1950s, when it was set at three times the economy food plan for a given family size. Families today spend closer to one-seventh of their budgets on food, not one-third as in the 1950s, and so it may be worth revisiting how much cash SNAP households should be expected to contribute toward food purchases.

4. Research has demonstrated that take-up rates fall quickly as the potential benefit declines; thus, even though a family may be eligible for assistance, a low benefit level makes it not worth the trouble to apply. Raising the minimum benefit, currently \$16 per month, could solve this problem. Moreover, this extra benefit might move some households with incomes between 100 percent and 130 percent of the poverty line (that is, the nonpoor food-insecure households discussed above) into food security.

We recognize that these suggestions would increase the total expenditures on SNAP.⁴⁵ But they would likely reduce U.S. food insecurity and its corresponding health problems. Whether these benefits are worth the extra cost via SNAP is something that policy makers need to consider.

What We Still Need to Learn

The existing research on food insecurity gives us an exceptional overview of the food-insecurity landscape in the United States, allowing us to propose new policy directions, some of which were covered in the previous section. However, researchers could pursue many more areas to further our knowledge about food insecurity.⁴⁶

Disability

As we've shown, households with at least one person with a disability are substantially more likely to be food insecure than other households.⁴⁷ But we lack a clear understanding of why. Possible reasons include limitations in accessing food; the amount of time it takes to care for those with disabilities and/or to navigate the challenges associated with one's own disabilities; difficulty getting and holding a job; and higher health-care costs, which take away money that might otherwise be available for food. Moreover, the reasons are likely to differ depending on the type of disability. Thus we should study this problem by type of disability (both physical and mental), including the question of who in the household has a particular disability. Understanding what combination of factors is most likely to produce food insecurity among people with disabilities will help guide policy.

Education

Parents' education influences food insecurity among children, even after controlling for a wide array of other factors, including income. The reasons are not immediately apparent, but they may include the direct effect of having more human capital (that is, more knowledge and experience); a more future-oriented outlook; and the fact that education is a proxy both for other assets (most studies are unable to measure such assets) and for other skills (for example, financial management). If something about more years of schooling per se leads to a lower probability of food insecurity, then policies to increase educational attainment may directly and indirectly reduce food insecurity.

Overlooked people

Studies of food insecurity that use nationally representative data (for example, CPS or SIPP) help us understand most of the U.S. population. However, some groups are overlooked. In particular, people who are homeless or living in marginal housing when surveys are conducted may not be included. Because the causes of food insecurity among these groups may differ from those of the general population—and, hence, the best policy responses may differ—including them and similar households in separate surveys may be worthwhile. Understanding the appropriate policy responses will be especially important insofar as many overlooked groups are likely to have substantially higher food insecurity rates than those of the general population. Moreover, understanding food insecurity and its causes among hard-to-reach groups would give us a better, less-biased picture of food insecurity in the population as a whole.

Linking administrative and survey data

One of the challenges we face in evaluating whether food-assistance programs are effectively combating childhood food insecurity is that respondents in household surveys underreport transfer income, including food-assistance programs such as SNAP and WIC.⁴⁸ One remedy would be to link administrative data on transfer programs, as well as tax data on the EITC, with data sets such as CPS, ACS, PSID, and SIPP. (This would give us better information about income, which is often misreported as well.) However, because SNAP and WIC are administered at the state level, the Census Bureau (or any other survey organization) would have to sign separate agreements with each state to create such linkages. Perhaps states could be given incentives, financial or otherwise, to do so.

Qualitative data

Our understanding of food insecurity in the United States is based mostly on quantitative data sets. Few scholars have used qualitative data (that is, information that can't be expressed numerically) to study the problem, and their work to date has had comparatively little influence on either research or policy.⁴⁹ Yet qualitative research would give us a more complete picture of U.S. food insecurity, and it could establish new perspectives that could then be used in collecting quantitative data. We offer three suggestions regarding qualitative data. First, the types of questions posed and the methods used should mainly tackle issues concerning food insecurity

that quantitative data cannot. Second, the sampling should include both food-secure and food-insecure households. Some work using qualitative data has included only food-insecure households; at least with respect to the causes of food insecurity, such data is of limited use. Third, the research teams who conduct qualitative studies should be interdisciplinary, allowing for a richer set of questions and multiple approaches to interpreting responses. Following these recommendations would yield important information about, among other things, the coping mechanisms that families use when their food resources are exhausted, the precursors to food insecurity (for example, family disruptions), the hurdles people may face when they apply for food assistance and other forms of aid, and how disabilities make it harder to procure and prepare food.

Longer-lasting surveys

To study other problems facing low-income Americans, some surveys have collected information from the same group of people, and in some cases their descendants, for years. In part because the CFMS was developed relatively recently, no surveys that ask about food insecurity have gone on nearly as long. Thus we do not have a good understanding of whether the causes of transitory food insecurity differ from those of longer-term or permanent food insecurity. Following people for longer periods would also let us see more variation in food insecurity and its causes, allowing us to analyze the problem, and potential policy solutions, more effectively.

Children's responses

Recent work has demonstrated that children respond differently than their parents do to questions about their food-insecurity status.⁵⁰ As a consequence, findings about the incidence of food insecurity will differ depending on who answers the questions. One question for future research is whether children's answers suggest different causes of food insecurity. If so, then policy responses may depend on whether the children's or parents' perspective is deemed the most useful one for reducing food insecurity.

The Healthy and Hunger-Free Kids Act of 2010 set in motion a flurry of research on childhood food insecurity to assist our nation's fight against hunger. The research reported here opens new opportunities for further inquiry, as well as for new policy options in that battle.

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